



**CALL NO. 107**

**CONTRACT ID. 204117**

**ROWAN COUNTY**

**FED/STATE PROJECT NUMBER HSIP 5211 (118)**

**DESCRIPTION US HIGHWAY 60 (US 60)**

**WORK TYPE ASPHALT SURFACE WITH GRADE & DRAIN**

**PRIMARY COMPLETION DATE 9/30/2021**

**LETTING DATE: September 25,2020**

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 am EASTERN DAYLIGHT TIME September 25,2020. Bids will be publicly announced at 10:00 am EASTERN DAYLIGHT TIME.

**NO PLANS ASSOCIATED WITH THIS PROJECT.**

**DBE CERTIFICATION REQUIRED - 18%**

**REQUIRED BID PROPOSAL GUARANTY: Not less than 5% of the total bid.**

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**PART I**  
**SCOPE OF WORK**

## ADMINISTRATIVE DISTRICT - 09

**CONTRACT ID - 204117**

**HSIP 5211 (118)**

**COUNTY - ROWAN**

**PCN - 0910300602001**

**HSIP 5211 (118)**

US HIGHWAY 60 (US 60) (MP 10.834) FROM BRAMBLEWOOD LANE EXTENDING EAST TO THE ROWAN/CARTER COUNTY LINE (MP 17.112) SYP NO. 09-09008.00.

GEOGRAPHIC COORDINATES LATITUDE 38:14:20.20 LONGITUDE -83:21:15.30

**COMPLETION DATE(S):**

COMPLETED BY 09/30/2021

APPLIES TO ENTIRE CONTRACT

## **CONTRACT NOTES**

### **PROPOSAL ADDENDA**

All addenda to this proposal must be applied when calculating bid and certified in the bid packet submitted to the Kentucky Department of Highways. Failure to use the correct and most recent addenda may result in the bid being rejected.

### **BID SUBMITTAL**

Bidder must use the Department's electronic bidding software. The Bidder must download the bid file located on the Bid Express website ([www.bidx.com](http://www.bidx.com)) to prepare a bid packet for submission to the Department. The bidder must submit electronically using Bid Express.

### **JOINT VENTURE BIDDING**

Joint venture bidding is permissible. All companies in the joint venture must be prequalified in one of the work types in the Qualifications for Bidders for the project. The bidders must get a vendor ID for the joint venture from the Division of Construction Procurement and register the joint venture as a bidder on the project. Also, the joint venture must obtain a digital ID from Bid Express to submit a bid. A joint bid bond of 5% may be submitted for both companies or each company may submit a separate bond of 5%.

### **UNDERGROUND FACILITY DAMAGE PROTECTION**

The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. When prescribed in said directives, the contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom shall be contacted through their individual Protection Notification Center. Non-compliance with these directives can result in the enforcement of penalties.

### **REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY**

Pursuant to KRS 176.085(1)(b), an agency, department, office, or political subdivision of the Commonwealth of Kentucky shall not award a state contract to a person that is a foreign entity required by [KRS 14A.9-010](#) to obtain a certificate of authority to transact business in the Commonwealth ("certificate") from the Secretary of State under [KRS 14A.9-030](#) unless the person produces the certificate within fourteen (14) days of the bid or proposal opening. If the foreign entity is not required to obtain a certificate as provided in [KRS 14A.9-010](#), the foreign entity should identify the applicable exception. Foreign entity is defined within [KRS 14A.1-070](#).

**For all foreign entities required to obtain a certificate of authority to transact business in the Commonwealth, if a copy of the certificate is not received by the contracting agency within the time frame identified above, the foreign entity's solicitation response shall be deemed non-responsive or the awarded contract shall be cancelled.**

Businesses can register with the Secretary of State at <https://secure.kentucky.gov/sos/ftbr/welcome.aspx>.

### **SPECIAL NOTE FOR PROJECT QUESTIONS DURING ADVERTISEMENT**

Questions about projects during the advertisement should be submitted in writing to the Division of Construction Procurement. This may be done by fax (502) 564-7299 or email to [kytc.projectquestions@ky.gov](mailto:kytc.projectquestions@ky.gov). The Department will attempt to answer all submitted questions. The Department reserves the right not to answer if the question is not pertinent or does not aid in clarifying the project intent.

The deadline for posting answers will be 3:00 pm Eastern Daylight Time, the day preceding the Letting. Questions may be submitted until this deadline with the understanding that the later a question is submitted, the less likely an answer will be able to be provided.

The questions and answers will be posted for each Letting under the heading "Questions & Answers" on the Construction Procurement website ([www.transportation.ky.gov/contract](http://www.transportation.ky.gov/contract)). The answers provided shall be considered part of this Special Note and, in case of a discrepancy, will govern over all other bidding documents.

### **HARDWOOD REMOVAL RESTRICTIONS**

The US Department of Agriculture has imposed a quarantine in Kentucky and several surrounding states, to prevent the spread of an invasive insect, the emerald ash borer. Hardwood cut in conjunction with the project may not be removed from the state. Chipping or burning on site is the preferred method of disposal.

### **INSTRUCTIONS FOR EXCESS MATERIAL SITES AND BORROW SITES**

Identification of excess material sites and borrow sites shall be the responsibility of the Contractor. The Contractor shall be responsible for compliance with all applicable state and federal laws and may wish to consult with the US Fish and Wildlife Service to seek protection under Section 10 of the Endangered Species Act for these activities.

### **ACCESS TO RECORDS**

The contractor, as defined in KRS 45A.030 (9) agrees that the contracting agency, the Finance and Administration Cabinet, the Auditor of Public Accounts, and the Legislative Research Commission, or their duly authorized representatives, shall have access to any books, documents, papers, records, or other evidence, which are directly pertinent to this contract for the purpose of financial audit or program review. Records and other prequalification information confidentially

disclosed as part of the bid process shall not be deemed as directly pertinent to the contract and shall be exempt from disclosure as provided in KRS 61.878(1)(c). The contractor also recognizes that any books, documents, papers, records, or other evidence, received during a financial audit or program review shall be subject to the Kentucky Open Records Act, KRS 61.870 to 61.884.

In the event of a dispute between the contractor and the contracting agency, Attorney General, or the Auditor of Public Accounts over documents that are eligible for production and review, the Finance and Administration Cabinet shall review the dispute and issue a determination, in accordance with Secretary's Order 11-004.

April 30, 2018

### **FEDERAL CONTRACT NOTES**

The Kentucky Department of Highways, in accordance with the Regulations of the United States Department of Transportation 23 CFR 635.112 (h), hereby notifies all bidders that failure by a bidder to comply with all applicable sections of the current Kentucky Standard Specifications, including, but not limited to the following, may result in a bid not being considered responsive and thus not eligible to be considered for award:

- |                                |  |
|--------------------------------|--|
| 102.02 Current Rating          | 102.08 Preparation and Delivery of Proposals |
| 102.13 Irregular Bid Proposals | 102.14 Disqualification of Bidders           |
| 102.09 Proposal Guaranty       |  |

### **CIVIL RIGHTS ACT OF 1964**

The Kentucky Department of Highways, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252) and the Regulations of the Federal Department of Transportation (49 C.F.R., Part 21), issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the ground of race, color, or national origin.

### **NOTICE TO ALL BIDDERS**

To report bid rigging activities call: 1-800-424-9071.

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

### **SECOND TIER SUBCONTRACTS**

Second Tier subcontracts on federally assisted projects shall be permitted. However, in the case of DBE's, second tier subcontracts will only be permitted where the other subcontractor is also a DBE. All second tier subcontracts shall have the consent of both the Contractor and the Engineer.

### **DISADVANTAGED BUSINESS ENTERPRISE PROGRAM**

It is the policy of the Kentucky Transportation Cabinet (“the Cabinet”) that Disadvantaged Business Enterprises (“DBE”) shall have the opportunity to participate in the performance of highway construction projects financed in whole or in part by Federal Funds in order to create a level playing field for all businesses who wish to contract with the Cabinet. To that end, the Cabinet will comply with the regulations found in 49 CFR Part 26, and the definitions and requirements contained therein shall be adopted as if set out verbatim herein.

The Cabinet, contractors, subcontractors, and sub-recipients shall not discriminate on the basis of race, color, national origin, or sex in the performance of work performed pursuant to Cabinet contracts. The contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of federally assisted highway construction projects. The contractor will include this provision in all its subcontracts and supply agreements pertaining to contracts with the Cabinet.

Failure by the contractor to carry out these requirements is a material breach of its contract with the Cabinet, which may result in the termination of the contract or such other remedy as the Cabinet deems necessary.

### **DBE GOAL**

The Disadvantaged Business Enterprise (DBE) goal established for this contract, as listed on the front page of the proposal, is the percentage of the total value of the contract.

The contractor shall exercise all necessary and reasonable steps to ensure that Disadvantaged Business Enterprises participate in a least the percent of the contract as set forth above as goals for this contract.

### **OBLIGATION OF CONTRACTORS**

Each contractor prequalified to perform work on Cabinet projects shall designate and make known to the Cabinet a liaison officer who is assigned the responsibility of effectively administering and promoting an active program for utilization of DBEs.

If a formal goal has not been designated for the contract, all contractors are encouraged to consider DBEs for subcontract work as well as for the supply of material and services needed to perform this work.

Contractors are encouraged to use the services of banks owned and controlled by minorities and women.

### **CERTIFICATION OF CONTRACT GOAL**

Contractors shall include the following certification in bids for projects for which a DBE goal has been established. BIDS SUBMITTED WHICH DO NOT INCLUDE CERTIFICATION OF DBE PARTICIPATION WILL NOT BE ACCEPTED. These bids will not be considered for award by the Cabinet and they will be returned to the bidder.

“The bidder certifies that it has secured participation by Disadvantaged Business Enterprises (“DBE”) in the amount of \_\_\_\_\_ percent of the total value of this contract and that the DBE participation is in compliance with the requirements of 49 CFR 26 and the policies of the Kentucky Transportation Cabinet pertaining to the DBE Program.”

**The certification statement is located in the electronic bid file. All contractors must certify their DBE participation on that page. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted.**

### **DBE PARTICIPATION PLAN**

Lowest responsive bidders must submit the *DBE Plan/ Subcontractor Request*, form TC 14-35 DBE, within **5** days of the letting. This is necessary before the Awards Committee will review and make a recommendation. **The project will not be considered for award prior to submission and approval of the apparent low bidder’s DBE Plan/Subcontractor Request.**

The DBE Participation Plan shall include the following:

1. Name and address of DBE Subcontractor(s) and/or supplier(s) intended to be used in the proposed project;
2. Description of the work each is to perform including the work item, unit, quantity, unit price and total amount of the work to be performed by the individual DBE. The Proposal Line Number, Category Number, and the Project Line Number can be found in the “material listing” on the Construction Procurement website under the specific letting;
3. The dollar value of each proposed DBE subcontract and the percentage of total project contract value this represents. DBE participation may be counted as follows:
  - a. If DBE suppliers and manufactures assume actual and contractual responsibility, the dollar value of materials to be furnished will be counted toward the goal as follows:
    - The entire expenditure paid to a DBE manufacturer;
    - 60 percent of expenditures to DBE suppliers that are not manufacturers provided the supplier is a regular dealer in the product involved. A regular dealer must be engaged in, as its principal business and in its own name, the sale of products to the public, maintain an inventory and own and operate distribution equipment; and
    - The amount of fees or commissions charged by the DBE firms for a bona fide service, such as professional, technical, consultant, or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, supplies, delivery of materials and supplies or for furnishing bonds, or insurance, providing such fees or commissions are determined to be reasonable and customary.

- b) The dollar value of services provided by DBEs such as quality control testing, equipment repair and maintenance, engineering, staking, etc.;
  - c) The dollar value of joint ventures. DBE credit for joint ventures will be limited to the dollar amount of the work actually performed by the DBE in the joint venture;
4. Written and signed documentation of the bidder's commitment to use a DBE contractor whose participation is being utilized to meet the DBE goal; and
  5. Written and signed confirmation from the DBE that it is participating in the contract as provided in the prime contractor's commitment.

#### **UPON AWARD AND BEFORE A WORK ORDER WILL BE ISSUED**

Contractors must submit the signed subcontract between the contractor and the DBE contractor, along with the DBE's certificate of insurance. If the DBE is a supplier of materials for the project, a signed purchase order must be submitted to the Division of Construction Procurement.

Changes to DBE Participation Plans must be approved by the Cabinet. The Cabinet may consider extenuating circumstances including, but not limited to, changes in the nature or scope of the project, the inability or unwillingness of a DBE to perform the work in accordance with the bid, and/or other circumstances beyond the control of the prime contractor.

#### **CONSIDERATION OF GOOD FAITH EFFORTS REQUESTS**

If the DBE participation submitted in the bid by the apparent lowest responsive bidder does not meet or exceed the DBE contract goal, the apparent lowest responsive bidder must submit a Good Faith Effort Package to satisfy the Cabinet that sufficient good faith efforts were made to meet the contract goals prior to submission of the bid. Efforts to increase the goal after bid submission will not be considered in justifying the good faith effort, unless the contractor can show that the proposed DBE was solicited prior to the letting date. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted. One complete set (hard copy along with an electronic copy) of this information must be received in the Division of Contract Procurement no later than 12:00 noon of the tenth calendar day after receipt of notification that they are the apparent low bidder.

Where the information submitted includes repetitious solicitation letters it will be acceptable to submit a sample representative letter along with a distribution list of the firms solicited. Documentation of DBE quotations shall be a part of the good faith effort submittal as necessary to demonstrate compliance with the factors listed below which the Cabinet considers in judging good faith efforts. This documentation may include written subcontractors' quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

The Good Faith Effort Package shall include, but may not be limited to information showing evidence of the following:

1. Whether the bidder attended any pre-bid meetings that were scheduled by the Cabinet to inform DBEs of subcontracting opportunities;
2. Whether the bidder provided solicitations through all reasonable and available means;
3. Whether the bidder provided written notice to all DBEs listed in the DBE directory at the time of the letting who are prequalified in the areas of work that the bidder will be subcontracting;
4. Whether the bidder followed up initial solicitations of interest by contacting DBEs to determine with certainty whether they were interested. If a reasonable amount of DBEs within the targeted districts do not provide an intent to quote or no DBEs are prequalified in the subcontracted areas, the bidder must notify the Disadvantaged Enterprise Business Liaison Officer (DEBLO) in the Office of Civil Rights and Small Business Development to give notification of the bidder's inability to get DBE quotes;
5. Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise perform these work items with its own forces;
6. Whether the bidder provided interested DBEs with adequate and timely information about the plans, specifications, and requirements of the contract;
7. Whether the bidder negotiated in good faith with interested DBEs not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached;
8. Whether quotations were received from interested DBE firms but were rejected as unacceptable without sound reasons why the quotations were considered unacceptable. The fact that the DBE firm's quotation for the work is not the lowest quotation received will not in itself be considered as a sound reason for rejecting the quotation as unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a DBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy DBE goals;
9. Whether the bidder specifically negotiated with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be subcontracted includes potential DBE participation;
10. Whether the bidder made any efforts and/or offered assistance to interested DBEs in obtaining the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal; and
11. Any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include DBE participation.

### **FAILURE TO MEET GOOD FAITH REQUIREMENT**

Where the apparent lowest responsive bidder fails to submit sufficient participation by DBE firms to meet the contract goal and upon a determination by the Good Faith Committee based upon the information submitted that the apparent lowest responsive bidder failed to make sufficient reasonable efforts to meet the contract goal, the bidder will be offered the opportunity to meet in person for administrative reconsideration. The bidder will be notified of the Committee's decision within 24 hours of its decision. The bidder will have 24 hours to request reconsideration of the Committee's decision. The reconsideration meeting will be held within two days of the receipt of a request by the bidder for reconsideration.

The request for reconsideration will be heard by the Office of the Secretary. The bidder will have the opportunity to present written documentation or argument concerning the issue of whether it met the goal or made an adequate good faith effort. The bidder will receive a written decision on the reconsideration explaining the basis for the finding that the bidder did or did not meet the goal or made adequate Good Faith efforts to do so.

The result of the reconsideration process is not administratively appealable to the Cabinet or to the United States Department of Transportation.

The Cabinet reserves the right to award the contract to the next lowest responsive bidder or to rebid the contract in the event that the contract is not awarded to the low bidder as the result of a failure to meet the good faith requirement.

### **SANCTIONS FOR FAILURE TO MEET DBE REQUIREMENTS OF THE PROJECT**

Failure by the prime contractor to fulfill the DBE requirements of a project under contract or to demonstrate good faith efforts to meet the goal constitutes a breach of contract. When this occurs, the Cabinet will hold the prime contractor accountable, as would be the case with all other contract provisions. Therefore, the contractor's failure to carry out the DBE contract requirements shall constitute a breach of contract and as such the Cabinet reserves the right to exercise all administrative remedies at its disposal including, but not limited to the following:

- Disallow credit toward the DBE goal;
- Withholding progress payments;
- Withholding payment to the prime in an amount equal to the unmet portion of the contract goal; and/or
- Termination of the contract.

### **PROMPT PAYMENT**

The prime contractor will be required to pay the DBE within seven (7) working days after he or she has received payment from the Kentucky Transportation Cabinet for work performed or materials furnished.

### **CONTRACTOR REPORTING**

All contractors must keep detailed records and provide reports to the Cabinet on their progress in meeting the DBE requirement on any highway contract. These records may include, but shall not be limited to payroll, lease agreements, cancelled payroll checks, executed subcontracting agreements, etc. Prime contractors will be required to complete and submit a **signed and notarized** Affidavit of Subcontractor Payment (TC 18-7) and copies of checks for any monies paid to each DBE subcontractor or supplier utilized to meet a DBE goal. These documents must be completed and signed within 7 days of being paid by the Cabinet.

Payment information that needs to be reported includes date the payment is sent to the DBE, check number, Contract ID, amount of payment and the check date. Before Final Payment is made on this contract, the Prime Contractor will certify that all payments were made to the DBE subcontractor and/or DBE suppliers.

**\*\*\*\*\* IMPORTANT \*\*\*\*\***

**Please mail the original, signed and completed TC (18-7) Affidavit of Subcontractor Payment form and all copies of checks for payments listed above to the following address:**

Office of Civil Rights and Small Business Development  
6<sup>th</sup> Floor West 200 Mero Street  
Frankfort, KY 40622

The prime contractor should notify the KYTC Office of Civil Rights and Small Business Development seven (7) days prior to DBE contractors commencing work on the project. The contact in this office is Mr. Melvin Bynes. Mr. Bynes' current contact information is email address – [melvin.bynes2@ky.gov](mailto:melvin.bynes2@ky.gov) and the telephone number is (502) 564-3601.

### **DEFAULT OR DECERTIFICATION OF THE DBE**

If the DBE subcontractor or supplier is decertified or defaults in the performance of its work, and the overall goal cannot be credited for the uncompleted work, the prime contractor may utilize a substitute DBE or elect to fulfill the DBE goal with another DBE on a different work item. If after exerting good faith effort in accordance with the Cabinet's Good Faith Effort policies and procedures, the prime contractor is unable to replace the DBE, then the unmet portion of the goal may be waived at the discretion of the Cabinet.

### **PROHIBITION ON TELECOMMUNICATIONS EQUIPMENT OR SERVICES**

In accordance with the FY 2019 National Defense Authorization Act (NDAA), 2 CFR 200.216, and 2 CFR 200.471, Federal agencies are prohibited, after August 13, 2020, from obligating or expending financial assistance to obtain certain telecommunications and video surveillance services and equipment from specific producers. As a result of these regulations, contractors and subcontractors are prohibited, on projects with federal funding participation, from providing telecommunication or video surveillance equipment, services, or systems produced by:

- Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities)
- Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities)

**LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – CARGO PREFERENCE ACT (CPA).**

**(REV 12-17-15) (1-16)**

SECTION 7 is expanded by the following new Article:

102.10 **Cargo Preference Act – Use of United States-flag vessels.**

Pursuant to Title 46CFR Part 381, the Contractor agrees

- To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

- To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph 1 of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

- To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

### **NATIONAL HIGHWAY**

Be advised this project is on the NATIONAL HIGHWAY SYSTEM.

### **ASPHALT MIXTURE**

Unless otherwise noted, the Department estimates the rate of application for all asphalt mixtures to be 110 lbs/sy per inch of depth.

### **DGA BASE**

Unless otherwise noted, the Department estimates the rate of application for DGA Base to be 115 lbs/sy per inch of depth.

### **DGA BASE FOR SHOULDERS**

Unless otherwise noted, the Department estimates the rate of application for DGA Base for Shoulders to be 115 lbs/sy per inch of depth. The Department will not measure necessary grading and/or shaping of existing shoulders prior to placing of DGA Base, but shall be incidental to the Contract unit price per ton for DGA Base.

Accept payment at the Contract unit price per ton as full compensation for all labor, materials, equipment, and incidentals for grading and/or shaping of existing shoulders and furnishing, placing, and compacting the DGA Base.

### **FUEL AND ASPHALT PAY ADJUSTMENT**

The Department has included the Contract items Asphalt Adjustment and Fuel Adjustment for possible future payments at an established Contract unit price of \$1.00. The Department will calculate actual adjustment quantities after work is completed. If existing Contract amount is insufficient to pay all items on the contract with the adjustments, the Department will establish additional monies with a change order.

### **OPTION B**

Be advised that the Department will control and accept compaction of asphalt mixtures furnished on this project under OPTION B in accordance with Sections 402 and 403.

## **SPECIAL NOTE FOR AWARD OF CONTRACT**

In accordance to section 103.02 of the Standard Specifications for Road and Bridge Construction, the Department may hold and not award the contract for a period not to exceed sixty (60) calendar days from the date of letting.

## **Special Notes Applicable to Project – General Notes & Description of Work**

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### **CAUTION**

The information in this proposal and the type of work listed herein are approximate only and are not to be taken as an exact evaluation of the materials and conditions to be encountered during construction; the bidder must draw his/her own conclusions when developing the Unit Bid Prices for each bid item. As such, if the conditions encountered are not in accordance with the information shown, the Department does not guarantee any changes to the Unit Bid Prices nor extension of the contract will be considered. The Department will pay for bid item quantity overruns, but only if pre-approved by the Engineer.

### **STATIONING**

The contractor is advised that the planned locations of work were established from a beginning station number which is STA 572+03.52 at the intersection of US 60 and Bramblewood Road. Milepoints were established from a beginning Milepoint which is MP 10.834 at the intersection of US 60 and Bramblewood Road. The existing mile marker signs may not correspond to the proposed work locations.

### **LIDAR**

All survey information was obtained from available KYTC Aerial and Mobile LIDAR data and should be field verified as appropriate during construction and prior to incorporating the various project work items. Refer to the Special Note for Staking concerning staking operations required to control and construct the work.

### **ON-SITE INSPECTION**

Before submitting a bid for the work, make a thorough inspection of the site and determine existing conditions so that the work can be expeditiously performed after a contract is awarded. The Department will consider submission of a bid to be evidence of this inspection having been made. The Department will not honor any claims for money or time extension resulting from site conditions.

### **RIGHT OF WAY LIMITS**

The Department has not established the exact limits of the Right-of-Way. Unless a consent and release form is obtained from the adjoining property owner, limit work activities to the obvious Right-of-Way and staging areas secured by the Contractor at no additional cost to the Department. In the event that private improvements (i.e. fences, buildings, etc.) encroach upon the Right-of-Way, the contractor shall notify the Engineer and limit work activities in order to NOT disturb the improvements. If they become necessary, the Department will secure consent and releases from property owners through the Engineer. Be responsible for all encroachments onto private lands.

### **CONTROL**

Perform all work under the absolute control of the Department of Highways. Obtain the Engineer's approval of all designs required to be furnished by the Contractor prior to incorporation into the work. The Department reserves the right to have other work performed by other contractors and its own forces and to permit public utility companies and others to do work during the construction within the limits of, or adjacent to, the project. Conduct operations and cooperate with such other parties so that interference with such other work will be reduced to a minimum. The Department will not honor any claims for money or time extension created by the operations of such other parties. Should a difference of opinion arise as to the rights of the Contractor and others working within the limits of, or adjacent to, the project, the Engineer will decide as to the respective rights of the various parties involved in order to assure the completion of the Department's work in general harmony and in a satisfactory manner, and his/her decision shall be final and binding upon the Contractor.

## General Notes &amp; Description of Work

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**DESCRIPTION OF WORK**

Except as specified herein, perform all work in accordance with the Department's Standard Specifications, Supplemental Specifications, applicable Special Notes and Special Provisions, and applicable Standard and Sepia Drawings, current editions. Furnish all materials, labor, equipment, and incidentals for the following work:

**Superelevation Improvements.** There are multiple curves where Superelevation Improvements are being proposed. The intent of this work is to bring a consistent pavement cross slope through the identified curves. Refer to the Superelevation Improvement Summary for locations and approximate quantities. The Contractor will utilize Leveling & Wedging and Milling & Texturing to achieve the desired superelevation improvements at the identified location(s). The Leveling & Wedging mix design will be based on the lift thickness being constructed in each curve. The Superelevation Correction Summary lists the estimated quantities of Leveling & Wedging and Milling & Texturing for each curve; however, the Engineer will make the final determination as to which bid items will be required at each superelevation improvement area, as well as the appropriate lift or mill thicknesses and number of lifts based on the existing conditions encountered at the time of construction. As a result of the superelevation improvements, the roadside shoulders, fill slopes, and/or ditches will have to be modified to match the final pavement elevations and tie in with the existing ground lines. The bid item 'Ditching & Shouldering' has been included for these roadside modifications. Refer to the detail sheet titled: DITCHING & SHOULDERING AND EMBANKMENT BENCHING DETAILS for more information.

NOTE: Some field adjustments of the proposed shoulder width, fill slope, ditch, and/or superelevation improvement may be required. The proposed shoulder and fill slope grading is intended to occur within Right-of-Way and NOT disturb any sensitive obstructions (i.e. fences, buildings, utility poles, etc.). Superelevation improvements with sensitive obstructions along the roadside shall still require the roadside shoulder and fill slope to be modified, but the slope may have to be constructed steeper than what is shown on the Superelevation Typical Section. The desire of the Department is to construct the new fill slopes at 3:1 or flatter. When a fill slope needs to be constructed steeper than 3:1 to remain within Right-of-Way or not impact a sensitive obstruction, and the existing fill slope is steeper than 3:1, then the new fill slope can be constructed steeper than 3:1, but the new fill slope shall not be constructed steeper than the existing fill slope. If a desired superelevation improvement will result in the new fill slope having to be graded steeper than the existing fill slope in order to remain within Right-of-Way or not impact a sensitive obstruction, then the superelevation rate should be modified (reduced), as directed by the engineer, in order to reduce the final change in pavement edge elevation, thereby reducing the height of the new fill slope grading, and allowing for a flatter fill slope.

**Pavement Resurfacing.** The existing roadway is to be resurfaced from Station 763+00 (KY 174) to Station 903+51.36 with edgeline rumble strips. There are additional Surface quantities estimated for work outside of the resurfacing limits. Refer to the Detail and Summary Sheets for more information on these work items.

**Widening of Paved Shoulder.** Areas have been identified along the route for widening the paved shoulder. Work will include trenching the existing roadside, placing asphalt, and regrading the roadside, as shown on the Typical Sections. Perform this work at the locations identified elsewhere in the Proposal, or the locations as directed by the Engineer. Refer to the Special Note for Shoulder Milling/Trenching for more information.

**Ditching and Shouldering.** Several areas throughout the project are set up for Ditching & Shouldering.

## General Notes &amp; Description of Work

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Perform Ditching & Shouldering at the locations identified elsewhere in the Proposal, or the locations as directed by the Engineer. The proposed shoulder, ditch, and/or roadside dimensions are detailed on the Typical Sections. Perform Ditching & Shouldering according to the Special Note for Ditching & Shouldering. For details of the conditions and situations commonly encountered when performing Ditching & Shouldering, refer to the detail sheets titled: DITCHING & SHOULDERING AND EMBANKMENT BENCHING DETAILS.

**Pipe Replacements & Extensions.** There are locations throughout the project where culvert pipes are being replaced and/or extended. Locations are noted on the Culvert Pipe Replacement & Extension Summary. Other items that may be associated with the pipe replacements and/or extensions include: Sloped & Mitered Concrete Headwalls, Intermediate Anchor/Collar, Ditching & Shouldering, Channel Lining, Erosion Control Blanket, etc. Refer to the Special Note for Pipe Replacements / Extensions for more information on this item of work.

**Sloped & Mitered Concrete Headwalls.** Sloped & Mitered Concrete Headwalls shall be constructed as shown on the detail sheets titled: SLOPED & MITERED CONCRETE HEADWALL DETAILS. This headwall is intended to combine the benefits of a pipe headwall with the advantages of safety and adaptability by allowing the headwall to be custom fit with the surrounding embankment. The Culvert Pipe Replacement & Extension Summary identifies which pipe ends are to receive the Sloped & Mitered Concrete Headwalls. The identified pipe ends shall have the headwall installed at an angle that matches the final embankment slopes at each location. If the pipe is on a skew, install the headwall and miter the pipe so that the concrete slope paving of the new headwall is perpendicular to the roadway. In other words, the headwall should be installed and the pipe should be mitered to match the final embankment slope, so that the roadside fill slope is fairly consistent prior to the pipe, at the pipe, and beyond the pipe. When completed the edges of the Sloped & Mitered Concrete Headwall should be flush with the surrounding ground line. Payment at the Contract unit price Each shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary to install the headwall and miter the pipe.

NOTE: For pipes that receive the Sloped & Mitered Concrete Headwall, the pipe length will be measured to the furthest point along the mitered end of the pipe.

**Intermediate Anchor/Collar.** There are quantities of Class A Concrete included in the contract to construct an intermediate anchor, or collar, around the pipes at the pipe extension locations. This is so the new pipe can be securely connected to the existing pipe. The intermediate anchors shall be constructed as shown on Standard Drawing RDX-060, current edition.

**Channel Lining.** A quantity of 480 Tons of Channel Lining Class II has been included in the Ditching and Shouldering Summary for use at the locations indicated. A quantity of 30 Tons of Channel Lining Class II has been included in the RCBC Summary for use at the locations indicated. An additional 120 Tons of Channel Lining Class II, for a total of 630 Tons of Channel Lining Class II, has been included in the contract for potential use around drop box inlets, safety box inlets, inlets and outlets of pipes, along areas of regraded ditch line and/or fill slope, and other areas as directed by the Engineer. The Contractor and Engineer should work together to determine the location and best use of Channel Lining throughout this project. The Engineer will make the final determination as to the needed quantities and placement of Channel Lining.

## General Notes & Description of Work

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**Erosion Control Blanket.** A quantity of 10,000 square yards of Erosion Control Blanket has been included in the contract for potential use along areas of regraded shoulders, ditch lines, fills slopes and/or back slopes, inlets and outlets of pipes, and any other areas as directed by the Engineer. The Contractor and Engineer should work together to determine the location and best use of Erosion Control Blanket throughout this project. The Engineer will make the final determination as to the quantities and placement of Erosion Control Blanket.

**Guardrail Replacement.** Portions of existing guardrail within the project will be replaced. Refer to the Guardrail Summary for the approximate locations for guardrail replacement. The work will include removal of the existing guardrail, placement of a crushed stone base shoulder at a four foot width (with one foot of depth) and 2:1 side slopes to accommodate installation of the new guardrail and end treatments, double asphalt seal coat, placement of geotextile fabric, roadway excavation, embankment-in-place, and tree removal. See the Special Note for Guardrail for more information on this work.

**Delineator White for Offset Block.** KYTC has a Master Agreement Modification for Delineators that are installed atop the guardrail offset block. Bi-directional white guardrail delineators made from 0.125" aluminum sheeting measuring 4.5" wide and 10" tall. Retroreflective white sheeting must be type XI and cover top half of each side. Two 1/4" holes (1" apart beginning 1" from bottom edge) shall be pre-drilled in the bottom half to aide installation." Refer to Detail for Guardrail Delineation.

**Drilled Railroad Rails and Cribbing.** There are locations within the project where embankment slide repairs using drilled railroad rails and cribbing is proposed. Locations are noted on the Proposed Cribbing Summary. Refer to the Special Note for Embankment Slide Repair and the associated detail sheets for more information.

**Removal of Existing Signing Assemblies and Installation of Proposed Signing.** A quantity of 150 each of "Remove Sign" has been included in the Signing Summary for removal of existing signing along the corridor. An estimated quantity of new signing and sign post is included on the Signing Summary. Refer to the Special Note for Signing, Special Note for Staking, and Special Note for Signage for more details.

**Trim & Remove Trees, Stumps, and Brush.** There are locations within the project where Trees, Stumps, or Brush are to be removed and/or trimmed. Locations are noted on the Tree Removal & Trimming Summary. Refer to the Special Note for Tree, Stump, and Brush Removal for more information.

**Temporary Striping.** A quantity of 7,050 linear feet of Pave Striping – Temp Paint – 4 in has been included in the contract for potential use in the Superelevation Improvement areas, and any other areas as directed by the Engineer. The Contractor and Engineer should work together to determine any locations throughout the project requiring temporary pavement striping. The Engineer will make the final determination as to the quantities and placement of temporary pavement striping.

## SPECIAL NOTE FOR DITCHING & SHOULDERING

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### I. DESCRIPTION

Except as provided herein, all work shall be performed in accordance with Department's Standard Specifications, Interim Supplemental Specifications, applicable Standard and Sepia Drawings, applicable Special Provisions and Special Notes, current editions. Article references are to the Standard Specifications. This project shall consist of furnishing all labor, equipment, materials, and incidentals for the following:

- (1) Maintaining and Controlling Traffic; (2) Site Preparation; (3) Ditching; (4) Shouldering; (5) Constructing Embankments, Embankment Benching, and/or Excavation; (6) Erosion Control; and (7) Any other work as specified in this Contract.

### II. MATERIALS

All materials shall be sampled and tested in accordance with the Department's Sampling Manual and the materials shall be available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these Notes.

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Erosion Control.** See Special Note for Erosion Control.
- C. Channel Lining, Class II.** When listed as a bid item, furnish Channel Lining, Class II as per Section 805.
- D. Geotextile Fabric Type IV.** When listed as a bid item, furnish Geotextile Fabric Type IV as per Section 843.

### III. CONSTRUCTION METHODS

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Erosion Control.** See Special Note for Erosion Control.
- C. Site Preparation.** Be responsible for all site preparation including, but not limited to: staking; clearing, grubbing, and removal of all obstructions or any other items; excavation, embankment benching, compacting embankment in place; temporary pollution and erosion control; disposal of excess, waste, and debris; and final dressing, cleanup, and seeding and protection. Perform all site preparation as approved or directed by the Engineer.
- D. Staking.** See Special Note for Staking.

## Ditching & Shouldering

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**E. Ditching & Shouldering.** All work shall be completed according to Section 209, or as specified in the DITCHING & SHOULDERING AND EMBANKMENT BENCHING DETAILS, the Typical Sections, the Plan Sheets, or as directed by the Engineer. Ditching & Shouldering shall consist of any necessary clearing, grubbing, grading, and/or reshaping of the existing shoulder, ditch, and/or roadside to achieve the proposed shoulder, ditch, and/or roadside dimensions detailed on the Typical Sections. Depending on the existing conditions encountered and to achieve the dimensions as detailed in the Typical Sections, Ditching & Shouldering may also include, but is not limited to: embankment benching, excavating and removing excess material, excavation of rock, providing additional earth material suitable for vegetation growth and grading, shaping, and compacting the earth material.

Provide positive drainage of ditches and slopes at all times during and upon completion of construction. When asphalt surfacing or resurfacing is included in the contract, perform all ditching and as much of the shouldering operations as is practical before beginning final surfacing operations.

**F. Embankment Benching.** Embankment Benching shall be required when the existing groundline has an incline greater than 15%. Any and all required embankment benching shall be incidental to the bid item DITCHING & SHOULDERING. For more information refer to the DITCHING & SHOULDERING AND EMBANKMENT BENCHING DETAILS.

**G. Channel Lining.** Install Class II Channel Lining along any sections of ditches identified in the Proposal, along any fill or ditch backslopes identified in the Proposal requiring Slope Protection, or any other locations the Engineer directs for slope protection or erosion control.

**H. Right-of-Way Limits.** The Department has not established exact limits of the Right-of-Way. Unless a consent and release form is obtained from the adjoining property owner, limit work activities to the obvious Right-of-Way and staging areas secured by the Contractor at no additional cost to the Department. In the event that private improvements (i.e. fences, buildings, etc.) encroach upon the Right-of-Way, the contractor shall notify the Engineer and limit work activities in order to NOT disturb the improvements. If they become necessary, the Department will secure consent and releases from property owners through the Engineer. Be responsible for all encroachments onto private lands. Plans showing existing Right-of-Way along the project corridor may be available at: <http://maps.kytc.ky.gov/photolog/?config=ProjectArchives>

**I. Property Damage.** The Contractor shall be responsible for all damage to public and/or private property resulting from the Contractor's activities. Repair or replace damaged roadway features in like kind materials and design as directed by the Engineer at no additional cost to the Department. Repair or replace damaged private property in like kind

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materials and design to the satisfaction of the owner and the Engineer at no additional cost to the Department.

- J. Coordination with Utility Companies.** Locate all underground, above ground, and overhead utilities prior to beginning construction. Be responsible for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require that utilities be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities. Be responsible for repairing all utility damage that occurs due to the Contractor's operations at no additional cost to the Department. NOTIFY THE ENGINEER AND THE UTILITY OWNER(S) IMMEDIATELY WHEN IT IS DISCOVERED OR ANTICIPATED THAT ANY UTILITY CONFLICT COULD DELAY THE CONTRACTOR'S OPERATIONS.

If the total delay exceeds ten working days, an extension of the specified completion date will be negotiated with the Contractor for delay to the Contractor's work; however, no extension will be granted for any delay caused by the Contractor's failure to notify the Engineer and/or the utility company as specified above when a conflict is discovered or anticipated as specified.

- K. Caution.** The information in this proposal and shown on the plans and the type of work listed herein are approximate only and are not to be taken as an accurate evaluation of the materials and conditions to be encountered during construction; the bidder must draw their own conclusions. The Department does not give any guarantee as to the accuracy of the data and no claim for money or time extension will be considered if the conditions encountered are not in accordance with the information shown.

- L. Control.** Perform all work under the absolute control of the Department. Obtain the Engineer's approval of all designs required to be furnished by the Contractor prior to incorporation into the work. The Department reserves the right to have other work performed by other contractors and its own forces, and to permit public utility companies and others to do work during the construction within the limits of, or adjacent to, the project. Conduct operations and cooperate with such other parties so that interference with such other work will be reduced to a minimum. The Department will not honor any claims for money or time extension created by the operations of such other parties.

Should a difference of opinion arise as to the rights of the Contractor and others working within the limits of, or adjacent to, the project, the Engineer will decide as to the respective rights of the various parties involved in order to assure the completion of the Department's work in general harmony and in a satisfactory manner, and the Engineer's decision shall be final and binding upon the Contractor.

- M. Clean Up, Disposal of Waste.** Clean up the project area as work progresses. Dispose of all removed excess material, debris, and other waste at approved sites off the Right of Way

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obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.

- N. Final Dressing, Seeding and Protection.** Grade all disturbed areas to blend with the adjacent roadways features and to provide a suitable seed bed. Apply Class A Final Dressing to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.

**IV. METHOD OF MEASUREMENT**

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Erosion Control.** See Special Note for Erosion Control.
- C. Site Preparation.** Other than the bid items listed, the Department will NOT measure Site Preparation for payment, but shall be incidental to the project bid items.
- D. Staking.** See Special Note for Staking.
- E. Ditching & Shouldering.** Contrary to Section 209.04 the Department will measure the bid item DITCHING & SHOULERING in linear feet along the centerline of the roadway as the length of the actual ditching and/or shouldering work performed. Further, this measurement will only include one side of the roadway. Therefore, for areas where ditching and shouldering occurs on both sides of the road, the Department will measure each side independently. The Department will not measure cleaning pipe structures 36 inches or less in diameter or reshaping any deformed ends on metal entrance pipes that are to remain in place, as these operations are considered incidental to the bid item DITCHING & SHOULERING.
- F. Embankment Benching.** The Department will not measure Embankment Benching for payment. Any and all required embankment benching shall be incidental to the bid item DITCHING & SHOULERING.
- G. Channel Lining, Class II.** When listed as a bid item, Class II Channel Lining shall be measured according to Section 703.04.
- H. Geotextile Fabric, Type IV.** When listed as a bid item, Geotextile Fabric, Type IV shall be measured according to Section 214.04.
- I. Clean Up, Disposal of Waste, Final Dressing, Seeding and Protection.** The Department will NOT measure for payment the following activities: Clean Up, Disposal of Waste, and Final Dressing. These activities shall be incidental to the project bid items. Seeding and Protection shall be measured according to Section 212.

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**V. BASIS OF PAYMENT**

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Erosion Control.** See Special Note for Erosion Control.
- C. Staking.** See Special Note for Staking.
- D. Ditching & Shouldering.** The Department will make payment for the completed and accepted quantities under the bid item DITCHING & SHOULERING. The Department will consider payment full compensation for furnishing all labor, materials, equipment, and incidentals necessary to preform Ditching & Shouldering as required by these notes, at the locations indicated on the summary sheets, plans, and/or as directed by the Engineer.
- E. Channel Lining, Class II.** When listed as a bid item, the Department will make payment for Class II Channel Lining according to Section 703.05.
- F. Geotextile Fabric, Type IV.** When listed as a bid item, the Department will make payment for Geotextile Fabric, Type IV according to Section 214.05.

## SPECIAL NOTE FOR TREE, STUMP, AND BRUSH REMOVAL

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### I. DESCRIPTION

All work shall be performed in accordance with the Department's current Standard Specifications for Road and Bridge Construction and applicable Special Provisions, except as hereafter specified. Article references are to the Standard Specifications.

This work shall consist furnishing all equipment, labor, materials, and incidentals for the following: (1) Site Preparation; (2) Maintaining and controlling traffic; (3) Temporary erosion control and temporary pollution control; (4) Cutting, trimming, and/or removing trees, stumps, and/or brush as specified or directed by the Project Engineer; (5) Treating all cut stumps required by Project Engineer to prevent re-sprouting; (6) Clean up and disposal of waste; (7) Final dressing and seeding and protection; and (8) all other work specified in the Contract.

### II. MATERIALS

All materials shall be sampled and tested in accordance with the Department's Sampling Manual and the materials shall be available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these Notes.

- A. Maintain and Control Traffic.** The Contractor shall maintain and control traffic in accordance with the Traffic Control Plan.
- B. Seeding and Protection.** Use applicable Seed Mixture as specified per Section 212.03.03.
- C. Erosion Control.** See the Special Note for Erosion Control.

### III. CONSTRUCTION METHODS

- A. Maintain and Control Traffic.** The Contractor shall maintain and control traffic in accordance with the Traffic Control Plan.
- B. Cutting, Trimming, and/or Removing Trees, Stumps, and/or Brush.** The Contractor shall cut trees and/or bushes as close to the ground as possible; three inches (3") or less from ground line. The tree trimming listed in the summary shall be cleared as shown on the Tree Trimming Detail. Grinding of all tree stumps within the mowing zone shall be required as directed by the Engineer. All stumps that are listed on the summary and/or directed by the Engineer to be removed, are to be removed via mechanical grinding, or other methods approved by the Engineer, to a minimum depth of four (4) inches below the surrounding grade line. For trees that are cut, but will not be required to have their stump removed, treat the stump, within one hour of cutting, with the specified herbicide solution.

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Replace and level any and all soil disturbed during the tree, stump, and brush removal and trimming operations. Leave the soil in a condition suitable for seeding that is level with surrounding soil grade, with no holes or indentions to catch water or present unsafe mowing conditions. This work will be incidental to the bid items "Remove Trees or Stumps" and "Trim and Remove Trees and Brush."

- C. Removal of Tree, Stump, and Brush Debris.** The Contractor will remove all debris and biomass from the trimming and/or removal of trees, stumps, and/or brush from the work site and dispose of such off the right-of-way in accordance with local, state, and federal solid waste laws and regulations. Cleanup and remove all existing down trees and brush located within the designated areas. At the discretion of the Project Engineer, the contractor may be permitted to chip and blow biomass onto non-mowing zones. Chips shall not be blown onto areas that would potentially restrict the flow of water in drainage ditches. All un-chipped biomass must be removed from roadway right-of-ways.

The Contractor shall keep the work zone free of accumulated waste material and debris at all times. Remove and dispose of all tree, stump, and brush chips off the right-of-way. Remove and dispose of all debris and waste material off the right-of-way as work is completed and at the end of each workday. Remove desirable wood pieces from the right-of-way at the end of each workday. Stockpile trees and brush off the right-of-way. At the discretion of the Project Engineer, the Contractor may be permitted to stockpile trees and brush at approved locations along the right-of-way.

The Contractor shall immediately correct any disturbance to all drainage features and structures caused by the Contractor's work.

- D. Stump Treatment.** Within one hour of cutting, the Contractor shall apply a stump treatment mix consisting of fifty percent (50%) Glyphosate (EPA Reg. No. 524-579) with water and add twelve (12) ounces of Imazapyr (EPA Reg. No. 241-431), as specified, per gallon of solution. The addition of a non-ionic surfactant 5% (v/v) shall be added to the solution to increase uptake of the herbicide solution into the root system. Generic formulations are not acceptable. Mix the herbicide solution in the presence of the Inspector. Include a color indicator in the herbicide solution to mark the treated stumps. Spray or paint the herbicide solution onto all cut stumps within one hour after cutting. Apply the herbicide solution in a manner to avoid drift onto surrounding vegetative ground cover. Stumps in the mowing zone, designated for mechanical grinding treatment, need not receive the herbicide treatment.

Provide herbicide material for the treatment of cut stumps meeting the following criteria:

**a. Glyphosate**

Active ingredient: **(Glyphosate)**

\*Glyphosate, N-(phosphonomethyl)glycine, in the form of its

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potassium salt.....	48.7%
Inert ingredients .....	51.3%
Total .....	100.0%
* Contains 660 grams per liter or 5.5 pounds per U.S. gallon of the active ingredient glyphosate, in the form of its potassium salt. Equivalent to 540 grams per liter or 4.5 pounds per U.S. gallon of the acid, glyphosate. EPA Reg. No. 524-579	

**b. Imazapyr**

Active ingredient: ( <b>Imazapyr</b> )	
*Isopropylamine salt of Imazapyr 2-[4,5-dihydro-4-methyl-4-(1methylethyl)-5oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)	26.7%
Inert ingredients .....	73.3%
Total .....	100%
* Equivalent to 21.8 percent 2-[4,5-dihydro-4-methyl-4-(1methylethyl)-5oxo-1H-imidazolyl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon. EPA Reg. No. 241-431	

KRS 217B requires that any individual who applies pesticides to Kentucky Highway Right-of-Way areas must be certified as a Pesticide Applicator under Category 6 guidelines. Comply with all current laws and regulations established by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and by KRS 217B that regulate the handling, use, and application of pesticides.

**E. Property Damage.** The Contractor will be responsible for all damage to public and/or private property resulting from his work.

**F. Coordination with Utility Companies.** NOTICE: Utility locations shown in the plans are approximate and have not been specifically located by the Department. Locate all underground, above ground and overhead utilities prior to beginning construction. The Contractor shall have the responsibility for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require that utilities be relocated and/or adjusted, the utility companies will work concurrently with the Utility Owner while they relocate their facilities. The Contractor shall be responsible for repairing all utility damage that occurs as a result of his operations.

**G. Right-of-Way Limits.** The exact limits of the Right-of-Way have not been established by the Department. The Contractor shall limit his activities to obvious Right-of-Way, permanent or temporary easements, and any work areas secured by consent and release of the adjacent property owners. The Contractor shall be responsible for all encroachments onto private lands.

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- H. Clean Up, Disposal of Waste.** Clean up and dispose of all removed debris by the end of each work day, and other waste as per Section 204.03.08. The Department will incur no cost to obtain the disposal sites. The Department will NOT make direct payment for clean up or disposal of waste and debris from the project. See the Special Provision for Waste and Borrow Sites.
- I. Final Dressing, Seeding and Protection.** Apply final dressing, class A to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the appropriate Seed Mixture as specified in Section 212.03.03.
- J. Erosion Control.** See the Special Note for Erosion Control.

#### IV. METHOD OF MEASUREMENT

- A. Maintain and Control Traffic.** See the Traffic Control Plan.
- B. Site preparation.** Other than the bid items listed, site preparation will NOT be measured for payment, but shall be incidental to the bid items “Remove Trees or Stumps” and/or “Trim & Remove Trees & Brush”.
- C. Remove Trees or Stumps.** The Department will measure the quantity as each tree or stump removed. Trees or stumps to be removed under this bid item are those listed on the Plans or in this Proposal, or as directed by the Engineer.
- D. Trim & Remove Trees & Brush.** The Department will measure the quantity as per linear foot, per side of the highway. See the Tree Trimming Detail for the horizontal and vertical trimming dimensions. The horizontal width is taken from the edge of pavement measured perpendicular to the roadway but not to extend beyond the obvious Right-of-Way limits, or as directed by the Engineer.
- E. Stump Treatment.** The Department will NOT measure for payment the operation of Stump Treatment. This activity shall be incidental to the bid items “Remove Trees or Stumps” and/or “Trim & Remove Trees & Brush”.
- F. Clean Up, Disposal of Waste.** The Department will NOT measure for payment the operations of Clean Up and Disposal of Waste. These activities shall be incidental to the project bid items.
- G. Final Dressing, Seeding and Protection.** The Department will NOT measure for payment the operations of Final Dressing. Seeding and Protection will be measured according to Section 212.

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**H. Erosion Control.** See the Special Note for Erosion Control.

**V. BASIS OF PAYMENT**

**A. Maintain and Control Traffic.** See the Traffic Control Plan.

**B. Remove Trees or Stumps.** The Department will make payment for the completed and accepted quantities of each tree or stump removed. The Department will consider payment at the contract unit price as full compensation for furnishing all materials, equipment, labor, other expenses, and all incidentals necessary to complete the work of removing the trees and/or stumps.

**C. Trim & Remove Trees & Brush.** The Department will make payment for the completed and accepted quantities per linear foot. The Department will consider payment at the contract unit price as full compensation for furnishing all materials, equipment, labor, other expenses, and all incidentals necessary to complete the work of trimming and removing the trees and/or brush.

**D. Erosion Control.** See the Special Note for Erosion Control.

## SPECIAL NOTE FOR EMBANKMENT SLIDE REPAIR

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### I. DESCRIPTION

Except as specified herein, perform all work in accordance with the Department's Standard and Supplemental Specifications and Standard and Sepia Drawings, current editions. Article references are to the Standard Specifications.

Furnish all equipment, labor, materials, and incidentals for the following work items:

- (1) Site preparation;
- (2) Furnish and install railroad rails;
- (3) Furnish and install cribbing;
- (4) Excavate, place geotextile material, and backfill the area around the railroad rails and on the fill slope;
- (5) Reconstruct shoulder area;
- (6) Install guardrail;
- (7) Maintain and Control Traffic; and
- (8) any other work as specified by this contract.

Repairs using drilled railroad steel and guardrail cribbing are to occur at locations indicated on the Plan Sheets and/or Summary Sheets. Begin and End limits at each area are to be field verified with approval from the Engineer.

### II. MATERIALS

All materials shall be sampled and tested in accordance with the Department's Sampling Manual and the materials shall be available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these Notes.

- A. Railroad Rails.** Use recycled (used) railroad rails classified with a nominal weight of 130 lb/yd (pounds per yard) size or greater. Use only visibly straight recycled railroad rails with no splices. The Engineer will verify rail nominal weights (Manufacturer's Stamp with lb/yd, date, etc.) Provide Certification for nominal weight if the Manufacturer's Stamp is unidentifiable.
- B. Wall Cribbing.** Use recycled (used) steel "W" beam guardrail. **Cribbing material will be furnished by the Department of Highways.** Wall cribbing will be located at the *Bailey Bridge Yard in Frankfort, KY.* The Contractor will be responsible for picking up the cribbing material and delivering it to the project site as an incidental item.
- C. Backfill material for Drilled Sockets.** Use the following for backfill material for Drilled sockets: concrete or grout. Do not use auger tailings. Engineer will use visual inspection and/or material testing, as applicable to determine acceptability.
- D. Fill Material for CRIBBING.** Use one of the following backfill materials: Kentucky Aggregate Gradation No. 2's. Backfill material shall meet requirements of Section 805. The Engineer will use visual inspection and/or material testing, as applicable, to determine acceptability.

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- E. DGA.** Furnish DGA as per Section 805. Do not use Crushed Stone Base.
- F. Final Dressing, Seed and Protection.** Use seed mixture(s) according to Section 212.
- G. Geotextile Fabric.** Furnish Geotextile Fabric Type IV as per Section 843.
- H. Erosion Control.** See Special Note for Erosion Control.

### III. CONSTRUCTION METHODS

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Staking.** Establish proper slope elevations and ratios, shoulder widths, existing ditch profile and final ditch profile to insure positive drainage. Be responsible for field layout. Positive drainage is required upon completion of the project and is the responsibility of the Contractor.
- C. Site Preparation.** Prepare repair sites. This includes clearing and grubbing, if necessary. Remove all obstructions. Sweep and remove debris, if necessary. The area to be cleared has not been measured by the Department and the bidder must draw his own conclusions. Construct silt checks, temporary silt fence, or other erosion control devices, as necessary to satisfy the BMP, at locations directed by the engineer. The engineer shall approve all site preparation. The Department will not make direct payment for site preparation.
- D. Installation of Railroad Rails.** See attached summary for site locations and estimated quantities of materials required. The depth to rock shown on the summary is approximate. No geotechnical borings were advanced, and, as such, rock depths may differ from those estimated. Therefore the contractor is responsible for determining actual depth to rock and providing to the department to be approved by the engineer. The embankment failures at these sites are caused by erosion from steep slopes and poor drainage.

NOTE TO ENGINEER AND CONTRACTOR: ABSOLUTELY NO CHANGE IN SCOPE OF WORK OR INCREASE IN QUANTITIES WILL BE ALLOWED ON THIS PROJECT WITHOUT PRIOR WRITTEN APPROVAL FROM THE TEBM (Transportation Engineering Branch Manager) OR HIS REPRESENTATIVE IN THE DISTRICT OFFICE.

THE DEPARTMENT SHALL NOT BE LIABLE FOR PAYMENTS DUE TO ADDITIONAL WORK THAT HAS NOT BEEN AUTHORIZED BY THE AFOREMENTIONED PERSONS.

## Embankment Slide Repair

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Install used railroad rail piling in drilled sockets in rock or stable material under the landslides (see figure 1) or the eroded areas (see figure 2) as project location dictates or as directed by the Engineer.

Drill the socket, furnish, and install the railroad rails into holes at slide locations. If the Engineer determines from sounding obtained at a drilled socket that railroad rail piling cannot be used in that socket, the depth of the socket shall be measured and 50% of the depth shall be paid as "Railroad Rail-Drilled". Drill sockets into solid rock, if possible. The Department will monitor each hole, which will serve as a sounding for the rail to be installed in it. Embed the railroad rail into solid rock no less than one-half the free end length of the rail. (See figure 1 and figure 2). If solid rock cannot be obtained, the Engineer will determine the length of embedment required in other stable foundation. Allow adequate size of the drilled socket to allow free insertion of the railroad rail, but the maximum socket size is 1 foot in diameter.

After each hole is drilled, install railroad rail immediately with the flanges positioned perpendicular to the direction of the landslide or break (see figure 3). Determine the height of rail that is needed to reestablish pavement and shoulder typical section. Cut off excess rail flush with the proposed ground line that is not needed. Use cutoffs elsewhere in the project if possible; unusable cutoffs remain the property of the Contractor.

After railroad rail is installed, immediately backfill the drilled hole with the approved materials. Shovel the backfill material into the hole in small amounts. Avoid bridging between the rail and the sides of the hole. Do not use Auger tailings as backfill material.

When double or triple rows are required, stagger the rows to obtain the required spacing. Keep the spacing between the rows of rails as close as is practical; do not space between the rows of more than 2 feet, if possible. See figure 3 (Case II and Case III) for the diagrams showing two (2) or three (3) rows of rails. Select the spacing as per Table 1 for all 130 pound per yard rail or greater. The Department shall approve the selection prior to work being performed.

Crib any exposed portion of railroad rail before placing backfill.

- E. Excavation and Backfill.** Excavate each repair area to provide a platform for drilling the used railroad rails, if necessary. Excavate for roadway ditches as necessary for slope, shoulder and pavement drainage. Place geotextile fabric, then construct embankment behind railroad rails, cribbing, and on slope, as per Section 206. Construct embankment up to the approximate existing pavement elevation.

Reconstruct the shoulder area with DGA up to the approximate existing elevation and width of the surrounding typical section or to a minimum width of 2 Feet at each slide location. Do not pond water on the shoulder area or at the shoulder edge. Reconstruct the shoulder before installing guardrail.

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**DO NOT USE EXCAVATED MATERIAL FROM THE SITE AS FILL MATERIAL.** Excess excavation may be wasted at sites on the right-of-way, ONLY if approved by the Engineer. Material may NOT be wasted in flood prone areas or in streams.

If the Engineer deems no suitable sites are available within the right-of-way, the Contractor will be required to waste excess material off the right-of-way at sites obtained by the Contractor at no cost to the Department.

- F. Installation of Wall Cribbing.** Install Cribbing as shown on Figure 1 or Figure 2 as slide location dictates or as directed by the Engineer. Extend wall cribbing 2 feet below the existing ground line. If bedded rock is encountered, install the cribbing to the bedded rock only. If necessary, the Engineer will direct changes to this procedure. Furnish all labor and equipment to deliver and install wall cribbing on the recycled (used) railroad rail piling. Wall cribbing shall be lapped, bolted, and attached solid to the drilled railroad rails.
- G. Final Dressing, Seeding and Protection.** Apply Final Dressing, Class A to all disturbed areas, both on and off the right-of-way. Sow with Seed Mixture No. 1. The Department will NOT make direct payment for final dressing, or seeding and protection, but shall be incidental to Erosion Control.
- H. On-Site Inspection.** Each Contractor submitting a bid for this work shall make a thorough inspection of the site prior to submitting his bid and shall thoroughly familiarize themselves with the existing conditions so that the work can be expeditiously performed after a contract is awarded. Submission of a bid will be considered evidence of this inspection having been made.
- I. Right-of-Way Limits.** The Department has not established exact limits of the Right-of-Way. The Contractor shall make every effort to limit his activities to obvious right-of-way and permanent or temporary easements and shall be responsible for encroachments onto private lands.
- J. Property Damage.** The Contractor will be responsible for all damage to public and/or private property resulting from his work.
- K. Erosion Control.** See Special Note for Erosion Control.

#### IV. METHOD OF MEASUREMENT

- A. Maintain and Control Traffic.** See Traffic Control Plan.

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- B. Staking.** See Special Note for Staking.
- C. Site Preparation.** Other than the bid items listed, site preparation will NOT be measured for payment, but shall be incidental to the bid item Excavation and Backfill.
- D. Railroad Rail-Drilled.** The Department will measure the finished in-place length of this item in Linear Feet. Laps, cutoffs, excess, and waste will NOT be measured for payment. If the Engineer determines from the sounding obtained at a drilled socket that railroad rail piling cannot be used in that socket, the depth of the socket shall be measured and 50% of the depth shall be paid as Railroad Rail-Drilled.
- E. Excavation and Backfill.** The Department will measure this item in cubic yards. The Department will measure the quantity in the field as per Section 204 (Roadway Excavation) or other accepted methods of measurement as directed by the Engineer.
- F. Wall Cribbing.** The Department will measure this item in square feet finished in placed area. Laps, cutoffs, excess and waste will not be measured for payment.
- G. Geotextile Fabric.** The Department will measure Geotextile Fabric Type IV according to Section 214.
- H. DGA.** The Department will measure according to Section 302.
- I. Clean Up, Disposal of Waste.** The Department will NOT measure for payment the operation of Clean Up and Disposal of Waste. These activities shall be incidental to project bid items.
- J. Final Dressing, Seeding and Protection.** The Department will NOT measure for payment the operation of Final Dressing. This shall be incidental. The Department will measure Seeding and Protection according to Section 212.
- K. Erosion Control.** See Special Note for Erosion Control.

**V. BASIS OF PAYMENT**

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Staking.** See Special Note for Staking.
- C. Railroad Rail-Drilled.** The Department will make payment for the completed and accepted quantities under the bid item: Railroad Rail-Drilled. The Department will

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consider payment full compensation for all work required in these notes and elsewhere in the Contract.

- D. Excavation and Backfill.** The Department will make payment for the completed and accepted quantities under the bid item: Excavation and Backfill. Payment will be based on quantity measured in the field. The Department will consider payment full compensation for all work and incidentals necessary to excavate and backfill the areas indicated on the plans or as directed by the Engineer.
- E. Wall Cribbing.** The Department will make payment for the completed and accepted quantities under the bid item: Cribbing. Payment will be based on the quantity installed in the field. The Department will not make separate payment for the hauling of the wall cribbing to the project site(s). The Department will consider payment full compensation for all work required on the project.
- F. Geotextile Fabric.** The Department will make payment of Geotextile Fabric Type IV according to Section 214.
- G. DGA.** The Department will make payment according to Section 302.
- H. Erosion Control.** See Special Note for Erosion Control.

## **SPECIAL NOTE FOR SHOULDER MILLING/TRENCHING**

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Trench shoulders as shown on the Typical Section. The Engineer may eliminate locations along the route from shoulder trenching (e.g. road approaches, turn lanes, entrances, etc.). For entrances and road approaches, the Engineer will determine whether to omit the trenching or continue the trenching across the entrance or approach. **DO NOT** trench across entrances or road approaches without the Engineer's approval. If trenching is achieved by means other than milling, saw cut the pavement 4.5 inches deep to create a smooth edge prior to excavating the shoulder trench. Excavate the material from the shoulder and maintain the proposed cross-slope as shown on the Typical Sections. The intent is to mill, or excavate, the entire trench so that the proposed shoulder slope is retained at the end of the paving operation. Reshape and compact excavated material from the trench on the outside edge of the newly paved shoulder as shown on the Typical Section.

Retain possession of excess materials and/or materials the Engineer deems unsuitable for reuse and waste the materials off the right-of-way at sites obtained by the Contractor at no additional cost to the Department. See Special Provision for Waste and Borrow.

Accept payment at the contract unit price per square yard for **SHOULDER MILLING/TRENCHING** as full compensation for all labor, materials, equipment, and incidentals for excavating the shoulder trench and reuse and/or disposal of the excavated material.

## SPECIAL NOTE FOR BOX CULVERT EXTENSIONS

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### I. DESCRIPTION.

Except as provided herein, perform all work in accordance with the Department's Standard Specifications, interim Supplemental Specifications, Standard and Sepia Drawings, and Special Notes and Special Provisions, current editions. Section references are to the Standard Specifications. This project shall consist of furnishing all labor, equipment, materials, and incidentals for the following:

(1) Contractor staking; (2) Site preparation; (3) Foundation preparation and construction of reinforced concrete box culvert extensions and headwalls; (4) Maintain and Control Traffic; and (5) all other work specified as part of this contract.

### II. MATERIALS.

Provide for sampling and testing of all materials in accordance with the Department's Sampling Manual. Make materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these notes.

**A. Maintain and Control Traffic.** See Traffic Control Plan.

**B. Erosion Control.** See Special Note for Erosion Control.

**C. Foundation Preparation.** Furnish materials according to Section 603, the drawings, and as directed by the Engineer.

**D. Reinforced Concrete Box Culvert Extensions.** Furnish Class A Concrete and deformed Steel Reinforcement according to Sections 601 and 602. Contrary to Section 602.03.03, field bending bars will be allowed; however, obtain the Engineers approval of proposed field bending methods prior to bending. Furnish additional reinforcement to provide adequate splice lengths with existing box culvert steel as determined by the Engineer.

**E. Steel Reinforcement.** See Section 811.

### III. CONSTRUCTION.

**A. Maintain and Control Traffic.** See Traffic Control Plan.

**B. Erosion Control.** See Special Note for Erosion Control.

**C. Site Preparation.** Be responsible for all Site Preparation, including but not limited to Clearing and Grubbing; Removing pavement; Tree and Stump removal; Temporary Fencing; Roadway Excavation and Structure Excavation; Embankment and Embankment in Place; removal of obstructions or any other items; Grading, Reshaping, and Compacting; Ditching and Shouldering, obtaining borrow and waste sites, and disposal of materials, waste, and debris; cleaning inlet and outlet ditches; and restoration, cleanup and final dressing.

## Box Culvert Extensions

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Clear and Grub only the minimum area required for construction and/or as directed by the Engineer. Limit clearing and grubbing to the absolute minimum required to construct the box culvert extensions. Obtain the Engineer's approval before removing trees and stumps from the cleared areas. Phase construction such that the potential for erosion is as minimal as possible.

Excavate as needed to remove any portion of the existing structure necessary for construction of the box culvert extension. Perform any ditching or grading as directed by the Engineer. Stockpile suitable materials for incorporation into the work as approved by the Engineer.

Be responsible for all excavation (common, roadway, structure, solid rock, and unclassified) required for foundation preparation, toe walls, and all other excavation required for the box culvert extensions. Excavate rock in channel as required to allow for construction of foundation and construction of box culvert extensions.

Be responsible for all embankment, embankment in place, and borrow required for backfilling the box culvert extension, constructing widened roadway and shoulder transitions, and all other embankment required to complete the work.

Provide positive drainage of slopes and ditches at all times during and upon completion of construction. Waste all removed materials not incorporated into the work at sites off the right of way obtained by the Contractor at no additional cost to the Department (see the Special Provision for Waste and Borrow Sites). Perform all excavation and removal of obstructions only as approved or directed by the Engineer

**D. Remove Headwall.** Remove the existing headwall(s) and wingwalls at the existing box culvert end(s) to sound concrete masonry, or as directed by the Engineer. Before removing any concrete masonry saw around the perimeter of the removal area on the interior and exterior to a depth of 1 inch. When sawing, take care not to cut into the existing steel reinforcement. Do not kink or unnecessarily bend exposed existing steel reinforcement. Remove structure excavation to solid rock or as directed by the Engineer, and prepare foundation. Existing steel reinforcement shall be thoroughly cleaned of concrete and straightened for use to bond the new concrete and reinforcement with a minimum overlap of 1'-9", unless otherwise shown in the drawings. As an alternative, if the existing headwall is sound, the Engineer may approve leaving the existing headwall in place. If the Engineer approves leaving the existing headwall in place, center 3'-0" long, #6 dowel bars at 12" spacing into the existing slabs and walls, embedded 1'-6" deep into the existing box culvert concrete, and set with an adhesive anchorage system to provide a pullout strength of equal or greater capacity than the corresponding reinforcing steel.

**E. Box Culvert Extensions.** Construct the box culvert extension(s) according to the notes and details in the drawings, and Sections 601, 602, 603, 610, and/or any other applicable Standard Specifications. Class A Concrete shall be used throughout. Bond the proposed plastic concrete to the existing hardened concrete in all locations using a Type V Epoxy Resin or other approved

## Box Culvert Extensions

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structural adhesive, as prescribed in Section 826. Follow the manufacturer's application instructions. All exposed concrete edges shall be beveled  $\frac{3}{4}$ ", unless otherwise noted. Reinforcement shall have a 2" clear distance to the proposed face of concrete, unless otherwise noted. Obtain the Engineer's approval of the final centerline, flow line, length, skew, and revised dimensions and/or steel pattern, if any, of each box culvert extension prior to placing concrete.

The Contractor is required to complete the box culvert extension(s) in accordance with the plans and all applicable specifications. The cost of any and all labor, materials, equipment, and/or any other items necessary to construct the box culvert extension(s) shall be incidental to the most appropriate bid items. Incidental items may include, but are not limited to, cofferdams, shoring, excavation, backfilling, and phased construction.

**F. Remove Concrete Masonry.** If the Engineer approves leaving the existing headwall(s) in place, a portion of the existing parapet(s) may need to be removed in order to construct a shoulder of suitable depth from the edge of pavement to the proposed headwall. Any necessary removal of a portion of the existing parapet shall be considered Site Preparation and shall be incidental to the box culvert bid items. Also, if the existing headwall(s) are left in place, one or both of the existing wingwalls, or a portion of either wingwall may need to be removed in order to construct the proposed box culvert extension(s) and/or headwall(s). In this situation, any necessary removal of the existing wingwall(s), or any portion thereof, shall be considered Site Preparation and shall be incidental to the box culvert bid items.

**G. Embankments.** Backfill box culvert extensions and construct embankments, slopes, roadway shoulders, and ditches as shown on the drawings, or as directed by the Engineer. Warp and tie the embankment slopes into the adjacent existing roadway to match the existing slopes and ditches. Provide positive drainage of slopes and ditches at all times during and upon completion of construction.

**H. Ditching, Shouldering.** Construct ditches and shoulders to provide positive drainage. Transition the ditches and shoulders between the existing typical section and the reconstructed roadway at the box culvert extension site(s). Clean all new and existing cross drainage and entrance structures within the limits of the ditching areas according to Section 209.03.B.

**I. Clean Culvert.** Remove all deleterious material and objects not native to the box culvert barrel, such as, but not limited to debris and silt. The Contractor may choose to clean the box culvert prior to, or after, the proposed box culvert extension work. If the Contractor chooses to clean the box culvert prior to the proposed box culvert extension work, and additional debris, silt, etc. builds up during the box culvert extension operations, the Contractor shall remove the additional debris, silt, etc. at no additional cost to the Department, after the box culvert extension operations are complete.

NOTE: The proposal lists the existing box culverts that are to receive the Clean Culvert bid item. These identified box culverts are those that had existing debris, silt, etc. at the time the proposal was developed. The Engineer and the Contractor are encouraged to review the proposed box

## Box Culvert Extensions

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culvert extension site(s) prior to the Contractor beginning the box culvert extension work and determine if the Clean Culvert bid item applies. The Engineer shall determine the final approved quantities. If an existing box culvert location has a buildup of debris, silt, etc., but the Clean Culvert bid item is NOT listed in the proposal for that box culvert, the Contractor shall notify the Engineer prior to beginning box culvert extension operations, so that the Engineer can confirm that the existing box culvert has a buildup of debris, silt, etc. If the contractor does not notify the Engineer of this situation prior to beginning the box culvert extension operations, the Engineer will assume the buildup was a result of the Contractor's operations, and the cost of cleaning the box culvert shall be at no additional cost to the Department.

**J. Property Damage.** Be responsible for all damage to public and/or private property resulting from the work. Restore damaged roadway features and private property at no additional cost to the Department.

**K. On-Site Inspection.** Before submitting a bid for the work, make a thorough inspection of the site and determine existing conditions so that the work can be expeditiously performed after a contract is awarded. The Department will consider submission of a bid to be evidence of this inspection having been made. The Department does not warrant or give any guarantee as to the accuracy of the data and information shown and no claims for money or time extensions will be considered if the conditions encountered, items used or omitted, and final quantities required are not in accordance with the information shown.

**L. Coordination with Utility Companies.** Locate all underground, above ground, and overhead utilities prior to beginning construction. Be responsible for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require utilities to be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities. Be responsible for repairing all utility damage that occurs as a result of the Contractor's operations at no additional cost to the Department.

**M. Right of Way Limits.** The Department has not established the exact limits of the Right-of-Way. Limit work activities to obvious Right-of-Way, permanent or temporary easements, and work areas secured by the Department through consent and release of the adjacent property owners. Be responsible for all encroachments onto private lands.

**N. Control.** Perform all work under the absolute control of the Department. Obtain the Engineer's approval of all designs required to be furnished by the Contractor prior to incorporation into the work. The Department reserves the right to have other work performed by other contractors and its own forces and to permit public utility companies and others to do work during the construction within the limits of, or adjacent to, the project. Conduct operations and cooperate with such other parties so that interference with such other work will be reduced to a minimum. The Department will not honor any claims for money or time extension created

Box Culvert Extensions  
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by the operations of such other parties. Should a difference of opinion arise as to the rights of the Contractor and others working within the limits of, or adjacent to, the project, the Engineer will decide as to the respective rights of the various parties involved in order to assure the completion of the Department's work in general harmony and in a satisfactory manner, and his decision shall be final and binding upon the Contractor.

**O. Clean Up, Disposal of Waste.** Dispose of all removed concrete, debris, and other waste and debris off the Right-of-Way at sites obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.

**P. Final Dressing, Seeding and Protection.** Apply Class A Final Dressing to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.

#### IV. MEASUREMENT.

Quantities shown on the summaries and drawings are approximate only. The Department will measure for payment only the bid items listed and the actual quantities incorporated in the work. All other items required to complete the construction shall be incidental to the listed bid items.

**A. Maintain and Control Traffic.** See Traffic Control Plan.

**B. Erosion Control.** See the Special Note for Erosion Control.

**C. Site Preparation.** Other than the bid items listed, the Department will not measure Site Preparation for separate payment, but shall be incidental to the applicable project bid items.

**D. Remove Headwall.** The Department will measure the removal of existing headwalls as Each. If the Engineer allows a proposed box culvert extension to be constructed without removing the existing headwall, the Remove Headwall bid item shall not be measured for payment.

**E. Foundation Preparation.** The Department will measure Foundation Preparation of box culvert extensions as Lump Sum. The Lump Sum unit price shall include all extensions at each identified box culvert, and shall not be measured as individual units per inlet or outlet. Except for the Foundation Preparation bid items listed, the Department will NOT measure Foundation Preparation for any other items of work and shall consider it incidental to the other items of work, as applicable.

**F. Precast Box Culvert.** The Department will measure Precast Box Culverts as Linear Feet.

**G. Precast Box Culvert Headwalls.** The Department will measure Precast Box Culvert Headwalls as Each.

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**H. Concrete-Class A.** See Section 601.04.

**I. Steel Reinforcement.** See Section 602.04.

**J. Clean Culvert.** The Department will measure each box culvert cleaned as Lump Sum. The bid item Clean Culvert will not be measured when a box culvert must be cleaned due to buildup of debris, silt, etc. that occurs during the Contractor's construction operations.

**V. PAYMENT.**

The Department will make payment only for the bid items listed. All other items required to complete the construction shall be incidental to the listed bid items.

**A. Maintain and Control Traffic.** See Traffic Control Plan.

**B. Erosion Control.** See the Special Note for Erosion Control.

**C. Foundation Preparation.** Payment at the Lump Sum unit price shall be full compensation for furnishing all labor, materials, and equipment necessary for Foundation Preparation of all extensions at each identified box culvert.

**D. Precast Box Culvert.** Payment at the Liner Feet unit price shall be full compensation for furnishing all labor, materials, and equipment necessary for Precast Box Culvert.

**E. Precast Box Culvert Headwalls.** Payment at the Each unit price shall be full compensation for furnishing all labor, materials, and equipment necessary for Precast Box Culvert Headwalls.

**F. Concrete-Class A.** See Section 601.05.

**G. Steel Reinforcement.** See Section 602.04.

**H. Clean Culvert.** The Department will make payment for the completed and accepted quantities of each box culvert cleaned, as approved by the Engineer. Payment at the Lump Sum unit price shall be full compensation for furnishing all labor, materials, and equipment necessary to clean each box culvert measured for payment. Any box culverts that require cleaning, but are not approved by the Engineer for measurement of payment, shall be incidental to the box culvert bid items.

## ***SPECIAL NOTE***

### **For Potentially Contaminated Soils**

#### **Rowan County**

#### **PERFORM LOW COST SAFETY IMPROVEMENTS ON US 60 FROM MP 10.834 TO MP 17.112**

#### **Item No. 9-9008**

Excavated soils that are found to be stained or have a petroleum odor shall remain on-site or shall be disposed at an off-site, approved and contained landfill. The contractor shall be HazMat certified or shall have a certified HazMat subcontractor perform this excavation and disposal. The contractor shall provide the disposal manifest to the engineer. Payment shall be incidental to roadway excavation.

**If there are any questions regarding this note, please contact Danny Peake, Director, Division of Environmental Analysis, 200 Mero Street, Frankfort, KY 40601, Phone: (502) 564-7250.**

## SPECIAL NOTE FOR STAKING

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Perform Contractor Staking according to Section 201; except, in addition to the requirements of Section 201, perform the following:

1. Contrary to Section 201, perform items 1-3 usually performed by the Engineer.
2. Using the proposed pavement superelevation rates, runout, and runoff lengths, determine the necessary changes in pavement edge elevation along the curves and the transitions leading into and out of the curve to achieve the proposed superelevation improvements. The intent is to provide a consistent superelevation throughout the curves and smooth transitions into and out of the curves. Once the proposed changes in pavement edge elevations are determined and prior to starting paving operations, verify the proposed roadside re-grading along the curve can be constructed so that the new roadside is flush with the new pavement edge elevation and the new toe of slope, or top of cut, will remain within the existing Right-of-Way and/or not impact a sensitive obstruction. If necessary, and with the approval of the Engineer, reduce the proposed superelevation rate of a curve if the new edge of pavement elevation will cause the new roadside grading to extend beyond the Right-of-Way and/or impact a sensitive obstruction. Alternatively, with the approval of the Engineer and to the extent allowable by the "Ditching & Shouldering and Embankment Benching Details" and/or the Special Note for Ditching & Shouldering, the Contractor may be allowed to make adjustments to the roadside grading so the proposed roadside re-grading will remain within the existing Right-of-Way and/or not impact a sensitive obstruction. After the final proposed changes in pavement edge elevations are determined and before paving operations begin, submit to the Engineer and obtain approval for the number of asphalt lifts, each asphalt lift's thickness, the asphalt mix type of each lift, the length and placement of any longitudinal edge keys, and any milling and texturing the contractor will use to achieve the superelevation improvement. Ensure positive drainage upon completion of the work.
3. Verify the dimensions, type, and quantities of the culvert pipes, entrance pipes, and/or box culverts as listed and detailed in the proposal, and determine flow line elevations and slopes necessary to provide positive drainage. Revise as necessary to accommodate the existing site conditions; to provide proper alignment of the drainage structures with existing and/or proposed ditches, stream channels, swales, and the roadway lines and grades; and to ensure positive drainage upon completion of the work.
4. Using stakes, paint marks on the pavement, mag nails, and/or any other means approved by the Engineer, the Contractor shall mark and/or stake the proposed sign locations in the field. NOTE: The proposed signs are listed in the proposal by approximate location and are NOT to be taken as the exact location for the signs. During staking operations the Contractor shall review the signing layout and existing field conditions and look for potential conflicts, including but not limited to utilities, driveways, visual obstructions, etc. When conflicts are found, adjust the staked location of signs to mitigate conflicts. Because the sign locations in the proposal are approximate and the location of some signs may need to be adjusted due to conflicts, during staking operations the Contractor shall

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refer to and utilize the information in the Manual on Uniform on Traffic Control Devices (MUTCD), current edition. The MUTCD cover items such as: appropriate sign location, advance placement distances, and spacing requirements for signing. The intent is for the proposed signs to be consistent with, and meet the requirements of, the MUTCD. Once the proposed sign locations have been staked, notify and coordinate with the District Traffic Engineer, and perform a review of the staked locations. Adjust the staked locations, as directed by the District Traffic Engineer and obtain approval of the final staked locations. This review will also be used to determine if there are any existing signs that require removal and/or relocation. Provide the District Traffic Engineer with 2 weeks of notice when a route will be ready for a review of the staked locations. NOTE: The District Traffic Engineer may determine that the proposed signing, including sign types and messages, needs to be adjusted and/or modified from what is shown in the proposal. Therefore, the Contractor shall not order any sign material for a route until the route has been staked and final sign location approval has been given by the District Traffic Engineer.

5. Produce and furnish to the Engineer "As Built" information for the superelevation improvements and the drainage improvements. For superelevation improvements, as built information will consist of a record of the final pavement cross slopes every 50 feet, for each lane of travel along the curves and the transitions into and out of the curves. Elevation data of the curve improvements is not necessary; simply the cross slope percentage every 50 feet. For the drainage improvements, as built information will consist of a final record of the actual types, sizes, and locations of the drainage structures (i.e. box inlets, headwalls, junction boxes, etc.), culvert pipes, and/or box culverts constructed. Final elevation data of the drainage improvements is not necessary.
6. Using paint marks on the pavement, and/or any other means approved by the Engineer, the Contractor shall layout and pre-mark the proposed striping, pavement markings, etc. Adjust as necessary to accommodate the existing site conditions and to provide proper alignment of the proposed thru and turning lanes. Obtain approval of the pre-marked layout from the Engineer and/or District Traffic Engineer prior to installing the striping and/or pavement markings.
7. Prior to incorporating into the work, obtain the Engineers approval of all revisions determined by the Contractor.
8. Perform any and all other staking operations required to control and construct the work.

## **SPECIAL NOTE FOR EROSION CONTROL**

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### **I. DESCRIPTION**

Perform all erosion and water pollution control work in accordance with any other notes in the Proposal, the Department's Standard and Interim Supplemental Specifications, the Special Provisions and Special Notes, and the Standard and Sepia Drawings, current editions, or as directed by the Engineer. Section references are to the Standard Specifications. This work shall consist of:

(1) Developing and preparing a Best Management Practices Plan (BMP) tailored to suit the specific construction phasing for each site within the project; (2) Preparing the project site for construction, including locating, furnishing, installing, and maintaining temporary and/or permanent erosion and water pollution control measures as required by the BMP prior to beginning any earth disturbing activity on the project site; (3) Clearing and grubbing and removal of all obstructions as required for construction; (4) Removing all erosion control devices when no longer needed; (5) Restoring all disturbed areas as nearly as possible to their original condition; (6) Preparing seedbeds and permanently seeding all disturbed areas; (7) Providing a Kentucky Erosion Prevention and Sediment Control Program (KEPSC) qualified inspector; and (8) Performing any other work to prevent erosion and/or water pollution as specified by this contract, required by the BMP, or as directed by the Engineer.

### **II. MATERIALS**

Furnish materials in accordance with these notes, the Standard Specifications and Interim Supplemental Specifications, applicable Special Provisions and Special Notes, and the Standard and Sepia Drawings, current editions. Provide for all materials to be sampled and tested in accordance with the Department's Sampling Manual. Unless directed otherwise by the Engineer, make the materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing.

### **III. CONSTRUCTION**

Be advised, these Erosion Control Notes do not constitute a BMP plan for the project. Jointly with the Engineer, prepare a site specific BMP plan for each drainage area within the project in accordance with Section 213. Provide a unique BMP at each project site using good engineering practices taking into account existing site conditions, the type of work to be performed, the construction phasing, methods, and the techniques to be utilized to complete the work. Be responsible for all erosion prevention, sediment control, and water pollution prevention measures required by the BMP for each site. Represent and warrant compliance with the Clean Water Act (33 USC Section 1251 et seq.), the 404 Permit, the 401 Water Quality Certification, and applicable state and local government agency laws, regulations, rules, specifications, and permits. Contrary to Section 105.05, in case of discrepancy between these notes, the Standard Specifications, Interim Supplemental Specifications, Special Provisions and Special Notes, Standard and Sepia Drawings, and such state and local government agency requirements, adhere to the most restrictive requirement.

## Erosion Control

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Conduct operations in such a manner as to minimize the amount of disturbed ground during each phase of the construction and limit the haul roads to the minimum required to perform the work. Preserve existing vegetation not required to be removed by the work or the contract. Seed and/or mulch disturbed areas at the earliest opportunity. Use silt fence, silt traps, temporary ditches, brush barriers, erosion control blankets, sodding, channel lining, and other erosion control measures in a timely manner as required by the BMP and as directed or approved by the Engineer. Prevent sediment laden water from leaving the project, entering an existing drainage structure, or entering a stream.

Provide for erosion control measures to be in place and functioning prior to any earth disturbance within a drainage area. Compute the volume and size of silt control devices necessary to control sediment during each phase of construction. All silt control devices shall be sized to retain a volume of 3,600 cubic feet per disturbed contributing acre. Remove sediment from silt traps before they become a maximum of ½ full. Maintain silt fence by removing accumulated trappings and/or replacing the geotextile fabric when it becomes clogged, damaged, or deteriorated, or when directed by the Engineer. Properly dispose of all materials trapped by erosion control devices at approved sites off the right of way obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.

As work progresses, add or remove erosion control measures as required by the BMP, applicable to the Contractor's project phasing, construction methods, and techniques. Update the volume calculations and modify the BMP as necessary throughout the duration of the project. Ensure that an updated BMP is kept on site and available for public inspection throughout the life of the project.

The required volume at each Silt Trap shall be computed based on the Up Gradient Contributing Areas that are disturbed and/or stabilized to the satisfaction of the Engineer. The required volume calculation for each Silt Trap shall be determined by the Contractor and verified by the Engineer. The required volume at each Silt Trap may be reduced by the following amounts:

- Up Gradient Areas not disturbed (acres)
- Up Gradient Areas that have been reclaimed and protected by Erosion Control Blanket or other ground protection material such as Temporary Mulch (acres)
- Up Gradient Areas that have been protected by Silt Fence (acres) – Areas protected by Silt Fence shall be computed at a maximum rate of 100 square feet per linear foot of Silt Fence
- Up Gradient Areas that have been protected by Silt Traps (acres)

The use of Temporary Mulch is encouraged.

Silt Trap Type B shall always be placed at the collection point prior to discharging into a Blue Line Stream or onto an adjacent Property Owner. Where overland flow exists, a Silt Fence or other filter devices may be used.

After all construction is complete, restore all disturbed areas in accordance with Section 212. Completely remove all temporary erosion control devices not required as part of the permanent erosion control from the construction site. Prior to removal, obtain the Engineer's concurrence of items to be removed. Grade the remaining exposed earth (both on and off the Right-of-Way) as nearly

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as possible to its original condition, or as directed by the Engineer. Prepare the seed bed areas and sow all exposed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.

**IV. MEASUREMENT**

The Department will measure the various erosion control items according to Section 212.04 and Section 213.04, as applicable.

**V. BASIS OF PAYMENT**

The Department will make payment for the various erosion control items according to Section 212.04 and Section 213.04, as applicable.

## SPECIAL NOTES FOR PIPE REPLACEMENTS / EXTENSIONS

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### I. DESCRIPTION

Except as provided herein, perform all work in accordance with the Department's Standard Specifications, interim Supplemental Specifications, Standard and Sepia Drawings, and Special Notes and Special Provisions, current editions. Article references are to the Standard Specifications. This project shall consist of furnishing all labor, equipment, materials, and incidentals for the following:

(1) Maintaining and Controlling Traffic; (2) Constructing pipe replacements and/or pipe extensions; (3) Embankment and/or Excavation; (4) Erosion Control; and (6) Any other work as specified by this contract.

### II. MATERIALS

Provide for sampling and testing of all materials in accordance with the Department's Sampling Manual. Make materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these notes.

**A. Maintain and Control Traffic.** See Traffic Control Plan.

**B. Culvert Pipe.** Furnish pipe meeting the requirements of Section 810. Select pipe for pH range Medium and minimum fill cover height according to the applicable Standard or Sepia Drawings, current editions. Verify maximum and minimum fill cover height required for new pipe prior to construction and obtain the Engineer's approval of the class or gauge of pipe and type of coating prior to delivering pipe to project. Furnish approved connecting bands or pipe anchors and toe walls.

**C. Flowable Fill.** Furnish Flowable Fill for Pipe Backfill per Section 601.03.03(B).

**D. Erosion Control.** See Special Note for Erosion Control.

### III. CONSTRUCTION METHODS

**A. Maintain and Control Traffic.** See Traffic Control Plan.

**B. Erosion Control.** See Special Note for Erosion Control.

**C. Site Preparation.** Be responsible for all site preparation including, but not limited to, saw cutting and removing pavement; clearing and grubbing; staking; incidental excavation and backfilling; common and solid rock excavation; embankment in place; removal of obstructions, or any other items; restoration of pavements, slopes, and all disturbed areas; final dressing and cleanup; and disposal of materials. Limit clearing and grubbing to the absolute minimum required to construct the drainage features. Perform all site preparation only as approved or directed by the Engineer.

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- D. Removing Headwalls, Pipe, and Excavation.** Remove existing headwalls and lengths of culvert and/or entrance pipes at the approximate locations noted on the summary. The Engineer will determine the exact locations and lengths of pipe to be removed at the time of construction. When removing pipe, or any portion of pipe under the roadway, saw cut the existing asphalt pavement and base to a neat edge prior to excavation and removal of the existing pipe. NOTE: Saw cutting the pavement shall be incidental. Obtain the Engineer's approval of trench width and/or saw cutting limits prior to saw cutting the pavement. Excavate the trench and remove the pipe as directed, or approved, by the Engineer without disturbing existing underground utilities.
- E. Constructing Pipe, Headwalls, and Drainage Boxes.** Construct culvert and/or entrance pipes, pipe extensions, headwalls, drainage boxes, and other drainage structures at the locations shown in the proposal or as designated by the Engineer. The contractor will establish, with the approval of the Engineer, the final centerlines, flow lines, and skews to obtain the best fit with the existing and/or proposed ditches and other proposed improvements. (See the Special Note for Staking.) Construct pipe bedding according to Section 701 and the applicable Standard or Sepia Drawings, current editions. Use approved connecting bands or concrete anchors as required. Prior to backfilling pipe, obtain the Engineer's approval of the pipe installation. Provide Positive drainage upon completion of pipe installation.
- F. Pipe Backfill.** Backfill entrance pipes according to Section 701.03.06. Contrary to Section 701.03.06, backfill culvert pipes with flowable fill for the width of the roadway and as shown on the Pipe Replacement Detail. Steel plates will likely be required to maintain traffic while the flowable fill cures. Once the flowable fill has sufficiently cured, place the Asphalt Base in lifts with thicknesses of 3-4 inches, up to the surface of the existing pavement. Seal with Leveling & Wedging. Allow the asphalt base and leveling & wedging to be exposed to traffic for a minimum of 14 days to allow for settlement. During the waiting period, level & wedge any settlement as directed by the Engineer. After the waiting period has been met for the last pipe replacement constructed, the final milling and/or surfacing operations can begin, unless directed otherwise by the Engineer.
- G. Embankments.** Backfill pipe and culvert extensions, and construct shoulder embankments as directed by the Engineer. The contractor shall bench into the existing slope and apply proper compaction according to Section 206. For more information and details on benching, refer to Note 2 on the detail sheet titled: DITCHING & SHOULDERING AND EMBANKMENT BENCHING DETAILS, found elsewhere in the Proposal. Provide positive drainage of ditches, shoulders, and slopes at all times during, and upon completion of construction.
- H. Property Damage.** Be responsible for all damage to public and/or private property resulting from the work. Repair or replace damaged roadway features in like kind materials and design, as directed by the Engineer at no additional cost to the Department. Repair or replace damaged private property in like kind materials and design to the satisfaction of the owner and the Engineer at no additional cost to the Department.

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- I. Coordination with Utility Companies.** Locate all underground, above ground, and overhead utilities prior to beginning construction. Be responsible for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require that utilities be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities. Be responsible for repairing all utility damage that occurs as a result of pipe replacement and pipe extension operations at no additional cost to the Department. NOTIFY THE ENGINEER AND THE UTILITY OWNER(S) IMMEDIATELY WHEN IT IS DISCOVERED OR ANTICIPATED THAT ANY UTILITY CONFLICT COULD DELAY THE CONTRACTOR'S OPERATIONS. If the total delay exceeds ten working days, an extension of the specified completion date will be negotiated with the Contractor for delay to the Contractor's work; however, no extension will be granted for any delay caused by the Contractor's failure to notify the Engineer and/or the utility company as specified above when a conflict is discovered or anticipated as specified.
- J. Right-of-Way Limits.** The Department has not established exact limits of the Right-of-Way. Unless a consent and release form is obtained from the adjoining property owner, limit work activities to the obvious Right-of-Way and staging areas secured by the Contractor at no additional cost to the Department. In the event that private improvements (i.e. fences, buildings, etc.) encroach upon the Right-of-Way, the contractor shall notify the Engineer and limit work activities in order to NOT disturb the improvements. If they become necessary, the Department will secure consent and releases from property owners through the Engineer. Be responsible for all encroachments onto private lands.
- K. Clean Up, Disposal of Waste.** Clean up the project area as work progresses. Dispose of all removed concrete, pipe, pavement, debris, excess and unsuitable excavation, and all other waste at approved sites off the Right of Way obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.
- L. Final Dressing, Seeding and Protection.** Grade all disturbed areas to blend with the adjacent roadways features and to provide a suitable seed bed. Apply Class A Final Dressing to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.
- M. Erosion Control.** See the Special Note for Erosion Control.

**IV. METHOD OF MEASUREMENT**

- A. Maintain and Control Traffic.** See the Traffic Control Plan.
- B. Site Preparation.** Other than the bid items listed, site preparation will NOT be measured for payment, but shall be incidental to culvert and/or entrance pipe bid items, as applicable.

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- C. Remove Headwall.** The Department will measure the removal of existing headwalls as Each. Any excavation, including rock excavation, necessary to remove existing headwalls will NOT be measured for payment, but shall be incidental to the bid item "Remove Headwall".
- D. Remove Pipe.** Removal of existing culvert and entrance pipe shall be measured according to Section 701.04.14. Any excavation, including rock excavation, necessary to remove existing pipe will NOT be measured for payment, but shall be incidental to the bid item "Remove Pipe".
- E. Culvert and Entrance Pipe.** The Department will measure the quantities according to Section 701.04. Any excavation, including rock excavation, necessary to install culvert or entrance pipe shall be incidental to the corresponding pipe bid items.
- F. Headwalls, Drainage Boxes.** The Department will measure according to Section 710. Any excavation, including rock excavation, necessary to construct headwalls and/or drainage boxes will NOT be measured for payment, but shall be incidental to the applicable bid item.
- G. Excavation, Pipe Backfill, Embankments.** The Department will NOT measure for payment the following items: any excavation, including rock excavation, necessary to remove the existing pipe and/or install the proposed culvert or entrance pipe, pipe backfill material, flowable fill, and re-constructing shoulder embankments, but shall considered these items incidental to the bid items for culvert and entrance pipe.
- H. Clean Up, Disposal of Waste, Final Dressing, Seeding and Protection.** The Department will NOT measure for payment the following activities: Clean Up, Disposal of Waste, and Final Dressing. These activities shall be incidental to the project bid items. Seeding and Protection shall be measured according to Section 212.
- I. Erosion Control.** See the Special Note for Erosion Control.

**V. BASIS OF PAYMENT**

- A. Maintain and Control Traffic.** See the Traffic Control Plan.
- B. Remove Headwall.** The Department will make payment for the completed and accepted quantities of Each headwall removed. Payment at the Contract unit price per Each shall be full compensation for furnishing all labor, materials, equipment, and incidentals for removing the existing headwall.
- C. Remove Pipe.** The Department will make payment according to Section 701.05. Payment at the Contract unit price per linear foot shall be full compensation for furnishing all labor, materials, equipment, and incidentals for removing the existing pipe.
- D. Culvert and Entrance Pipe.** The Department will make payment according to Section

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701.05. Payment at the Contract unit price per linear foot shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary for installing and backfilling new culvert and entrance pipe.

**E. Headwalls, Drainage Boxes.** The Department will make payment according to Section 710.

**F. Erosion Control.** See the Special Note for Erosion Control.

## SPECIAL NOTE FOR SIGNAGE

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The final advisory speeds and some sign types will have to be determined after the curve superelevation improvements and final surfacing operations have been completed. The Contractor shall notify the Engineer and District Traffic Engineer when all of the superelevation improvements and surfacing operations have been completed. Once notified, the District Traffic Engineer will ball-bank the newly surfaced route to determine the appropriate advisory speeds and work with the Contractor to determine the final Signing Plan. The Engineer and/or District Traffic Engineer will provide the Contractor with the final advisory speeds, any changes to proposed sign types, and the final quantities within three (3) weeks of being notified by the Contractor that final surfacing operations are complete. After the Contractor has received this information from the Engineer and/or the District Traffic Engineer, the Contractor shall then proceed to layout and stake the signing according to the Special Note for Staking, included elsewhere in this proposal.

All sign sheeting shall be from the Cabinet's List of Approved Materials.

The following signs and sign components shall be fabricated using Type XI sheeting:

- White sign legends on panel signs
- STOP (R1-1) signs
- ALL WAY (R1-3P) signs
- YIELD (R1-2) signs
- DO NOT ENTER (R5-1) signs
- WRONG WAY (R5-1a) signs

The following signs and sign components shall be fabricated using Type XI fluorescent yellow sheeting:

- Horizontal Alignment Signs and Plaques, including signs shown in Figure 2C-1 of the MUTCD
- All Advisory Speed (W13-1P) plaques

The following signs shall be fabricated using Type XI fluorescent yellow-green sheeting:

- School and school bus warning signs, including the fluorescent yellow-green signs shown in Figures 7B-1 and 7B-6 of the MUTCD and other school-related warning signs that are not included in the MUTCD.
- Bicycle Warning (W11-1) signs and SHARE THE ROAD (W16-1P) plaques or diagonal downward point arrow (W16-7P) plaques that supplement Bicycle Warning signs.
- In-Street Pedestrian Crossing (R1-6) signs and Overhead pedestrian Crossing (R1-9) signs
- Supplemental plaques to any of the previously listed signs

All other permanent signs shall be fabricated using Type XI sheeting.

## SPECIAL NOTE FOR SIGNING

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### I. DESCRIPTION

Except as provided herein, this work shall be performed in accordance with the current edition of the Manual on Uniform Traffic Control Devices (MUTCD), the Department's current Standard Specifications and Interim Supplemental Specifications, applicable Standard and Sepia Drawings, and applicable Special Provisions. Article references are to the Standard Specifications. This project shall consist of furnishing all labor, equipment, materials, and incidentals for the following:

(1) Maintaining and Controlling Traffic; (2) Furnish, Fabricate, and Erect Signs; and (3) All other work specified in the Contract.

### II. MATERIALS

All materials shall be sampled and tested in accordance with the Department's Sampling Manual and the materials shall be available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these Notes.

**A. Maintain and Control Traffic.** See Traffic Control Plan.

**B. Erosion Control.** See Special Note for Erosion Control.

### III. CONSTRUCTION METHODS

**A. Maintain and Control Traffic.** See Traffic Control Plan.

**B. Site Preparation.** Be responsible for all site preparation including, but not limited to: clearing and grubbing, staking, excavation, backfill, and removal of obstructions or any other material not covered by other items. Perform all site preparation only as approved, or directed, by the Engineer.

**C. Staking.** See Special Note for Staking.

**D. Signs and Posts.** Before beginning installation, the Contractor shall furnish to the Engineer drawings, descriptions, manufacturer's cuts, etc. covering all material to be used. Mill test reports for beams, steel panels, and each different gauge of aluminum or steel sheeting used must be submitted to the Division of Construction and approved prior to erection.

Fabricate sheet signs from .080 or .125 gauge aluminum alloy 5052-H38 or 6061-T6, in accordance with ASTM B-209, and to the size and shape specified. Prepare the side of

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the sheet to be used as the sign face to receive the retroreflective background material according to the recommendations of the sheeting and retroreflective material manufacturer(s). Sheeting used as background material for sign faces is to be the color specified and visually in accordance with the standard requirements of ASTM D-4956, and meet the requirements of Section 830 of the Standard Specifications. Contrary to Section 830.02.06, only the types and colors of sheeting as specified in the proposal will be accepted. All retroreflective material shall be fabricated and assembled in accordance with the specifications and/or recommendations of the manufacturer(s).

All hardware for the erection of sheeting signs shall be rust resistant: stainless steel, zinc coated, aluminum, or an Engineer approved material. All beams and posts shall be of sufficient lengths to extend from the top of the sign to the required embedment in the anchor. Splicing of the sign post shall NOT be allowed. For installations in soil, Type I steel posts shall be mounted on either a standard anchor, with soil stabilizer plate, or on a Type D breakaway sign support. Refer to Sheeting Sign Detail Sheet 1 of 2 for installation details for a standard anchor with soil stabilizer plate. When installing a standard anchor with soil stabilizer plate, if solid rock is encountered, the Contractor shall drill a hole to the required depth into the rock, install the anchor into the hole, and backfill the anchor post with concrete, or other method approved by the Engineer. The cost shall be incidental to Type I steel post, and a soil stabilizer plate will not be required. Refer to Standard Drawing RGX-065, current edition, for installation details of Type D breakaway sign supports. Approved manufacturers for Type D breakaway sign supports have been placed on the list of approved materials. For installations on existing concrete, such as a sidewalk, concrete median, etc., Type I steel posts shall be mounted on a Type D surface mount. For Type D surface mounts use only Kleen Break Model 425 for Surface Mount Concrete Installations by Xcessories Squared of Auburn, IL. Prior to installation, the Contractor shall submit to the Engineer shop drawings of the Type D surface mount(s). Install the Type D surface mount(s) according to all the applicable requirements of the manufacturer (see shop drawings). All steel post shall meet the requirements of Section 832. All hardware including, but not limited to, sign post anchors, soil stabilizer plates, nuts, bolts, washers, fasteners, fittings, and bracing, or any other incidentals necessary to erect the signs shall be furnished by the Contractor and will be incidental to the work.

New concrete bases, posts, support anchors, signs, etc. are to be installed prior to dismantling any existing sign(s). The removal of existing signs, posts, and support anchors is to be performed concurrently with the installation of new signs, posts, and support anchors, under the same lane closure during the same work shift. Completely remove existing sign support anchors or remove them to a minimum depth of six (6) inches below existing ground line and backfill the disturbed area to the existing ground line.

When listed in the summaries, Reflective Sign Post Panels shall be 2" wide x 60" tall (or 84" tall for urban installations) and shall have three 3/8" holes (one hole in the top 3",

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one hole near the center, and one hole in the bottom 3”) that align with the holes on the Type I steel post. Sheeting for the Reflective Sign Post Panels shall be the same Type and color as the sign installed on the post. Examples include:

- Red, fluorescent yellow, and fluorescent yellow-green (Type XI Sheeting)
- White and yellow (Type XI Sheeting).

All manufactured sheeting signs shall be free of visual defects including, but not limited to: cracks, tears, ridges, humps, discoloration, etc., and defective signs shall be replaced at no additional cost to the Department.

All sign blanks shall be hole punched by the manufacturer for either horizontal or vertical installation. Attach all aluminum sheeting signs to square post with 3/8” all steel rivets and nylon washers.

Post will be attached to the anchor with 5/16” corner bolts and 5/16” flanged nuts, and all post and anchor cuts shall be treated with a Cold Galvanizing Compound spray.

Sign posts shall be erected vertically by using a bubble level. The tolerance shall be a two (2) degree angle in any direction. For locations where there are more than one sign is mounted beside each other, the posts shall be spaced to provide approximately six inches (6”) of spacing between signs.

**E. Property Damage.** The Contractor shall be responsible for all damage to public and/or private property resulting from the Contractor’s activities. Repair or replace damaged roadway features in like kind materials and design as directed by the Engineer at no additional cost to the Department. Repair or replace damaged private property in like kind materials and design to the satisfaction of the owner and the Engineer at no additional cost to the Department.

**F. Coordination with Utility Companies.** Locate all underground, above ground, and overhead utilities prior to beginning construction. Be responsible for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require that utilities be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities. Be responsible for repairing all utility damage that occurs due to the Contractor’s operations at no additional cost to the Department. NOTIFY THE ENGINEER AND THE UTILITY OWNER(S) IMMEDIATELY WHEN IT IS DISCOVERED OR ANTICIPATED THAT ANY UTILITY CONFLICT COULD DELAY THE CONTRACTOR’S OPERATIONS. If the total delay exceeds ten working days, an extension of the specified completion date will be negotiated with the Contractor for delay to the Contractor's work; however, no extension will be granted for any delay

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caused by the Contractor's failure to notify the Engineer and/or the utility company as specified above when a conflict is discovered or anticipated as specified.

**G. Caution.** The information in this proposal and the type of work listed herein are approximate only and are not to be taken as an exact evaluation of the materials and conditions to be encountered during construction; the bidder must draw his/her own conclusions when developing the Unit Bid Prices for each bid item. As such, if the conditions encountered are not in accordance with the information shown, the Department does not guarantee any changes to the Unit Bid Prices nor extension of the contract will be considered. The Department will pay for bid item quantity overruns, but only if pre-approved by the Engineer.

**H. Control.** Perform all work under the absolute control of the Department. Obtain the Engineer's approval of all designs required to be furnished by the Contractor prior to incorporation into the work. The Department reserves the right to have other work performed by other contractors and its own forces, and to permit public utility companies and others to do work during the construction within the limits of, or adjacent to, the project. Conduct operations and cooperate with such other parties so that interference with such other work will be reduced to a minimum. The Department will not honor any claims for money or time extension created by the operations of such other parties.

Should a difference of opinion arise as to the rights of the Contractor and others working within the limits of, or adjacent to, the project, the Engineer will decide as to the respective rights of the various parties involved in order to assure the completion of the Department's work in general harmony and in a satisfactory manner, and the Engineer's decision shall be final and binding upon the Contractor.

**I. Clean Up, Disposal of Waste.** Clean up the project area as work progresses. Dispose of all removed concrete, debris, and other waste as per Section 204.03.08. The Department will incur no cost to obtain the disposal sites. The Department will NOT make direct payment for disposal of waste and debris from the project. Existing anchors, signs, posts, and any other hardware or material removed from the site are to become the property of the Contractor. See Special Provision for Waste and Borrow Sites.

**J. Final Dressing, Seeding and Protection.** Grade all disturbed areas to blend with the adjacent roadways features and to provide a suitable seed bed. Apply Class A Final Dressing to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.

**K. Erosion Control.** See Special Note for Erosion Control.

#### IV. METHOD OF MEASUREMENT

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- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Site Preparation.** Other than the bid items listed, the Department will NOT measure Site Preparation for payment, but shall be incidental to the project bid items.
- C. Signs.** The Department will measure the finished in-place area of signs in Square Feet.
- D. Sign Posts.** The Department will measure the finished in-place length of sign posts in Linear Feet, from the top of the anchor, or top of the sign support, to the top of the sign post. Laps, cutoffs, excess, and waste will NOT be measured for payment.
- E. Type D Breakaway Sign Supports.** The Department will measure Type D sign supports as Each support installed.
- F. Type D Surface Mounts.** The Department will measure Type D Surface Mounts as Each surface mount installed.
- G. Class A Concrete for Signs.** The Department will measure the Class A Concrete used in conjunction with Type D breakaway sign support installations in Cubic Yards. Any concrete that is required as backfill due to hitting rock during a standard installation shall be incidental to the bid item STEEL POST TYPE I, and soil stabilizers will not be required.
- H. Clean Up, Disposal of Waste, Final Dressing, Seeding and Protection.** The Department will NOT measure for payment the following activities: Clean Up, Disposal of Waste, and Final Dressing. These activities shall be incidental. Seeding and Protection shall be measured according to Section 212.
- I. Erosion Control.** See Special Note for Erosion Control.
- J. Remove Sign.** The Department will consider all signs attached to one or more connected posts as a single sign. The Department will measure as Each sign assembly removed and NOT each individual sign removed.
- K. Items Provided by KYTC.** The Department will NOT measure for payment the installation of signs and/or surface mounts provided by KYTC. These activities shall be incidental to the bid item STEEL POST TYPE I.

**V. BASIS OF PAYMENT**

- A. Maintain and Control Traffic.** See Traffic Control Plan.

Signing  
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- B. Signs.** The Department will make payment for the completed and accepted quantities under the bid item SBM ALUM SHEET SIGNS .125 IN or .080 IN. The Department will consider payment full compensation for all work and incidentals necessary to install the signs, as required by these notes and the details found elsewhere in the proposal, at the locations indicated on the summary sheets, plans, and/or as directed by the Engineer.
- C. Sign Posts.** The Department will make payment for the completed and accepted quantities under the bid item STEEL POST TYPE I. The Department will consider payment full compensation for all work and incidentals necessary to install the sign posts as required by these notes and the details found elsewhere in the proposal.
- D. Type D Breakaway Sign Supports.** The Department will make payment for the completed and accepted quantities under the bid item GMSS TYPE D. The Department will consider payment full compensation for all work and incidentals necessary to install the Type D breakaway sign supports as required by Standard Drawing RGX-065, current edition.
- E. Type D Surface Mounts.** The Department will make payment for the completed and accepted quantities under the bid item GMSS TYPE D Surface Mount. The Department will consider payment full compensation for all work and incidentals necessary to install the Type D surface mounts according to all applicable manufacturer requirements.  
NOTE: There are two permissible Type D Surface Mount alternatives: Kleen Break Model 425 for Surface Mount Concrete Installations by Xcessories Squared of Auburn, IL
- F. Class A Concrete for Signs.** The Department will make payment for the completed and accepted quantities, used in conjunction with Type D breakaway sign support installations, under the bid item CLASS A CONCRETE FOR SIGNS. The Department will consider payment full compensation for all work and incidentals necessary to install the concrete as required by Standard Drawing RGX-065, current edition.
- G. Remove Sign.** The Department will make payment for the completed and accepted quantities under the bid item REMOVE SIGN. The Department will consider payment full compensation for all work and incidentals necessary to remove the existing signs, posts, anchors, and any other sign material or hardware, from the locations indicated on the summary sheets, plans, and/or as directed by the Engineer.
- H. Erosion Control.** See Special Note for Erosion Control.

## SPECIAL NOTES FOR COMPLETION DATES & LIQUIDATED DAMAGES

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The ultimate fixed completion date for this project will be **September 30, 2021**. Liquidated Damages for failure to complete the project on time will be assessed following Section 108.09.

In addition to the requirements of Section 108.09, the Department will assess Liquidated Damages in the amount of **\$1,000** per hour for each hour, or fraction of an hour, for any and all road closures that are in place beyond the time frame(s) noted in the Traffic Control Plan and approved by the Engineer.

Contrary to Section 108.09, Liquidated Damages will be assessed for the months of December through March.

Contrary to Section 108.09, Liquidated Damages will be assessed regardless of whether seasonal limitations prohibit the Contractor from performing work on the controlling operation.

All liquidated damages will be applied accumulatively.

All other applicable portions of Section 108 apply.

## **SPECIAL PROVISION FOR WASTE AND BORROW SITES**

Obtain U.S. Army Corps of Engineer's approval before utilizing a waste or borrow site that involves "Waters of the United States". The Corps of Engineers defines "Waters of the United States" as perennial or intermittent streams, ponds or wetlands. The Corps of Engineers also considers ephemeral streams, typically dry except during rainfall but having a defined drainage channel, to be jurisdictional waters. Direct questions concerning any potential impacts to "Waters of the United States" to the attention of the appropriate District Office for the Corps of Engineers for a determination prior to disturbance. Be responsible for any fees associated with obtaining approval for waste and borrow sites from the U.S. Army Corps of Engineer or other appropriate regulatory agencies.

1-296 Waste & Borrow Sites  
01/02/2012

## **COORDINATION OF WORK WITH OTHER CONTRACTS**

Be advised, there may be an active project(s) adjacent to or within this project. The Engineer will coordinate the work of the Contractors. See Section 105.06.

1-3193 Coordination Contracts  
01/02/2012

### **SPECIAL NOTE FOR DOUBLE ASPHALT SEAL COAT**

Use RS-2 or RS-2C asphalt material that is compatible with the seal aggregate. Apply the first course of asphalt seal coat at the rate of 3.2 lbs/sy of asphalt and 30 lbs/sy of size #78 seal coat aggregate. Apply the second course at 2.8 lbs/sy of asphalt and 20 lbs/sy of size #9M seal coat aggregate. The Engineer may adjust the rate of application as conditions warrant. Use caution in applying liquid asphalt material to avoid over spray getting on curbs, gutter, barrier walls, bridges, guardrail, and other roadway appurtenances.

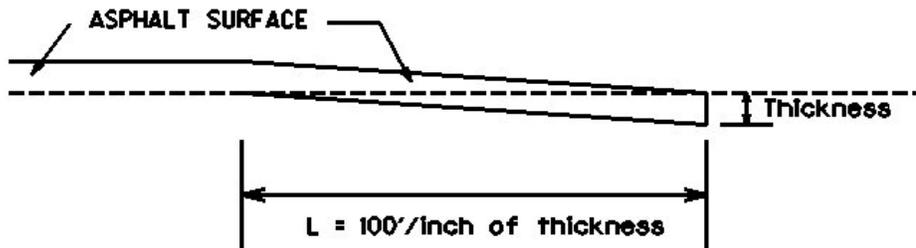
The Department will not measure any surface preparation required prior to applying the asphalt seal coat, but shall be incidental to “Asphalt Material for Asphalt Seal Coat”.

1-3215 Double Asphalt Seal Coat  
01/02/2012

### SPECIAL NOTE FOR EDGE KEY

Construct Edge Keys at the beginning of project, end of project, at railroad crossings, and at ramps, as applicable. Unless specified in the Contract or directed by the Engineer, do not construct edge keys at intersecting streets, roads, alleys, or entrances. Cut out the existing asphalt surface to the required depth and width shown on the drawing and heel the new surface into the existing surface. The Department will make payment for this work at the Contract unit price per ton for Asphalt Pavement Milling and Texturing, which shall be full compensation for all labor, materials, equipment, and incidentals for removal and disposal of the existing asphalt surface required to construct the edge key.

### EDGE KEY



**Thickness = 1.0 Inches**

**L = 100 LF**

**L = Length of Edge Key**

1-3309 Edge key by Ton  
01/02//2012

## SPECIAL NOTES FOR GUARDRAIL

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### I. DESCRIPTION

Except as specified herein, perform all work in accordance with the Department's Standard and Supplemental Specifications, Special Notes and Special Provisions, and the Standard and Sepia Drawings, current editions. Article references are to the Standard Specifications.

Furnish all equipment, labor, materials, and incidentals for the following work items:

(1) Site preparation; (2) Remove existing guardrail systems; (3) Construct Guardrail, End Treatments, Bridge End Connectors, and Terminal Sections, as applicable; (4) Delineators for guardrail; (5) Maintain and Control Traffic; and (6) all other work specified as part of this contract.

### II. MATERIALS

Except as specified herein, provide for all materials to be sampled and tested in accordance with the Department's Sampling Manual and make the materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing.

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Guardrail.** Furnish guardrail system components according to Section 814 and the Standard and Sepia Drawings; except use steel posts only, no alternates.
- C. Delineators for Guardrail.** Furnish white and/or yellow Delineators for Guardrail according to Standard Drawing RBR-055 – Delineators for Guardrail, current edition.
- D. Erosion Control.** See the Special Note for Erosion Control.

### III. CONSTRUCTION METHODS

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Site Preparation.** Remove existing guardrail system, including the guardrail end treatments, Bridge End connectors and all other elements of the existing guardrail system as per Section 719, except that the Contractor will take possession of all concrete posts and all concrete associated with the existing bridge and/or guardrail end treatments. Locate all disposal areas off the Right of Way. Be responsible for all site preparation, including but not limited to, clearing and grubbing, excavation, embankment, and removal of all obstructions or any other items; regrading, reshaping, adding and compacting of suitable materials on the existing shoulders to provide proper template or foundation for the guardrail;

Guardrail  
Page 2 of 3

filling voids left as the result of removing existing guardrail and guard posts with dry sand; temporary pollution and erosion control; disposal of excess, waste materials, and debris; and final dressing, cleanup, and seeding and protection. Perform all site preparation as approved or directed by the engineer.

- C. Guardrail.** Except as specified herein, construct guardrail system according to Section 719 and the Standard and Sepia Drawings, current editions. Locations listed on the summary and/or shown on the drawings are approximate only. The Engineer will determine the exact termini for individual guardrail installations at the time of construction. Unless directed otherwise by the Engineer, provide a minimum two (2) foot shoulder width. Construct radii at entrances and road intersections as directed by the Engineer.

Erect guardrail to the lines and grades shown on the current Standard and Sepia Drawings, or as directed by the Engineer by any method approved by the Engineer which allows construction of the guardrail to the true grade without apparent sags.

When removing existing guardrail and installing new guardrail, do not leave the blunt end exposed where it would be hazardous to the public. When it is not practical to complete the construction of the guardrail and the permanent end treatments and terminal sections first, provide a temporary end by connecting at least 25 feet of rail to the last post, and by slightly flaring, and burying the end of the rail completely into the existing shoulder. If left overnight, place a drum with bridge panel in advance of the guardrail end and maintain during use.

- D. Delineators for Guardrail.** Construct Delineators for Guardrail according to Standard Drawing RBR-055 – Delineators for Guardrail, current edition.
- E. Property Damage.** Be responsible for all damage to public and/or private property resulting from the work. Restore damaged roadway features and private property at no additional cost to the Department.
- F. Coordination with Utility Companies.** Locate all underground, above ground, and overhead utilities prior to beginning construction. Be responsible for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require utilities to be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities. Be responsible for repairing all utility damage that occurs as a result of guardrail operations at no additional cost to the Department.
- G. Right of Way Limits.** The Department has not established the exact limits of the Right-of-Way. Limit work activities to obvious Right-of-Way, permanent or temporary easements, and work areas secured by the Department through consent and release of the adjacent property owners. Be responsible for all encroachments onto private lands.

Guardrail  
Page 3 of 3

- H. Clean Up, Disposal of Waste.** Dispose of all removed concrete, debris, and other waste and debris off the Right-of-Way at sites obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.
- I. Final Dressing, Seeding and Protection.** Apply Class A Final Dressing to all disturbed areas, both on and off the Right-of-Way. Sow all disturbed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.
- J. Erosion Control.** See the Special Note for Erosion Control.

**IV. METHOD OF MEASUREMENT**

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Site preparation.** Other than the bid items listed, the Department will not measure Site Preparation for separate payment but shall be incidental to the Guardrail, End Treatments, Bridge End Connectors, and Terminal Sections, as applicable.
- C. Guardrail, End Treatments, Bridge End Connectors, Terminal Sections, and Remove Guardrail.** The Department will measure according to Section 719.04.
- D. Delineators for Guardrail.** See Standard Drawing RBR-055 – Delineators for Guardrail.
- E. Clean Up, Disposal of Waste, Final Dressing, and Seeding and Protection.** The Department will NOT measure for payment the operations of: Clean Up, Disposal of Waste, and Final Dressing. These activities shall be incidental. Seeding and Protection will be measured according to Section 212.
- F. Erosion Control.** See the Special Note for Erosion Control.

**V. BASIS OF PAYMENT**

- A. Maintain and Control Traffic.** See Traffic Control Plan.
- B. Guardrail, End Treatments, Bridge End Connectors, Terminal Sections, and Remove Guardrail.** The Department will make payment according to Section 719.05.
- C. Delineators for Guardrail.** See Standard Drawing RBR-055 – Delineators for Guardrail.
- D. Erosion Control.** See the Special Note for Erosion Control.

**SPECIAL NOTE FOR  
ASPHALT MILLING AND TEXTURING**

Begin paving operations within **48 hours** of commencement of the milling operation. Continue paving operations continuously until completed. If paving operations are not begun within this time period, the Department will assess liquidated damages at the rate prescribed by Section 108.09 until such time as paving operations are begun.

Take possession of the millings and recycle the millings or dispose of the millings off the Right-of-Way at sites obtained by the Contractor at no additional cost to the Department.

1-3520 48 hours Contractor keeps millings  
01/2/2012

### **SPECIAL NOTE FOR TYPICAL SECTION DIMENSIONS**

Consider the dimensions shown on the typical sections for pavement and shoulder widths and thickness' to be nominal or typical dimensions. The Engineer may direct or approve varying the actual dimensions to be constructed to fit existing conditions. Do not widen existing pavement or shoulders unless specified elsewhere in this proposal or directed by the engineer.

1-3725 Typical Section Dimensions  
01/02/2012

**TRAFFIC CONTROL PLAN  
ROWAN COUNTY  
US 60  
ITEM NO. 9-9008.00**

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**TRAFFIC CONTROL GENERAL**

Except as provided herein, traffic shall be maintained in accordance with the current editions of the Manual on Uniform Traffic Control Devices (MUTCD), Standard Specifications, and the Standard and Sepia Drawings. Except for the roadway and traffic control bid items listed, all items of work necessary to maintain and control traffic will be paid at the lump sum bid price to “Maintain and Control Traffic”.

Contrary to Section 106.01, traffic control devices used on this project may be new, or used in like new condition, at the beginning of the work and maintained in like new condition until completion of the work. Any temporary traffic control items, devices, materials, and incidentals shall remain the property of the contractor unless otherwise addressed, when no longer needed.

**PROJECT PHASING & CONSTRUCTION PROCEDURES**

The US 60 corridor from MP 10.834 to MP 17.112 is a two-lane rural roadway with a wide range of proposed improvement options. Due to US 60 being an official detour route for I-64 traffic, as well as the high number of residents and businesses along the route, full closure of the roadway should be avoided whenever possible and would require approval by the Engineer. The following proposed improvements are isolated to one side of the roadway, and can be constructed by a standard single lane closure:

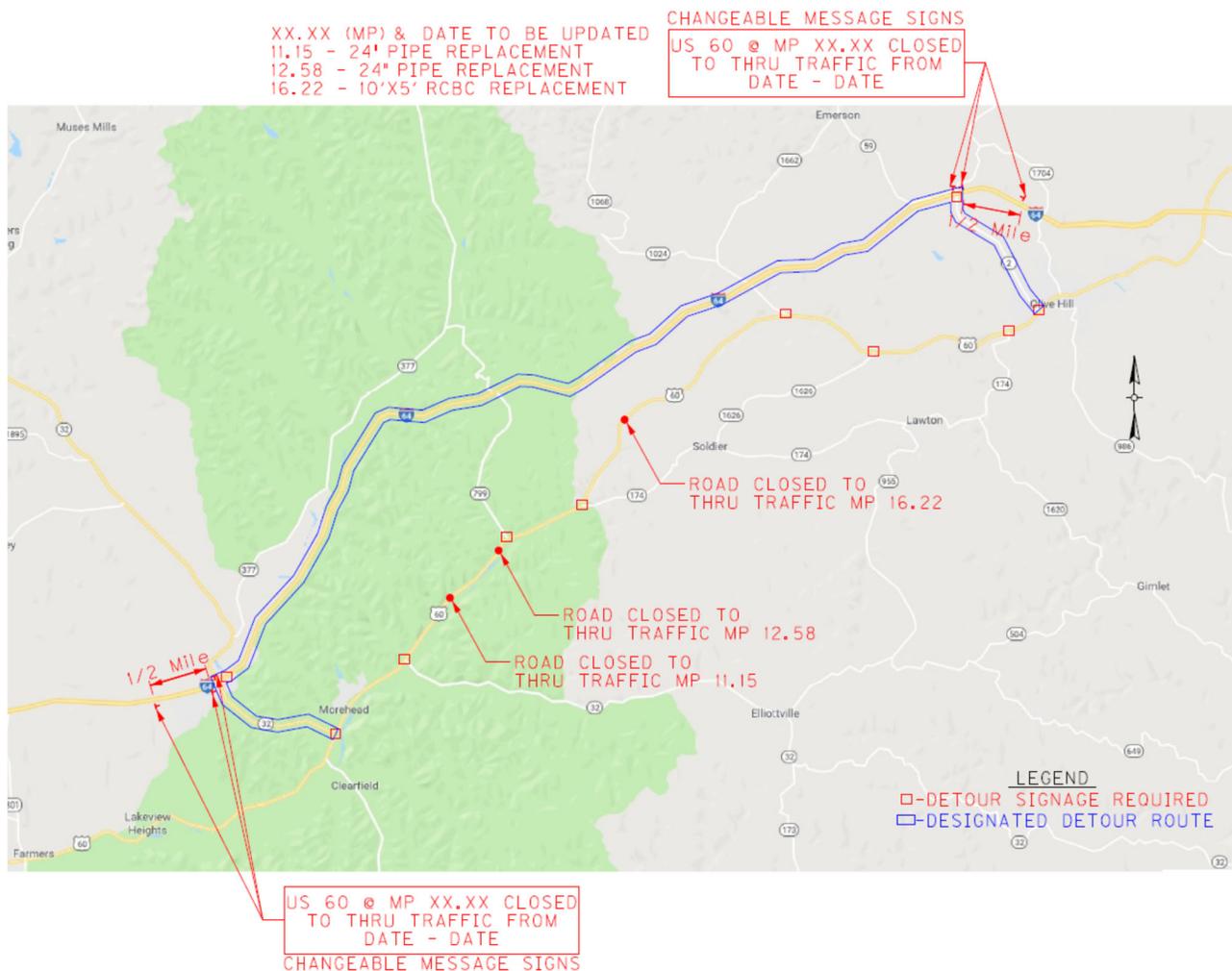
- Elevate and/or Widen Shoulder
- Remove or Replace Existing Guardrail
- Install New Guardrail Outside of Widened Shoulder
- Construct New Side Slopes and/or Ditch
- Extend Existing Cross Pipe

These improvements shall adhere to KYTC standard drawing TTC-100-04, which utilizes 2 flaggers, one in each direction, to direct the movement of traffic around the work zone.

The remainder of the proposed improvements can also be constructed utilizing standard single lane closures as shown in TTC-100-04, however, they will affect both sides of the roadway. In these cases, the work will be done on one side of the roadway, pavement will be placed as necessary, and then the lane closure and traffic will be flipped to the opposite sides of the roadway to complete the construction. These proposed improvements include:

- Replace Existing Cross Pipe or Culvert (except as noted)
- Modify Superelevation
- Re-Surface Roadway

Proposed improvements that warrant consideration of a full road closure are the installation of the new skewed 10’X5’ pre-cast concrete box culvert at MP 16.22, and the replacement of existing crossing pipes at MP 11.15 and MP 12.58. When a full closure of US 60 is required, I-64 will be the designated, signed detour route and changeable message signs along I-64 at the locations shown will be used for advanced warning notification in case there is a crash on I-64 while US 60 is closed.



For all other construction activities, utilize a lane closure, and maintain alternating one-way traffic. This may require part-width construction of certain elements. Provide a minimum clear lane width of 10 feet; however, provide for passage of vehicles of up to 16 feet in width. If traffic should be stopped due to construction operations, and a school bus or emergency vehicle on an official run arrives on the scene, make provisions for the passage of the school bus or emergency vehicle as quickly as possible.

No lane closures will be allowed on the following dates:

- |                          |  |
|--------------------------|--|
| Independence Day Weekend | Friday, July 3, 2020 – Sunday, July 5, 2020              |
| Labor Day Weekend        | Friday, September 4, 2020 – Monday, September 7, 2020    |
| Thanksgiving Weekend     | Wednesday, November 25, 2020 – Monday, November 30, 2020 |
| Christmas and New Year’s | Thursday, December 24, 2020 – Sunday, January 3, 2021    |
| Easter Weekend           | Friday, April 2, 2021 – Sunday, April 4, 2021            |

Memorial Day Weekend	Friday, May 28, 2021 – Monday, May 31, 2021
Independence Day Weekend	Friday, July 2, 2021 – Monday, July 5, 2021
Labor Day Weekend	Friday, September 10, 2021 – Monday, September 6, 2021
Poppy Mountain Festival	As determined by the Engineer
Harvest Festival	As determined by the Engineer
MSU Events	As determined by the Engineer

At the discretion of the Engineer, additional days and hours may be specified when lane closures will not be allowed due to unforeseen events.

## **LANE CLOSURES**

Do not leave lane closures in place during non-working hours or prohibited periods, unless otherwise approved by the Engineer. No long-term lane closures (more than 3 days) will be allowed; therefore, lane closures will not be measured for payment.

## **SIGNS**

Sign posts and splices shall be compliant with NCHRP 350 or MASH. Manufacturer's documentation validating this compliance shall be provided to the Engineer prior to installation. Signs, including any splices, shall be installed according to manufacturer's specifications and installation recommendations. Contrary to section 112.04.02, only long-term signs (signs intended to be continuously in place for more than 3 days) will be measured for payment. Short-term signs (signs intended to be left in place for 3 days or less) will not be measured for payment but will be incidental to Maintain and Control Traffic.

## **CHANGEABLE MESSAGE SIGNS**

Provide changeable message signs at locations determined by the Engineer. The Engineer may vary the designated locations as the work progresses. The Engineer will determine the messages to be displayed. In the event of damage or mechanical/electrical failure, repair or replace the Changeable Message Sign within 24 hours. The Department will measure for payment the maximum number of Changeable Message Signs in concurrent use at the same time on a single day on all sections of the contract. The Department will measure individual Changeable Message Signs only once for payment, regardless of how many times they are set, reset, removed, and relocated during the duration of the project. The Department will not measure for payment any replacements for damaged Changeable Message Signs or any changeable message signs the Engineer directs to be replaced due to poor condition or readability. Retain possession of the Changeable Message Signs upon completion of the work.

## **BARRICADES**

The Department will not measure barricades used in lieu of barrels and cones for channelization or delineation, but shall be incidental to Maintain and Control Traffic according to Section 112.04.01.

The Department will measure barricades used for road closures and to protect pavement removal areas in individual units Each. The Department will measure for payment the maximum number of barricades in concurrent use at the same time on a single day on all sections of the contract. The Department will

measure individual barricades only once for payment, regardless of how many times they are set, reset, removed, and relocated during the duration of the project. The Department will not measure for payment any replacements for damaged barricades, or any barricades the Engineer directs to be replaced due to poor condition or reflectivity. Retain possession of the Barricades upon completion of construction.

### **TEMPORARY ENTRANCES**

The Engineer will not require the Contractor to provide continuous access to farms, single family, duplex, or triplex residential properties during working hours; however, provide reasonable egress and ingress to each such property when actual operations are not in progress at that location. Limit the time during which a farm or residential entrance is blocked to the minimum length of time required for actual operations, not extended for the Contractor's convenience, and in no case exceeding six (6) hours. Notify all residents twenty-four hours in advance of any driveway or entrance closings and make any accommodations necessary to meet the access needs of disabled residents.

Except as allowed by the Phasing as specified above, maintain direct access to all side streets and roads, schools, churches, commercial properties, and apartments or apartment complexes of four or more units at all times. Access to fire hydrants must also be maintained at all times

The Department will measure asphalt materials required to construct and maintain any temporary entrances which may be necessary to provide temporary access; however, the Department will not measure aggregates, excavation, and/or embankment, but shall be incidental to Maintain and Control Traffic. The Engineer will determine the type of surfacing material, asphalt or aggregate, to be used at each entrance.

### **PAVEMENT MARKINGS**

If there is to be a deviation from the existing striping plan, the Engineer will furnish the Contractor a striping plan prior to placement of the final surface course. Install Temporary Striping according to Section 112 with the following exception:

If the Contractor's operations or phasing requires temporary markings that must subsequently be removed from the final surface course, use an approved removable lane tape; however, the Department will not measure removable lane tape for separate payment, but will measure and pay for removable lane tape as temporary striping.

### **PAVEMENT EDGE DROP-OFFS**

Do not allow a pavement edge between opposing directions of traffic or lanes that traffic is expected to cross in a lane change situation with an elevation difference greater than 1½". Place Warning signs (MUTCD W8-11 or W8-9A) in advance of and at 1500' intervals throughout the drop-off area. Dual post the signs on both sides of the traveled way. Wedge all transverse transitions between resurfaced and un-resurfaced areas which traffic may cross with asphalt mixture for leveling and wedging. Remove the wedges prior to placement of the final surface course.

Protect pavement edges that traffic is not expected to cross, except accidentally, as follows:

Less than 2" - No protection required.

2" to 4" - Place plastic drums, vertical panels, or barricades every 50 feet. During daylight working hours only, the Engineer will allow the Contractor to use cones in lieu of plastic drums, panels, and barricades. Wedge the drop-off with DGA or asphalt mixture for leveling and wedging with a 1:1 or flatter slope in daylight hours, or 3:1 or flatter slope during nighttime hours, when work is not active in the drop-off area.

Greater than 4" - Protect drop-offs greater than 4 inches within 10 feet of traffic by placing drums, vertical panels, or barricades every 25 feet. The Engineer will not allow the use of cones in lieu of drums, vertical panels, or barricades for drop-offs greater than 4". Place Type III Barricades directly in front of the drop-off facing oncoming traffic in both directions of travel. Provide warning signs as shown on the Standard Drawings or as directed by the Engineer

Pedestrians & Bicycles - Protect pedestrian and bicycle traffic as directed by the Engineer.

## USE AND PLACEMENT OF CHANGEABLE MESSAGE SIGNS

The following policy is based upon current Changeable Message Signs (CMS) standards and practice from many sources, including the Federal Highway Administration (FHWA), other State Departments of Transportation, and Traffic Safety Associations. It is understood that each CMS installation or use requires individual consideration due to the specific location or purpose. However, there will be elements that are constant in nearly all applications. Accordingly, these recommended guidelines bring a level of uniformity, while still being open to regional experience and engineering judgment.

### Application

The primary purpose of CMS is to advise the driver of unexpected traffic and routing situations. Examples of applications where CMS can be effective include:

- Closures (road, lane, bridge, ramp, shoulder, interstate)
- Changes in alignment or surface conditions
- Significant delays, congestion
- Construction/maintenance activities (delays, future activities)
- Detours/alternative routes
- Special events with traffic and safety implications
- Crash/incidents
- Vehicle restrictions (width, height, weight, flammable)
- Advance notice of new traffic control devices
- Real-time traffic conditions (must be kept up to date)
- Weather /driving conditions, environmental conditions, Roadway Weather Information Systems
- Emergency Situations
- Referral to Highway Advisory Radio (if available)
- Messages as approved by the County Engineer's Office

### **CMS should not be used for:**

- Replacement of static signs (e.g. road work ahead), regulatory signage (e.g. speed limits), pavement markings, standard traffic control devices, conventional warning or guide signs.
- Replacement of lighted arrow board
- Advertising (Don't advertise the event unless clarifying "action" to be taken by driver – e.g. Speedway traffic next exit)
- Generic messages
- Test messages (portable signs only)
- Describe recurrent congestion (e.g. rush hour)
- Public service announcements (not traffic related)

## Messages

Basic principles that are important to providing proper messages and insuring the proper operation of a CMS are:

- Visible for at least ½ mile under ideal daytime and nighttime conditions
- Legible from all lanes a minimum of 650 feet
- Entire message readable twice while traveling at the posted speed
- No more than two message panels should be used (three panels may be used on roadways where vehicles are traveling less than 45 mph). A panel is the message that fits on the face of the sign without flipping or scrolling.
- Each panel should convey a single thought; short and concise
- Do not use two unrelated panels on a sign
- Do not use the sign for two unrelated messages
- Should not scroll text horizontally or vertically
- Should not contain both the words left and right
- Use standardized abbreviations and messages
- Should be accurate and timely
- Avoid filler/unnecessary words and periods (hazardous, a, an, the)
- Avoid use of speed limits
- Use words (not numbers) for dates

## Placement

Placement of the CMS is important to ensure that the sign is visible to the driver and provides ample time to take any necessary action. Some of the following principles may only be applicable to controlled access roadways. The basic principles of placement for a CMS are:

- When 2 signs are needed, place on same side of roadway and at least 1,000 feet apart
- Place behind semi-rigid/rigid protection (guardrail, barrier) or outside of the clear zone
- Place 1,000 feet in advance of work zone; at least one mile ahead of decision point
- Normally place on right side of roadway; but should be placed closest to the affected lane so that either side is acceptable
- Signs should not be dual mounted (one on each side of roadway facing same direction)
- Point trailer hitch downstream
- Secure to immovable object to prevent theft (if necessary)
- Do not place in sags or just beyond crest
- Check for reflection of sun to prevent the blinding of motorist
- Should be turned ~3 degrees outward from perpendicular to the edge of pavement
- Bottom of sign should be 7 feet above the elevation of edge of roadway
- Should be removed when not in use

### Standard Abbreviations

The following is a list of standard abbreviations to be used on CMS:

<u>Word</u>	<u>Abbrev</u>	<u>Example</u>
Access	ACCS	ACCIDENT AHEAD/ USE ACCS RD NEXT RIGHT
Alternate	ALT	ACCIDENT AHEAD/ USE ALT RTE NEXT RIGHT
Avenue	AVE	FIFTH AVE CLOSED/ DETOUR NEXT LEFT
Blocked	BLKD	FIFTH AVE BLKD/ MERGE LEFT
Boulevard	BLVD	MAIN BLVD CLOSED/ USE ALT RTE
Bridge	BRDG	SMITH BRDG CLOSED/ USE ALT RTE
Cardinal Directions	N, S, E, W	N I75 CLOSED/ DETOUR EXIT 30
Center	CNTR	CNTR LANE CLOSED/ MERGE LEFT
Commercial	COMM	OVRSZ COMM VEH/ USE I275
Condition	COND	ICY COND POSSIBLE
Congested	CONG	HVY CONG NEXT 3 MI
Construction	CONST	CONST WORK AHEAD/ EXPECT DELAYS
Downtown	DWNTN	DWNTN TRAF USE EX 40
Eastbound	E-BND	E-BND I64 CLOSED/ DETOUR EXIT 20
Emergency	EMER	EMER VEH AHEAD/ PREPARE TO STOP
Entrance, Enter	EX, EXT	DWNTN TRAF USE EX 40
Expressway	EXPWY	WTRSN EXPWY CLOSED/ DETOUR EXIT 10
Freeway	FRWY, FWY	GN SYNDR FWY CLOSED/ DETOUR EXIT 15
Hazardous Materials	HAZMAT	HAZMAT IN ROADWAY/ ALL TRAF EXIT 25
Highway	HWY	ACCIDENT ON AA HWY/ EXPECT DELAYS
Hour	HR	ACCIDENT ON AA HWY/ 2 HR DELAY
Information	INFO	TRAF INFO TUNE TO 1240 AM
Interstate	I	E-BND I64 CLOSED/ DETOUR EXIT 20
Lane	LN	LN CLOSED MERGE LEFT
Left	LFT	LANE CLOSED MERGE LFT
Local	LOC	LOC TRAF USE ALT RTE
Maintenance	MAINT	MAINT WRK ON BRDG/ SLOW
Major	MAJ	MAJ DELAYS I75/ USE ALT RTE
Mile	MI	ACCIDENT 3 MI AHEAD/ USE ALT RTE
Minor	MNR	ACCIDENT 3 MI MNR DELAY
Minutes	MIN	ACCIDENT 3 MI/ 30 MIN DELAY
Northbound	N-BND	N-BND I75 CLOSED/ DETOUR EXIT 50
Oversized	OVRSZ	OVRSZ COMM VEH/ USE I275 NEXT RIGHT
Parking	PKING	EVENT PKING NEXT RGT
Parkway	PKWY	CUM PKWAY TRAF/ DETOUR EXIT 60
Prepare	PREP	ACCIDENT 3 MI/ PREP TO STOP
Right	RGT	EVENT PKING NEXT RGT
Road	RD	HAZMAT IN RD/ ALL TRAF EXIT 25
Roadwork	RDWK	RDWK NEXT 4 MI/ POSSIBLE DELAYS
Route	RTE	MAJ DELAYS I75/ USE ALT RTE
Shoulder	SHLDR	SHLDR CLOSED NEXT 5 MI
Slippery	SLIP	SLIP COND POSSIBLE/ SLOW SPD
Southbound	S-BND	S-BND I75 CLOSED/ DETOUR EXIT 50
Speed	SPD	SLIP COND POSSIBLE/ SLOW SPD

**Standard Abbreviations** (cont)

<b><u>Word</u></b>	<b><u>Abbrev</u></b>	<b><u>Example</u></b>
Street	ST	MAIN ST CLOSED/ USE ALT RTE
Traffic	TRAF	CUM PKWAY TRAF/ DETOUR EXIT 60
Vehicle	VEH	OVRSZ COMM VEH/ USE I275 NEXT RIGHT
Westbound	W-BND	W-BND I64 CLOSED/ DETOUR EXIT 50
Work	WRK	CONST WRK 2MI/ POSSIBLE DELAYS

Certain abbreviations are prone to inviting confusion because another word is abbreviated or could be abbreviated in the same way. DO NO USE THESE ABBREVIATIONS:

<b><u>Abbrev</u></b>	<b><u>Intended Word</u></b>	<b><u>Word Erroneously Given</u></b>
ACC	Accident	Access (Road)
CLRS	Clears	Colors
DLY	Delay	Daily
FDR	Feeder	Federal
L	Left	Lane (merge)
LOC	Local	Location
LT	Light (traffic)	Left
PARK	Parking	Park
POLL	Pollution (index)	Poll
RED	Reduce	Red
STAD	Stadium	Standard
TEMP	Temporary	Temperature
WRNG	Warning	Wrong

**Typical Messages**

The following is a list of typical messages used on CMS. The list consists of the reason or problem that you want the driver to be aware of and the action that you want the driver to take.

<b><u>Reason/Problem</u></b>	<b><u>Action</u></b>
ACCIDENT	ALL TRAFFIC EXIT RT
ACCIDENT/XX MILES	AVOID DELAY USE XX
XX ROAD CLOSED	CONSIDER ALT ROUTE
XX EXIT CLOSED	DETOUR
BRIDGE CLOSED	DETOUR XX MILES
BRIDGE/(SLIPPERY, ICE, ETC.)	DO NOT PASS
CENTER/LANE/CLOSED	EXPECT DELAYS
DELAY(S), MAJOR/DELAYS	FOLLOW ALT ROUTE
DEBRIS AHEAD	KEEP LEFT
DENSE FOG	KEEP RIGHT
DISABLED/VEHICLE	MERGE XX MILES
EMER/VEHICLES/ONLY	MERGE LEFT
EVENT PARKING	MERGE RIGHT
EXIT XX CLOSED	ONE-WAY TRAFFIC
FLAGGER XX MILES	PASS TO LEFT
FOG XX MILES	PASS TO RIGHT

**Typical Messages** (cont)

**Reason/Problem**

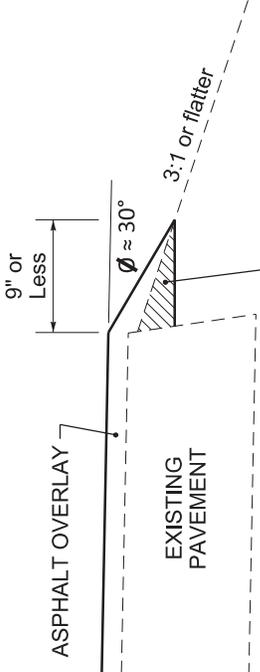
FREEWAY CLOSED  
FRESH OIL  
HAZMAT SPILL  
ICE  
INCIDENT AHEAD  
LANES (NARROW, SHIFT, MERGE, ETC.)  
LEFT LANE CLOSED  
LEFT LANE NARROWS  
LEFT 2 LANES CLOSED  
LEFT SHOULDER CLOSED  
LOOSE GRAVEL  
MEDIAN WORK XX MILES  
MOVING WORK ZONE, WORKERS IN ROADWAY  
NEXT EXIT CLOSED  
NO OVERSIZED LOADS  
NO PASSING  
NO SHOULDER  
ONE LANE BRIDGE  
PEOPLE CROSSING  
RAMP CLOSED  
RAMP (SLIPPERY, ICE, ETC.)  
RIGHT LANE CLOSED  
RIGHT LANE NARROWS  
RIGHT SHOULDER CLOSED  
ROAD CLOSED  
ROAD CLOSED XX MILES  
ROAD (SLIPPERY, ICE, ETC.)  
ROAD WORK  
ROAD WORK (OR CONSTRUCTION) (TONIGHT, TODAY, TOMORROW, DATE)  
ROAD WORK XX MILES  
SHOULDER (SLIPPERY, ICE, SOFT, BLOCKED, ETC.)  
NEW SIGNAL XX MILES  
SLOW 1 (OR 2) - WAY TRAFFIC  
SOFT SHOULDER  
STALLED VEHICLES AHEAD  
TRAFFIC BACKUP  
TRAFFIC SLOWS  
TRUCK CROSSING  
TRUCKS ENTERING  
TOW TRUCK AHEAD  
UNEVEN LANES  
WATER ON ROAD  
WET PAINT  
WORK ZONE XX MILES  
WORKERS AHEAD

**Action**

PREPARE TO STOP  
REDUCE SPEED  
SLOW  
SLOW DOWN  
STAY IN LANE  
STOP AHEAD  
STOP XX MILES  
TUNE RADIO 1610 AM  
USE NN ROAD  
USE CENTER LANE  
USE DETOUR ROUTE  
USE LEFT TURN LANE  
USE NEXT EXIT  
USE RIGHT LANE  
WATCH FOR FLAGGER

DURABLE PAVEMENT EDGE DETAIL

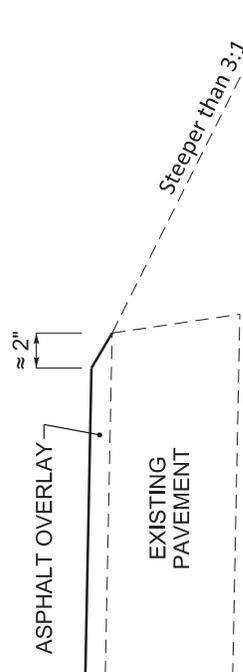
(Resurfacing adjacent to fill slope or ditch foreslope that is 3:1 or less)



PREPARE SHOULDER ACCORDING TO STANDARD SPECIFICATIONS

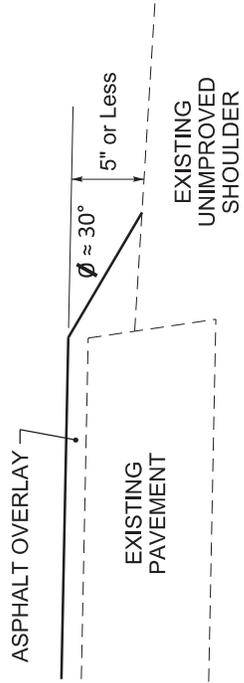
DURABLE PAVEMENT EDGE DETAIL

(Resurfacing adjacent to fill slope or ditch foreslope that is steeper than 3:1)



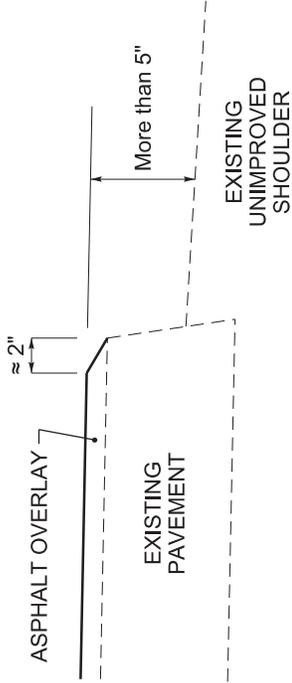
DURABLE PAVEMENT EDGE DETAIL

(Resurfacing adjacent to low shoulder with dropoff of 5 inches or less)



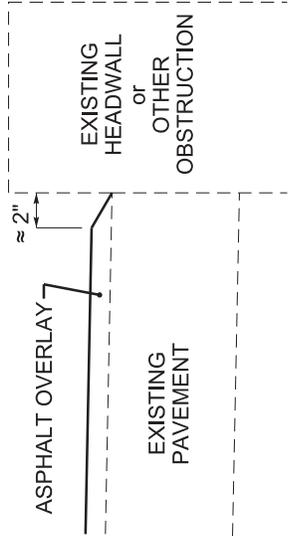
DURABLE PAVEMENT EDGE DETAIL

(Resurfacing adjacent to low shoulder with dropoff of more than 5 inches)



DURABLE PAVEMENT EDGE DETAIL

(Resurfacing adjacent to an obstruction, such as an existing headwall)



NOTES

1. DETAILS DO NOT APPLY TO OVERLAYS LESS THAN 1 INCH THICK.
2. THE DURABLE PAVEMENT EDGE DEVICE MAY BE DISENGAGED AT DRIVEWAYS, SIDE STREETS, HIGH SHOULDERS, AND OTHER LOCATIONS NOT FEASIBLE TO CONSTRUCT, AS APPROVED BY THE ENGINEER.

DRAWING NOT TO SCALE

DURABLE PAVEMENT EDGE DETAILS

	<b>KENTUCKY TRANSPORTATION CABINET</b> Department of Highways <b>DIVISION OF RIGHT OF WAY &amp; UTILITIES</b>	TC 62-226 Rev. 01/2016 Page 1 of 1
<b>RIGHT OF WAY CERTIFICATION</b>		

<input checked="" type="checkbox"/> Original	<input type="checkbox"/> Re-Certification	<b>RIGHT OF WAY CERTIFICATION</b>	
<b>ITEM #</b>	<b>COUNTY</b>	<b>PROJECT # (STATE)</b>	<b>PROJECT # (FEDERAL)</b>
09-9008.00	Rowan	12FO FD52 103 9359901D	HSIP 5211118

**PROJECT DESCRIPTION**

Perform low cost safety improvements on US 60 From MP 10.834 to MP 17.112

**No Additional Right of Way Required**

Construction will be within the limits of the existing right of way. The right of way was acquired in accordance to FHWA regulations under the Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970, as amended. No additional right of way or relocation assistance were required for this project.

**Condition # 1 (Additional Right of Way Required and Cleared)**

All necessary right of way, including control of access rights when applicable, have been acquired including legal and physical possession. Trial or appeal of cases may be pending in court but legal possession has been obtained. There may be some improvements remaining on the right-of-way, but all occupants have vacated the lands and improvements, and KYTC has physical possession and the rights to remove, salvage, or demolish all improvements and enter on all land. Just Compensation has been paid or deposited with the court. All relocations have been relocated to decent, safe, and sanitary housing or that KYTC has made available to displaced persons adequate replacement housing in accordance with the provisions of the current FHWA directive.

**Condition # 2 (Additional Right of Way Required with Exception)**

The right of way has not been fully acquired, the right to occupy and to use all rights-of-way required for the proper execution of the project has been acquired. Some parcels may be pending in court and on other parcels full legal possession has not been obtained, but right of entry has been obtained, the occupants of all lands and improvements have vacated, and KYTC has physical possession and right to remove, salvage, or demolish all improvements. Just Compensation has been paid or deposited with the court for most parcels. Just Compensation for all pending parcels will be paid or deposited with the court prior to AWARD of construction contract

**Condition # 3 (Additional Right of Way Required with Exception)**

The acquisition or right of occupancy and use of a few remaining parcels are not complete and/or some parcels still have occupants. All remaining occupants have had replacement housing made available to them in accordance with 49 CFR 24.204. KYTC is hereby requesting authorization to advertise this project for bids and to proceed with bid letting even though the necessary right of way will not be fully acquired, and/or some occupants will not be relocated, and/or the just compensation will not be paid or deposited with the court for some parcels until after bid letting. KYTC will fully meet all the requirements outlined in 23 CFR 635.309(c)(3) and 49 CFR 24.102(j) and will expedite completion of all acquisitions, relocations, and full payments after bid letting and prior to AWARD of the construction contract or force account construction.

Total Number of Parcels on Project	EXCEPTION (S) Parcel #	ANTICIPATED DATE OF POSSESSION WITH EXPLANATION
<b>Number of Parcels That Have Been Acquired</b>		
Signed Deed		
Condemnation		
Signed ROE		

**Notes/ Comments (Use Additional Sheet if necessary)**

<b>LPA RW Project Manager</b>		<b>Right of Way Supervisor</b>	
Printed Name		Printed Name	James R. Mason
Signature		Signature	 Digitally signed by James R. Mason Date: 2019.09.26 08:44:34 -04'00'
Date		Date	
<b>Right of Way Director</b>		<b>FHWA</b>	
Printed Name		Printed Name	
Signature	 Digitally signed by DM Loy Date: 2019.09.26 09:33:15 -04'00'	Signature	No Signature Required as per FHWA-KYTC Current Stewardship Agreement
Date		Date	

## UTILITIES AND RAIL CERTIFICATION NOTE

**Rowan County - HSIP 5211 (118)**  
**FD52 103 0060 010-018**  
**Perform Low Cost Safety Improvements on US 60 from MP**  
**10.834-17.112**  
**Item No. 9-9008.00**

### GENERAL PROJECT NOTE ON UTILITY PROTECTION

*Utility coordination efforts determined that utility relocation work is required to complete the project. Any work pertaining to these utility facilities is defined in the bid package and is to be carried out as instructed by the Kentucky Transportation Cabinet. The contractor will be responsible for any coordination or adjustments that are discussed or quantified in the proposal.*

### NOTE: DO NOT DISTURB THE FOLLOWING UTILITIES LOCATED WITHIN THE PROJECT DISTURB LIMITS

- **Water Mains**  
A 6" Asbestos Water Main is located on the north side of US 60 from the beginning of the project to Sta. 663+20, then crosses to the south side of US 60 where it ends at Sta. 700+00. An 8" PVC water main is located on the south side of US 60 from the beginning of the project up to Sta. 606+50 where it ties into the pump station on the north side of the road. A 10" PVC water main crosses US 60 at Sta. 609+00 coming from the water pump station and runs along the south side up to Sta. 704+50 where it crosses to the north side of US 60 and runs to Sta. 750+00. An 8" PVC water main begins on the south side of US 60 at Sta. 700+00 and crosses US 60 to the north side just before Sta. 746+00, then crosses back to the south side at Sta. 788+20 before crossing back to the north side at Sta. 837+50 and runs to the project end. Specific relocations to the 6" Asbestos Water Main are detailed below.
- **Electric Poles**  
Overhead electric/telephone is located on both north and south sides throughout the project limits. Specific pole relocations (telephone) are detailed below.

**\*The Contractor is fully responsible for protection of all utilities listed above\***

### THE FOLLOWING COMPANIES ARE RELOCATING/ADJUSTING THEIR UTILITIES WITHIN THE PROJECT LIMITS AND WILL BE COMPLETE PRIOR TO CONSTRUCTION

N/A

### THE FOLLOWING COMPANIES HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE COMPANY OR THE COMPANY'S SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT

The Department will consider submission of a bid as the Contractor's agreement to not make any claims for additional compensation due to delays or other conditions created by the operations of LG&E Kentucky Utilities. Working days will not be charged for those days on which work on LG&E Kentucky Utilities facilities is delayed, as provided in the current edition of the KY Standard Specifications for Road and Bridge Construction. Should a

## UTILITIES AND RAIL CERTIFICATION NOTE

**Rowan County - HSIP 5211 (118)**  
**FD52 103 0060 010-018**  
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**Item No. 9-9008.00**

difference of opinion arise as to the rights of the Contractor and others working within the limits of, or adjacent to the project, the KYTC Resident Engineer will decide as to the respective rights of the various parties involved in order to assure the completion of the Department's work in general harmony and in a satisfactory manner, and his decision shall be final and binding upon the Contractor.

**THE FOLLOWING COMPANIES HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE ROAD CONTRACTOR AS INCLUDED IN THIS CONTRACT**

Rowan Water 6" Asbestos Water Main relocations:

- Lt. Sta. 581+40 to Sta. 582+00-W MAIN POINT RELOCATE
- Lt. Sta. 588+42 to Sta. 590+66-W MAIN POINT RELOCATE, W SERVICE SHORT SIDE and W PIPE 6"
- Lt. Approximate Sta. 593+50-W VALVE
- Lt. Sta. 610+33 to Sta. 610+93-W MAIN POINT RELOCATE and W SERVICE SHORT SIDE
- Lt. Approximate Sta. 614+50-W PIPE 6", W SERVICE SHORT SIDE and W VALVE
- Lt. Sta. 615+49 to Sta. 615+79-W MAIN POINT RELOCATE
- Lt. Sta. 623+69 to Sta. 624+29-W MAIN POINT RELOCATE and W PIPE 6"
- Lt. Sta. 628+92 to Sta. 629+52-W MAIN POINT RELOCATE
- Lt. Approximate Sta. 631+00-W SERVICE SHORT SIDE and W VALVE

All work on Rowan Water facilities will follow their specifications as provided in the proposal documentation. All water valves and services shall be field located and approved by the engineer. All water services will be 1" CTS poly pipe.

**THE FOLLOWING RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED**

- No Rail Involved**       **Minimal Rail Involved (See Below)**       **Rail Involved (See Below)**

## UTILITIES AND RAIL CERTIFICATION NOTE

**Rowan County - HSIP 5211 (118)**  
**FD52 103 0060 010-018**  
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### **UNDERGROUND FACILITY DAMAGE PROTECTION – BEFORE YOU DIG**

The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. The contractor is instructed to contact KY 811 for the location of existing underground utilities. Contact shall be made a minimum of two (2) and no more than ten (10) business days prior to excavation.

The contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY 811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom are to be contacted through their individual Protection Notification Center. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area. Non-compliance with these directives can result in the enforcement of penalties.

### **SPECIAL CAUTION NOTE – PROTECTION OF UTILITIES**

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his activities. The contractor will coordinate his activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs.

The utility facilities as noted in the previous section(s) have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor's responsibility to verify all utilities and their respective locations before excavating.

***Please Note: The information presented in this Utility Note is informational in nature and the information contained herein is not guaranteed.***

## UTILITIES AND RAIL CERTIFICATION NOTE

**Rowan County - HSIP 5211 (118)**  
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### AREA UTILITIES CONTACT LIST

<u>Utility Company/Agency</u>	<u>Contact Name</u>	<u>Contact Information</u>
1. Rowan County Water	Ronnie Crisp	(606) 784-9818 1765 Christy Creek Morehead, KY 40351
2. LG&E Kentucky Utilities	Chris Mays Matt Raymer	(800) 981-0600 215 Wall Street Maysville, KY 41056

***NOTE: The Utilities Contact List is provided as informational only, and may not be a complete list of all Utility Companies with facilities in the project area.***

KYTC BMP Plan for Project CID 20-4117



**Kentucky Transportation Cabinet**

**Highway District 9**

**And**

\_\_\_\_\_ **(2), Construction**

**Kentucky Pollutant Discharge Elimination System  
Permit KYR10  
Best Management Practices (BMP) plan**

**Groundwater protection plan**

**For Highway Construction Activities**

**For**

**Highway Safety Improvement Project on US 60 in  
Rowan County**

**Project: CID 20-4117**

## KYTC BMP Plan for Project CID 20-4117

### Project information

Note – (1) = Design (2) = Construction (3) = Contractor

1. Owner – Kentucky Transportation Cabinet, District 9
2. Resident Engineer: (2)
3. Contractor name: (2)  
Address: (2)  
  
Phone number: (2)  
Contact: (2)  
Contractors agent responsible for compliance with the KPDES permit requirements (3):
4. Project Control Number: (2)
5. Route (Address): US 60
6. Latitude/Longitude (project mid-point): 38° 14' 20", -83° 21' 15"
7. County (project mid-point): Rowan
8. Project start date (date work will begin): (2)
9. Projected completion date: (2)

## KYTC BMP Plan for Project CID 20-4117

### A. Site description:

1. Nature of Construction Activity (from letting project description): Asphalt Pavement, Drainage Improvements, Roadway Rehab
2. Order of major soil disturbing activities: (2) and (3)
3. This project does not involve significant cut and fill.
4. Estimate of total project area (acres): 45.6
5. Estimate of area to be disturbed (acres): 11.9
6. Post construction runoff coefficient will be included in the project drainage folder. Persons needing information pertaining to the runoff coefficient will contact the resident engineer to request this information.
7. Data describing existing soil condition: (1) & (2)
8. Data describing existing discharge water quality (if any): (1) & (2)
9. Receiving water name: Triplett Creek & Hays Branch
10. TMDLs and Pollutants of Concern in Receiving Waters: No TDML's were involved on this project.
11. Site map – Project layout sheet plus the erosion control sheets in the project plans that depict Disturbed Drainage Areas (DDAs) and related information. These sheets depict the existing project conditions with areas delineated by DDA (drainage area bounded by watershed breaks and right of way limits), the storm water discharge locations (either as a point discharge or as overland flow) and the areas that drain to each discharge point. These plans define the limits of areas to be disturbed and the location of control measures. Controls will be either site specific as designated by the designer or will be annotated by the contractor and resident engineer before disturbance commences. The project layout sheet shows the surface waters and wetlands.
12. Potential sources of pollutants:

The primary source of pollutants is solids that are mobilized during storm events. Other sources of pollutants include oil/fuel/grease from servicing and operating construction equipment, concrete washout water, sanitary wastes and trash/debris. (3)

## KYTC BMP Plan for Project CID 20-4117

### **B. Sediment and Erosion Control Measures:**

1. Plans for highway construction projects will include erosion control sheets that depict Disturbed Drainage Areas (DDAs) and related information. These plan sheets will show the existing project conditions with areas delineated by DDA within the right of way limits, the discharge points and the areas that drain to each discharge point. Project managers and designers will analyze the DDAs and identify Best Management Practices (BMPs) that are site specific. The balance of the BMPs for the project will be listed in the bid documents for selection and use by the contractor on the project with approval by the resident engineer.

Projects that do not have DDAs annotated on the erosion control sheets will employ the same concepts for development and managing BMP plans.

2. Following award of the contract, the contractor and resident engineer will annotate the erosion control sheets showing location and type of BMPs for each of the DDAs that will be disturbed at the outset of the project. This annotation will be accompanied by an order of work that reflects the order or sequence of major soil moving activities. The remaining DDAs are to be designated as "Do Not Disturb" until the contractor and resident engineer prepare the plan for BMPs to be employed. The initial BMP's shall be for the first phase (generally Clearing and Grubbing) and shall be modified as needed as the project changes phases. The BMP Plan will be modified to reflect disturbance in additional DDA's as the work progresses. All DDA's will have adequate BMP's in place before being disturbed.
3. As DDAs are prepared for construction, the following will be addressed for the project as a whole or for each DDA as appropriate:
  - Construction Access – This is the first land-disturbing activity. As soon as construction begins, bare areas will be stabilized with gravel and temporary mulch and/or vegetation.
  - At the beginning of the project, all DDAs for the project will be inspected for areas that are a source of storm water pollutants. Areas that are a source of pollutants will receive appropriate cover or BMPs to arrest the introduction of pollutants into storm water. Areas that have not been opened by the contractor will be inspected periodically (once per month) to determine if there is a need to employ BMPs to keep pollutants from entering storm water.
  - Clearing and Grubbing – The following BMP's will be considered and used where appropriate.

## KYTC BMP Plan for Project CID 20-4117

- Leaving areas undisturbed when possible.
- Silt basins to provide silt volume for large areas.
- Silt Traps Type A for small areas.
- Silt Traps Type C in front of existing pipes and drop inlets which are to be saved
- Diversion ditches to catch sheet runoff and carry it to basins or traps or to divert it around areas to be disturbed.
- Brush and/or other barriers to slow and/or divert runoff.
- Silt fences to catch sheet runoff on short slopes. For longer slopes, multiple rows of silt fence may be considered.
- Temporary Mulch for areas which are not feasible for the fore mentioned types of protections.
- Non-standard or innovative methods.
- Cut & Fill and placement of drainage structures - The BMP Plan will be modified to show additional BMP's such as:
  - Silt Traps Type B in ditches and/or drainways as they are completed
  - Silt Traps Type C in front of pipes and drop inlets after they are placed
  - Channel Lining
  - Erosion Control Blanket
  - Temporary mulch and/or seeding for areas where construction activities will be ceased for 21 days or more.
  - Non-standard or innovative methods
- Profile and X-Section in place – The BMP Plan will be modified to show elimination of BMP's which had to be removed and the addition of new BMP's as the roadway was shaped. Probably changes include:
  - Silt Trap Type A, Brush and/or other barriers, Temporary Mulch, and any other BMP which had to be removed for final grading to take place.
  - Additional Silt Traps Type B and Type C to be placed as final drainage patterns are put in place.
  - Additional Channel Lining and/or Erosion Control Blanket.
  - Temporary Mulch for areas where Permanent Seeding and Protection cannot be done within 21 days.
  - Special BMP's such as Karst Policy
- Finish Work (Paving, Seeding, Protect, etc.) – A final BMP Plan will result from modifications during this phase of construction. Probable changes include:
  - Removal of Silt Traps Type B from ditches and drainways if they are protected with other BMP's which are sufficient to control erosion, i.e. Erosion Control Blanket or Permanent Seeding and Protection on moderate grades.
  - Permanent Seeding and Protection

## KYTC BMP Plan for Project CID 20-4117

- Placing Sod
- Planting trees and/or shrubs where they are included in the project
- BMP's including Storm Water Management Devices such as velocity dissipation devices and Karst policy BMP's to be installed during construction to control the pollutants in storm water discharges that will occur after construction has been completed are: This project does not include storm water BMPs or flow controls for post-construction use.

### **C. Other Control Measures**

1. No solid materials, including building materials, shall be discharged to waters of the commonwealth, except as authorized by a Section 404 permit.
2. Waste Materials

All waste materials that may leach pollutants (paint and paint containers, caulk tubes, oil/grease containers, liquids of any kind, soluble materials, etc.) will be collected and stored in appropriate covered waste containers. Waste containers shall be removed from the project site on a sufficiently frequent basis as to not allow wastes to become a source of pollution. All personnel will be instructed regarding the correct procedure for waste disposal. Wastes will be disposed in accordance with appropriate regulations. Notices stating these practices will be posted in the office.

3. Hazardous Waste

All hazardous waste materials will be managed and disposed of in the manner specified by local or state regulation. The contractor shall notify the Section Engineer if there any hazardous wastes being generated at the project site and how these wastes are being managed. Site personnel will be instructed with regard to proper storage and handling of hazardous wastes when required. The Transportation Cabinet will file for generator, registration when appropriate, with the Division of Waste Management and advise the contractor regarding waste management requirements.

4. Spill Prevention

The following material management practices will be used to reduce the risk of spills or other exposure of materials and substances to the weather and/or runoff.

- **Good Housekeeping:**

## KYTC BMP Plan for Project CID 20-4117

The following good housekeeping practices will be followed onsite during the construction project.

- An effort will be made to store only enough product required to do the job
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure
- Products will be kept in their original containers with the original manufacturer's label
- Substances will not be mixed with one another unless recommended by the manufacturer
- Whenever possible, all of the product will be used up before disposing of the container
- Manufacturers' recommendations for proper use and disposal will be followed
- The site contractor will inspect daily to ensure proper use and disposal of materials onsite

### ➤ **Hazardous Products:**

These practices will be used to reduce the risks associated with any and all hazardous materials.

- Products will be kept in original containers unless they are not resealable
- Original labels and material safety data sheets (MSDS) will be reviewed and retained
- Contractor will follow procedures recommended by the manufacturer when handling hazardous materials
- If surplus product must be disposed of, manufacturers' or state/local recommended methods for proper disposal will be followed

**The following product-specific practices will be followed onsite:**

### ➤ **Petroleum Products:**

Vehicles and equipment that are fueled and maintained on site will be monitored for leaks, and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products onsite will be stored in tightly sealed containers, which are clearly labeled and will be protected from exposure to weather.

The contractor shall prepare an Oil Pollution Spill Prevention Control and Countermeasure plan when the project that involves the storage of petroleum products in 55 gallon or larger containers with a total combined storage capacity of 1,320 gallons. This is a requirement of 40 CFR 112.

## KYTC BMP Plan for Project CID 20-4117

This project (will / will not) (3) have over 1,320 gallons of petroleum products with a total capacity, sum of all containers 55 gallon capacity and larger.

### ➤ **Fertilizers:**

Fertilizers will be applied at rates prescribed by the contract, standard specifications or as directed by the resident engineer. Once applied, fertilizer will be covered with mulch or blankets or worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

### ➤ **Paints:**

All containers will be tightly sealed and stored indoors or under roof when not being used. Excess paint or paint wash water will not be discharged to the drainage or storm sewer system but will be properly disposed of according to manufacturers' instructions or state and local regulations.

### ➤ **Concrete Truck Washout:**

Concrete truck mixers and chutes will not be washed on pavement, near storm drain inlets, or within 75 feet of any ditch, stream, wetland, lake, or sinkhole. Where possible, excess concrete and wash water will be discharged to areas prepared for pouring new concrete, flat areas to be paved that are away from ditches or drainage system features, or other locations that will not drain off site. Where this approach is not possible, a shallow earthen wash basin will be excavated away from ditches to receive the wash water

### ➤ **Spill Control Practices**

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

- Manufacturers' recommended methods for spill cleanup will be clearly posted. All personnel will be made aware of procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area. Equipment and materials will include as appropriate, brooms, dust pans, mops, rags, gloves, oil absorbents, sand, sawdust, and plastic and metal trash containers.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

## KYTC BMP Plan for Project CID 20-4117

- Spills of toxic or hazardous material will be reported to the appropriate state/local agency as required by KRS 224 and applicable federal law.
- The spill prevention plan will be adjusted as needed to prevent spills from reoccurring and improve spill response and cleanup.
- Spills of products will be cleaned up promptly. Wastes from spill clean up will be disposed in accordance with appropriate regulations.

### **D. Other State and Local Plans**

This BMP plan shall include any requirements specified in sediment and erosion control plans, storm water management plans or permits that have been approved by other state or local officials. Upon submittal of the NOI, other requirements for surface water protection are incorporated by reference into and are enforceable under this permit (even if they are not specifically included in this BMP plan). This provision does not apply to master or comprehensive plans, non-enforceable guidelines or technical guidance documents that are not identified in a specific plan or permit issued for the construction site by state or local officials. There are no other local (MS4) requirements that are expected to be necessary for this project.

### **E. Maintenance**

1. The BMP plan shall include a clear description of the maintenance procedures necessary to keep the control measures in good and effective operating condition.
- Maintenance of BMPs during construction shall be a result of weekly and post rain event inspections with action being taken by the contractor to correct deficiencies.
  - Post Construction maintenance will be a function of normal highway maintenance operations. Following final project acceptance by the cabinet, district highway crews will be responsible for identification and correction of deficiencies regarding ground cover and cleaning of storm water BMPs. The project manager shall identify any BMPs that will be for the purpose of post construction storm water management with specific guidance for any non-routine maintenance. There are no such BMP's for this project.

### **F. Inspections**

Inspection and maintenance practices that will be used to maintain erosion and sediment controls:

## KYTC BMP Plan for Project CID 20-4117

- All erosion prevention and sediment control measures will be inspected at least once each week and following any rain of one-half inch or more.
- Inspections will be conducted by individuals that have successfully completed the KEPSC-RI course as required by Section 213.02.02 of the Standard Specifications for Road and Bridge Construction, current edition.
- Inspection reports will be written, signed, dated, and kept on file.
- Areas at final grade will be seeded and mulched within 14 days.
- Areas that are not at final grade where construction has ceased for a period of 21 days or longer and soil stock piles shall receive temporary mulch no later than 14 days from the last construction activity in that area.
- All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of being reported.
- Built-up sediment will be removed from behind the silt fence before it has reached halfway up the height of the fence.
- Silt fences will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts.
- Sediment basins will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 50 percent of the design capacity and at the end of the job.
- Diversion dikes and berms will be inspected and any breaches promptly repaired. Areas that are eroding or scouring will be repaired and re-seeded / mulched as needed.
- Temporary and permanent seeding and mulching will be inspected for bare spots, washouts, and healthy growth. Bare or eroded areas will be repaired as needed.
- All material storage and equipment servicing areas that involve the management of bulk liquids, fuels, and bulk solids will be inspected weekly for conditions that represent a release or possible release of pollutants to the environment.

## **G. Non – Storm Water discharges**

It is expected that non-storm water discharges may occur from the site during the construction period. Examples of non-storm water discharges include:

- Water from water line flushings.
- Water from cleaning concrete trucks and equipment.
- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).

## KYTC BMP Plan for Project CID 20-4117

- Uncontaminated groundwater and rain water (from dewatering during excavation).

All non-storm water discharges will be directed to the sediment basin or to a filter fence enclosure in a flat vegetated infiltration area or be filtered via another approved commercial product.

### H. Groundwater Protection Plan (3)

This plan serves as the groundwater protection plan as required by 401 KAR 5:037.

- Contractors statement: (3)

The following activities, as enumerated by 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan, will or may be conducted as part of this construction project:

\_\_\_\_\_ 2. (e) land treatment or land disposal of a pollutant;

\_\_\_\_\_ 2. (f) Storing, ..., or related handling of hazardous waste, solid waste or special waste, ..., in tanks, drums, or other containers, or in piles, (This does not include wastes managed in a container placed for collection and removal of municipal solid waste for disposal off site);

\_\_\_\_\_ 2. (g) .... Handling of materials in bulk quantities (equal or greater than 55 gallons or 100 pounds net dry weight transported held in an individual container) that, if released to the environment, would be a pollutant;

\_\_\_\_\_ 2. (j) Storing or related handling of road oils, dust suppressants, ....., at a central location;

\_\_\_\_\_ 2. (k) Application or related handling of road oils, dust suppressants or deicing materials, (does not include use of chloride-based deicing materials applied to roads or parking lots);

\_\_\_\_\_ 2. (m) Installation, construction, operation, or abandonment of wells, bore holes, or core holes, (this does not include bore holes for the purpose of explosive demolition);

Or, check the following only if there are no qualifying activities

\_\_\_\_\_ There are no activities for this project as listed in 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan.

## KYTC BMP Plan for Project CID 20-4117

The contractor is responsible for the preparation of a plan that addresses the

401 KAR 5:037 Section 3. (3) Elements of site specific groundwater protection plan:

- (a) General information about this project is covered in the Project information;
- (b) Activities that require a groundwater protection plan have been identified above;
- (c) Practices that will protect groundwater from pollution are addressed in section C. Other control measures.
- (d) Implementation schedule – all practices required to prevent pollution of groundwater are to be in place prior to conducting the activity;
- (e) Training is required as a part of the ground water protection plan. All employees of the contractor, sub-contractor and resident engineer personnel will be trained to understand the nature and requirements of this plan as they pertain to their job function(s). Training will be accomplished within one week of employment and annually thereafter. A record of training will be maintained by the contractor with a copy provide to the resident engineer.
- (f) Areas of the project and groundwater plan activities will be inspected as part of the weekly sediment and erosion control inspections
- (g) Certification (see signature page.)



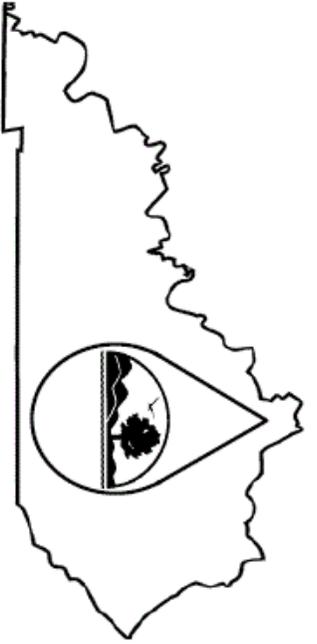


**CID 20-4117**  
**Rowan County**  
**Highway Safety Improvement Project along US-60**  
**from MP 10.834 – 17.112**  
**Item No.: 9-9008**

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An electronic Notice of Intent (eNOI) for obtaining coverage under the Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Stormwater Discharges Associated with Construction Activities (KYR10) has been drafted, a copy of which is attached. Upon award, the Contractor will be identified in Section III of the form as the “Building Contractor” and the eNOI will be submitted for approval to the Kentucky Division of Water. The Contractor shall be responsible for advancing the work within this contract in a manner that is compliant with all applicable and appropriate KYTC specifications for sediment and erosion control, as well as meeting the requirements of the KYR10 permit and the KDOW.

**eForm Submittal ID: 175734**



## KENTUCKY POLLUTION DISCHARGE ELIMINATION SYSTEM (KPDES)

**Notice of Intent (NOI) for coverage of Storm Water Discharge  
Associated with Construction Activities Under the KPDES Storm  
Water General Permit KYR100000**

**Click here for Instructions  
(Controls/KPDES\_FormKYR10\_Instructions.htm)**

Click here to obtain information and a copy of the KPDES General Permit:  
(<http://dep.ky.gov/formslibrary/Documents/KYR10PermitPage.pdf>)

(\*) indicates a required field; (✓) indicates a field may be required based on user input or is an optionally required field

Reason for Submittal:(*) Application for New Permit Coverage ▼	Agency Interest ID: Agency Interest ID	Permit Number:(✓) KPDES Permit Number	
If change to existing permit coverage is requested, describe the changes for which modification of coverage is being sought:(✓)  			
<b>ELIGIBILITY:</b> Stormwater discharges associated with construction activities disturbing individually one (1) acre or more, including, in the case of a common plan of development, contiguous construction activities that cumulatively equal one (1) acre or more of disturbance.			
<b>EXCLUSIONS:</b> The following are excluded from coverage under this general permit: 1) Are conducted at or on properties that have obtained an individual KPDES permit for the discharge of other wastewaters which requires the development and implementation of a Best Management Practices (BMP) plan; 2) Any operation that the DOW determines an individual permit would better address the discharges from that operation; 3) Any project that discharges to an Impaired Water listed in the most recent Integrated Report, §305(b) as impaired for sediment and for which an approved TMDL has been developed.			
<b>SECTION I -- FACILITY OPERATOR INFORMATION (PERMITTEE)</b>			
Company Name:(✓) KYTC District 9	First Name:(✓) Steve	M.I.: MI	Last Name:(✓) Gunnell
Mailing Address:(*) 822 Elizaville Ave.	City:(*) Flemingsburg	State:(*) Kentucky	Zip:(*) 41041

1/6/2020

Kentucky EEC eForms

eMail Address:(\*)  
Steve.Gunnell@ky.gov

Business Phone:(\*)  
6068452551

Alternate Phone:  
Phone

SECTION II -- GENERAL SITE LOCATION INFORMATION

Project Name:(\*)

Status of Owner/Operator(\*)

SIC Code(\*)

KYTC Project: CID 20-4117

State Government

1611 Highway and Street Constr

Company Name:(\)

First Name:(\)

M.I.:

Last Name:(\)

KYTC Department of Highways District 9

Steve

MI

Gunnell

Site Physical Address:(\*)

US-60

City:(\*)

State:(\*)

Zip:(\*)

Morehead

Kentucky

40351

County:(\*)

Latitude(decimal degrees)(\*)DMS to DD Converter  
(https://www.fcc.gov/media/radio/dms-decimal)

Longitude(decimal degrees)(\*)

Rowan

38.238951

-83.354259

SECTION III -- SPECIFIC SITE ACTIVITY INFORMATION

Project Description:(\*)

Superelevation Improvements

a. For single projects provide the following information

Total Number of Acres in Project:(\)

Total Number of Acres Disturbed:(\)

45.6

11.9

Anticipated Start Date:(\)

Anticipated Completion Date:(\)

b. For common plans of development provide the following information

Total Number of Acres in Project:(\)

Total Number of Acres Disturbed:(\)

# Acre(s)

# Acre(s)

Number of individual lots in development, if applicable:(\)

Number of lots in development:(\)

# lot(s)

Total acreage of lots intended to be developed:(√)

Project Acres

Number of acres intended to be disturbed at any one time:(√)

Disturbed Acres

Anticipated Start Date:(√)

Anticipated Completion Date:(√)

List Building Contractor(s) at the time of Application:(\*)

+ Company Name	<input type="text"/>
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**SECTION IV -- IF THE PERMITTED SITE DISCHARGES TO A WATER BODY THE FOLLOWING INFORMATION IS REQUIRED** 

Discharge Point(s):

Unnamed Tributary?	Latitude	Longitude	Receiving Water Name	Delete
1 No	38.253239	-83.337794	Hays Branch	Delete
2 No	38.253903	-83.337401	Hays Branch	Delete
3 No	38.255398	-83.336014	Hays Branch	Delete
4 No	38.257228	-83.333767	Hays Branch	Delete
5 Yes	38.257668	-83.333547	Hays Branch	Delete
6 No	38.260292	-83.332772	Hays Branch	Delete
7 No	38.262956	-83.333148	Hays Branch	Delete
8 Yes	38.264370	-83.333244	Hays Branch	Delete
9 No	38.270285	-83.325709	Hays Branch	Delete
10 No	38.271356	-83.323055	Hays Branch	Delete

**SECTION V -- IF THE PERMITTED SITE DISCHARGES TO A MS4 THE FOLLOWING INFORMATION IS REQUIRED** 

Name of MS4:

Date of application/notification to the MS4 for construction site permit coverage:

Date

Discharge Point(s):(\*)

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**SECTION VI -- WILL THE PROJECT REQUIRE CONSTRUCTION ACTIVITIES IN A WATER BODY OR THE RIPARIAN ZONE?**

Will the project require construction activities in a water body or the riparian zone?:(*)	Yes ▼
If Yes, describe scope of activity: (✓)	describe scope of activity
Is a Clean Water Act 404 permit required?:(*)	Yes ▼
Is a Clean Water Act 401 Water Quality Certification required?:(*)	Yes ▼

**SECTION VII -- NOI PREPARER INFORMATION**

First Name: (*) First Name	M.I.: MI	Last Name: (*) Last Name	Company Name: (*) Company Name
Mailing Address: (*) Mailing Address	City: (*) City	State: (*) ▼	Zip: (*) Zip
eMail Address: (*) eMail Address	Business Phone: (*) Phone	Alternate Phone: Phone	

**SECTION VIII -- ATTACHMENTS**

Facility Location Map: (*)	Upload file
Supplemental Information:	Upload file

**SECTION IX -- CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly

1/6/2020

Kentucky EEC eForms

responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: (\*)

Title: (\*)

First Name: (\*)

M.I.:

Last Name: (\*)

eMail Address: (\*)

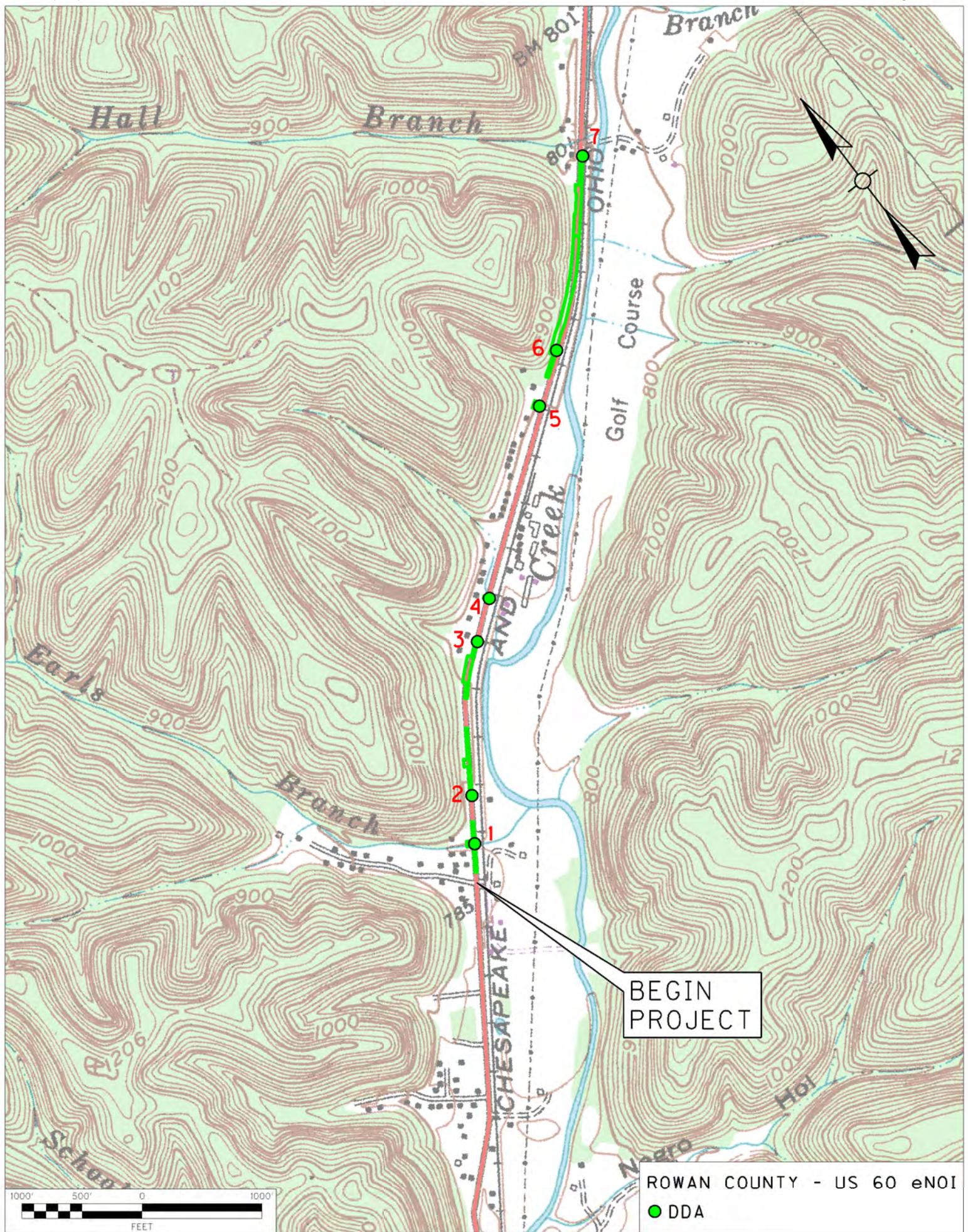
Business Phone: (\*)

Alternate Phone:

Signature Date: (\*)

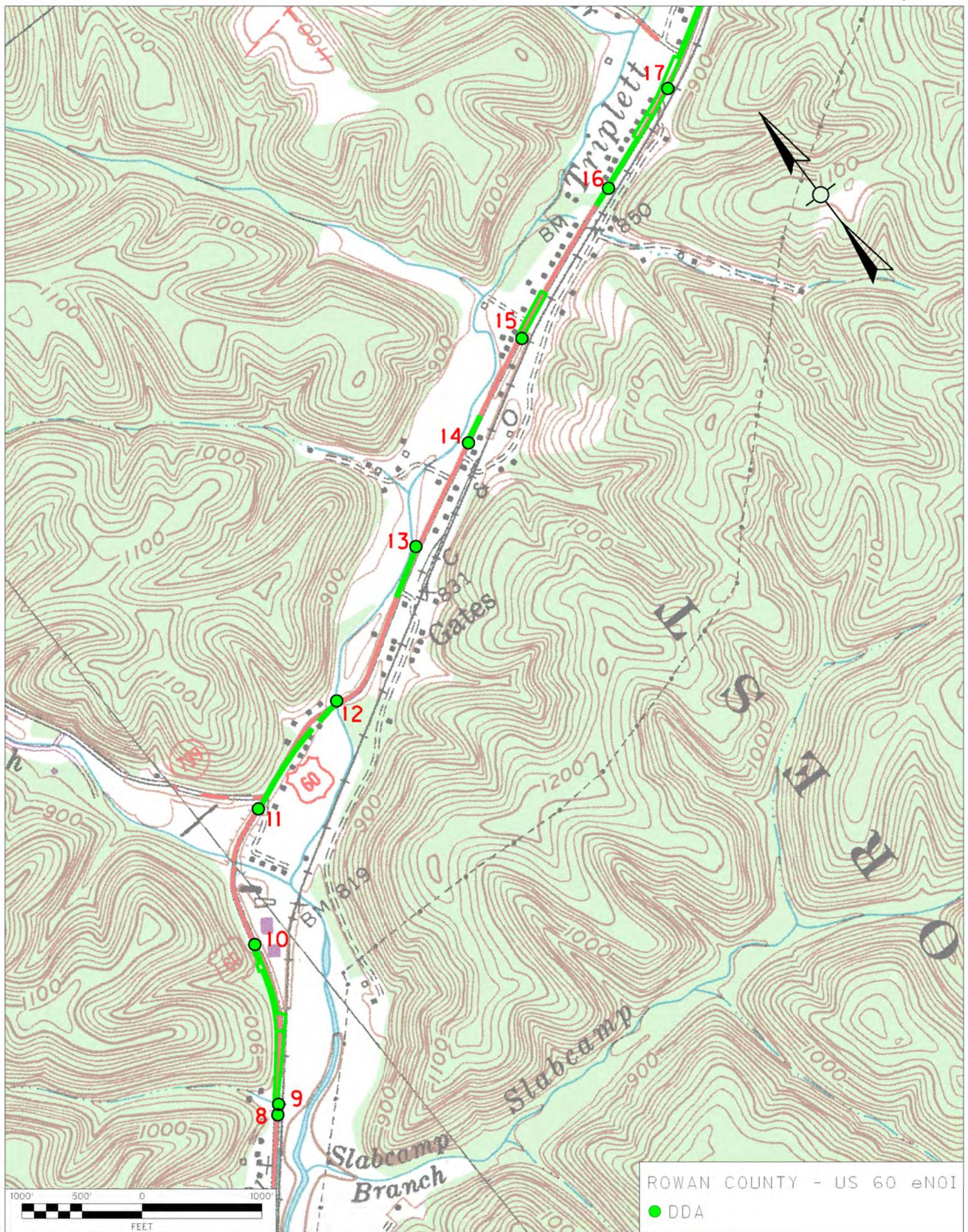
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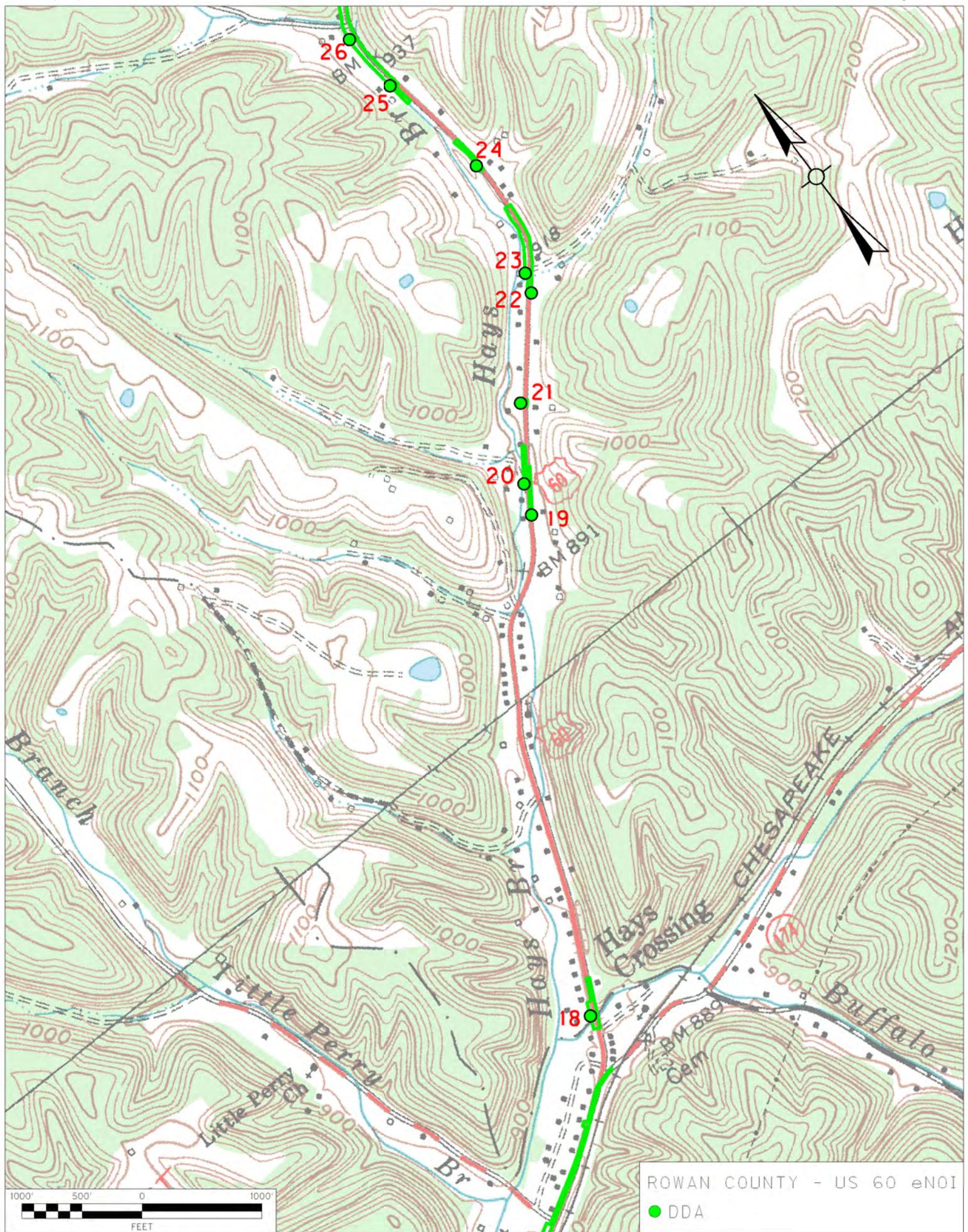


BEGIN  
PROJECT

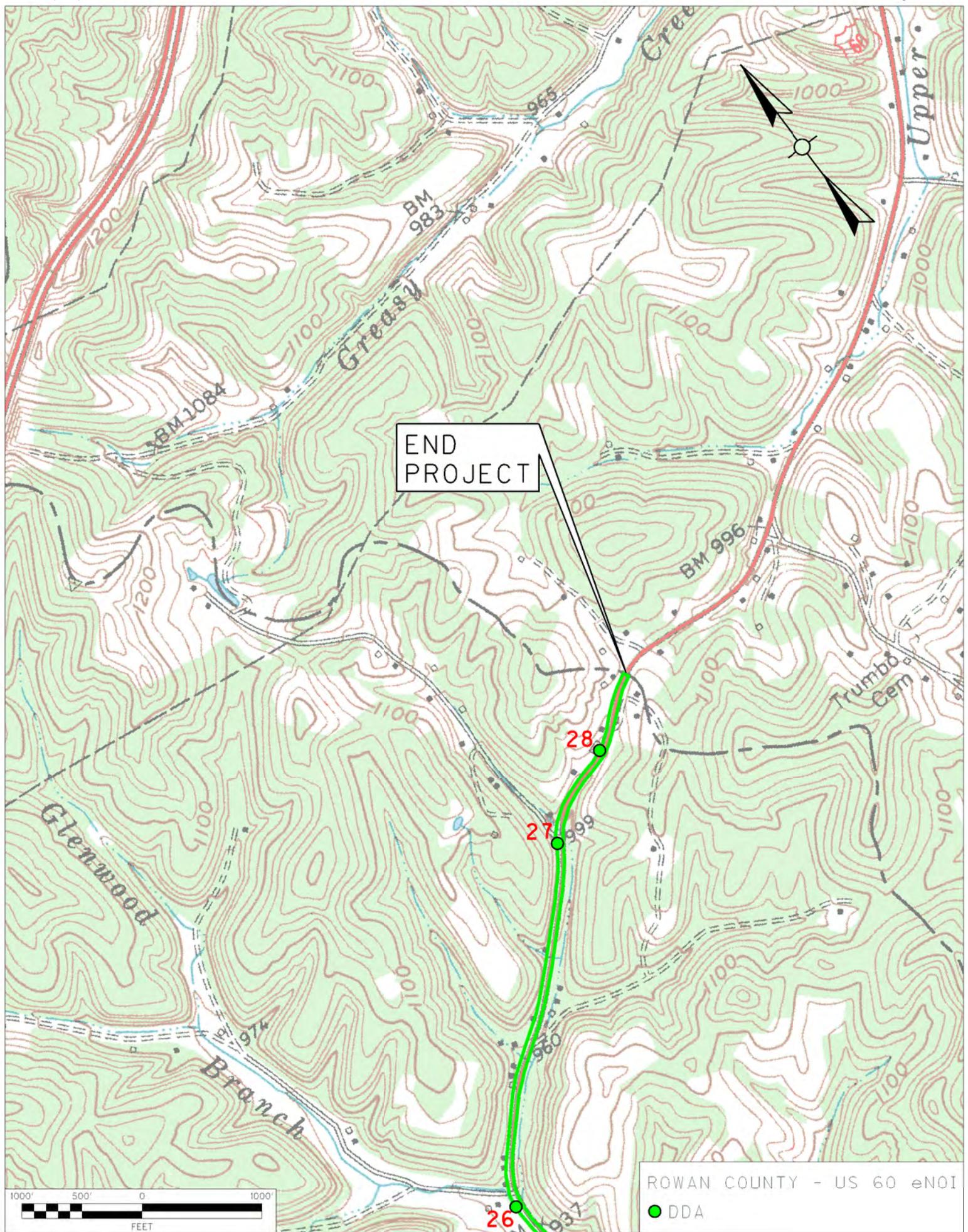
ROWAN COUNTY - US 60 eN01  
● DDA



ROWAN COUNTY - US 60 eNOI  
● DDA

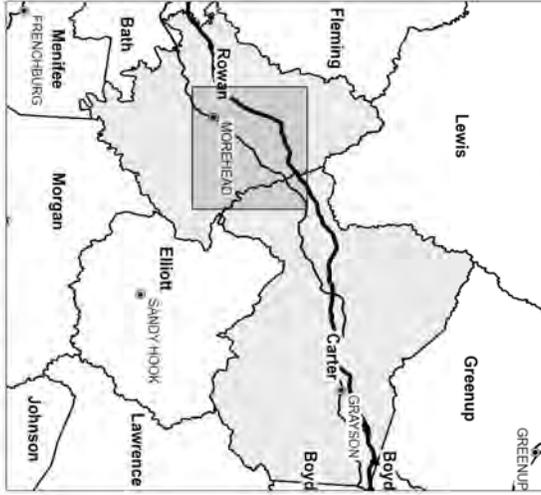
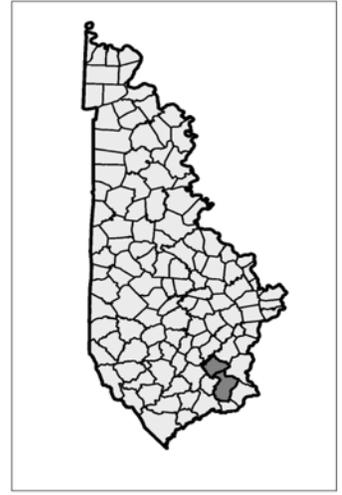


ROWAN COUNTY - US 60 eN01  
● DDA

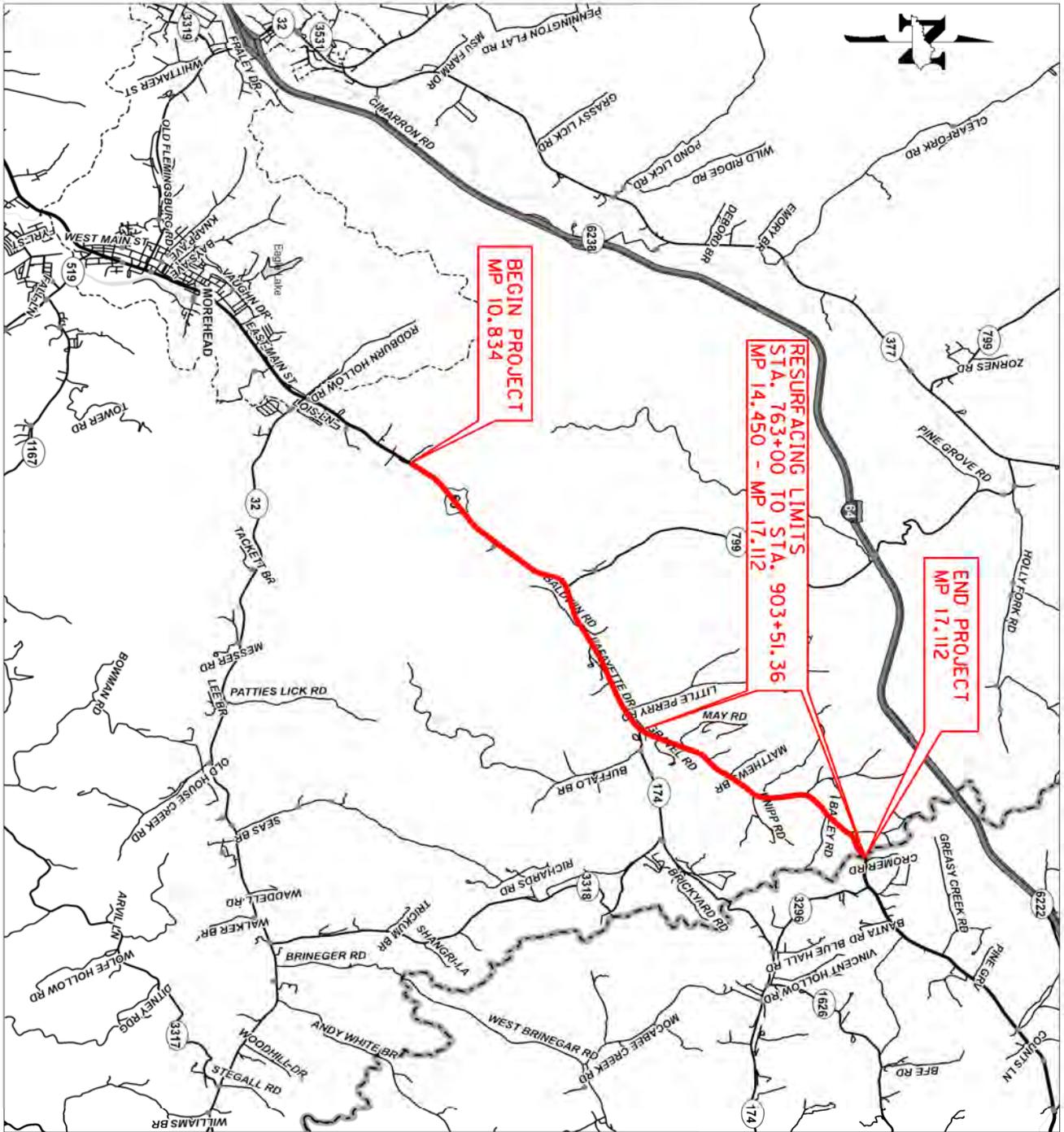


END  
PROJECT

ROWAN COUNTY - US 60 eNOI  
● DDA



**Commonwealth of Kentucky**  
**DEPARTMENT OF HIGHWAYS**  
**PLANS OF**  
**PROPOSED PROJECT**  
**ROWAN COUNTY**  
**US 60**



ROWAN COUNTY  
MP 10.834 TO MP 17.112  
ITEM NO. 9-9008.00  
GENERAL SUMMARY  
SHEET 1 OF 3

ITEM NUMBER	ITEM	UNIT	QUANTITY
1	DGA BASE	TON	401
100	ASPHALT SEAL AGGREGATE	TON	43.4
103	ASPHALT SEAL COAT	TON	5.3
190	LEVELING & WEDGING PG64-22	TON	793
212	CL2 ASPHALT BASE 1.00D PG64-22	TON	448
301	CL2 ASPHALT SURFACE 0.38D PG64-22	TON	3,694
356	ASPHALT MATERIAL FOR TACK	TON	34.4
462	CULVERT PIPE - 18"	LF	131
464	CULVERT PIPE - 24"	LF	159
466	CULVERT PIPE - 30"	LF	75
472	CULVERT PIPE - 60"	LF	4
496	CULVERT PIPE - 36" EQUIV.	LF	78
1204	PIPE CULVERT HEADWALL - 18"	EACH	3
1208	PIPE CULVERT HEADWALL - 24"	EACH	2
1213	PIPE CULVERT HEADWALL - 36" EQUIV.	EACH	4
1220	PIPE CULVERT HEADWALL - 60"	EACH	1
1374	METAL END SECTION TY 1-30 IN	EACH	1
1381	METAL END SECTION TY 2-18 IN	EACH	6
1383	METAL END SECTION TY 2-24 IN	EACH	2
1493	DROP BOX INLET TYPE 2	EACH	1
1642	JUNCTION BOX - 18 IN	EACH	3
1643	JUNCTION BOX - 24 IN	EACH	1
1726	SAFETY BOX INLET - 18 IN SBD-1	EACH	1
1727	SAFETY BOX INLET - 24 IN SBD-1	EACH	1
1987	DELINEATOR FOR GUARDRAIL (B/W)	EACH	228
2014	BARRICADE - TYPE III	EACH	4
2159	TEMPORARY DITCH	LF	16,574
2160	CLEAN TEMPORARY DITCH	LF	8,287
2351	GUARDRAIL - STEEL W BEAM - S FACE	LF	10,787.5
2355	GUARDRAIL - STEEL W BEAM - S FACE A	LF	100
2360	GUARDRAIL TERMINAL SECTION NO. 1	EACH	27
2363	GUARDRAIL CONNECTOR TO BRIDGE END TYPE A	EACH	4
2367	GUARDRAIL END TREATMENT TYPE 1	EACH	13
2369	GUARDRAIL END TREATMENT TYPE 2A	EACH	1
2373	GUARDRAIL END TREATMENT TYPE 3	EACH	2
2381	REMOVE GUARDRAIL	LF	11,437.5
2403	REMOVE CONCRETE MASONRY	CY	7
2483	CHANNEL LINING CLASS II	TON	640
2562	TEMPORARY SIGNS	SF	603.7
2569	DEMOBILIZATION	LS	1

MP 10.834 TO MP 17.112  
ITEM NO. 9-9008.00  
GENERAL SUMMARY  
SHEET 2 OF 3

ITEM NUMBER	ITEM	UNIT	QUANTITY
2575	DITCHING AND SHOULDERING	LF	16,069
2603	FABRIC - GEOTEXTILE CLASS 2	SY	1,237
2625	REMOVE HEADWALL	EACH	10
2650	MAINTAIN AND CONTROL TRAFFIC	LS	1
2671	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	6
2676	MOBILIZATION FOR MILL & TEXT	LS	1
2677	ASPHALT PAVE MILLING & TEXTURING	TON	279
2697	EDGE LINE RUMBLE STRIPS	LF	28,200
2701	TEMPORARY SILT FENCE	LF	16,574
2703	SILT TRAP TYPE A	EACH	12
2704	SILT TRAP TYPE B	EACH	12
2705	SILT TRAP TYPE C	EACH	12
2706	CLEAN SILT TRAP TYPE A	EACH	12
2707	CLEAN SILT TRAP TYPE B	EACH	12
2708	CLEAN SILT TRAP TYPE C	EACH	12
2726	STAKING	LS	1
3236	CRIBBING	SF	1,793
3234	RAILROAD RAILS - DRILLED	LF	636
3235	EXCAVATION AND BACKFILL	CY	571
3269	TRIM & REMOVE TREES & BRUSH	LF	590
5950	EROSION CONTROL BLANKET	SY	10,000
5952	TEMPORARY MULCH	SY	38,397
5953	TEMP SEEDING AND PROTECTION	SY	28,798
5963	INITIAL FERTILIZER	TON	1.78
5964	MAINTENANCE FERTILIZER	TON	3.00
5985	SEEDING AND PROTECTION	SY	57,596
5992	AGRICULTURAL LIMESTONE	TON	36.0
6406	SBM ALUM SHEET SIGNS 0.080 IN	SF	616.25
6407	SBM ALUM SHEET SIGNS 0.125 IN	SF	72.28
6410	STEEL POST TYPE 1	LF	1,239
6510	PAVE STRIPING - TEMP PAINT - 4 IN	LF	63,270
6542	PAVE STRIPING - THERMO - 6 IN W ①	LF	27,917
6543	PAVE STRIPING - THERMO - 6 IN Y ①	LF	27,917
6556	PAVE STRIPING - DUR TY 1-6 W ②	LF	222
6557	PAVE STRIPING - DUR TY 1-6 Y ②	LF	222
6569	PAVE MARKINGS - THERMO CROSS-HATCH	SF	475
6600	REMOVE PAVEMENT MARKER TYPE V	EACH	35

① TO BE USED IN THE RESURFACING LIMITS STA. 763+00 TO STA. 903+51.36 (SEE PAVEMENT MARKINGS SUMMARY)

② TO BE USED ON CONCRETE BRIDGE DECKS (SEE PAVEMENT MARKINGS SUMMARY)

MP 10.834 TO MP 17.112  
ITEM NO. 9-9008.00  
GENERAL SUMMARY  
SHEET 3 OF 3

ITEM NUMBER	ITEM	UNIT	QUANTITY
8003	FOUNDATION PREPARATION (MP 16.23 - STA. 856+84)	LS	1
8003	FOUNDATION PREPARATION (MP 16.46 - STA. 869+09)	LS	1
8018	RETAINING WALL (POLYPROPYLENE BARRIER WALL)	SF	2,450
8100	CONCRETE - CLASS A	CY	46.80
8150	STEEL REINFORCEMENT	LBS	2,430
14059	W PIPE PVC 06 INCH	LF	400
14082	W SERV CTS/POLY SHORT SIDE 1 IN	EACH	4
14105	W VALVE 06 INCH *	EACH	3
14024	W MAIN POINT RELOCATE	EACH	6
20092ES611	10'X5' PRECAST BOX CULVERT	LF	43
20092ES611	4'X3' PRECAST BOX CULVERT	LF	6
20748ED	SHOULDER MILLING/TRENCHING	LF	2,442
21289ED	LONGITUDINAL EDGE KEY	LF	9,128
21134ND	REMOVE, STORE & REINSTALL SIGN	EACH	2
21373ND	REMOVE SIGN	EACH	105
23044NS710	SAFETY BOX INLET - 36 IN SBD-1	EACH	2
24189ER	DURABLE WATERBORNE MARKINGS - 6 IN W (3)	LF	38,157
24190ER	DURABLE WATERBORNE MARKINGS - 6 IN Y (3)	LF	38,157
24544EC	REMOVE (CULVERT @ STA. 841+79)	LF	30
24575ES610	HEADWALL (SLOPED & MITERED CONCRETE - 18 IN)	EACH	3
24575ES610	HEADWALL (SLOPED & MITERED CONCRETE - 30 IN)	EACH	1
24631EC	BARCODE SIGN INVENTORY	EACH	179
24695ED	4'X3' PRECAST BOX CULVERT HEADWALL	EACH	1
24894EC	REMOVE BOULDERS (RT. STA. 583+14 & STA. 583+42)	EACH	2

(3) TO BE USED IN THE NON- RESURFACING LIMITS STA. 763+00 TO STA. 903+51.36 (SEE PAVEMENT MARKINGS SUMMARY)

**ROWAN COUNTY**  
**MP 10.834 TO MP 17.112**  
**ITEM NO. 9-9008.00**  
**PAVING SUMMARY**

PAVING AREAS		PAVING QUANTITIES	
ITEM	TOTAL	ITEM	TOTAL
<b>EDGE LINE RUMBLE STRIPS</b>	<b>LF</b>	<b>EDGE LINE RUMBLE STRIPS</b>	<b>LF</b>
	28,200		28,200
<b>RESURFACING (STA. 763+00 TO STA. 903+51.76)</b>	<b>SY</b>	<b>RESURFACING (STA. 763+00 TO STA. 903+51.76)</b>	<b>TON</b>
1.00" CL2 ASPHALT SURFACE 0.38D PG64-22	35,910	CL2 ASPHALT SURFACE 0.38D PG64-22	3,240
ASPHALT MATERIAL FOR TACK	35,910	ASPHALT MATERIAL FOR TACK	31.0
ASPHALT PAVE MILLING & TEXTURING	1,770	ASPHALT PAVE MILLING & TEXTURING	110
<b>SUPERELEVATION IMPROVEMENTS (1)</b>	<b>SY</b>	<b>SUPERELEVATION IMPROVEMENTS (1)</b>	<b>TON</b>
LEVELING & WEDGING PG64-22		LEVELING & WEDGING PG64-22	223
1.00" CL2 ASPHALT SURFACE 0.38D PG64-22	5,303	CL2 ASPHALT SURFACE 0.38D PG64-22	292
ASPHALT MATERIAL FOR TACK	5,303	ASPHALT MATERIAL FOR TACK	2.2
ASPHALT PAVE MILLING & TEXTURING	1,770	ASPHALT PAVE MILLING & TEXTURING	98
	<b>LF</b>		
LONGITUDINAL EDGE KEY	5,400		
<b>PAVEMENT WIDENING (2)</b>	<b>SY</b>	<b>PAVEMENT WIDENING (2)</b>	<b>TON</b>
3.00" CL2 ASPHALT BASE 1.00D PG64-22	2,442	CL2 ASPHALT BASE 1.00D PG64-22	404
1.00" CL2 ASPHALT SURFACE 0.38D PG64-22	1,656	CL2 ASPHALT SURFACE 0.38D PG64-22	91
ASPHALT MATERIAL FOR TACK	1,656	ASPHALT MATERIAL FOR TACK	0.7
	<b>SY</b>		
SHOULDER MILLING/TRENCHING	2,442		
	<b>LF</b>		
LONGITUDINAL EDGE KEY	3,728		
<b>CULVERT PIPE REPLACEMENT &amp; EXTENSION (3)</b>	<b>SY</b>	<b>CULVERT PIPE REPLACEMENT &amp; EXTENSION (3)</b>	<b>TON</b>
ASPHALT PAVE MILLING & TEXTURING	1,285	ASPHALT PAVE MILLING & TEXTURING	71
6.50" CL2 ASPHALT BASE 1.00D PG64-22	75	CL2 ASPHALT BASE 1.00D PG64-22	28
1.00" CL2 ASPHALT SURFACE 0.38D PG64-22	1,285	CL2 ASPHALT SURFACE 0.38D PG64-22	71
ASPHALT MATERIAL FOR TACK	1,285	ASPHALT MATERIAL FOR TACK	0.5
<b>RCBC SUMMARY (4)</b>	<b>SY</b>	<b>RCBC SUMMARY (4)</b>	<b>TON</b>
6.50" CL2 ASPHALT BASE 1.00D PG64-22	45	CL2 ASPHALT BASE 1.00D PG64-22	16
1.00" CL2 ASPHALT SURFACE 0.38D PG64-22	0	CL2 ASPHALT SURFACE 0.38D PG64-22	0
ASPHALT MATERIAL FOR TACK	0	ASPHALT MATERIAL FOR TACK	0.0
<b>CRIBBING/POLYPROPYLENE BARRIER WALL (5)</b>	<b>SY</b>	<b>CRIBBING/POLYPROPYLENE BARRIER WALL (5)</b>	<b>TON</b>
DGA BASE		DGA BASE	6
ASPHALT SEAL AGGREGATE		ASPHALT SEAL AGGREGATE	0.5
ASPHALT SEAL COAT		ASPHALT SEAL COAT	0.1

**PAVING SUMMARY**

CODE	ITEM	UNIT	PROJECT TOTAL
1	DGA BASE (6)	TON	401
100	ASPHALT SEAL AGGREGATE (6)	TON	43.4
103	ASPHALT SEAL COAT (6)	TON	5.3
190	LEVELING & WEDGING PG64-22 (7)	TON	793
212	CL2 ASPHALT BASE 1.00D PG64-22	TON	448
301	CL2 ASPHALT SURFACE 0.38D PG64-22	TON	3,694
356	ASPHALT MATERIAL FOR TACK	TON	34.4
2677	ASPHALT PAVE MILLING & TEXTURING	TON	279
2697	EDGE LINE RUMBLE STRIPS	LF	28,200
21289ED	LONGITUDINAL EDGE KEY	LF	9,128
209748ED	SHOULDER MILLING/TRENCHING	SY	2,442

**NOTES:**

All asphalt mixtures shall be estimated at 110 lbs. per SY per inch of depth unless otherwise noted.

Seal Coat: First course estimated at 3.2 lbs. per SY. Second course estimated at 2.8 lbs. per SY.

Seal Aggregate: First course estimated at 30 lbs. per SY. Second course estimated at 20 lbs. per SY.

(1) Carried over from the Superelevation Improvement Summary

(2) Carried over from the Pavement Widening Summary

(3) Carried over from the Culvert Pipe Replacement & Extension Summary

(4) Carried over from the RCBC Summary

(5) Carried over from the Cribbing/Modular Wall Summary

(6) Includes an additional 395 tons of DGA, 42.9 tons of Asphalt Seal Aggregate, and 5.2 tons of Asphalt Seal Coat for constructing applications of Double Asphalt Seal Coat at the Engineer's discretion within the resurfacing limits

(7) Includes 570 tons Leveling & Wedging to be used at the Engineer's Discretion within the resurfacing limits.

COUNTY OF	ITEM NO.	SHEET NO.
ROWAN	9.9008.00	

**ROWAN COUNTY - US 60**  
**MP 10.834 TO MP 17.112**  
**ITEM NO. 9.9008.00**  
**SUPERELEVATION IMPROVEMENT SUMMARY**

Begin Station	End Station	Width of Section (ft)	Length of Section (ft)	Runoff Length	Runout Length	Existing Superlevation	Proposed Superlevation	Longitudinal Edge Key (LF)	CL2 Asph Surf 0.38D PG64-22 (tons)	Leveling and Wedging (tons)	Asphalt Pave Milling & Text (tons)	
617+01	626+09	23	908	128	51	2.47% - 4.13%	5.0% Lt.	1,816	128	57		
723+53	727+72	23	419	61	51	0.89% - 1.81%	2.4% Rt.	838	59	49		
742+87	750+35	23	748	110	51	2.20% - 8.57%	4.3% Lt.	1,496	105	77	44	
831+25	837+50	23	625	204	51	8.35% - 12.80%	9.0% Lt.	1,250	*	19	54	
<b>TOTAL</b>									<b>5,400</b>	<b>292</b>	<b>202</b>	<b>98</b>

ITEM	DESCRIPTION	UNIT	QUANTITY
190	LEVELING & WEDGING PG64-22	TON	223
301	CL2 ASPH SURFACE 0.38D PG64-22	TON	292
2677	ASPHALT PAVE MILLING & TEXTURING	TON	98
21289ED	LONGITUDINAL EDGE KEY	LF	5,400

\* within resurfacing limits

NOTE: These numbers are for estimate purposes only. Final locations and quantities will be determined by the Engineer in the field.

Superlevation improvements to remove the dip/bump, with an estimated Leveling & Wedging Quantity, in the following locations :

	Leveling and Wedging (Tons)
Sta. 859+00 to Sta. 859+50	2
Sta. 860+25 to Sta. 860+75	2
Sta. 887+00 to Sta. 888+00	4
Sta. 891+75 to Sta. 894+00	9
Sta. 902+00 to Sta. 903+00	4
<b>TOTAL =</b>	<b>21</b>

NOTE: ALL QUANTITIES CARRIED OVER TO PAVING SUMMARY

US 60	SUPERELEVATION IMPROVEMENT SUMMARY
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Pavement Widening Summary						Rowan County		Route: US 60			
Begin		End		Side	Width (ft)	Depth (inches)	Length (LF)	Milling/ Trenching (SY)	Longitudinal Edge Key (LF)	Asphalt Surface (Tons)	Asphalt Base (Tons)
Mile Point	Station	Mile Point	Station								
11.12	587+12	11.21	592+02	Right	3	4.5	490	163	490	12	27
11.61	613+10	11.97	631+85	Right	3	4.5	1875	625	1875	46	103
12.35	652+18	12.61	665+81	Right	3	4.5	1363	454	1363	33	75
15.42	814+00	15.47	816+97	Left	3	4.5	297	99	297	*	16
15.75	831+36	15.83	835+90	Left	3	4.5	454	151	454	*	25
15.77	832+77	15.84	836+39	Right	3	4.5	362	121	362	*	20
16.09	849+60	16.13	851+81	Left	3	4.5	221	74	221	*	12
16.14	852+05	16.25	857+77	Left	3	4.5	572	191	572	*	32
16.20	855+10	16.22	856+40	Right	3	4.5	130	43	130	*	7
16.22	856+40	16.41	866+68	Right	3	4.5	1028	343	1028	*	57
16.25	858+19	16.29	859+93	Left	3	4.5	174	58	174	*	10
16.42	866+80	16.48	870+39	Right	3	4.5	359	120	359	*	20
<b>TOTALS</b>							<b>7325 LF</b>	<b>2442 SY</b>	<b>7325 LF</b>	<b>91 TONS</b>	<b>404 TONS</b>

\* within resurfacing limits

Remove Sign Summary

SIGN LOCATION			MUTCD Code	Sign Description	Sign Text / Remarks	Comments
Side of Road	Approx Station	Facing Traffic Traveling				
RT	574+80	C	OM3-R	Object Marker Type 3 Right		
LT	574+80	C	W14-3	No Passing Zone		
LT	574+98	NC	OM3-R	Object Marker Type 3 Right		
LT	578+36	C	CUSTOM	End XX Mile Speed	END 45 MILE SPEED	
		NC	R2-1	Speed Limit XX	45	
RT	578+49	C	CUSTOM	End XX Mile Speed	END 45 MILE SPEED	
			D10-2	Mile Marker (2 digit)	11	
		NC	R2-1	Speed Limit XX	45	
			D10-2	Mile Marker (2 digit)	11	
RT	584+41	C	W1-2R	Right Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
LT	585+04	NC	W3-5	Speed Limit XX Ahead	45	
RT	587+01	C	W2-2L	Side Road Left		
LT	590+77	NC	W1-2L	Left Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
LT	596+13	C	W14-3	No Passing Zone		
RT	597+69	C	R2-1	Speed Limit XX	55	
		NC	W14-3	No Passing Zone		
RT	598+42	C	R8-3A	No Parking		
		NC	R8-3A	No Parking		
RT	600+27	C	R8-3A	No Parking		
		NC	R8-3A	No Parking		
LT	606+64	C	W14-3	No Passing Zone		
RT	609+26	NC	W14-3	No Passing Zone		
RT	633+61	C	D10-2	Mile Marker (2 digit)	12	
		NC	D10-2	Mile Marker (2 digit)	12	
RT	635+62	NC	W14-3	No Passing Zone		
LT	647+12	C	W14-3	No Passing Zone		
RT	656+48	C	W1-2L	Left Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
LT	663+79	NC	W1-2R	Right Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
RT	667+59	C	W1-2R	Right Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
LT	668+84	NC	W1-8L	Left Chevron		
LT	669+99	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	671+14	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	672+29	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	673+44	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
RT	673+51	C	M2-1	Junction		
			M1-5A	State Route Sign (3 or 4 digit)	799	
			CUSTOM	Modified R5-2 (No Trucks Symbol)	OVER 3 AXLES	Remove, store and reinstall adjacent to proposed JCT 799 assembly
LT	674+59	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	675+74	C	W1-8R	Right Chevron		
LT	675+83	NC	M3-4	West		
			M1-4	US Route Sign (1 or 2 digit)	60	
LT	676+99	NC	W1-2L	Left Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
RT	677+01	C	M1-5A	State Route Sign (3 or 4 digit)	799	
			M6-1L	Left Arrow		
RT	677+01	C	M1-4	US Route Sign (1 or 2 digit)	60	
			M6-3	Straight Arrow		
LT	679+43	NC	M1-4	US Route Sign (1 or 2 digit)	60	
			M6-3	Straight Arrow		

Remove Sign Summary

SIGN LOCATION			MUTCD Code	Sign Description	Sign Text / Remarks	Comments
Side of Road	Approx Station	Facing Traffic Traveling				
LT	679+43	NC	M1-5A	State Route Sign (3 or 4 digit)	799	
			M6-1R	Right Arrow		
LT	681+98	NC	M2-1	Junction		
			M1-5A	State Route Sign (3 or 4 digit)	799	
			CUSTOM	Modified R5-2 (No Trucks Symbol)	OVER 3 AXLES	Remove, store and reinstall adjacent to proposed JCT 799 assembly
RT	685+54	C	M3-2	East		
			M1-4	US Route Sign (1 or 2 digit)	60	
			D10-2	Mile Marker (2 digit)	13	
RT	685+54	NC	D10-2	Mile Marker (2 digit)	13	
RT	689+26	C	OM3-R	Object Marker Type 3 Right		
LT	691+05	NC	OM3-R	Object Marker Type 3 Right		
RT	692+11	C	W1-2L	Left Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
LT	698+33	NC	W1-2R	Right Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
RT	705+77	NC	W14-3	No Passing Zone		
RT	706+90	C	W2-2L	Side Road Left		
			W16-8P	Advance Street Name (1-line)	Hamilton Rd	
RT	714+39	NC	W2-2R	Side Road Right		
			W16-8P	Advance Street Name (1-line)	Hamilton Rd	
LT	721+07	C	W14-3	No Passing Zone		
RT	739+39	NC	W14-3	No Passing Zone	14	
		NC	D10-2	Mile Marker (2 digit)		
		C	D10-2	Mile Marker (2 digit)	14	
RT	743+31	C	W11-8	Emergency Vehicle		
RT	746+51	C	W2-2L	Side Road Left		
			W16-8P	Advance Street Name (1-line)	Little Perry Rd	
RT	753+52	C	W2-2L	Side Road Left		
			W16-8P	Advance Street Name (1-line)	Stinson Rd	
LT	754+75	NC	W2-2R	Side Road Right		
			W16-8P	Advance Street Name (1-line)	Little Perry Rd	
LT	757+69	NC	W11-8	Emergency Vehicle		
RT	758+19	C	M2-1	Junction		
			M1-5A	State Route Sign (3 or 4 digit)	799	
LT	761+49	NC	W2-2R	Side Road Right		
			W16-8P	Advance Street Name (1-line)	Stinson Rd	
RT	761+76	C	W1-2L	Left Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
RT	762+76	C	M1-4	US Route Sign (1 or 2 digit)	60	
			M6-3	Straight Arrow		
RT	762+76	C	M1-5A	State Route Sign (3 or 4 digit)	174	
			M6-1R	Right Arrow		
LT	764+86	NC	M1-5A	State Route Sign (3 or 4 digit)	174	
			M6-1L	Left Arrow		
LT	764+86	NC	M1-4	US Route Sign (1 or 2 digit)	60	
			M6-3	Straight Arrow		
RT	767+76	C	M3-2	East		
			M1-4	US Route Sign (1 or 2 digit)	60	
RT	768+68	C	OM3-R	Object Marker Type 3 Right		
LT	768+80	NC	OM3-R	Object Marker Type 3 Right		
LT	769+25	NC	W1-2R	Right Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
LT	774+10	NC	M2-1	Junction		
			M1-5A	State Route Sign (3 or 4 digit)	174	
RT	786+95	NC	W14-3	No Passing Zone		
RT	792+00	C	D10-2	Mile Marker (2 digit)	15	
		NC	D10-2	Mile Marker (2 digit)	15	
RT	795+65	C	W1-4R	Right Reverse Curve		
RT	809+79	C	W2-2L	Side Road Left		
			W16-8P	Advance Street Name (1-line)	Matthews Branch Rd	
LT	809+85	NC	W1-4R	Right Reverse Curve		
			W2-2R	Side Road Right		

Remove Sign Summary

SIGN LOCATION			MUTCD Code	Sign Description	Sign Text / Remarks	Comments
Side of Road	Approx Station	Facing Traffic Traveling				
LT	817+62	NC	W16-8P	Advance Street Name (1-line)	Matthews Branch Rd	
LT	818+07	C	W14-3	No Passing Zone		
RT	826+06	NC	W14-3	No Passing Zone		
RT	827+20	C	W2-2R	Side Road Right		
			W16-8P	Advance Street Name (1-line)	Knipp Hollow Rd	
RT	831+03	C	W1-2L	Left Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
RT	833+05	NC	W1-8R	Right Chevron		
RT	834+17	C	W1-8L	Left Chevron		
		NC	W1-8R	Right Chevron		
RT	835+12	C	W1-8L	Left Chevron		
		NC	W1-8R	Right Chevron		
LT	836+00	NC	W2-2L	Side Road Left		
			W16-8P	Advance Street Name (1-line)	Knipp Hollow Rd	
RT	836+24	C	W1-8L	Left Chevron		
LT	838+07	NC	W1-2R	Right Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
RT	853+77	C	W1-2R	Right Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
RT	844+80	C	D10-2	Mile Marker (2 digit)	16	
		NC	D10-2	Mile Marker (2 digit)	16	
LT	855+75	NC	W1-8L	Left Chevron		
		C	W1-8R	Right Chevron		
LT	856+55	NC	W1-8L	Left Chevron		
		C	W1-8R	Right Chevron		
LT	857+32	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	858+19	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	858+88	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	859+66	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	860+44	C	W1-8R	Right Chevron		
LT	862+43	NC	W1-2L	Left Curve		
			W13-1P	XX MPH (Advisory Speed)	XX	
RT	864+65	C	W1-4R	Right Reverse Curve		
LT	876+17	NC	W1-4R	Right Reverse Curve		
RT	882+13	C	W1-5L	Left Winding Road		
			W13-1P	XX MPH (Advisory Speed)	XX	
RT	883+13	C	S3-2	School Bus Turn Ahead		
LT	887+58	NC	W1-8L	Left Chevron		
LT	888+59	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	889+35	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	890+11	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	890+87	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	891+63	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	892+41	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	893+18	C	W1-8R	Right Chevron		
		NC	W1-8L	Left Chevron		
LT	893+95	C	W1-8R	Right Chevron		
RT	897+60	C	D10-2	Mile Marker (2 digit)	17	
		NC	D10-2	Mile Marker (2 digit)	17	
LT	898+20	NC	S3-2	School Bus Turn Ahead		
LT	904+99	NC	W1-5L	Left Winding Road		
			W13-1P	XX MPH (Advisory Speed)	XX	

SIGN LOCATION										SIGN SUMMARY				ROWAN COUNTY				US 60		TOTAL		Barcode
Side of Road	Approx Offset (ft)	Approx Station	Approx. Mile Point	Facing Traffic Traveling	MUTCD Code	Sign Description	Sign Text / Remarks	Sign Dimensions (in x in)	Text/ Symbol Color	Background Color	Sheeting Type	SBM Alum Sheet Signs (SQ FT)	SBM Alum Sheet Signs (SQ FT)	# of Sign Posts	Estimated Length of 2" Post (ft)	Estimated Sign Post Length (LF)	Sign Inv. (EACH)					
RT	21.3	574+80	10.886	C	OM3-R	Object Marker Type 3 Right		12 x 36	Black	Yellow	XI	3.00		1	11	11	1					
LT	24.5	574+80	10.886	C	W14-3	No Passing Zone		48 x 48 x 36	Black	Yellow	XI		5.56	1	12	12	1					
LT	23.4	574+98	10.890	NC	OM3-R	Object Marker Type 3 Right		12 x 36	Black	Yellow	XI	3.00		1	11	11	1					
LT	21.0	578+36	10.954	C	CUSTOM	End XX Mile Speed	END 45 MILE SPEED	24 x 30	Black	White	XI	5.00		1	12	12	1					
				NC	R2-1	Speed Limit XX	45	24 x 30	Black	White	XI	5.00					1					
RT	24.6	578+49	10.956	C	CUSTOM	End XX Mile Speed	END 45 MILE SPEED	24 x 30	Black	White	XI	5.00		1	14	14	1					
				NC	D10-2	Mile Marker (2 digit)	11	10 x 27	White	Green	XI	1.88					1					
					R2-1	Speed Limit XX	45	24 x 30	Black	White	XI	5.00					1					
					D10-2	Mile Marker (2 digit)	11	10 x 27	White	Green	XI	1.88					1					
RT	19.7	584+41	11.068	C	W13-1P	Right Curve		30 x 30	Black	FL Yellow	XI	6.25		1	13	13	1					
					W3-5	Speed Limit XX Ahead	45	36 x 36	White & Black	Yellow	XI	9.00		1	12	12	1					
RT	23.0	587+01	11.118	C	W2-2L	Side Road Left		30 x 30	Black	Yellow	XI	6.25		1	12	12	1					
LT	20.0	590+77	11.189	NC	W13-1P	XX MPH (Advisory Speed)	XX	18 x 18	Black	FL Yellow	XI	6.25		1	13	13	1					
LT	21.7	596+13	11.290	C	W14-3	No Passing Zone		48 x 48 x 36	Black	Yellow	XI	5.00	5.56	1	12	12	1					
					R2-1	Speed Limit XX	55	24 x 30	Black	White	XI	5.00					1					
					W14-3	No Passing Zone		48 x 48 x 36	Black	Yellow	XI	5.00	5.56	1	12	12	1					
RT	20.4	598+42	11.334	C	R8-3A	No Parking		24 x 30	Red	White	XI	5.00		1	12	12	1					
					R8-3A	No Parking		24 x 30	Red	White	XI	5.00					1					
					R8-3A	No Parking		24 x 30	Red	White	XI	5.00					1					
RT	25.3	600+27	11.369	NC	R8-3A	No Parking		24 x 30	Red	White	XI	5.00		1	12	12	1					
LT	18.9	606+64	11.489	C	W14-3	No Passing Zone		48 x 48 x 36	Black	Yellow	XI	5.00	5.56	1	12	12	1					
RT	25.8	609+26	11.539	NC	W14-3	No Passing Zone		48 x 48 x 36	Black	Yellow	XI	5.00	5.56	1	12	12	1					
RT	18.1	633+61	12.000	C	D10-2	Mile Marker (2 digit)	12	10 x 27	White	Green	XI	1.88		1	11	11	1					
					D10-2	Mile Marker (2 digit)	12	10 x 27	White	Green	XI	1.88					1					
RT	24.3	635+62	12.038	NC	W14-3	No Passing Zone		48 x 48 x 36	Black	Yellow	XI		5.56	1	12	12	1					
LT	20.1	647+12	12.256	C	W1-2L	Left Curve		30 x 30	Black	FL Yellow	XI	6.25		1	13	13	1					
RT	20.0	656+48	12.433	C	W13-1P	XX MPH (Advisory Speed)	XX	18 x 18	Black	FL Yellow	XI	6.25		1	13	13	1					
LT	20.0	663+79	12.572	NC	W1-2R	Right Curve		30 x 30	Black	FL Yellow	XI	6.25		1	13	13	1					
					W13-1P	XX MPH (Advisory Speed)	XX	18 x 18	Black	FL Yellow	XI	6.25		1	13	13	1					
RT	20.0	667+59	12.644	C	W1-2R	Right Curve		30 x 30	Black	FL Yellow	XI	6.25		1	13	13	1					
					W13-1P	XX MPH (Advisory Speed)	XX	18 x 18	Black	FL Yellow	XI	6.25		1	13	13	1					
LT	25.0	668+84	12.667	NC	W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1					
LT	25.0	669+99	12.689	NC	W1-8R	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1					
LT	25.0	671+14	12.711	C	W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1					
LT	25.0	672+29	12.733	NC	W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1					
LT	25.0	673+44	12.755	C	W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1					
RT	29.5	673+51	12.756	C	W2-1	Junction		21 x 15	Black	White	XI	2.19		1	12	12	1					
					M1-5A	State Route Sign (3 or 4 digit)	799	30 x 24	Black	White	XI	5.00		1	12	12	1					
					W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1					
LT	25.0	674+59	12.776	NC	W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1					

SIGN LOCATION				Sign Summary				ROWAN COUNTY				US 60		TOTAL		Barcode	
Side of Road	Approx Offset (ft)	Approx Station	Approx. Mile Point	Facing Traffic Traveling	MUTCD Code	Sign Description	Sign Text / Remarks	Sign Dimensions (in x in)	Text/ Symbol Color	Background Color	Sheeting Type	SBM Alum Sheet Signs (0.080 IN (SQ FT))	SBM Alum Sheet Signs (0.125 IN (SQ FT))	# of Sign Posts	Estimated Length of 2" Post (ft)	Estimated Sign Post Length (LF)	Sign Inv. (EACH)
LT	25.0	675+74	12.798	C	W1-8R	Right Chevron		18 x 24	Black	Fl Yellow	XI	3.00		1	11	11	1
					M3-4	West		24 x 12	Black	White	XI	2.00		1	12	12	1
LT	25.0	675+83	12.800	NC	W1-4	US Route Sign (1 or 2 digit)	60	24 x 24	Black	White	XI	4.00		1	12	12	1
					W1-2L	Left Curve		30 x 30	Black	Fl Yellow	XI	6.25		1	13	13	1
LT	20.0	676+99	12.822	NC	W13-1P	XX MPH (Advisory Speed)	XX	18 x 18	Black	Fl Yellow	XI	2.25		1	12	12	1
					M1-5A	State Route Sign (3 or 4 digit)	799	30 x 24	Black	White	XI	5.00		1	12	12	1
RT	35.6	677+01	12.822	C	M6-1L	Left Arrow		21 x 15	Black	White	XI	2.19		1	12	12	1
					M1-4	US Route Sign (1 or 2 digit)	60	24 x 24	Black	White	XI	4.00		1	12	12	1
RT	38.6	677+01	12.822	C	M6-3	Straight Arrow		21 x 15	Black	White	XI	2.19		1	12	12	1
					M1-4	US Route Sign (1 or 2 digit)	60	24 x 24	Black	White	XI	4.00		1	12	12	1
LT	31.2	679+43	12.868	NC	M6-3	Straight Arrow		21 x 15	Black	White	XI	2.19		1	12	12	1
					M1-5A	State Route Sign (3 or 4 digit)	799	30 x 24	Black	White	XI	5.00		1	12	12	1
LT	34.2	679+43	12.868	NC	M6-1R	Right Arrow		21 x 15	Black	White	XI	2.19		1	12	12	1
					M3-2	East		24 x 12	Black	White	XI	2.00		1	12	12	1
RT	25.8	680+05	12.880	C	M1-4	US Route Sign (1 or 2 digit)	60	24 x 24	Black	White	XI	4.00		1	12	12	1
					W2-1	Junction		21 x 15	Black	White	XI	2.19		1	12	12	1
LT	22.3	681+98	12.916	NC	M1-5A	State Route Sign (3 or 4 digit)	799	30 x 24	Black	White	XI	5.00		1	12	12	1
					D10-2	Mile Marker (2 digit)	13	10 x 27	White	Green	XI	1.88		1	11	11	1
RT	25.8	685+54	12.984	NC	D10-2	Mile Marker (2 digit)	13	10 x 27	White	Green	XI	1.88		1	11	11	1
					OM3-R	Object Marker Type 3 Right		12 x 36	Black	Yellow	XI	3.00		1	11	11	1
LT	15.6	691+05	13.088	NC	OM3-R	Object Marker Type 3 Right		12 x 36	Black	Yellow	XI	3.00		1	11	11	1
					W1-2L	Left Curve		30 x 30	Black	Fl Yellow	XI	6.25		1	13	13	1
RT	20.0	692+11	13.108	C	W13-1P	XX MPH (Advisory Speed)	XX	18 x 18	Black	Fl Yellow	XI	2.25		1	13	13	1
					W1-2R	Right Curve		30 x 30	Black	Fl Yellow	XI	6.25		1	13	13	1
LT	20.0	698+33	13.226	NC	W13-1P	XX MPH (Advisory Speed)	XX	18 x 18	Black	Fl Yellow	XI	2.25		1	12	12	1
					W1-4-3	No Passing Zone	14	48 x 48 x 36	Black	Yellow	XI	5.56		1	12	12	1
RT	17.3	705+77	13.367	NC	W2-2L	Side Road Left		30 x 30	Black	Yellow	XI	6.25		1	12	12	1
					W16-9P	Advance Street Name (1-line)	Hamilton Rd	40.5 x 8	Black	Yellow	XI	6.25		1	12	12	1
RT	20.0	706+90	13.388	C	W2-2R	Side Road Right		30 x 30	Black	Yellow	XI	6.25		1	12	12	1
					W16-9P	Advance Street Name (1-line)	Hamilton Rd	40.5 x 8	Black	Yellow	XI	6.25		1	12	12	1
RT	20.0	714+39	13.530	NC	W16-9P	Advance Street Name (1-line)	Hamilton Rd	40.5 x 8	Black	Yellow	XI	6.25		1	12	12	1
					W14-3	No Passing Zone	14	48 x 48 x 36	Black	Yellow	XI	5.56		1	12	12	1
LT	35.7	721+07	13.657	C	W14-3	No Passing Zone	14	48 x 48 x 36	Black	Yellow	XI	5.56		1	12	12	1
					D10-2	Mile Marker (2 digit)	14	10 x 27	White	Green	XI	1.88		1	12	12	1
RT	33.9	739+39	14.004	NC	D10-2	Mile Marker (2 digit)	14	10 x 27	White	Green	XI	1.88		1	12	12	1
					W1-8	Emergency Vehicle		30 x 30	Black	Yellow	XI	6.25		1	12	12	1
RT	31.5	743+31	14.078	C	W2-2L	Side Road Left		30 x 30	Black	Yellow	XI	6.25		1	12	12	1
					W16-9P	Advance Street Name (1-line)	Little Perry Rd	40.5 x 8	Black	Yellow	XI	6.25		1	12	12	1
RT	29.5	746+51	14.138	C	W16-9P	Advance Street Name (1-line)	Little Perry Rd	40.5 x 8	Black	Yellow	XI	6.25		1	12	12	1
					W2-2L	Side Road Left		30 x 30	Black	Yellow	XI	6.25		1	12	12	1
RT	31.1	753+52	14.271	C	W16-9P	Advance Street Name (1-line)	Stinson Rd	40.5 x 8	Black	Yellow	XI	6.25		1	12	12	1
					W2-2R	Side Road Right		30 x 30	Black	Yellow	XI	6.25		1	12	12	1
LT	17.8	754+75	14.295	NC	W16-9P	Advance Street Name (1-line)	Little Perry Rd	40.5 x 8	Black	Yellow	XI	6.25		1	12	12	1
					W11-8	Emergency Vehicle		30 x 30	Black	White	XI	6.25		1	12	12	1
LT	41.8	757+69	14.350	NC	W2-1	Junction		21 x 15	Black	White	XI	2.19		1	12	12	1
					M1-5A	State Route Sign (3 or 4 digit)	799	30 x 24	Black	White	XI	5.00		1	12	12	1
RT	27.3	758+19	14.360	C	W16-9P	Advance Street Name (1-line)	Stinson Rd	40.5 x 8	Black	Yellow	XI	6.25		1	12	12	1
					W2-2R	Side Road Right		30 x 30	Black	Yellow	XI	6.25		1	12	12	1
LT	21.8	761+49	14.422	NC	W16-9P	Advance Street Name (1-line)	Stinson Rd	40.5 x 8	Black	Yellow	XI	6.25		1	12	12	1
					W1-2L	Left Curve		30 x 30	Black	Fl Yellow	XI	6.25		1	13	13	1
RT	19.8	761+76	14.427	C	W13-1P	XX MPH (Advisory Speed)	XX	18 x 18	Black	Fl Yellow	XI	2.25		1	13	13	1
					M1-4	US Route Sign (1 or 2 digit)	60	24 x 24	Black	White	XI	4.00		1	12	12	1
RT	29.2	762+76	14.446	C	M6-3	Straight Arrow		21 x 15	Black	White	XI	2.19		1	12	12	1

SIGN LOCATION										SIGN SUMMARY				ROWAN COUNTY				US 60		TOTAL		Barcode
Side of Road	Approx Offset (ft)	Approx Station	Approx. Mile Point	Facing Traffic Travelling	MUTCD Code	Sign Description	Sign Text / Remarks	Sign Dimensions (in x n)	Text/ Symbol Color	Background Color	Sheeting Type	SBM Alum Sheet Signs (SQ FT)	SBM Alum Sheet Signs (SQ FT)	# of Sign Posts	Estimated Length of 2" Post (ft)	Estimated Sign Post Length (LF)	Sign Invt. (EACH)					
RT	32.2	762+76	14.446	C	M1-5A M6-1R	State Route Sign (3 or 4 digit) Right Arrow	174	30 x 24 21 x 15	Black Black	White White	XI XI	5.00 2.19		1	12	12	1					
LT	32.3	764+86	14.486	NC	M1-5A M6-1L	State Route Sign (3 or 4 digit) Left Arrow	174	30 x 24 21 x 15	Black Black	White White	XI XI	5.00 2.19		1	12	12	1					
LT	35.3	764+86	14.486	NC	M1-4 M6-3	US Route Sign (1 or 2 digit) Straight Arrow	60	24 x 24 21 x 15	Black Black	White White	XI XI	4.00 2.19		1	12	12	1					
RT	32.4	767+76	14.541	C	M3-2 M1-4	US Route Sign (1 or 2 digit) East	60	24 x 12 24 x 24	Black Black	White White	XI XI	2.00 4.00		1	12	12	1					
RT	19.8	768+68	14.558	C	OM3-R	Object Marker Type 3 Right		12 x 36	Black	Yellow	XI	3.00		1	11	11	1					
LT	19.0	768+80	14.561	NC	OM3-R	Object Marker Type 3 Right		12 x 36	Black	Yellow	XI	3.00		1	11	11	1					
LT	27.8	769+25	14.569	NC	W1-2R W13-1P	Right Curve XX MPH (Advisory Speed)	XX	30 x 30 18 x 18	Black Black	FL Yellow FL Yellow	XI XI	6.25 2.25		1	13	13	1					
LT	19.3	774+10	14.661	NC	M2-1 M1-5A	Junction State Route Sign (3 or 4 digit)	174	21 x 15 30 x 24	Black Black	White White	XI XI	2.19 5.00		1	12	12	1					
RT	43.9	786+95	14.904	NC	W14-3	No Passing Zone		48 x 48 x 36	Black	Yellow	XI		5.56	1	12	12	1					
RT	27.7	792+00	15.000	C	D10-2	Mile Marker (2 digit)	15	10 x 27	White	Green	XI	1.88		1	11	11	1					
RT	25.3	795+65	15.069	C	D10-2	Mile Marker (2 digit)	15	10 x 27	White	Green	XI	1.88		1	12	12	1					
RT	21.4	809+79	15.337	C	W1-4R W2-2L	Right Reverse Curve Slide Road Left		30 x 30 30 x 30	Black Black	FL Yellow FL Yellow	XI XI	6.25 2.25		1	12	12	1					
LT	20.0	809+85	15.338	NC	W1-6-8P W1-4R	Advance Street Name (1-line) Right Reverse Curve	Matthews Branch Rd	40.5 x 8 30 x 30	Black Black	Yellow FL Yellow	XI XI	2.25 6.25		1	12	12	1					
LT	26.6	817+62	15.485	NC	W16-8P	Advance Street Name (1-line)	Matthews Branch Rd	40.5 x 8	Black	Yellow	XI	2.25		1	12	12	1					
LT	31.6	818+07	15.494	C	W14-3	No Passing Zone		48 x 48 x 36	Black	Yellow	XI		5.56	1	12	12	1					
RT	25.5	826+06	15.645	NC	W14-3	No Passing Zone		48 x 48 x 36	Black	Yellow	XI		5.56	1	12	12	1					
RT	20.7	827+20	15.667	C	W2-2R W16-8P	Slide Road Right Advance Street Name (1-line)		30 x 30 40.5 x 8	Black Black	Yellow Yellow	XI XI	6.25 2.25		1	12	12	1					
RT	25.2	831+03	15.739	C	W1-2L	Left Curve		30 x 30	Black	FL Yellow	XI	6.25		1	13	13	1					
RT	24.7	833+05	15.777	NC	W13-1P	XX MPH (Advisory Speed)	XX	18 x 18	Black	FL Yellow	XI	2.25		1	11	11	1					
RT	26.5	834+17	15.799	C	W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1					
RT	24.0	835+12	15.817	NC	W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1					
LT	27.7	836+00	15.833	NC	W2-2L W16-8P	Right Chevron Advance Street Name (1-line)		30 x 30 40.5 x 8	Black Black	FL Yellow Yellow	XI XI	6.25 2.25		1	12	12	1					
RT	23.1	836+24	15.838	C	W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1					
LT	16.5	838+07	15.873	NC	W1-2R W13-1P	Right Curve XX MPH (Advisory Speed)	XX	30 x 30 18 x 18	Black Black	FL Yellow FL Yellow	XI XI	6.25 2.25		1	13	13	1					
RT	27.7	844+80	16.000	C	D10-2	Mile Marker (2 digit)	16	10 x 27	White	Green	XI	1.88		1	11	11	1					
RT	20.0	853+77	16.170	C	D10-2 W1-2R W13-1P	Mile Marker (2 digit) Right Curve XX MPH (Advisory Speed)	16 XX	10 x 27 30 x 30 18 x 18	White Black Black	Green FL Yellow FL Yellow	XI XI XI	1.88 6.25 2.25		1	13	13	1					
LT	20.0	855+75	16.207	NC	W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1					
LT	20.0	856+55	16.223	NC	W1-8R W1-8L	Right Chevron Left Chevron		18 x 24 18 x 24	Black Black	FL Yellow FL Yellow	XI XI	3.00 3.00		1	11	11	1					

SIGN LOCATION										SIGN SUMMARY			SHEETING			US 60		TOTAL		Barcode
Side of Road	Approx Offset (ft)	Approx Station	Approx. Mile Point	Facing Traffic Traveling	MUTCD Code	Sign Description	Sign Text / Remarks	Sign Dimensions (in x in)	Text/ Symbol Color	Background Color	Sheeting Type	SBM Alum Sheet Signs 0.080 IN (SQ FT)	SBM Alum Sheet Signs 0.125 IN (SQ FT)	# of Sign Posts	Estimated Length of 2" Post (ft)	Estimated Sign Post Length (LF)	Barcode Sign Inv. Length (EACH)			
LT	20.0	857+32	16.237	C	W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
				NC	W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00								
					W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00								
LT	20.0	858+19	16.254	NC	W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00								
LT	20.0	858+88	16.267	NC	W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00								
LT	20.0	859+66	16.281	NC	W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00								
LT	20.0	860+44	16.296	C	W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-2L	Left Curve		30 x 30	Black	FL Yellow	XI	6.25		1	13	13	1			
LT	20.0	862+43	16.334	NC	W1-4R	Right Reverse Curve		30 x 30	Black	FL Yellow	XI	6.25		1	12	12	1			
					W1-4R	Right Reverse Curve		30 x 30	Black	FL Yellow	XI	6.25		1	12	12	1			
RT	20.0	864+65	16.376	C	W1-4R	Right Reverse Curve		30 x 30	Black	FL Yellow	XI	6.25		1	12	12	1			
					W1-4R	Right Reverse Curve		30 x 30	Black	FL Yellow	XI	6.25		1	12	12	1			
RT	20.0	876+17	16.594	NC	W1-5L	Left Winding Road		30 x 30	Black	FL Yellow	XI	6.25		1	13	13	1			
					W1-5L	Left Winding Road		30 x 30	Black	FL Yellow	XI	6.25		1	13	13	1			
RT	20.0	882+13	16.707	C	W1-4P	School Bus Turn Ahead	XX	18 x 18	Black	FL Yellow-Green	XI	9.00		1	12	12	1			
					W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
LT	20.0	887+58	16.810	NC	W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
LT	20.0	888+59	16.829	NC	W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
LT	20.0	889+35	16.844	NC	W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
LT	20.0	890+11	16.858	NC	W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
LT	20.0	890+87	16.873	C	W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
LT	20.0	891+63	16.887	NC	W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
LT	20.0	892+41	16.902	NC	W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
LT	20.0	893+18	16.916	C	W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					W1-8L	Left Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
LT	20.0	893+95	16.931	C	W1-8R	Right Chevron		18 x 24	Black	FL Yellow	XI	3.00		1	11	11	1			
					D10-2	Mile Marker (2 digit)	17	10 x 27	White	Green	XI	1.88		1	11	11	1			
RT	27.7	897+60	17.000	NC	D10-2	Mile Marker (2 digit)	17	10 x 27	White	Green	XI	1.88		1	11	11	1			
LT	21.2	898+20	17.011	NC	S3-2	School Bus Turn Ahead		36 x 36	Black	FL Yellow-Green	XI	9.00		1	12	12	1			
					W1-5L	Left Winding Road		30 x 30	Black	FL Yellow	XI	6.25		1	13	13	1			
LT	20.0	904+99	17.140	NC	W13-1P	XX MPH (Advisory Speed)	XX	18 x 18	Black	FL Yellow	XI	2.25		1	13	13	1			

Summary of Items			
SBM Alum Sheet Signs 0.080 INCH	616.25	SQ FT	
SBM Alum Sheet Signs 0.125 INCH	72.28	SQ FT	
Barcode Sign Inventory	179	EACH	

Summary of Items			
Steel Post - Type 1	1239	LF	
GMSS Type D	0	EACH	
GMSS Type D (Surface Mount)	0	EACH	
Class A Concrete for Signs	0	CU YD	

**Guardrail Summary**

**County: ROWAN**

**Route: US 60**

Notes: Begin/End Milepoints are estimated to include the entire length of the Rail AND the End Treatments. The Engineer may adjust the proposed guardrail termini to ensure proper installation of the guardrail system.

Proposed Guardrail to be Constructed										Existing Guardrail to be Removed					
Side of Road	Proposed BEGINNING Treatment	Approx. BEGIN Station	Approx. BEGIN Milepoint	Approx. END Station	Approx. END Milepoint	Proposed ENDING Treatment	Proposed Length (LF)	Number of Radius	Remarks	Side of Road	Approx. BEGIN Station	Approx. BEGIN Milepoint	Approx. END Station	Approx. END Milepoint	Existing Length (LF)
RT	Type 1	572+55	10.844	574+82	10.887	Single Face A	162.50	4	25 FT of Single Face A, Connect to Guardrail on Existing Bridge	RT	572+55	10.844	574+82	10.887	237.50
LT	Terminal Section 1	574+72	10.885	574+82	10.887	Single Face A	2.50	4	25 FT of Single Face A, Connect to Guardrail on Existing Bridge	LT	574+72	10.885	574+82	10.887	12.50
RT	Single Face A	575+00	10.890	576+64	10.921	Terminal Section 1	157.50	2	25 FT of Single Face A, Connect to Guardrail on Existing Bridge	RT	575+00	10.890	576+64	10.921	175.00
LT	Single Face A	575+00	10.890	575+11	10.892	Terminal Section 1	2.50	4	25 FT of Single Face A, Connect to Guardrail on Existing Bridge	LT	575+00	10.890	575+11	10.892	12.50
RT	Type 1	587+12	11.120	592+02	11.213	Type 1	400.00			RT	587+12	11.120	592+02	11.213	500.00
RT	Terminal Section 1	613+10	11.612	631+85	11.967	Type 1	1,832.50	2		RT	613+10	11.612	631+85	11.967	1,875.00
RT	Terminal Section 1	652+18	12.352	665+81	12.610	Type 1	1,332.50	2		RT	652+18	12.352	665+81	12.610	1,375.00
LT	Terminal Section 1	699+68	13.252	704+01	13.334	Type 1	395.00	2		LT	699+68	13.252	704+01	13.334	437.50
RT	Terminal Section 1	767+41	14.534	768+80	14.561	Connector Type A	157.50	2		RT	767+41	14.534	771+59	14.613	425.00
LT	Terminal Section 1	767+77	14.541	768+45	14.554	Connector Type A	82.50	2		LT	767+77	14.541	769+60	14.576	187.50
LT	Connector Type A	768+69	14.559	769+60	14.576	Terminal Section 1	107.50	2		LT		0.000		0.000	0.00
RT	Connector Type A	769+05	14.565	771+59	14.613	Terminal Section 1	270.00	2		RT		0.000		0.000	0.00
LT	Terminal Section 1	813+78	15.413	816+97	15.473	Terminal Section 1	340.00	4		LT	813+78	15.413	816+97	15.473	325.00
RT	Terminal Section 1	820+52	15.540	820+74	15.544	Terminal Section 1	40.00	4		RT	820+52	15.540	820+74	15.544	25.00
RT		830+07	15.721	830+57	15.730	Type 1	0.00		Remove 75 LF guardrail for site distance and replace with End Treatment Type 1	RT	830+07	15.721	831+32	15.745	125.00
LT	Type 2A	831+36	15.745	836+10	15.835	Terminal Section 1	490.00	4		LT	831+36	15.745	836+10	15.835	475.00
RT	Type 1	832+77	15.772	836+39	15.841	Type 1	262.50			RT	832+77	15.772	836+39	15.841	362.50
RT										RT	841+72	15.942	841+95	15.946	25.00
LT	Type 1	849+60	16.091	851+81	16.133	Terminal Section 1	182.50	2		LT	849+60	16.091	851+81	16.133	225.00
LT	Terminal Section 1	852+05	16.137	857+77	16.246	Terminal Section 1	590.00	4		LT	852+05	16.137	857+77	16.246	575.00
RT	Type 3	854+88	16.191	866+68	16.414	Type 1	1,137.50			RT	854+88	16.191	866+68	16.414	1,187.50
LT	Terminal Section 1	858+19	16.254	859+93	16.287	Terminal Section 1	190.00	4		LT	858+19	16.254	859+93	16.287	175.00
RT	Type 1	866+80	16.417	870+39	16.485	Terminal Section 1	320.00	2		RT	866+80	16.417	870+39	16.485	362.50
RT	Terminal Section 1	870+75	16.491	875+08	16.573	Terminal Section 1	452.50	4		RT	870+75	16.491	875+08	16.573	437.50

**Guardrail Summary**

**County: ROWAN**

**Route: US 60**

Notes: Begin/End Milepoints are estimated to include the entire length of the Rail AND the End Treatments. The Engineer may adjust the proposed guardrail termini to ensure proper installation of the guardrail system.

Side of Road	Proposed BEGINNING Treatment Section	Approx. BEGIN Station	Approx. BEGIN Milepoint	Approx. END Station	Approx. END Milepoint	Proposed Guardrail to be Constructed			Number of Radius of Rail	Remarks	Existing Guardrail to be Removed					
						Proposed ENDING Treatment	Proposed Length (LF)	Proposed Type			Side of Road	Approx. BEGIN Station	Approx. BEGIN Milepoint	Approx. END Station	Approx. END Milepoint	Existing Length (LF)
RT	Terminal Section 1	875+33	16.578	877+94	16.628	Terminal Section 1	277.50	Type 1	4		RT	875+33	16.578	877+94	16.628	262.50
RT	Terminal Section 1	878+02	16.629	888+70	16.831	Type 3	1,082.50	Type 3	2		RT	878+02	16.629	888+70	16.831	1,075.00
LT	Terminal Section 1	887+98	16.818	893+57	16.924	Type 1	520.00	Type 1	2		LT	886+98	16.799	892+57	16.905	562.50

**Summary of Items**

Item Description	Quantity	Unit	Notes
Guardrail-Steel W/Beam-S Face	10,787.50	LF	
Remove Guardrail	11,437.50	LF	
End Treatment Type 1	13	EACH	GR Connector to Bridge End Type A
End Treatment Type 2A	1	EACH	GR Connector to Bridge End Type A-1
End Treatment Type 3	2	EACH	GR Connector to Bridge End Type C
End Treatment Type 4A	0	EACH	GR Connector to Bridge End Type D
End Treatment Type 7	0	EACH	DGA
Terminal Section No. 1	27	EACH	Asphalt Seal Coat
Guardrail-Steel W/Beam-S Face A	100	LF	Asphalt Seal Aggregate
			Guardrail-Bridge Case II

ROWAN COUNTY - US 60  
CULVERT PIPE REPLACEMENT & EXTENSION SUMMARY

Mile Point	Station	Pipe Size, Type	Existing		Length (LF)	Remove Pipe (LF <sup>3</sup> )		Remove Headwall (each)		Pipe Extension Length (LF)		Class A Concrete for Anchor/Collar (CU YD) <sup>4</sup>	Culvert Pipe 18" (LF)	Culvert Pipe 24" (LF)	Culvert Pipe 30" (LF)	Culvert Pipe 36" EQUIV. (LF)	Culvert Pipe 60" (LF)	Headwall or Drainage Box		Ditching & Shouldering (LF)		Ditching (LF)		Channel Lining (TON)		Comments	PAVING					
			Left Hdwl	Right Hdwl		Left	Right	Left	Right	Left	Right							Left	Right	Left	Right	Left	Right	Left	Right		1.0" CL2 ASPH SURFACE 0.38D PG64-22 (TONS)	6.5" CL2 ASPH BASE 1.00D PG64-22 (TONS)	MILLING AND TEXTURING			
11.02	584+70	24" VCP	STONE HDWL	STONE HDWL	31	15	16							34					24" SAFETY BOX INLET	24" STD. HDWL	50	50							14.1	3.7	14.1	
11.15	588+72	24" VCP	STONE HDWL	OPEN	47	20	27							49					24" S&F HDWL	24" STD. HDWL	50	*							14.1	3.7	14.1	
11.18	590+36	30" RCP	STONE HDWL	STONE HDWL	40	4	4				3	4.76			11				36" SAFETY BOX INLET	30" PIPE CULV. HDWL	50	*										
11.56	610+63	30" VCP	STONE HDWL	STONE HDWL	39	19	20								46				36" SAFETY BOX INLET	30" SLOPED & MITTERED HDWL	50	50							14.1	4.1	14.1	
11.66	615+49	18" HDPE	STONE HDWL	STONE HDWL	37	4	4					2.26	8						18" SAFETY BOX INLET	18" STD. HDWL	50	*										
11.82	623+99	18" HDPE	STONE HDWL	OPEN	36	4	4					2.26	20						18" JUNCTION BOX IN DITCH	18" STD. HDWL	50	*										
11.92	629+22	18" HDPE	STONE HDWL	OPEN	36	4	4					2.26	24						JUNCTION BOX IN DITCH	18" STD. HDWL	50	*										
12.35	651+92	4.5X3 METAL ARCH	STONE HDWL	CONC. HDWL	49															24" JUNCTION BOX IN DITCH	24" STD. HDWL	0	0									
12.58	664+01	24" VCP	OPEN	OPEN	44	19	25							76					18" SLOPED & MITTERED HDWL	18" SLOPED & MITTERED HDWL	50	*							14.1	3.7	14.1	
14.16	747+65	18" RCP	OPEN GRAVEL	POURED CONC.	38	4	4				5	2.26	18						18" SLOPED & MITTERED HDWL	18" SLOPED & MITTERED HDWL	*	*										
14.38	759+26	18" VCP ASSUMED	OPEN	OPEN	35	18	17						61						18" SLOPED & MITTERED HDWL	18" JUNCTION BOX IN DITCH	50	*							14.1	3.2	14.1	
15.54	820+62	24" VCP	STONE HDWL	STONE HDWL	39	20	19												36" EQUIV. HDWL	36" EQUIV. HDWL	50	50							*	4.6		
15.94	841+79	VARIABLES	CONC. HDWL	CONC. STONE HDWL	30	14	16												36" EQUIV. PIPE CULV. HDWL	36" EQUIV. PIPE CULV. HDWL	50	50							*	4.6		
16.81	887+52	60" CMP	OPEN	OPEN	35	4													60" PIPE CULV. HDWL	DROP BOX INLET TYPE 2	29	*										
16.97	896+23	30" VCP	CONC. HDWL	STONE HDWL	37	4									18						0	*										
TOTALS:						313 LF	10 Ea.					27.97 CU YD	131 LF	159 LF	75 LF	78 LF	4 LF				779 LF	0 LF		10 TON				71 TON	28 TON	71 TON		

\* within FDOTS resurfacing limits

<b>Headwall Totals</b>			
Standard Headwall - 18"	3	Each	
Standard Headwall - 24"	2	Each	
Pipe Culvert Headwall - 36" Equiv.	4	Each	
Safety Box Inlet 1.8 inch	1	Each	
Safety Box Inlet 2.4 inch	1	Each	
Safety Box Inlet 3.6 inch	2	Each	
Sloped & Mitered Conc. Headwall - 18"	3	Each	
Sloped & Mitered Conc. Headwall - 30"	1	Each	
Sloped & Hared Headwall - 24"	2	Each	
Remove Headwall	10	Each	

\* These locations of Ditching & Shouldering are already accounted for in the Ditching & Shouldering Summary and are NOT included in the Ditching & Shouldering TOTALS on this Pipe and Drainage Items Summary.

NOTES:

1. These Pipe and Drainage Item quantities and locations are approximate and are intended to provide a basis for bid. Final locations, flow line elevations, grate elevations, and quantities will be determined by the contractor and approved by the engineer in the field.
2. Clearing and grubbing necessary to install drainage items, as directed by the Engineer, will be considered part of Site Preparation, which is incidental to the Contract.
3. Remove Pipe shall be incidental to the construction of new pipe.
4. See Standard Drawing RDX-060-03 for Intermediate Anchor details.

**ROWAN COUNTY - US 60**  
**MILEPOINT 10.834 TO 17.112**  
**ITEM NO. 9-9008.00**  
**RCBC SUMMARY**

Mile Point	Station	CULVERT SIZE	EXTENSION LENGTH	RCBC				MISCELLANEOUS							REMARKS			
				FOUNDATION PREPARATION	CULVERT HEADWALL	CULVERT EXTENSION	CULVERT HEADWALL	CULVERT EXTENSION	CONCRETE - CLASS A	REMOVE CONCRETE MASONRY	CHANNEL LINING CLASS II	CHANNEL LINING CLASS III	DITCHING & SHOULDERING LEFT	DITCHING & SHOULDERING RIGHT		STEEL REINFORCEMENT	EMBANKMENT IN PALCE	
ITEM CODE	UNIT TO BID			8003	-	-	-	-	8100	2403	2483	2484	2575	2575	8150	2230		
				LS	EACH	LF	EACH	LF	CY	CY	TONS	TONS	LF	LF	LBS	CY		
11.28	595+74	3'X2'	0	0	0	0	0	0		4			0	0				CUT HEADWALLS TO MATCH EX. SLOPE
16.23	856+84	10'X5'	44	1		43			18.00		30		*	*	2,430			43 LF - 10'X5' PRECAST RCBC (w/ 16 Tons CL2 Asphalt Base 1,00D PG64-22)(CONCRETE - CLASS A & STEEL REINFORCEMENT ESTIMATED FOR CAST-IN-PLACE HEADWALLS)
16.46	869+09	4'X3'	6	1			1	6	0.83				50	*				6 LF - OF 4'X3' PRECAST BOX CULVERT, INSTALL CRIBBING TO SHORE-UP SHOULDER ON RIGHT SIDE. CONCRETE - CLASS A ESTIMATED FOR JUNCTION BOX AT CONNECTION
<b>PROJECT TOTALS</b>					<b>0</b>	<b>43</b>	<b>1</b>	<b>6</b>	<b>18.83</b>	<b>4</b>	<b>30</b>	<b>0</b>	<b>50</b>	<b>0</b>	<b>2,430</b>	<b>0</b>		<b>PROJECT TOTALS</b>

- NOTES:**
1. The Contractor shall field verify types and dimensions prior to ordering.
  2. See culvert detail sheets.
  3. Embankment to be used for backfilling culvert extensions and adjusting sideslopes around culvert and wingwalls.

**Ditching & Shouldering Summary**

**Rowan County**

**Route: US 60**

\* The "Figure References" noted below refer to the Figure number within the Ditching & Shouldering Detail Sheet that is the closest representation of the intended Ditching & Shouldering  
 \*\* The Estimated Volumes of Excavation and Embankment are provided for informational purposes ONLY. The Department gives no guarantee to the accuracy of the estimated volumes. The Bidder must draw his/her own conclusion. Payment will be based on the Linear Footage of Ditching & Shouldering performed, regardless of the accuracy of the Estimated Volumes of Excavation and Embankment.

Side of Road	Approx. BEGIN Station	Approx. BEGIN Milepoint	Approx. END Station	Approx. END Milepoint	Length (LF)	Estimated Excavation Volume** (CU YD)	Estimated Embankment Volume** (CU YD)	Ditching & Shouldering Detail Sheet Figure Ref. *	Include DGA Wedge? (Yes/No)	DGA (TONS)	Asphalt Seal Coat (TON)	Asphalt Seal Aggregate (TON)	Channel Line Ditch, Fill Slope or Cut Slope? (Yes/No)	Channel Lining Class II (TONS)	Geotex. Fabric CLASS 2 (SQ YD)	Remarks
RT	587+12	11.120	592+02	11.213	490	0	0	Figure 2	No							
RT	613+10	11.612	631+85	11.967	1,875	0	0	Figure 2	No							
RT	652+18	12.352	665+81	12.610	1,363	0	0	Figure 3	No							
LT	678+90	12.858	689+50	13.059	1,060	236	196	Figure 9	No							
RT	691+75	13.101	692+50	13.116	75	0	14	Figure 1	No							
RT	713+69	13.517	715+93	13.559	224	66	41	Figure 9	No							
RT	724+50	13.722	725+75	13.745	125	37	23	Figure 9	No							
RT	736+45	13.948	764+28	14.475	2,783	722	515	Figure 9	No							
LT	746+84	14.145	748+36	14.173	152	34	28	Figure 9	No							
LT	814+00	15.417	816+97	15.473	297	0	0	Figure 3	No							
LT	831+36	15.745	835+90	15.831	454	0	0	Figure 3	No							
RT	832+77	15.772	836+39	15.841	362	0	0	Figure 2	No							
LT	849+60	16.091	851+81	16.133	221	0	0	Figure 1	No							
LT	852+05	16.137	857+77	16.246	572	0	0	Figure 3	No							
RT	853+14	16.158	854+85	16.190	171	44	32	Figure 9	No							
RT	855+10	16.195	856+40	16.220	130	39	19	Figure 10	No				Yes - Cut Slope	128	205	
RT	856+40	16.220	870+25	16.482	1,385	0	132	Figure 3	No							
LT	858+19	16.254	859+93	16.287	174	0	132	Figure 3	No							
LT	874+42	16.561	887+48	16.808	1,306	290	242	Figure 9	No							
RT	887+26	16.804	890+50	16.866	324	0	144	Figure 3	No							
RT	890+50	16.866	896+84	16.986	634	188	70	Figure 10	No				Yes - Cut Slope	352	565	
LT	896+30	16.975	898+24	17.012	194	29	36	Figure 9	No							
RT	896+84	16.986	902+95	17.101	611	136	113	Figure 9	No							
LT	900+37	17.052	902+95	17.101	258	38	48	Figure 9	No							

**Summary of Items**

Ditching & Shouldering		15,240	LF	Asphalt Seal Coat		0	TONS	Channel Lining Class II		480	TONS
DGA		0	TONS	Asphalt Seal Aggregate		0	TONS	Geotextile Fabric CLASS 2		770	TONS

COUNTY OF	ITEM NO.	SHEET NO.
ROWAN	9-9008.00	

**ROWAN COUNTY - US 60**  
**MP 10.834 TO MP 17.112**  
**ITEM NO. 9-9008.00**

**POLYPROPYLENE BARRIER WALL & CRIBBING SUMMARY**

Begin Milepoint	Begin Station	End Milepoint	End Station	Offset	POLYPROPYLENE BARRIER WALL (SF)	PROPOSED CRIBBING (SF)	DGA (TON)	ASPHALT SEAL AGGREGATE (TON)	ASPHALT SEAL COAT (TON)	FABRIC GEOTEXTILE Class 2 (SY)	RAILROAD RAILS - DRILLED (LF)	EXCAVATION & BACKFILL (CY)	COMMENTS
15.417	814+00	15.445	815+50	Lt.	1,050							130	Install Proprietylene Barrier Wall system. Approx. max. height 7' - (*)
15.773	832+81	15.811	834+81	Lt.	1,400							175	Install Proprietylene Barrier Wall system. Approx. max. height 7' - (*)
16.399	865+85	16.414	866+68	Rt.		996				258	348	148	Install cribbing. Approx. max. height 12' - (*)
16.458	868+96	16.463	869+23	Rt.		324				84	120	48	Install cribbing. Approx. max. height 12' - (*)
16.804	887+26	16.813	887+71	Rt.		473	6	0.5	0.1	125	168	70	Install cribbing. Approx. max. height 10.5'
<b>TOTALS</b>					<b>2,450</b>	<b>1,793</b>	<b>6</b>	<b>0.5</b>	<b>0.1</b>	<b>467</b>	<b>636</b>	<b>571</b>	

ITEM	DESCRIPTION	UNIT	QUANTITY
1	DGA BASE	TON	6
100	ASPHALT SEAL AGGREGATE	TON	0.5
108	ASPHALT SEAL COAT	TON	0.1
2599	FABRIC - GEOTEXTILE CLASS 2	SY	467
3236	CRIBBING	SF	1,793
3234	RAILROAD RAILS - DRILLED	LF	636
3235	EXCAVATION AND BACKFILL	CY	571
8018	RETAINING WALL (POLYPROPYLENE BARRIER WALL)	SF	2,450

\* - QUANTITIES SHOWN ON PAVEMENT WIDENING SUMMARY SHEET FOR SHOULDER  
NOTE: These numbers are for estimate purposes only. Final locations and quantities will be determined by the Engineer in the field.

NOTE: ALL QUANTITIES CARRIED OVER TO GENERAL SUMMARY

US 60	<b>POLYPROPYLENE BARRIER WALL &amp; CRIBBING SUMMARY</b>
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COUNTY OF	ITEM NO.	SHEET NO.
ROWAN	9-9008.00	

ROWAN COUNTY - US 60  
MP 10.834 TO MP 17.112  
ITEM NO. 9-9008.00  
TREE TRIMMING / REMOVAL SUMMARY

Offset	Begin Milepoint	Begin Station	End Milepoint	End Station	Description	Length (LF)
LT	14.231	751+39	14.343	757+29	Trim & Remove Trees & Brush	590
<b>PROJECT TOTALS:</b>						590

ITEM 3269 DESCRIPTION TRIM & REMOVE TREES & BRUSH UNIT QUANTITY LF 590

NOTE: REFER TO TREE CLEARING DETAIL FOR CLEARING OFFSET AND HEIGHT

US 60  
TREE TRIMMING TABULATION

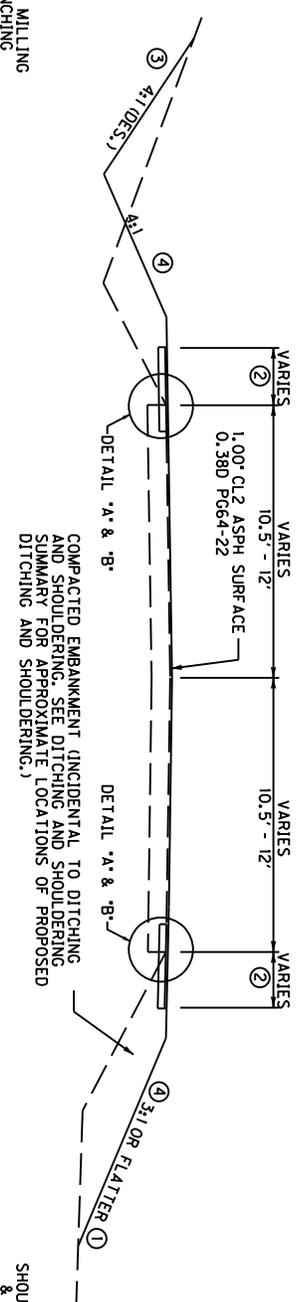
9-9008.00 - ROWAN CO. - US 60 PAVEMENT MARKINGS SUMMARY							
PAVEMENT STRIPING SUMMARY - DURABLE WATERBORNE (NON-RESURFACING LIMITS: STA. 572+03.52 STA. 763+00)							
Begin		End		Side	Length (LF)	Type	Comments
Mile Point	Station	Mile Point	Station				
10.834	572+03.52	10.886	574+80	LT	276	6" Single Solid White	
10.834	572+03.52	10.886	574+80	CL	553	6" Yellow (Various Configuration)	Match existing configuration
10.834	572+03.52	10.886	574+80	RT	276	6" Single Solid White	
10.890	574+98	14.451	763+00	LT	18,802	6" Single Solid White	
10.890	574+98	14.451	763+00	CL	37,604	6" Yellow (Various Configuration)	Match existing configuration
10.890	574+98	14.451	763+00	RT	18,802	6" Single Solid White	
PAVEMENT STRIPING SUMMARY - THERMOPLASTIC (RESURFACING LIMITS: STA. 763+00 TO STA. 903+51.36)							
Begin		End		Side	Length (LF)	Type	Comments
Mile Point	Station	Mile Point	Station				
14.451	763+00	14.553	768+41	LT	541	6" Single Solid White	
14.451	763+00	14.555	768+51	CL	1,102	6" Yellow (Various Configuration)	Match existing configuration
14.451	763+00	14.557	768+61	RT	561	6" Single Solid White	
14.562	768+89	14.910	787+23	LT	1,834	6" Single Solid White	
14.564	768+99	14.911	787+31	CL	3,664	6" Yellow (Various Configuration)	Match existing configuration
14.566	769+09	14.913	787+39	RT	1,830	6" Single Solid White	
14.918	787+68	17.112	903+51.36	LT	11,583	6" Single Solid White	
14.920	787+76	17.112	903+51.36	CL	23,151	6" Yellow (Various Configuration)	Match existing configuration
14.921	787+84	17.112	903+51.36	RT	11,567	6" Single Solid White	
PAVEMENT STRIPING SUMMARY - PAVEMENT STRIPING DURABLE TY 1 (FOR CONCRETE BRIDGE DECKS)							
Begin		End		Side	Length (LF)	Type	Comments
Mile Point	Station	Mile Point	Station				
10.886	574+80	10.890	574+98	LT	18	6" Single Solid White	
10.886	574+80	10.890	574+98	CL	36	6" Yellow (Various Configuration)	Match existing configuration
10.886	574+80	10.890	574+98	RT	18	6" Single Solid White	
14.553	768+41	14.562	768+89	LT	48	6" Single Solid White	
14.555	768+51	14.564	768+99	CL	96	6" Yellow (Various Configuration)	Match existing configuration
14.557	768+61	14.566	769+09	RT	48	6" Single Solid White	
14.910	787+23	14.918	787+68	LT	45	6" Single Solid White	
14.911	787+31	14.920	787+76	CL	90	6" Yellow (Various Configuration)	Match existing configuration
14.913	787+39	14.921	787+84	RT	45	6" Single Solid White	
PAVEMENT HATCHING SUMMARY - THERMOPLASTIC							
Begin		End		Side	Area (SQ FT)	Type	Comments
Mile Point	Station	Mile Point	Station				
14.852	784+16	14.915	787+53	LT	475	White Hatching	X = 24 IN. Y = 20 FT.

Summary	Totals
DURABLE WATERBORNE MARKING - 6 IN W	38,157 LF
DURABLE WATERBORNE MARKING - 6 IN Y	38,157 LF
PAVE STRIPING - THERMO - 6 IN W	27,917 LF
PAVE STRIPING - THERMO - 6 IN Y	27,917 LF
PAVE STRIPING - DUR TY 1-6 IN W	222 LF
PAVE STRIPING - DUR TY 1-6 IN Y	222 LF
PAVE MARKING - THERMO CROSS-HATCH	475 SQ FT



# TYPICAL SECTIONS

COUNTY OF	ITEM NO.
ROWAN	9-9008.00

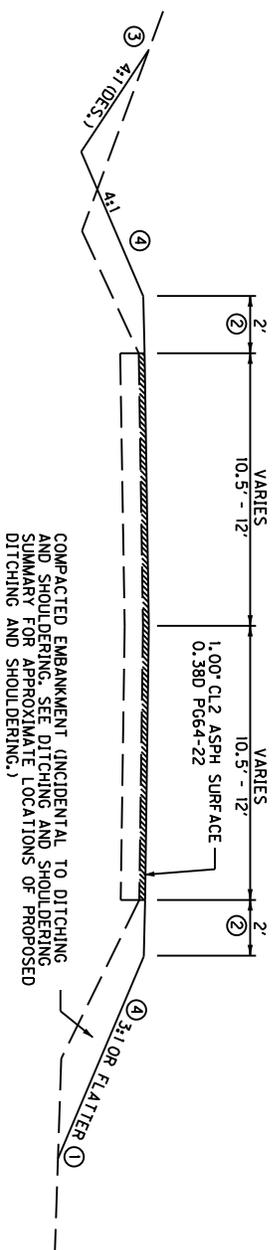
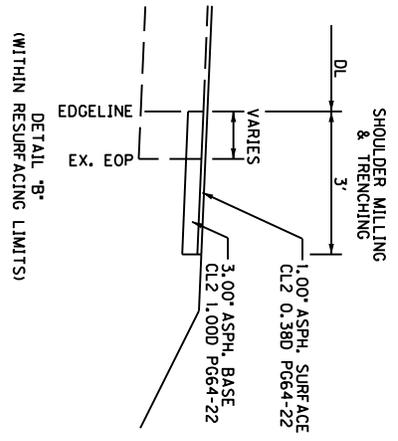
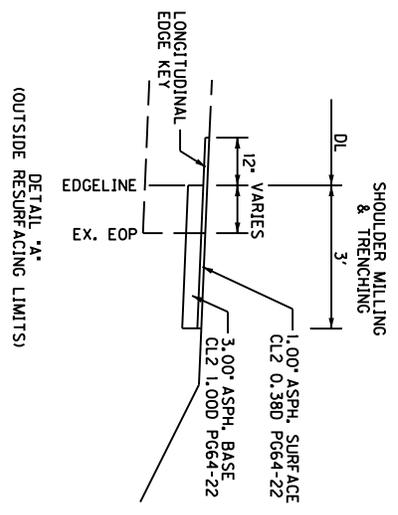


## PAVEMENT WIDENING DETAIL

SEE PAVEMENT WIDENING SUMMARY SHEET FOR APPROXIMATE LOCATIONS

NOTE: RESURFACING LIMITS STA. 763+00 TO STA. 903+51.36

- ① 3:1 OR FLATTER IS DESIRABLE. LOCATIONS THAT ARE LIMITED DUE TO RIGHT-OF-WAY, UTILITY POLE, TREES, FENCES, OR OTHER SENSITIVE OBSTRUCTIONS MAY REQUIRE EMBANKMENT BUT ONLY OUT TO THE EDGE OF THE RIGHT-OF-WAY OR SENSITIVE OBSTRUCTIONS. (SLOPE MAY BE STEEPER THAN 3:1)
- ② A 2' SHOULDER IS DESIRABLE BUT MAY HAVE TO BE ELIMINATED IN ORDER TO REMAIN ON RIGHT-OF-WAY OR AVOID A SENSITIVE OBSTRUCTION.
- ③ FLATTEN DITCH BACKSLOPE WHEN POSSIBLE TO REMAIN IN RIGHT-OF-WAY. IN AREAS WHERE THE BACKSLOPE MUST REMAIN STEEP, THE ENGINEER MAY DETERMINE THAT CHANNEL LINING NEEDS TO BE INSTALLED TO STABILIZE THE BACKSLOPE.
- ④ SHOULDER EMBANKMENT MATERIAL SHALL BE SUITABLE FOR VEGETATION GROWTH.



## ASPHALT OVERLAY SECTION WITH DITCHING AND SHOULDERING DETAIL

SEE DITCHING AND SHOULDERING SUMMARY FOR APPROXIMATE LOCATIONS OF PROPOSED DITCHING AND SHOULDERING SEE PLANS/PAVING SUMMARY SHEET FOR APPROXIMATE LOCATIONS OF ASPHALT OVERLAY

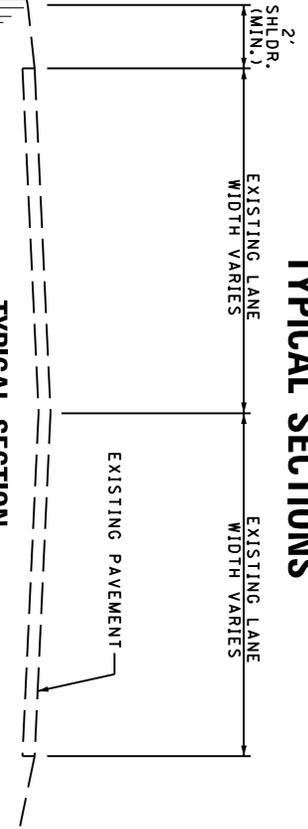
NOTE: RESURFACING LIMITS STA. 763+00 TO STA. 903+51.36

- ① 3:1 OR FLATTER IS DESIRABLE. LOCATIONS THAT ARE LIMITED DUE TO RIGHT-OF-WAY, UTILITY POLE, TREES, FENCES, OR OTHER SENSITIVE OBSTRUCTIONS MAY REQUIRE EMBANKMENT BUT ONLY OUT TO THE EDGE OF THE RIGHT-OF-WAY OR SENSITIVE OBSTRUCTIONS. (SLOPE MAY BE STEEPER THAN 3:1)
- ② A 2' SHOULDER IS DESIRABLE BUT MAY HAVE TO BE ELIMINATED IN ORDER TO REMAIN ON RIGHT-OF-WAY OR AVOID A SENSITIVE OBSTRUCTION.
- ③ FLATTEN DITCH BACKSLOPE WHEN POSSIBLE TO REMAIN IN RIGHT-OF-WAY. IN AREAS WHERE THE BACKSLOPE MUST REMAIN STEEP, THE ENGINEER MAY DETERMINE THAT CHANNEL LINING NEEDS TO BE INSTALLED TO STABILIZE THE BACKSLOPE.
- ④ SHOULDER EMBANKMENT MATERIAL SHALL BE SUITABLE FOR VEGETATION GROWTH.

NOT TO SCALE

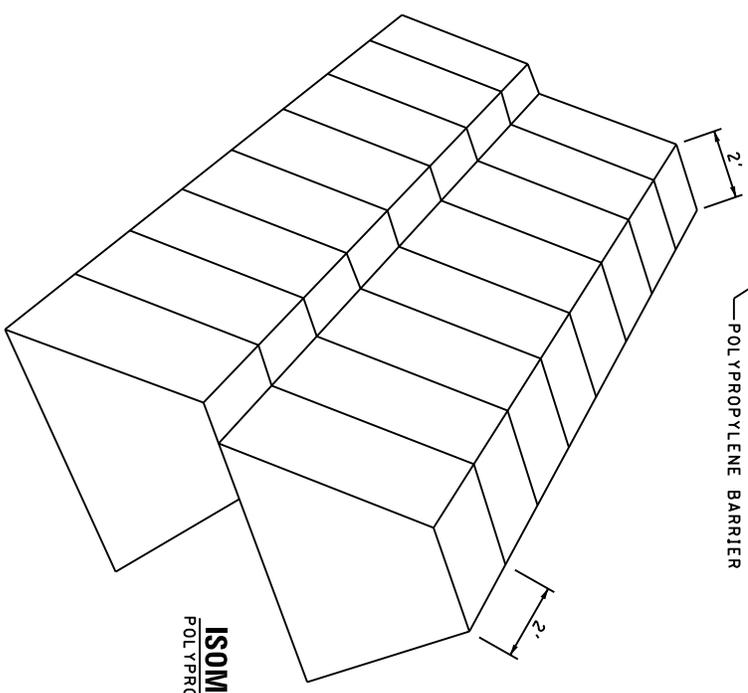
US 60  
DITCHING AND SHOULDERING  
PAVEMENT WIDENING

### TYPICAL SECTIONS

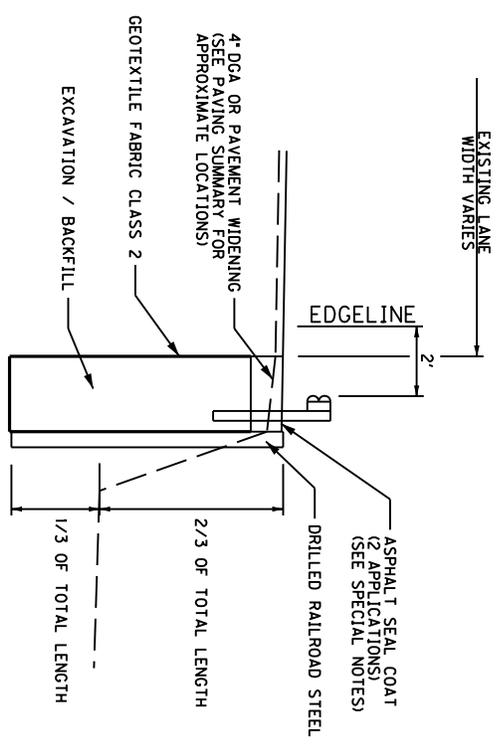


### TYPICAL SECTION POLYPROPYLENE BARRIER

- ① SEE POLYPROPYLENE BARRIER WALL SUMMARY SHEET FOR APPROXIMATE HEIGHT AND QUANTITIES TO BE USED AT EACH LOCATION. THE ENGINEER WILL DETERMINE THE EXACT LIMITS AND WALL HEIGHTS AT THE TIME OF CONSTRUCTION.
- ② SEE SPECIAL NOTE FOR AGGREGATE BACKFILL REQUIREMENTS.
- ③ FILL PROPYLENE BARRIER WITH CONCRETE - CLASS B. SEE SPECIAL NOTE.



**ISOMETRIC VIEW  
POLYPROPYLENE BARRIER**



**CRIBBING DETAIL**

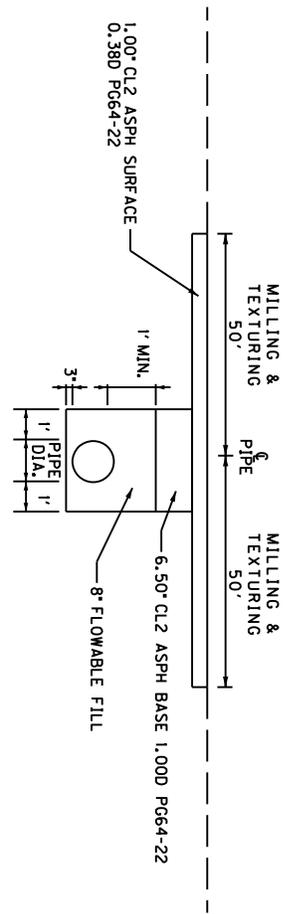
NOT TO SCALE

US 60  
CRIBBING/POLYPROPYLENE  
BARRIER WALL DETAILS

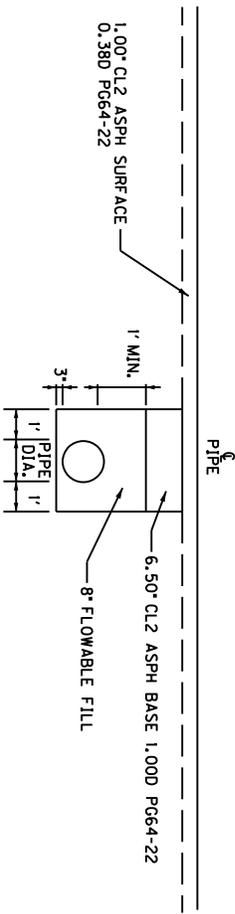
COUNTY OF	ITEM NO.
ROWAN	9-9008.00

COUNTY OF	ITEM NO.
ROWAN	9-9008.00

### TYPICAL SECTIONS



**FOR PIPES WHERE THE REMOVAL OF PIPE WILL REQUIRE PAVING OPERATIONS OUTSIDE RESURFACING LIMITS**



**FOR PIPES WHERE THE REMOVAL OF PIPE WILL REQUIRE PAVING OPERATIONS WITHIN RESURFACING LIMITS**

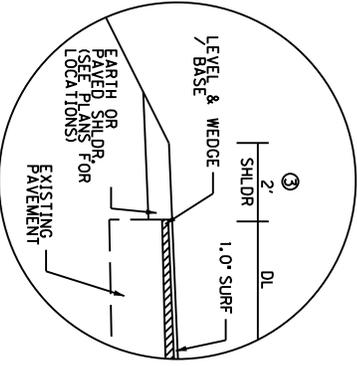
NOTE: RESURFACING LIMITS STA. 763+00 TO STA. 903+51.36

NOT TO SCALE

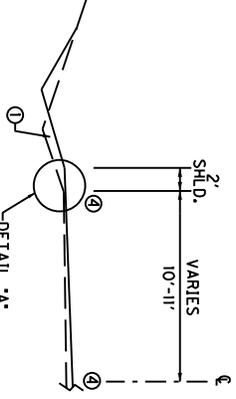
US 60  
PIPE PAVING DETAIL

# TYPICAL SECTIONS

COUNTY OF	ITEM NO.
ROWAN	9-9008.00

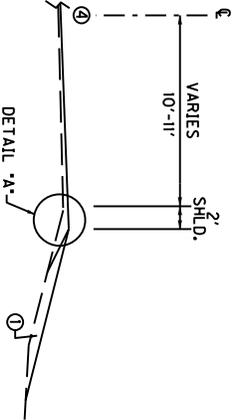


DETAIL 'A'



DETAIL 'A'

## SUPERELEVATED SECTION CUT



DETAIL 'A'

## SUPERELEVATED SECTION FILL

STA. 617 + 01 TO STA. 626 + 09 (BOTH SIDES)  
 STA. 723 + 53 TO STA. 727 + 72 (BOTH SIDES)  
 STA. 742 + 87 TO STA. 750 + 35 (BOTH SIDES)  
 STA. 831 + 25 TO STA. 837 + 50 (BOTH SIDES)

## SUPERELEVATION IMPROVEMENTS

NOTE: RESURFACING LIMITS STA. 763+00 TO STA. 903+51.36

US 60 - SUPERELEVATION IMPROVEMENTS  
 1.0' SURFACE — CL2 ASPH SURF 0.38D PG64-22  
 DEPTH VARIES — CL2 ASPH BASE 1.00D PG64-22  
 DEPTH VARIES — LEVELING & WEDGING PG64-22

- ① COMPACTED EMBANKMENT (INCIDENTAL TO DITCHING & SHOULDERING). CONTRACTOR SHALL PROPERLY BENCH INTO EXISTING SLOPE AND APPLY PROPER COMPACTION. COMPACT MATERIAL ACCORDING TO STANDARD SPECIFICATIONS (SEC. 209). FINAL PAVEMENT WILL BE PAID AS IF OF DITCHING & SHOULDERING AND INCLUDE ALL WORK NECESSARY TO PERFORM WORK. SHOULDER EMBANKMENT MATERIAL SHALL BE SUITABLE FOR VEGETATION GROWTH. LOCATIONS THAT ARE LIMITED DUE TO R/W, UTILITY POLES, TREES, FENCES, OR OTHER SENSITIVE OBSTRUCTIONS MAY REQUIRE EMBANKMENT BUT ONLY OUT TO THE EDGE OF R/W OR SENSITIVE OBSTRUCTIONS). (SLOPE MAY BE STEEPER THAN 3:1)
- ② EXCAVATION TO ACHIEVE THE PROPOSED DITCHES IS INCIDENTAL TO THE BID ITEM DITCHING & SHOULDERING.
- ③ DESIRABLE 2' PAVED SHOULDER (SEE PAVEMENT WIDENING SUMMARY SHEET FOR LOCATIONS)
- ④ LONGITUDINAL EDGE KEYS REQUIRED ALONG CENTERLINE AND INSIDE EDGE OF PAVEMENT WHEN BOTH LANES RECEIVE SUPERELEVATION IMPROVEMENTS.

NOT TO SCALE

US 60  
 SUPERELEVATION IMPROVEMENTS  
 DETAILS



**BEGIN PROJECT  
STA. 572+03.52  
MP 10.834**

GUARDRAIL REMOVAL (RT.)  
STA. 572+55 TO STA. 574+82  
(REMOVED) 237.5 LF OF GUARDRAIL  
STA. 575+00 TO STA. 576+64  
(REMOVED) 175 LF OF GUARDRAIL

BEGIN STATION	END STATION	TERM. SEC.	TREAT. TY 1	NO. 1	LENGTH
572+55	574+82	--	SF A	--	162.5'
575+00	576+64	--	SF A	--	157.5'

GUARDRAIL REMOVAL (LT.)  
STA. 574+72 TO STA. 574+82  
(REMOVED) 12.5 LF OF GUARDRAIL  
STA. 575+00 TO STA. 575+11  
(REMOVED) 12.5 LF OF GUARDRAIL

BEGIN STATION	END STATION	TERM. SEC.	TREAT. NO. 1	NO. 1	LENGTH
574+72	574+82	--	SF A	--	2.5'
575+00	575+11	--	SF A	--	2.5'

CONST. WATER MAIN  
POINT RELOCATE  
STA. 581+40 TO 582+00

CONST. 24" CU VERT PIPE  
W/ 1-24" SARETT BOX INLET  
(LT.) & 1-24" S&F HDWL (RT.)

GUARDRAIL ON BRIDGE  
-TO REMAIN

REMOVE EX. BOULDERS

SCALE: 1"=200'

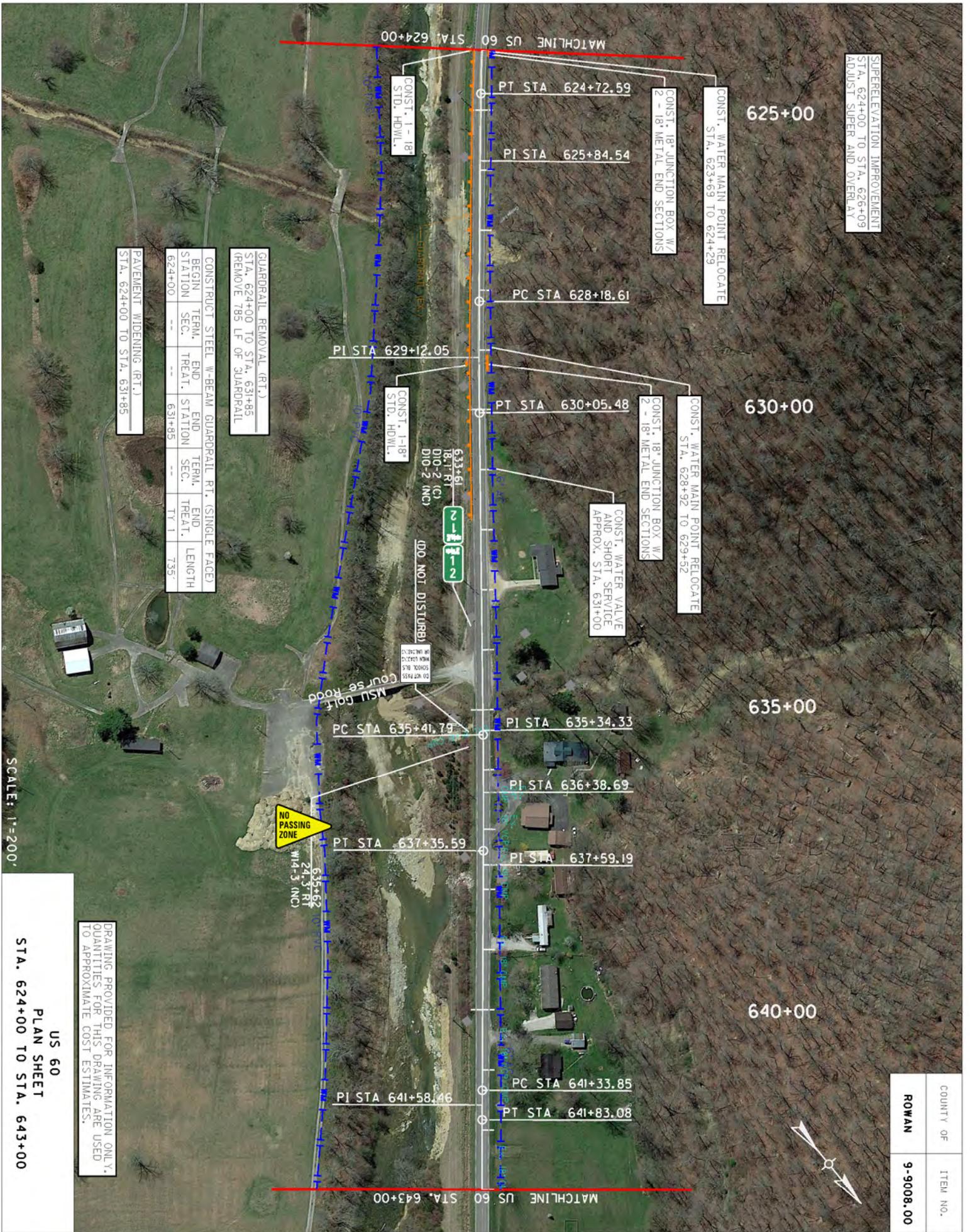
US 60  
PLAN SHEET  
STA. 572+03.52 TO STA. 586+00

DRAWING PROVIDED FOR INFORMATION ONLY.  
QUANTITIES FOR THIS DRAWING ARE USED  
TO APPROXIMATE COST ESTIMATES.

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SUPERELEVATION IMPROVEMENT  
STA. 624+00 TO STA. 626+09  
ADJUST SUPER AND OVERLAY

CONSTR. WATER MAIN POINT RELOCATE  
STA. 623+69 TO 624+29

CONSTR. 18" JUNCTION BOX W/  
2 - 18" METAL END SECTIONS

CONSTR. 1 - 18"  
STD. HDWL.

GUARDRAIL REMOVAL (RT.)  
STA. 624+00 TO STA. 631+85  
(REMOVE 785 LF OF GUARDRAIL)

BEGIN STATION	TERM. STATION	END TREAT.	END TREAT.	TR	LENGTH
624+00	631+85	---	---	TR 1	735'

PAVEMENT WIDENING (RT.)  
STA. 624+00 TO STA. 631+85

CONSTR. WATER MAIN POINT RELOCATE  
STA. 628+92 TO 629+52

CONSTR. WATER VALVE  
AND SHORT SERVICE  
APPROX. STA. 631+00

CONSTR. 1 - 18"  
STD. HDWL.

633+61  
18" RT  
DIO-2 (C)

DO NOT DISTURB

MSU Golf Course Road

NO PASSING ZONE

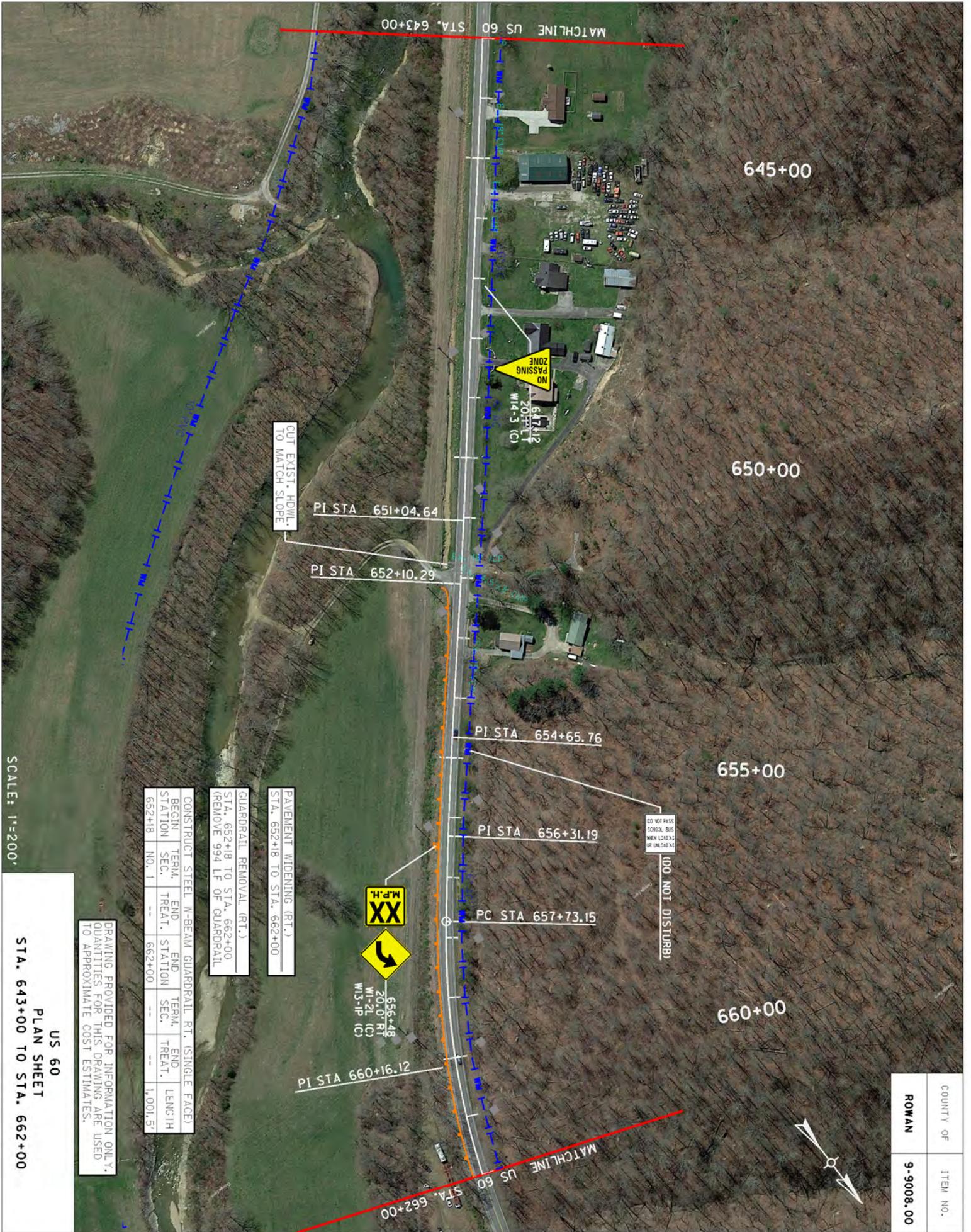
635+62  
24.3' RT  
W14-3 (INC)

COUNTY OF	ITEM NO.
ROWAN	9-9008.00

DRAWING PROVIDED FOR INFORMATION ONLY.  
QUANTITIES FOR THIS DRAWING ARE USED  
TO APPROXIMATE COST ESTIMATES.

SCALE: 1"=200'

US 60  
PLAN SHEET  
STA. 624+00 TO STA. 643+00



COUNTY OF	ROWAN
ITEM NO.	9-9008.00

DRAWING PROVIDED FOR INFORMATION ONLY.  
QUANTITIES FOR THIS DRAWING ARE USED  
TO APPROXIMATE COST ESTIMATES.

BEGIN STATION	TERM. SEC.	END STATION	TERM. SEC.	TREAT.	NO.	LENG: FT	HT
652+18	--	662+00	--		1	1,001.5	

GUARDRAIL REMOVAL (RT.)  
STA. 652+18 TO STA. 662+00  
(REMOVE 994 LF OF GUARDRAIL)

PAVEMENT WIDENING (RT.)  
STA. 652+18 TO STA. 662+00

M.P.H. XX

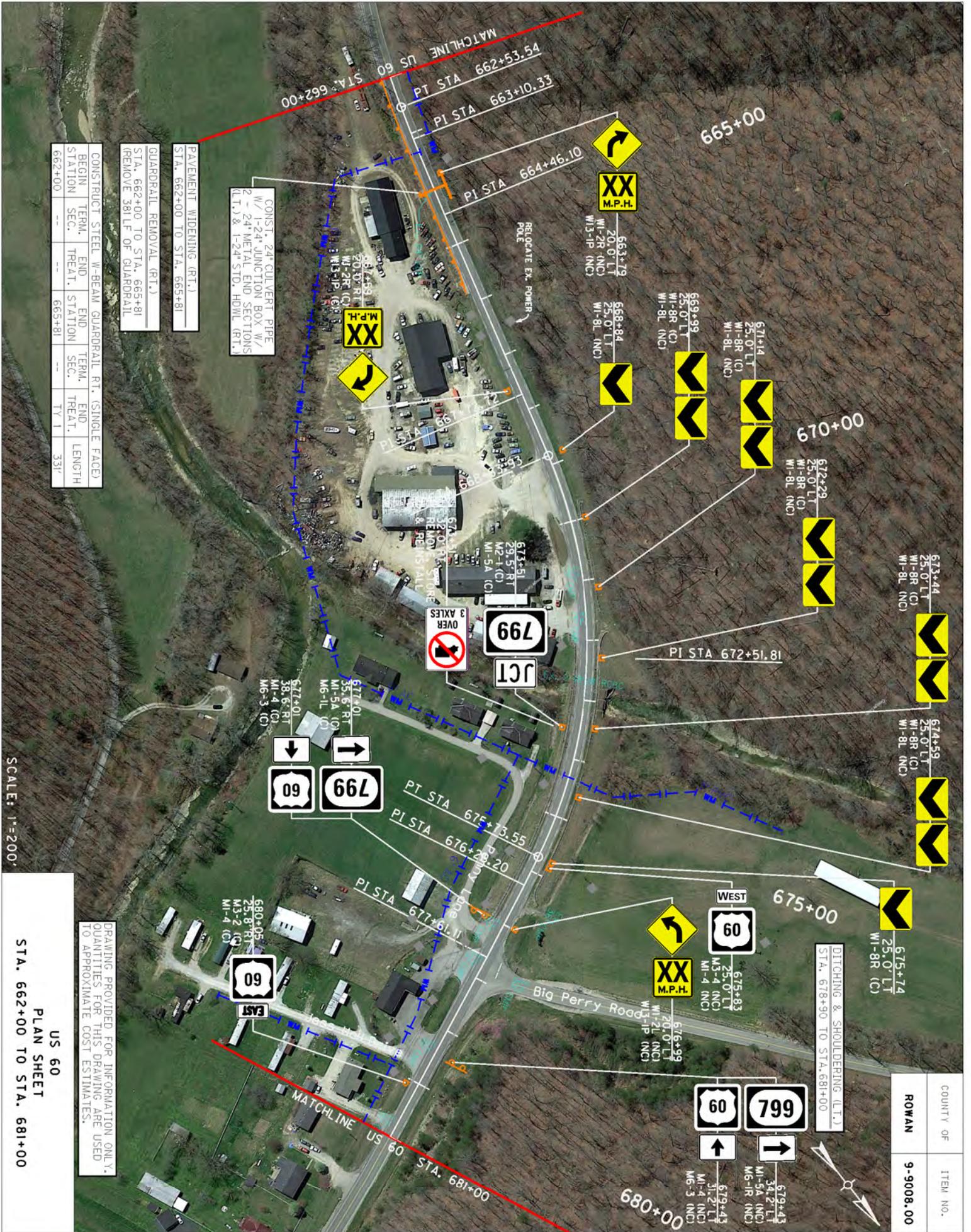
20'-0" RT  
W1-2L (C)  
W13-1P (C)

DO NOT PASS  
SCHOOL BUS  
WHEN FLASHING RED LIGHTS  
OR UNLIT

DO NOT DISTURB

SCALE: 1"=200'

US 60  
PLAN SHEET  
STA. 643+00 TO STA. 662+00



PAVEMENT WIDENING (RT.)					
STA.	662+00	TO	STA.	665+81	
GUARDRAIL REMOVAL (RT.)					
STA.	662+00	TO	STA.	665+81	
REMOVE 381 LF OF GUARDRAIL					
CONSTRUCT STEEL W-BEAM GUARDRAIL RT. (SINGLE FACE)					
BEGIN STATION	662+00	TERM. STATION	665+81	LENGTH	381'
SEC.	--	TREAT.	--	TY. 1	331'

CONSTR. 24" CULVERT PIPE  
W/ 1-24" JUNCTION BOX W/  
2 - 24" METAL END SECTIONS  
(L.T.) & 1-24" STD. HDWL (RT.)

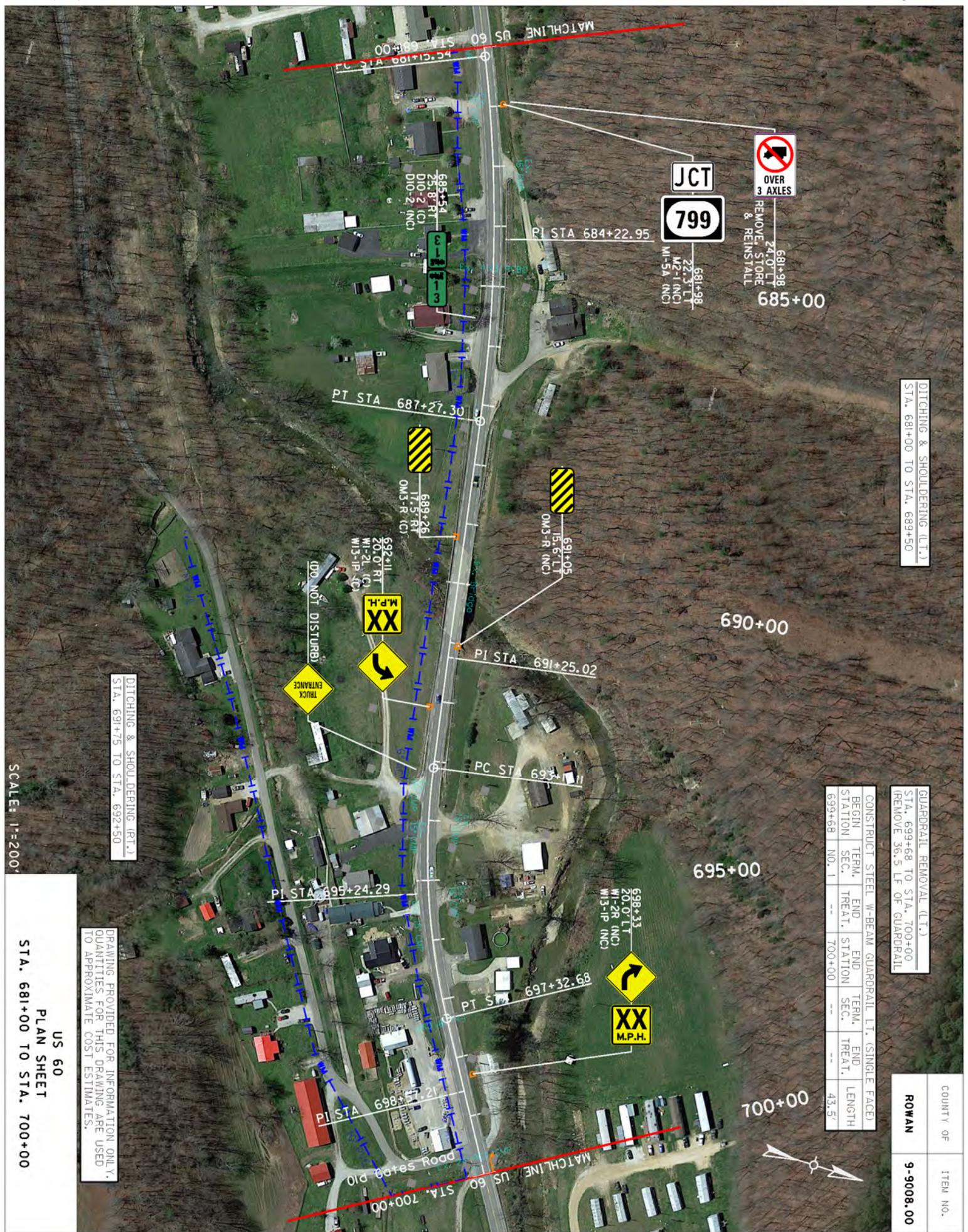
SCALE: 1"=200'

US 60  
PLAN SHEET  
STA. 662+00 TO STA. 681+00

DRAWING PROVIDED FOR INFORMATION ONLY.  
QUANTITIES FOR THIS DRAWING ARE USED  
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DITCHING & SHOULDERING (L.T.)  
STA. 618+90 TO STA. 681+00

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DITCHING & SHOULDERING (L.T.)  
STA. 681+00 TO STA. 689+50

DITCHING & SHOULDERING (R.T.)  
STA. 691+75 TO STA. 692+50

GUARDRAIL REMOVAL (L.T.)  
STA. 699+68 TO STA. 700+00  
(REMOVE 36.5 LF OF GUARDRAIL)

BEGIN STATION	TERM. SEC.	END STATION	TERM. SEC.	LENGTH
699+68	NO. 1	700+00	--	43.5'

COUNTY OF	ITEM NO.
ROWAN	9-9008.00

DRAWING PROVIDED FOR INFORMATION ONLY.  
QUANTITIES FOR THIS DRAWING ARE USED  
TO APPROXIMATE COST ESTIMATES.

SCALE: 1"=200'

US 60  
PLAN SHEET  
STA. 681+00 TO STA. 700+00

GUARDRAIL REMOVAL (L.T.)  
STA. 700+00 TO STA. 704+01  
(REMOVE 401 LF OF GUARDRAIL)

CONSTRUCT	TERM. STATION	END TREAT.	END STATION	TERM. TREAT.	END TREAT.	LENGTH
---	700+00	---	704+01	---	TY 1	351.5'

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ROWAN	9-9008.00



DITCHING & SHOULDERING (RT.)  
STA. 713+69 TO STA. 715+93

705+77  
17.3' RT  
W4-3 (NC)  
NO PASSING ZONE

Hamilton Rd  
706+90  
20.0' RT  
W2-2L (C)  
W16-8P (C)

Hamilton Rd  
714+39  
20.0' LT  
W2-2R (NC)  
W16-8P (NC)

SCALE: 1"=200'

US 60  
PLAN SHEET  
STA. 700+00 TO STA. 719+00

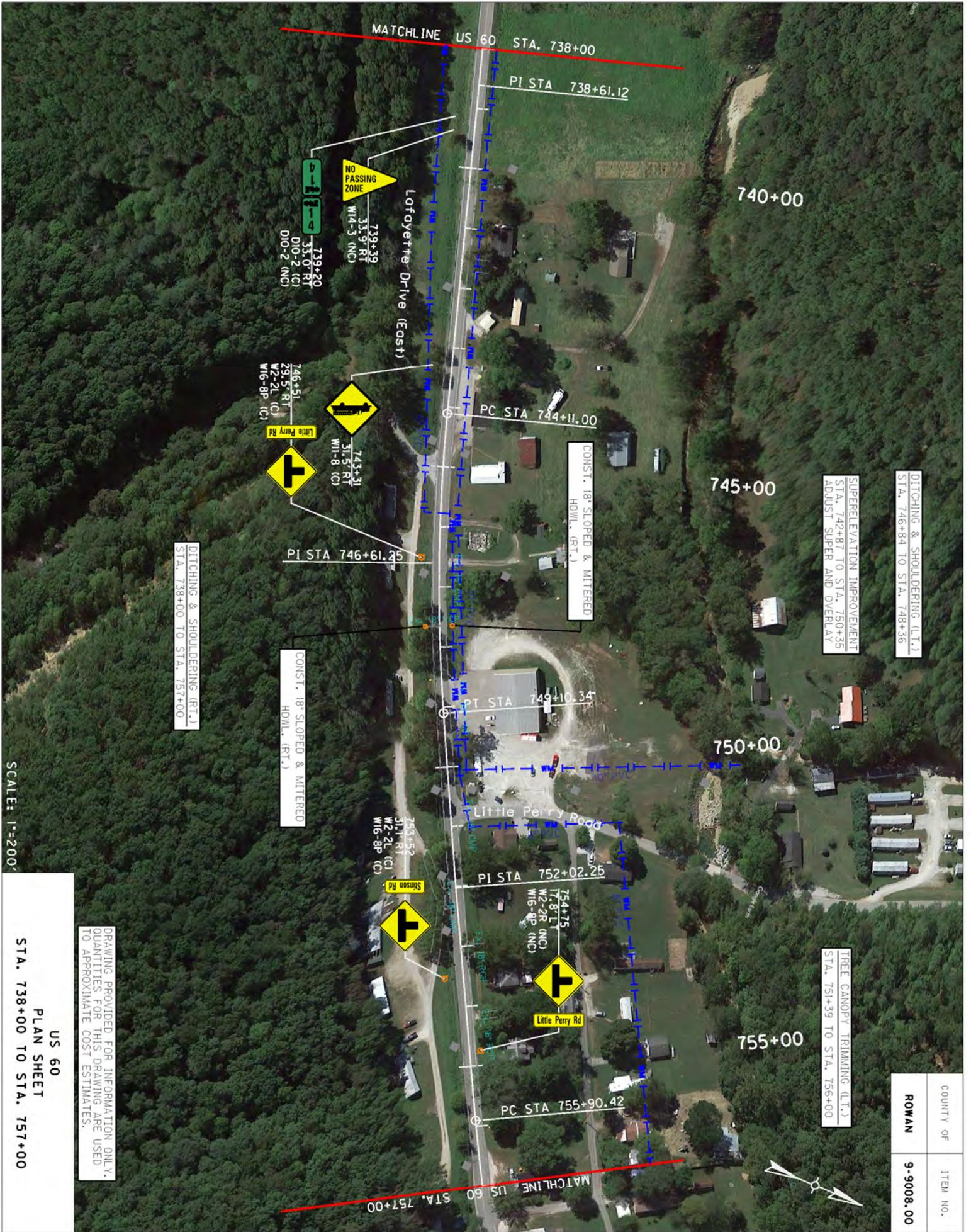
DRAWING PROVIDED FOR INFORMATION ONLY.  
QUANTITIES FOR THIS DRAWING ARE USED  
TO APPROXIMATE COST ESTIMATES.

700+00 MATCHLINE US 60 STA. 700+00

MATCHLINE US 60 STA. 719+00



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ROWAN	9-9008.00



SCALE: 1"=200'

DRAWING PROVIDED FOR INFORMATION ONLY.  
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US 60  
 PLAN SHEET  
 STA. 738+00 TO STA. 757+00

DITCHING & SHOULDERING (L.T.)  
 STA. 746+84 TO STA. 748+36

SUPERELEVATION IMPROVEMENT  
 STA. 742+87 TO STA. 750+35  
 ADJUST SUPER AND OVERLAY

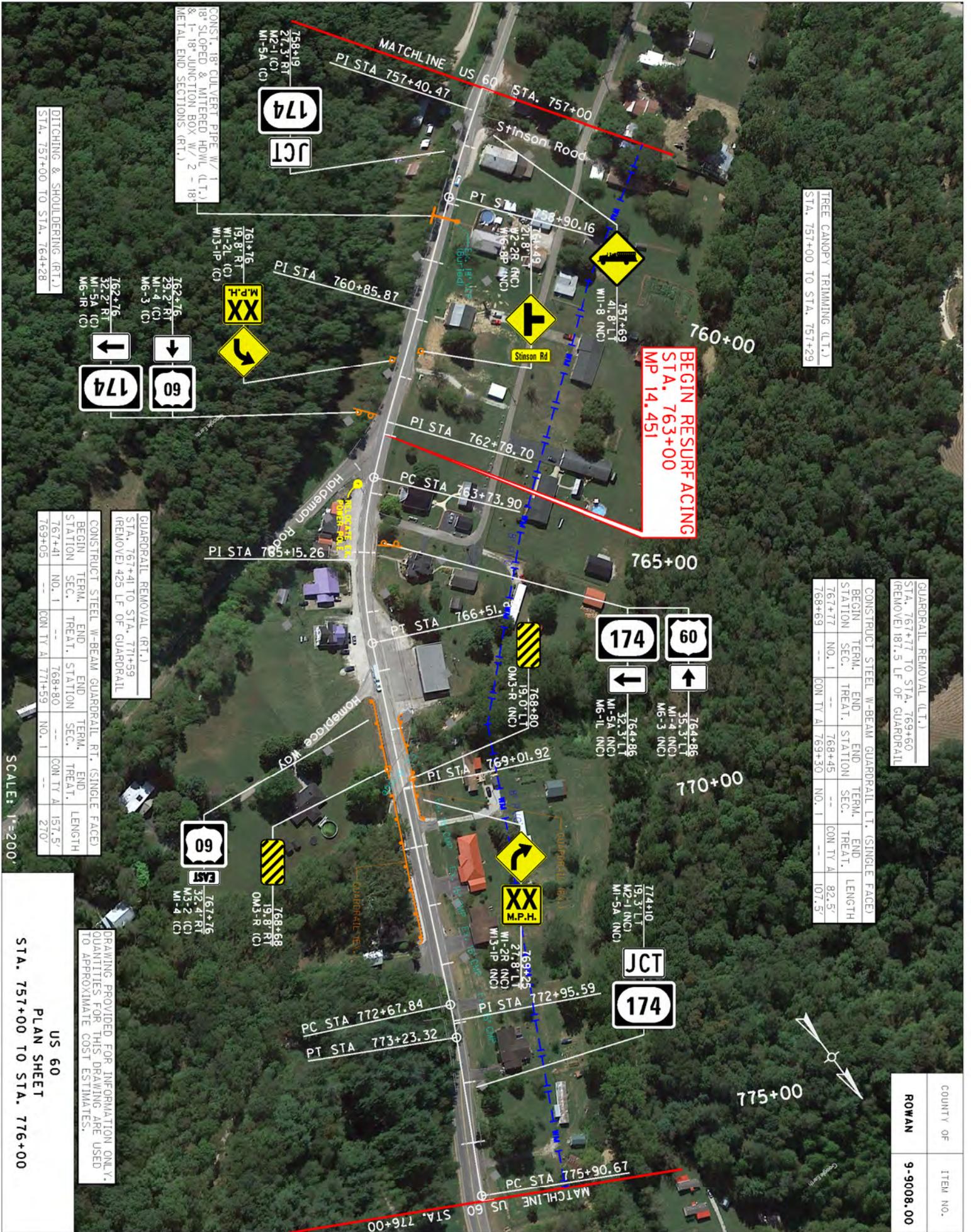
CONST. 18° SLOPED & MITERED  
 HDWL., (RT.)

CONST. 18° SLOPED & MITERED  
 HDWL., (RT.)

DITCHING & SHOULDERING (RT.)  
 STA. 738+00 TO STA. 757+00

TREE CANOPY TRIMMING (L.T.)  
 STA. 751+39 TO STA. 756+00

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BEGIN RESURFACING  
STA. 763+00  
MP 14.451

GUARDRAIL REMOVAL (L.T.)  
STA. 767+77 TO STA. 769+60  
(REMOVED) 187.5 LF OF GUARDRAIL

BEGIN STATION	TERM. SEC.	END STATION	TERM. SEC.	TREAT.	LENGTH
767+77	NO. 1	--	--	768+45	CON TY A
768+69	--	CON TY A	769+30	NO. 1	107.5'

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GUARDRAIL REMOVAL (R.T.)  
STA. 767+41 TO STA. 771+59  
(REMOVED) 425 LF OF GUARDRAIL

BEGIN STATION	TERM. SEC.	END STATION	TERM. SEC.	TREAT.	LENGTH
767+41	NO. 1	--	--	768+80	CON TY A
769+05	--	CON TY A	771+59	NO. 1	270'

DRAWING PROVIDED FOR INFORMATION ONLY.  
QUANTITIES FOR THIS DRAWING ARE USED  
TO APPROXIMATE COST ESTIMATES.

US 60  
PLAN SHEET  
STA. 757+00 TO STA. 776+00

SCALE: 1"=200'



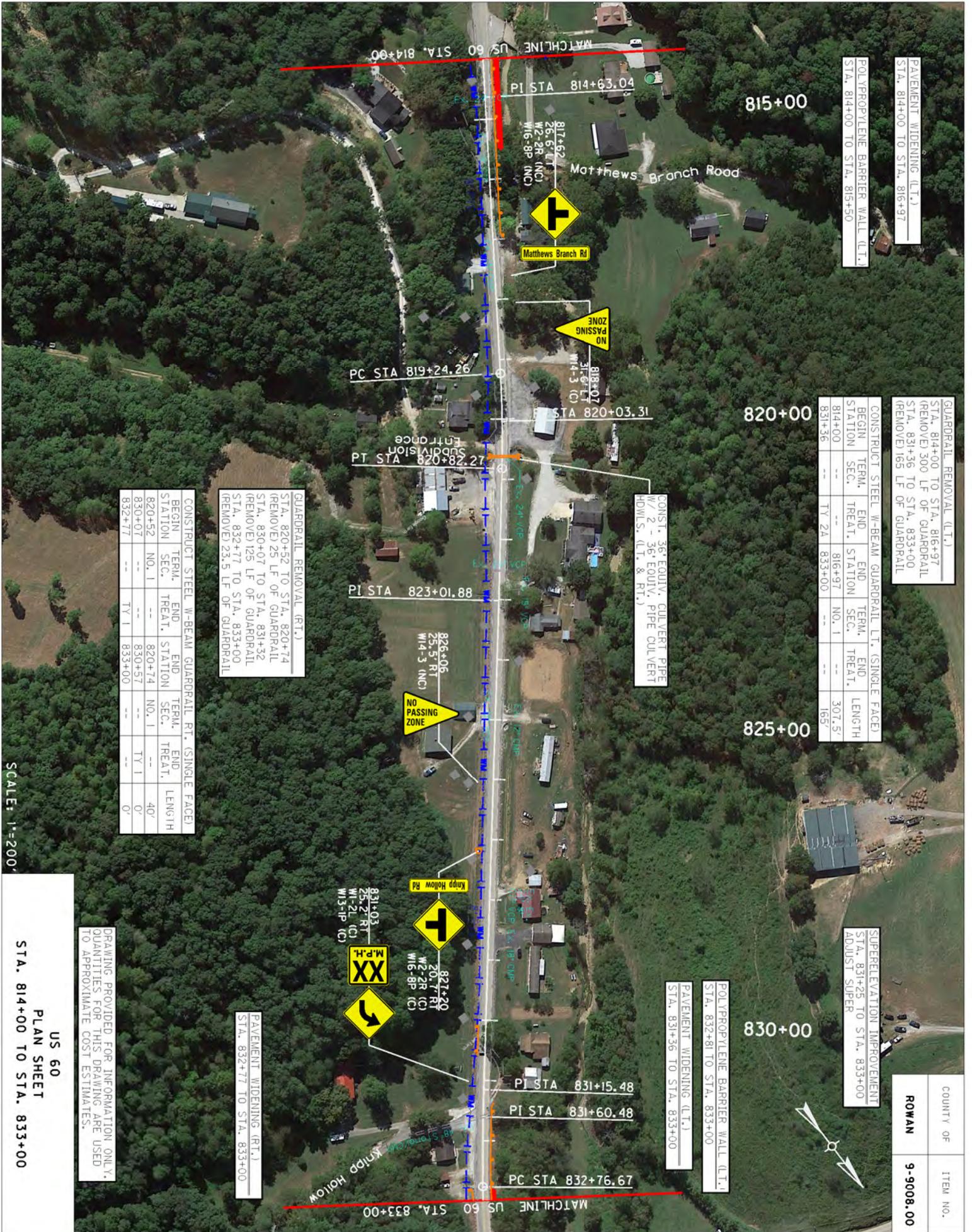
SCALE: 1"=200'

DRAWING PROVIDED FOR INFORMATION ONLY.  
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US 60  
PLAN SHEET  
STA. 776+00 TO STA. 795+00

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PAVEMENT WIDENING (L.T.)  
STA. 814+00 TO STA. 816+97

POLYPROPYLENE BARRIER WALL (L.T.)  
STA. 814+00 TO STA. 815+50

GUARDRAIL REMOVAL (L.T.)  
STA. 814+00 TO STA. 816+97  
(REMOVE) 300 LF OF GUARDRAIL  
STA. 831+36 TO STA. 833+00  
(REMOVE) 165 LF OF GUARDRAIL

BEGIN STATION	TERM. STATION	END STATION	NO.	TY	LENGTH
814+00	816+97	816+97	1	2A	307.5'
831+36	833+00	833+00	1	2A	165'

CONSTRUCT STEEL W-BEAM GUARDRAIL L.T. (SINGLE FACE)

BEGIN STATION	TERM. STATION	END STATION	NO.	TY	LENGTH
814+00	816+97	816+97	1	1	307.5'
831+36	833+00	833+00	1	1	165'

SUPERELEVATION IMPROVEMENT  
STA. 831+25 TO STA. 833+00  
ADJUST SUPER

COUNTY OF  
**ROWAN**

ITEM NO.  
**9-9008.00**

POLYPROPYLENE BARRIER WALL (L.T.)  
STA. 832+81 TO STA. 833+00

PAVEMENT WIDENING (L.T.)  
STA. 831+36 TO STA. 833+00

GUARDRAIL REMOVAL (R.T.)  
STA. 820+52 TO STA. 820+74  
(REMOVE) 25 LF OF GUARDRAIL  
STA. 830+07 TO STA. 831+32  
(REMOVE) 125 LF OF GUARDRAIL  
STA. 832+77 TO STA. 833+00  
(REMOVE) 23.5 LF OF GUARDRAIL

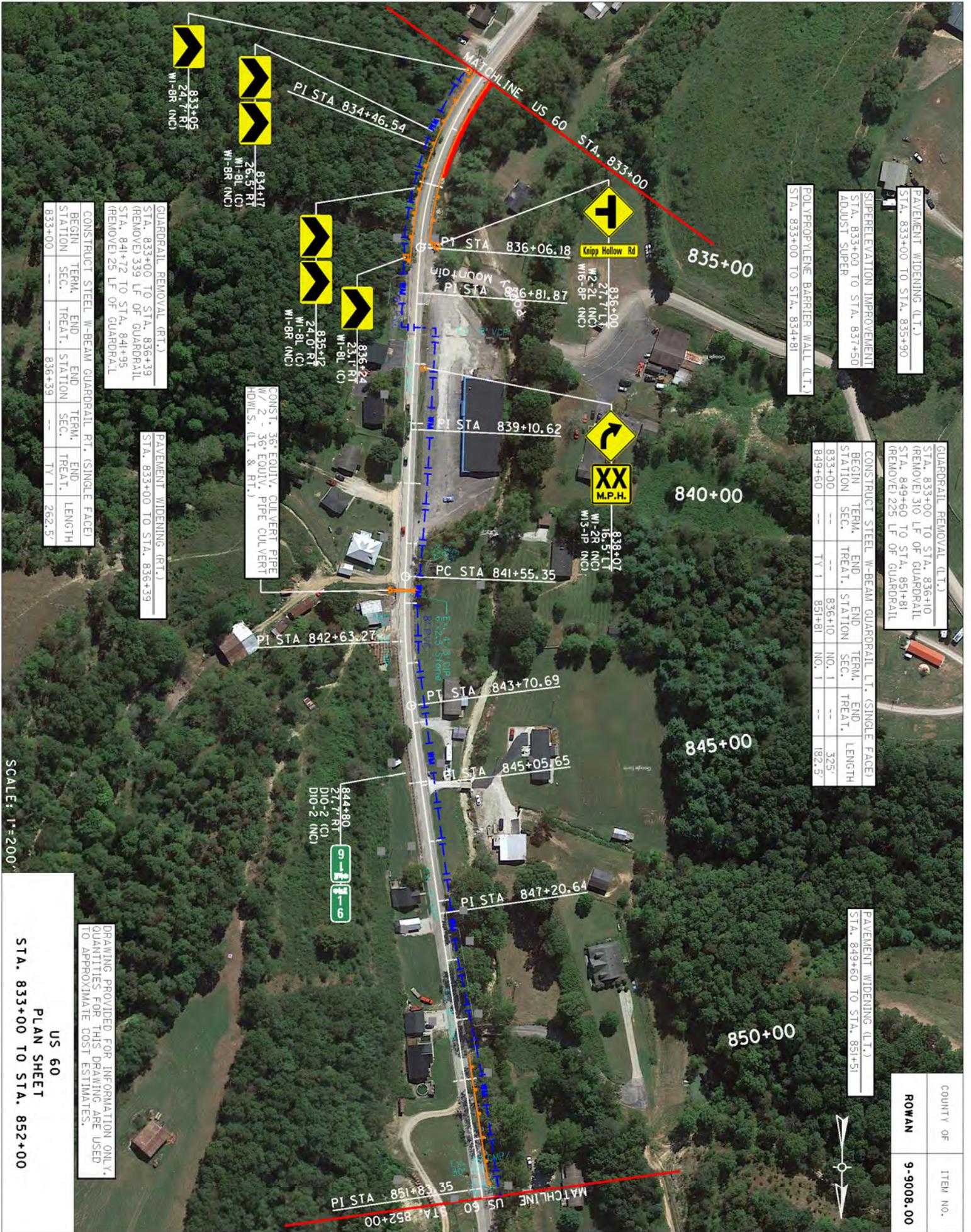
BEGIN STATION	TERM. STATION	END STATION	NO.	TY	LENGTH
820+52	820+74	820+74	1	1	40'
830+07	831+32	831+32	1	1	0'
832+77	833+00	833+00	1	1	0'

SCALE: 1"=200'

US 60  
PLAN SHEET  
STA. 814+00 TO STA. 833+00

DRAWING PROVIDED FOR INFORMATION ONLY. QUANTITIES FOR THIS DRAWING ARE USED TO APPROXIMATE COST ESTIMATES.

PAVEMENT WIDENING (R.T.)  
STA. 832+77 TO STA. 833+00



PAVEMENT WIDENING (L.T.)  
STA. 833+00 TO STA. 835+90

SUPERELEVATION IMPROVEMENT  
STA. 833+00 TO STA. 837+50  
ADJUST SUPER

POLYPROPYLENE BARRIER WALL (L.T.)  
STA. 833+00 TO STA. 834+81

GUARDRAIL REMOVAL (L.T.)  
STA. 833+00 TO STA. 836+10  
(REMOVE) 310 LF OF GUARDRAIL  
STA. 849+60 TO STA. 851+81  
(REMOVE) 225 LF OF GUARDRAIL

BEGIN STATION	TERM. STATION	END STATION	TERM. STATION	LENGTH
833+00	--	836+10	--	325'
849+60	--	TY 1	851+81	NO. 1 182.5'

PAVEMENT WIDENING (L.T.)  
STA. 849+60 TO STA. 851+51

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GUARDRAIL REMOVAL (R.T.)  
STA. 833+00 TO STA. 836+39  
(REMOVE) 339 LF OF GUARDRAIL  
STA. 841+72 TO STA. 841+95  
(REMOVE) 25 LF OF GUARDRAIL

PAVEMENT WIDENING (R.T.)  
STA. 833+00 TO STA. 836+39

BEGIN STATION	TERM. STATION	END STATION	TERM. STATION	LENGTH
833+00	--	836+39	--	262.5'

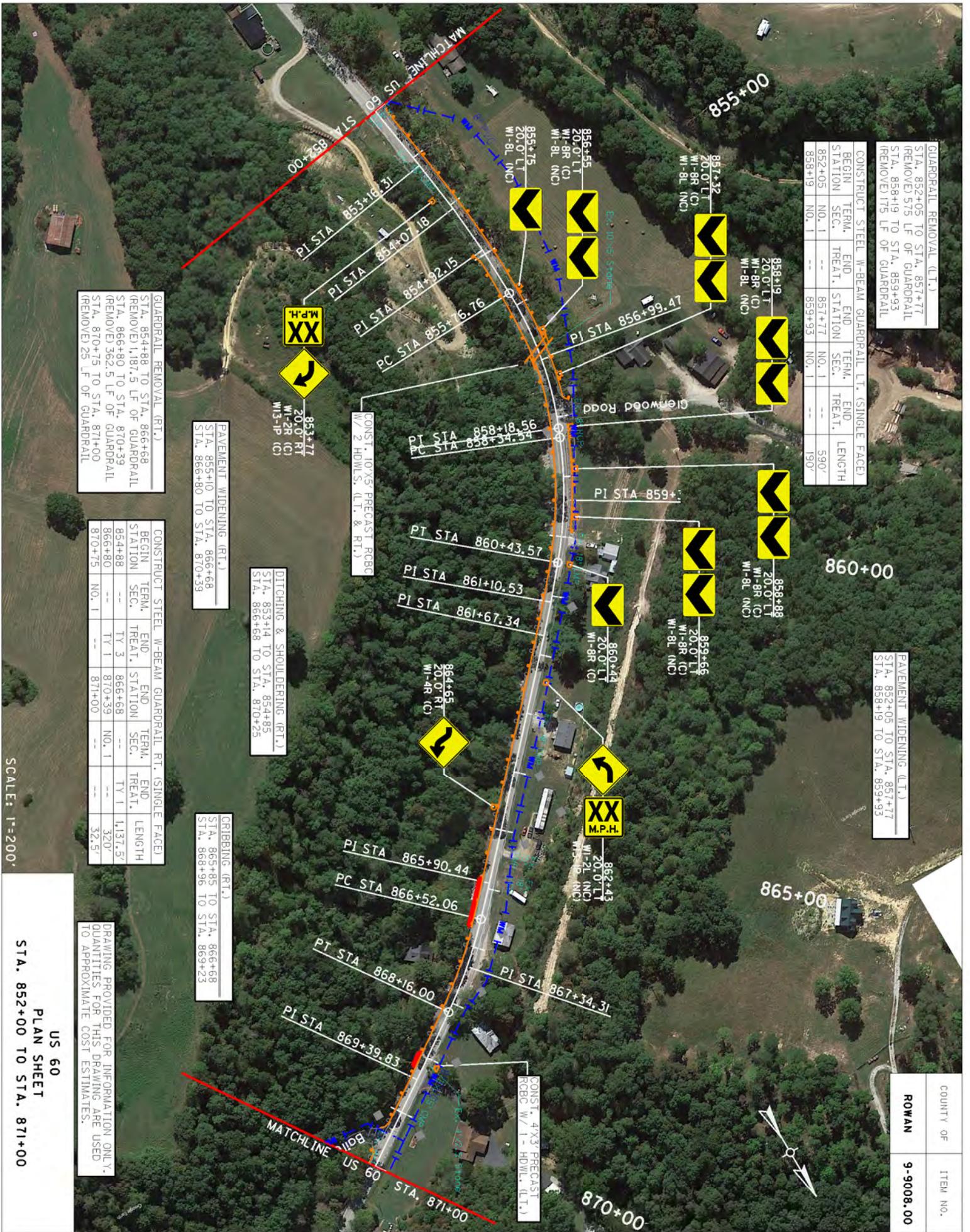
CONSTR. 36" EQUIV. GULVERT PIPE  
(N=2) 36" EQUIV. PIPE CULVERT  
HOLES (L.T. & R.T.)

844+80  
27.7' R (C)  
D10-2 (C)  
D10-2 (NC)

DRAWING PROVIDED FOR INFORMATION ONLY.  
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TO APPROXIMATE COST ESTIMATES.

US 60  
PLAN SHEET  
STA. 833+00 TO STA. 852+00

SCALE: 1"=200'



GUARDRAIL REMOVAL (L.T.)

STA. 852+05 TO STA. 857+77  
(REMOVED) 575 LF OF GUARDRAIL  
STA. 858+19 TO STA. 859+93  
(REMOVED) 175 LF OF GUARDRAIL

BEGIN STATION	TERM. SEC.	END STATION	TERM. TREAT.	LENGTH
852+05	NO. 1	857+77	---	590'
858+19	NO. 1	859+93	---	190'

CONSTRUCT STEEL W-BEAM GUARDRAIL LT. (SINGLE FACE)

BEGIN STATION	TERM. SEC.	END STATION	TERM. TREAT.	LENGTH
857+77	NO. 1	859+93	---	190'

PAVEMENT WIDENING (L.T.)

STA. 852+05 TO STA. 857+77  
STA. 858+19 TO STA. 859+93

BEGIN STATION	TERM. SEC.	END STATION	TERM. TREAT.	LENGTH
854+88	---	856+68	TY 3	1,137.5'
866+80	---	870+39	TY 1	320'
870+75	NO. 1	871+00	---	32.5'

GUARDRAIL REMOVAL (R.T.)

STA. 854+88 TO STA. 866+68  
(REMOVED) 1,187.5 LF OF GUARDRAIL  
STA. 866+80 TO STA. 870+39  
(REMOVED) 362.5 LF OF GUARDRAIL  
STA. 870+75 TO STA. 871+00  
(REMOVED) 25 LF OF GUARDRAIL

CONSTRUCT STEEL W-BEAM GUARDRAIL RT. (SINGLE FACE)

BEGIN STATION	TERM. SEC.	END STATION	TERM. TREAT.	LENGTH
854+88	---	856+68	TY 3	1,137.5'
866+80	---	870+39	TY 1	320'
870+75	NO. 1	871+00	---	32.5'

PAVEMENT WIDENING (R.T.)

STA. 855+10 TO STA. 866+68  
STA. 866+80 TO STA. 870+39

DITCHING & SHOULDERING (R.T.)

STA. 853+14 TO STA. 854+85  
STA. 866+68 TO STA. 870+25

CRIBBING (R.T.)

STA. 865+85 TO STA. 866+68  
STA. 868+96 TO STA. 869+23

CONST. 10'X5' PRECAST RCBO W/ 2 HOWLS. (L.T. & R.T.)

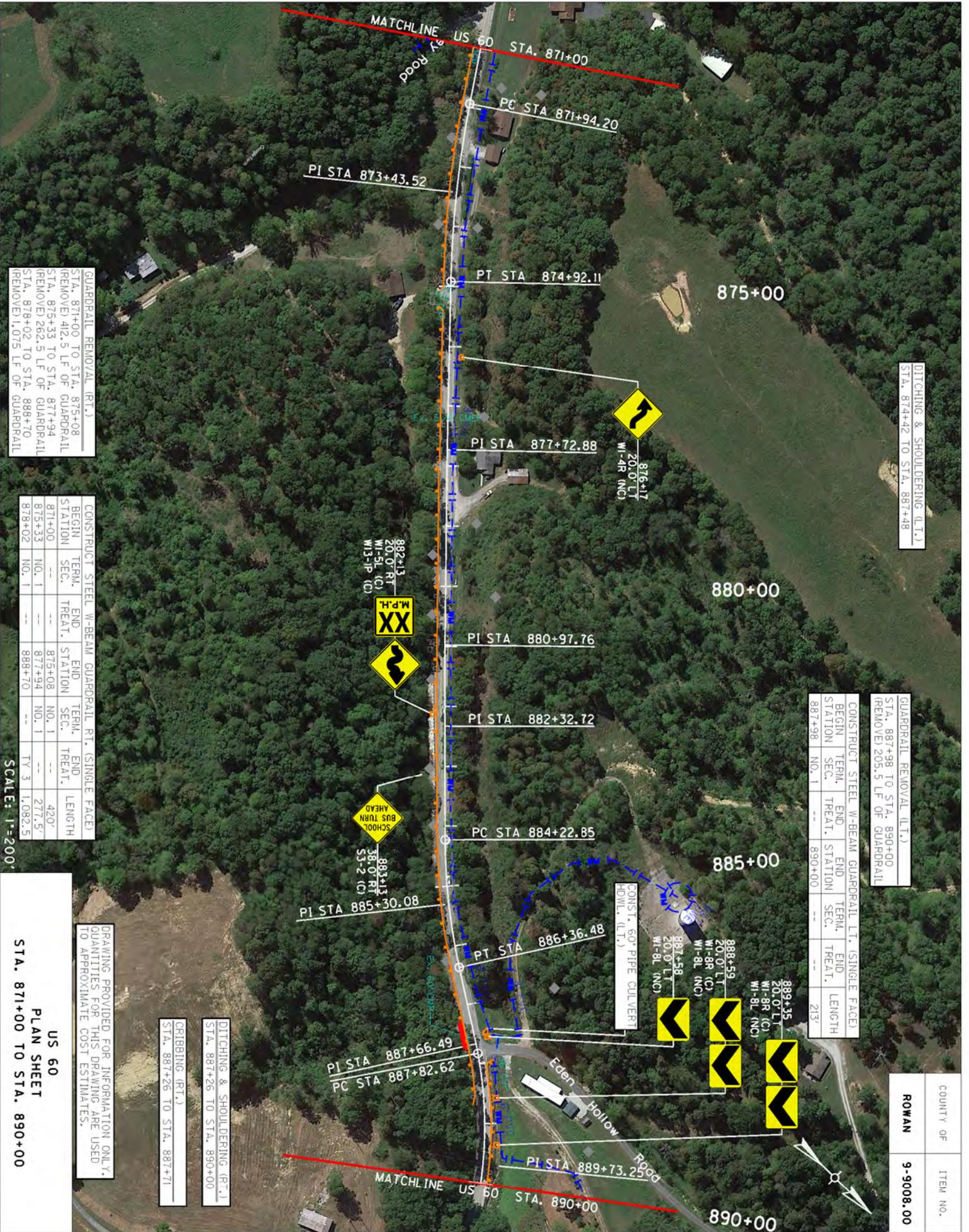
CONST. 4'X3' PRECAST RCBO W/ 1 - HOWL. (L.T.)

DRAWING PROVIDED FOR INFORMATION ONLY. QUANTITIES FOR THIS DRAWING ARE USED TO APPROXIMATE COST ESTIMATES.

SCALE: 1"=200'

US 60  
PLAN SHEET  
STA. 852+00 TO STA. 871+00

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DITCHING & SHOULDERING (L.T.)  
STA. 874+42 TO STA. 887+48

GUARDRAIL REMOVAL (L.T.)  
STA. 887+98 TO STA. 890+00  
REMOVE 205.5 LF OF GUARDRAIL

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BEGIN STATION	TERM. SEC.	END STATION	TERM. SEC.	LENGTH
887+98	NO. 1	890+00	---	213'

GUARDRAIL REMOVAL (R.T.)  
STA. 871+00 TO STA. 875+08  
REMOVE 412.5 LF OF GUARDRAIL  
STA. 875+33 TO STA. 877+94  
REMOVE 262.5 LF OF GUARDRAIL  
STA. 878+02 TO STA. 888+70  
REMOVE 1,075 LF OF GUARDRAIL

BEGIN STATION	TERM. SEC.	END STATION	TERM. SEC.	LENGTH
871+00	NO. 1	875+08	---	420'
875+33	NO. 1	877+94	---	277.5'
878+02	NO. 1	888+70	---	217.5'

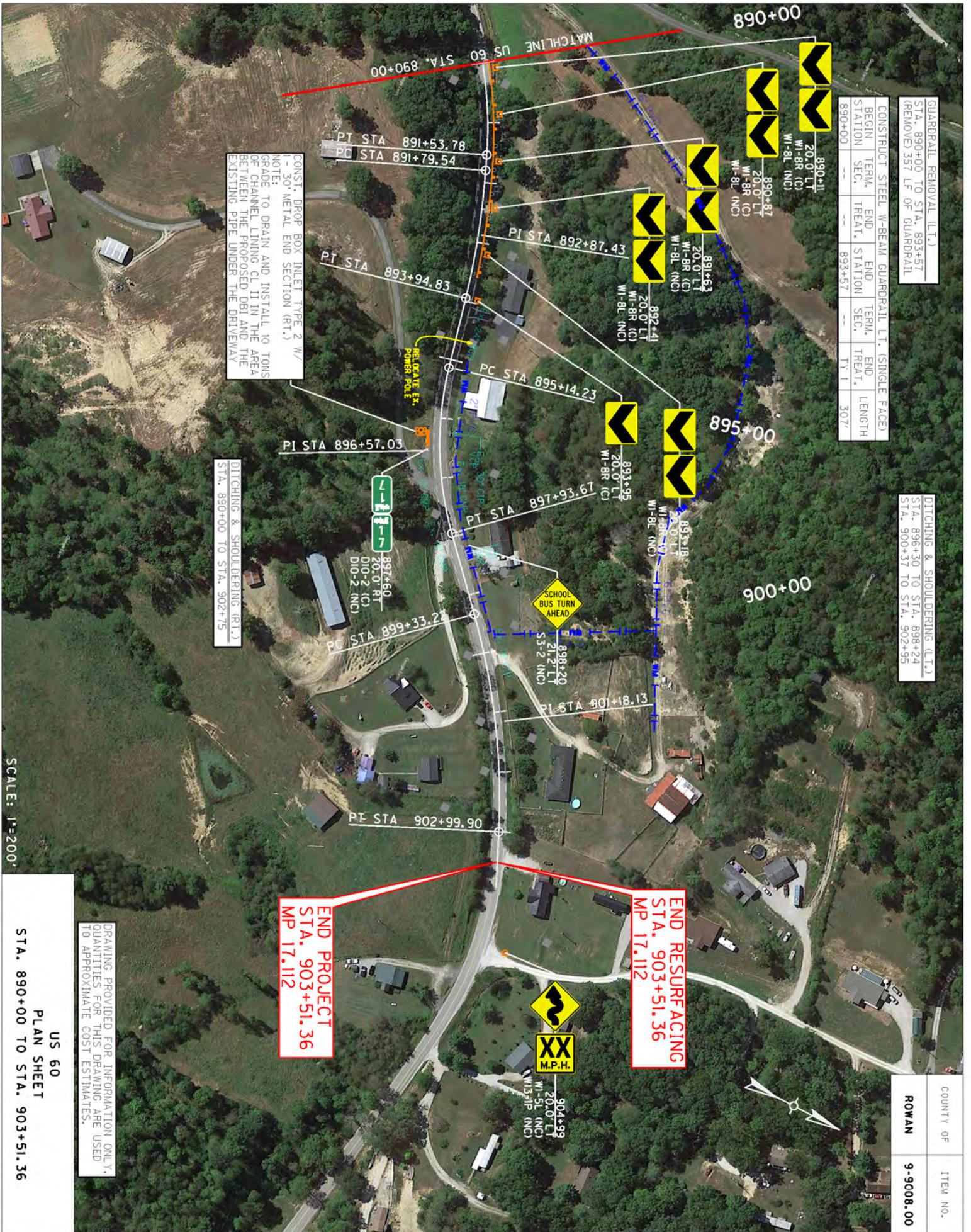
SCALE: 1"=200'

DRAWING PROVIDED FOR INFORMATION ONLY.  
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TO APPROXIMATE COST ESTIMATES.

US 60  
PLAN SHEET  
STA. 871+00 TO STA. 890+00

CRIBBLING (R.T.)  
STA. 887+26 TO STA. 887+71

DITCHING & SHOULDERING (R.T.)  
STA. 887+26 TO STA. 890+00



BEGIN STATION	TERM. STATION	END TREAT. SEC.	TY. 1	LENGTH
890+00	893+57	--	307	

GUARDRAIL REMOVAL (L.T.)  
STA. 890+00 TO STA. 893+57  
(REMOVED) 357 LF OF GUARDRAIL

DITCHING & SHOULDERING (L.T.)  
STA. 896+30 TO STA. 898+24  
STA. 900+37 TO STA. 902+95

COUNTY OF	ITEM NO.
ROWAN	9-9008.00

CONST. DROP BOX INLET TYPE 2 W/  
- 30\"/>

DITCHING & SHOULDERING (R.T.)  
STA. 890+00 TO STA. 902+75

END PROJECT  
STA. 903+51.36  
MP 17.112

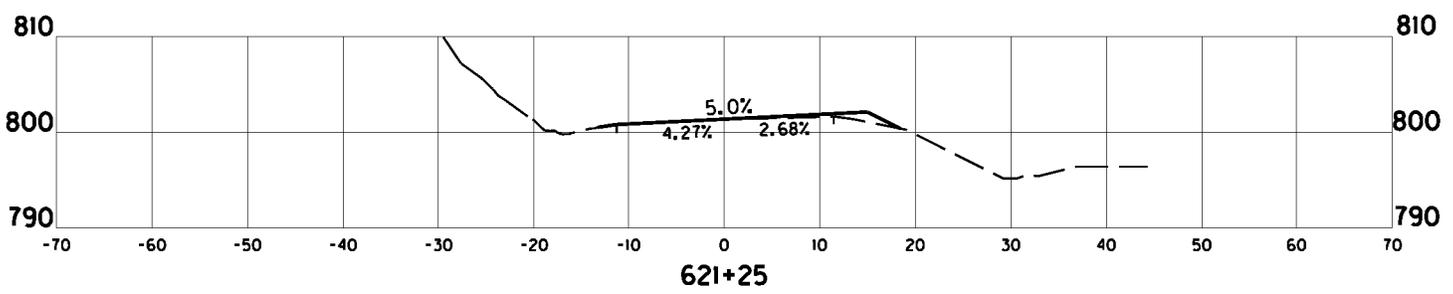
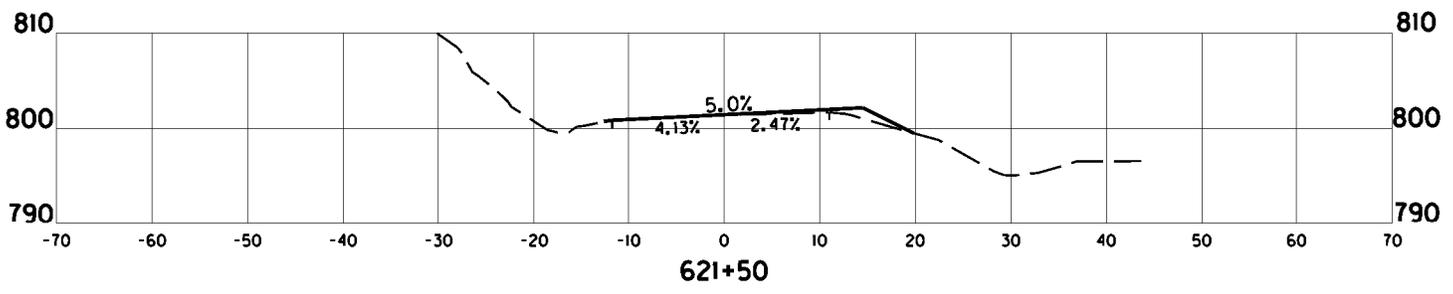
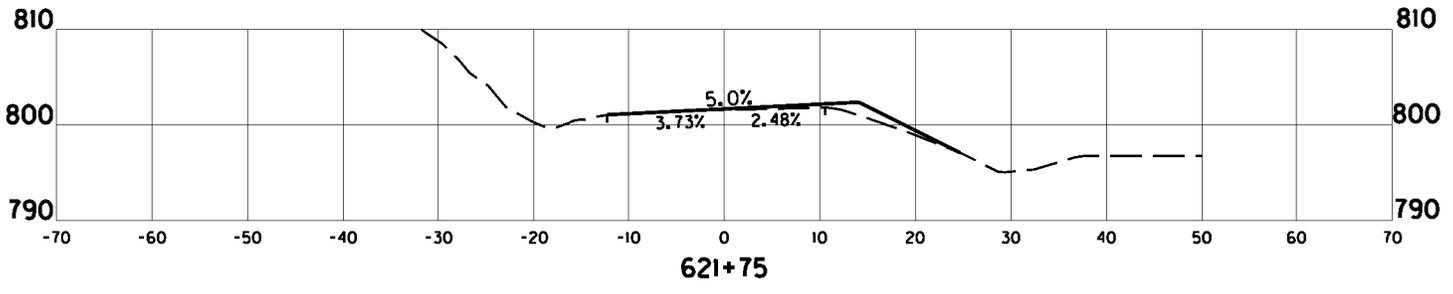
END RESURFACING  
STA. 903+51.36  
MP 17.112

SCALE: 1"=200'

US 60  
PLAN SHEET  
STA. 890+00 TO STA. 903+51.36

DRAWING PROVIDED FOR INFORMATION ONLY.  
QUANTITIES FOR THIS DRAWING ARE USED  
TO APPROXIMATE COST ESTIMATES.

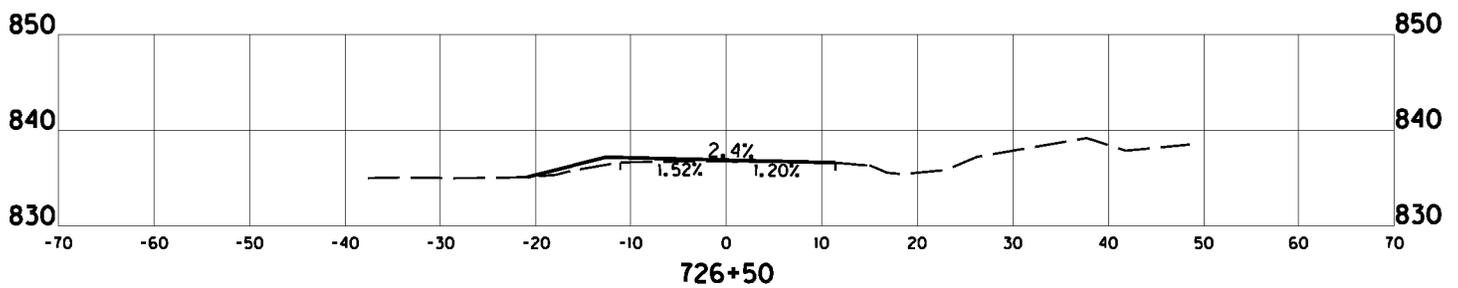
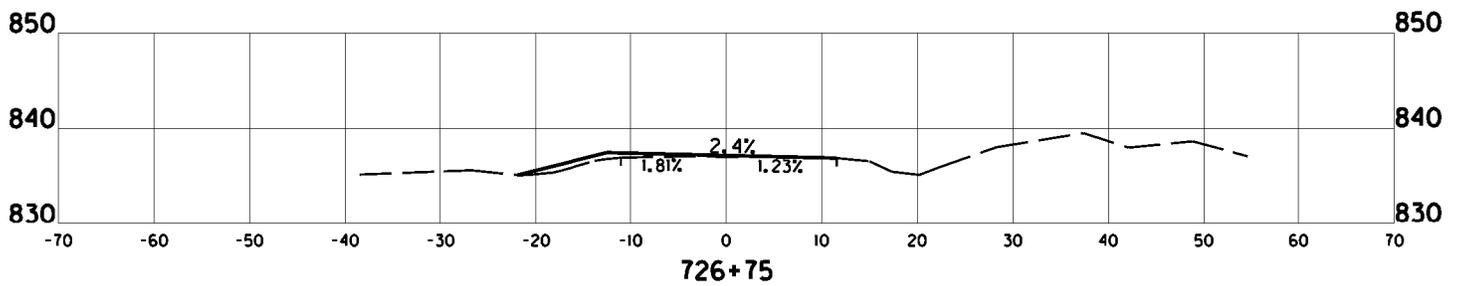
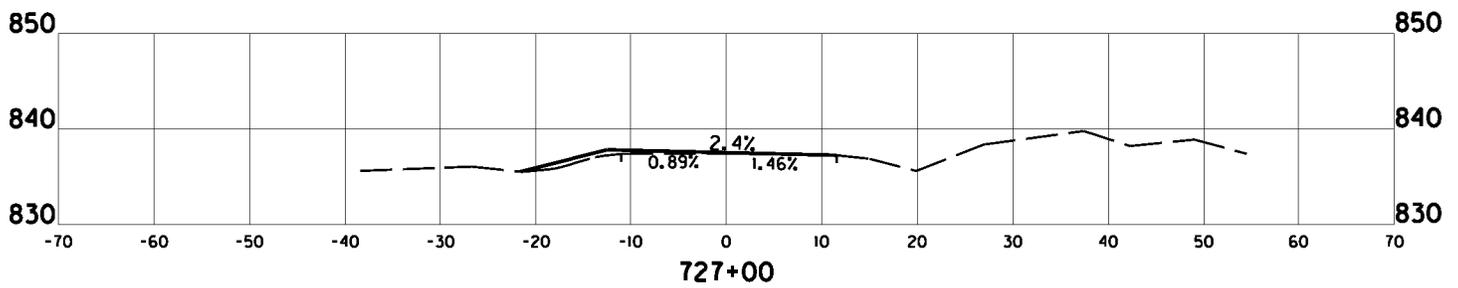
COUNTY OF	ITEM NO.
ROWAN	9-9008.00



SCALE: 1" = 20' HORIZONTAL  
 1" = 20' VERTICAL

US 60  
 STA. 621+25 TO STA. 621+75  
 PI STA. 621+56.89 - SUPERELEVATION SECTIONS

COUNTY OF	ITEM NO.
ROWAN	9-9008.00

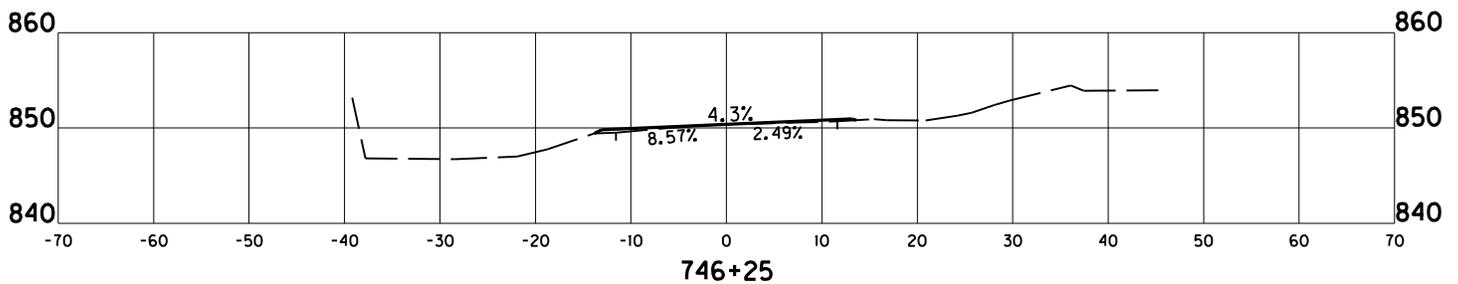
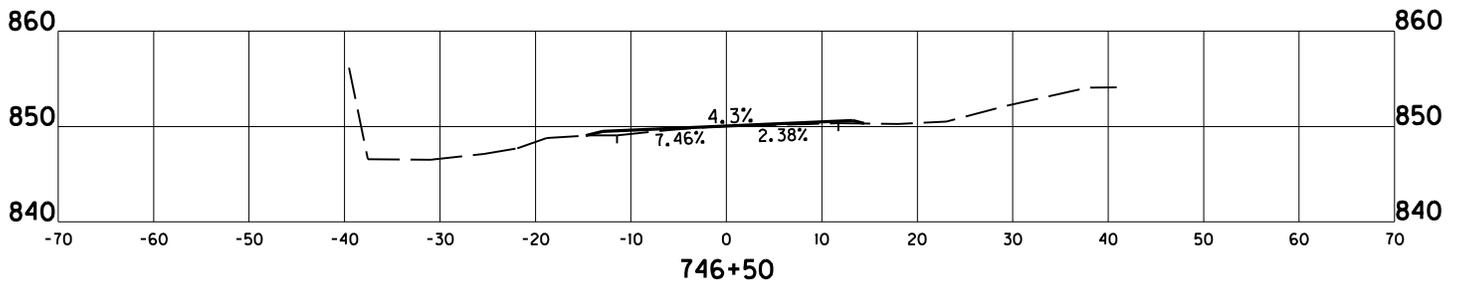
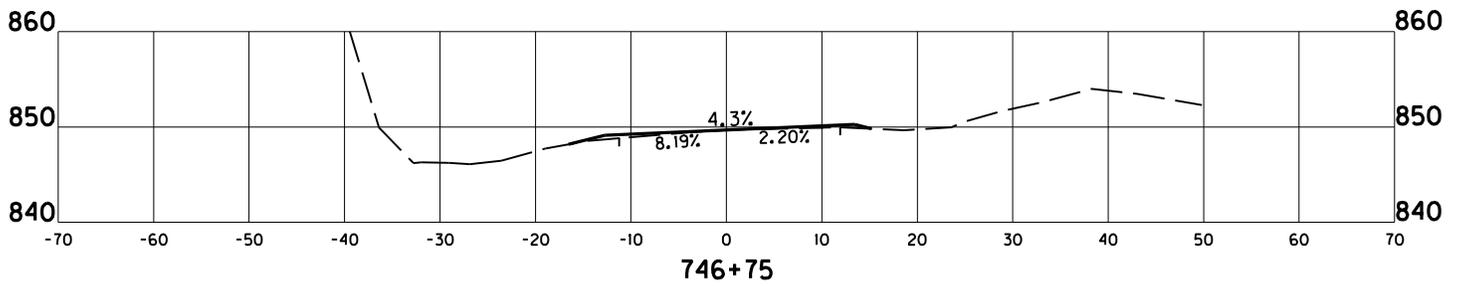


SCALE: 1" = 20' HORIZONTAL  
1" = 20' VERTICAL

US 60  
STA. 726+50 TO STA. 727+00  
PI STA. 726+80.63 - SUPERELEVATION SECTIONS

COUNTY OF	ITEM NO.
ROWAN	9-9008.00

STA. 750+00 END MILLING & TEXTURING  
 STA. 748+25 BEGIN MILLING & TEXTURING



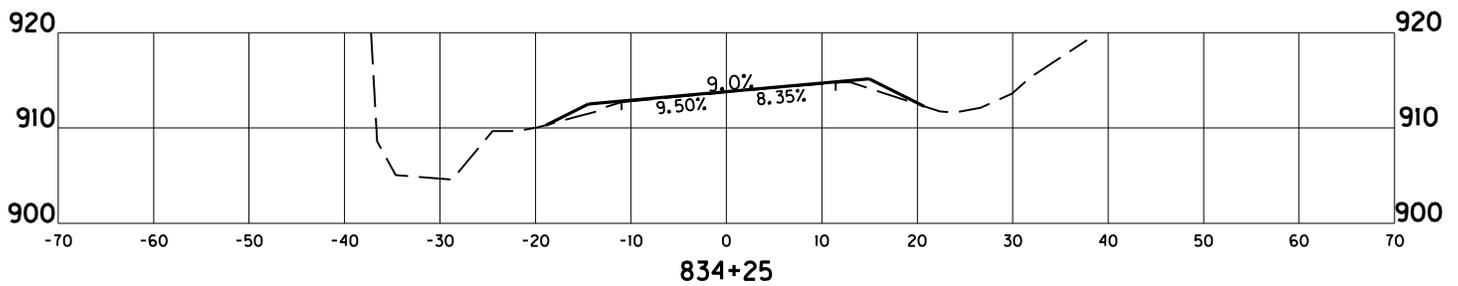
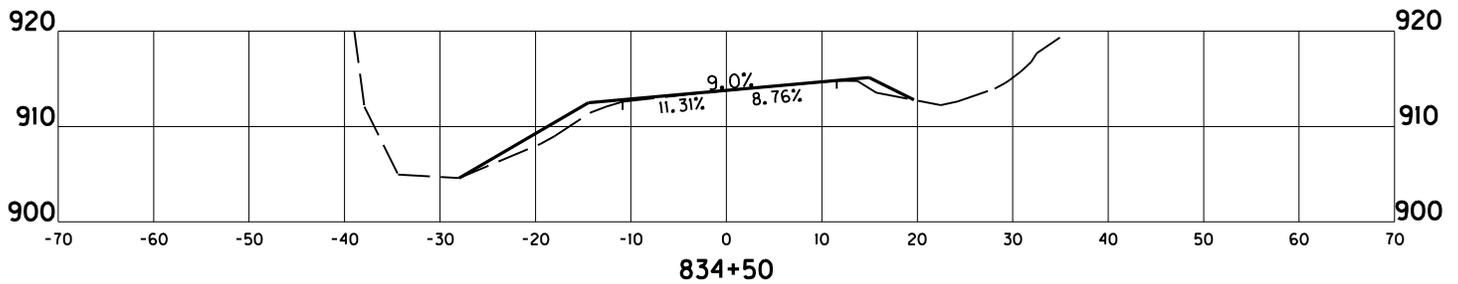
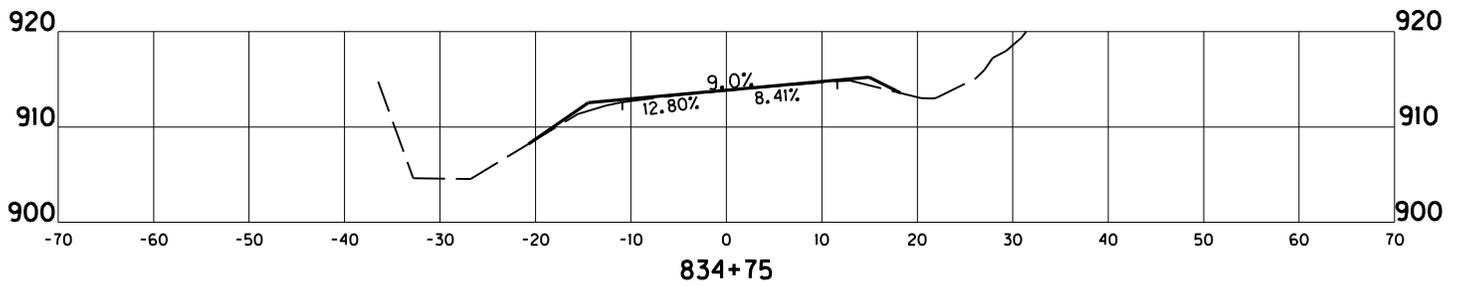
STA. 745+50 END MILLING & TEXTURING  
 STA. 743+25 BEGIN MILLING & TEXTURING

SCALE: 1" = 20' HORIZONTAL  
 1" = 20' VERTICAL

US 60  
 STA. 746+25 TO STA. 746+75  
 PI STA. 746+61.25 - SUPERELEVATION SECTIONS

COUNTY OF	ITEM NO.
ROWAN	9-9008.00

STA. 837+50 END MILLING & TEXTURING  
 STA. 835+25 BEGIN MILLING & TEXTURING

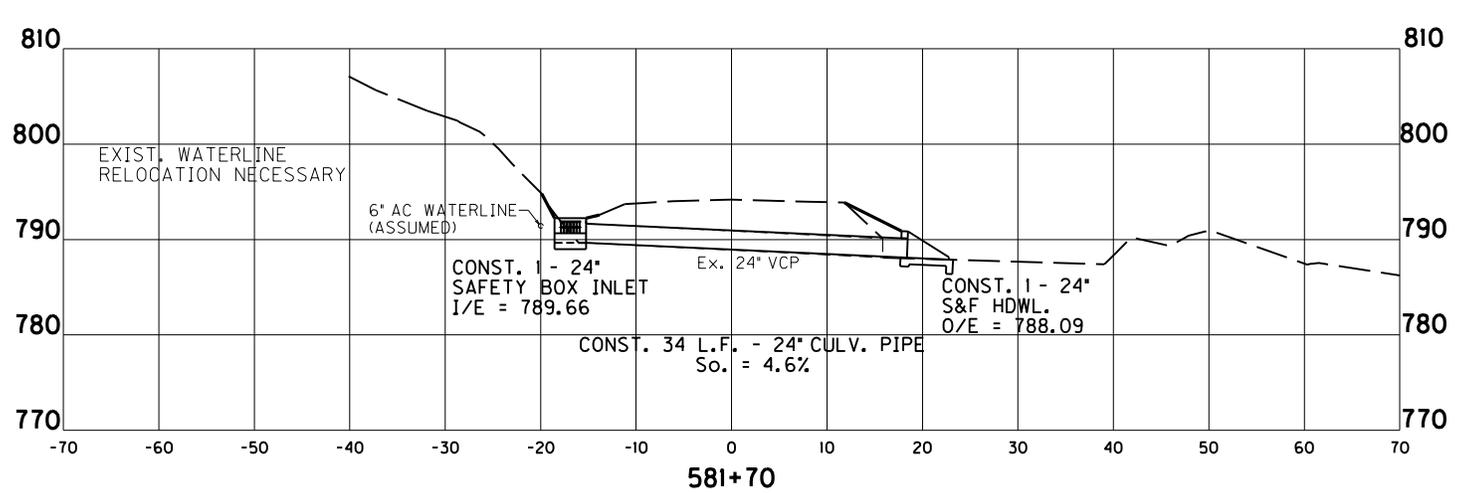
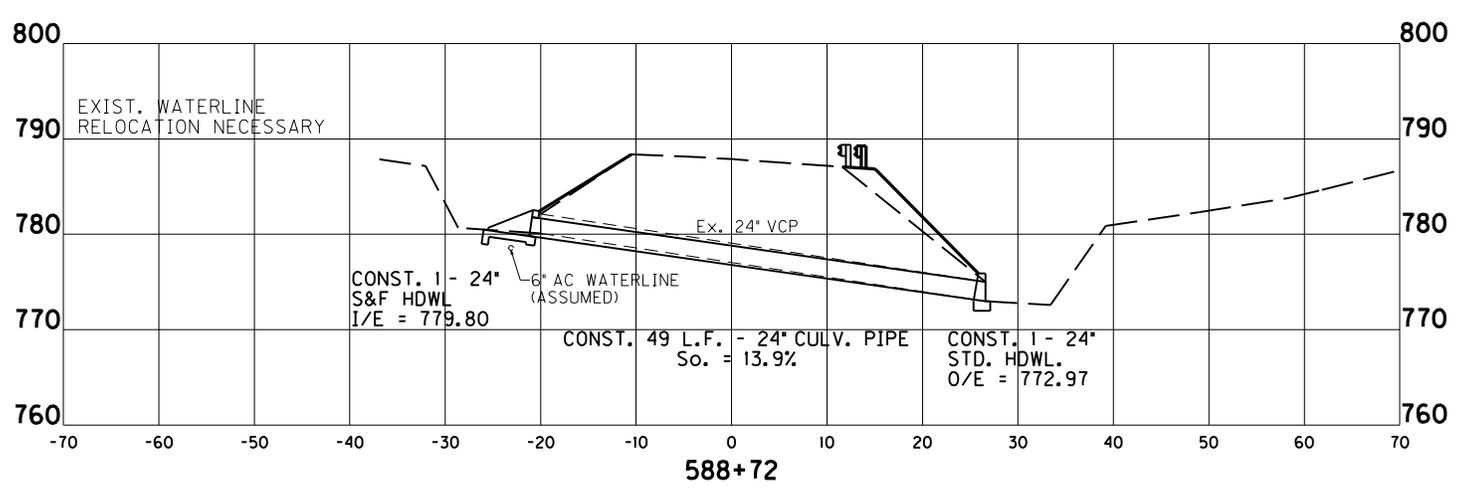
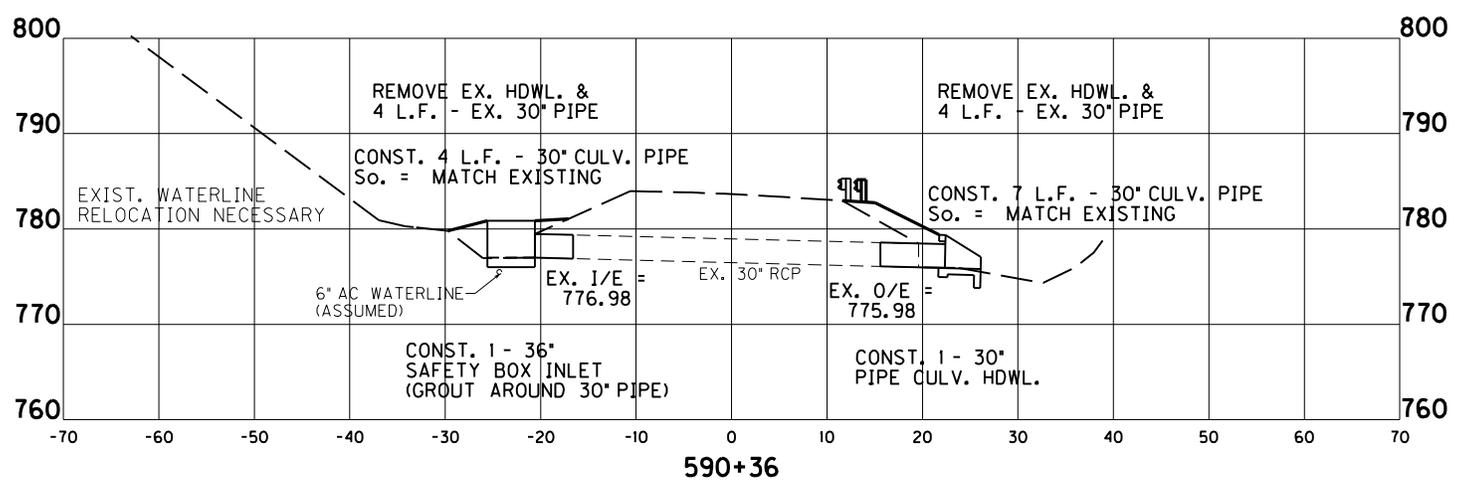


STA. 833+50 END MILLING & TEXTURING  
 STA. 831+50 BEGIN MILLING & TEXTURING

SCALE: 1" = 20' HORIZONTAL  
 1" = 20' VERTICAL

US 60  
 STA. 834+25 TO STA. 834+75  
 PI STA. 834+46.54 - SUPERELEVATION SECTIONS

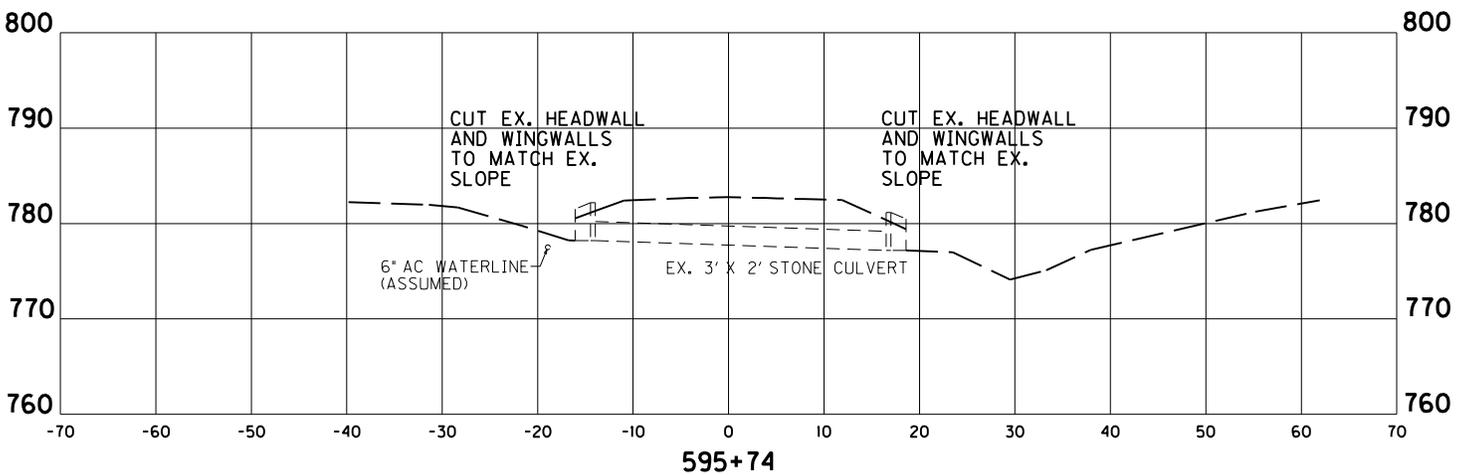
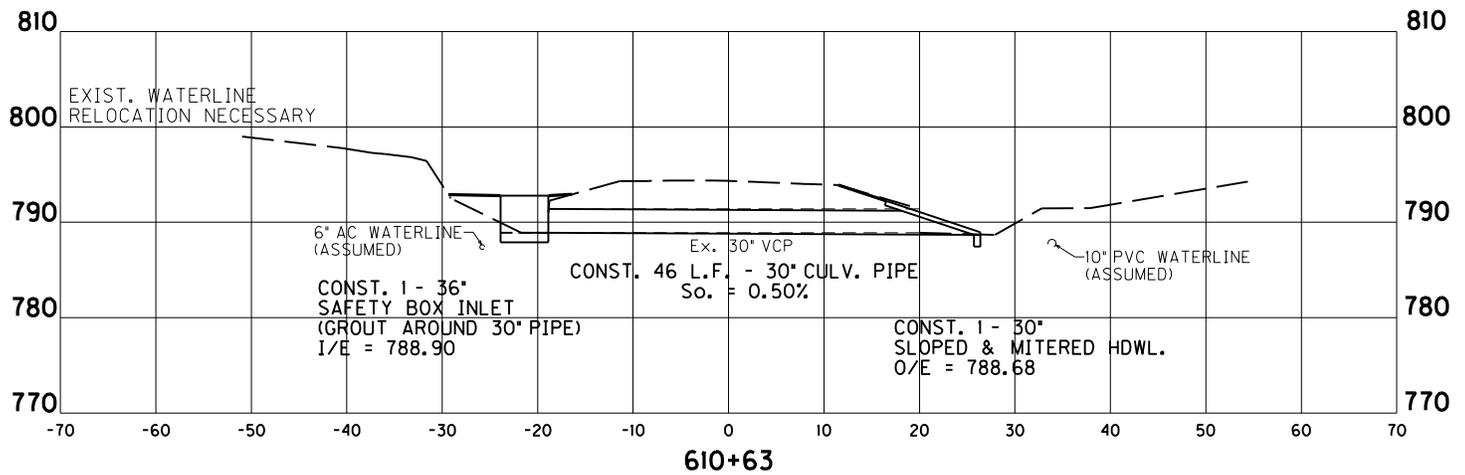
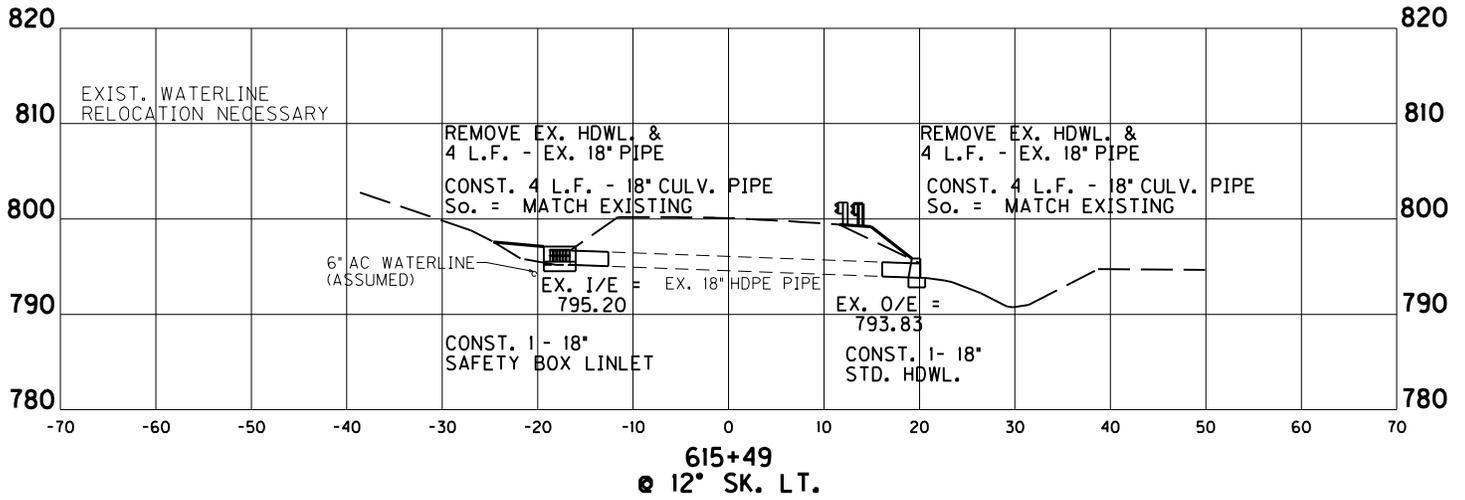
COUNTY OF	ITEM NO.
ROWAN	9-9008.00



US 60  
STA. 581+70 TO STA. 590+36  
PIPE SECTIONS

SCALE: 1" = 20' HORIZONTAL  
1" = 20' VERTICAL

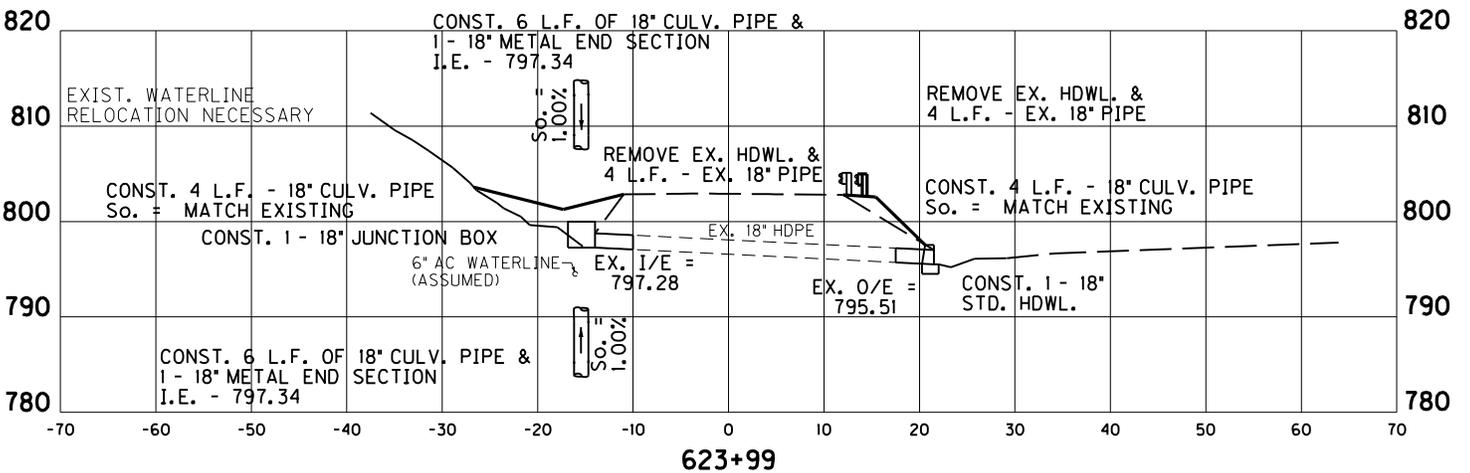
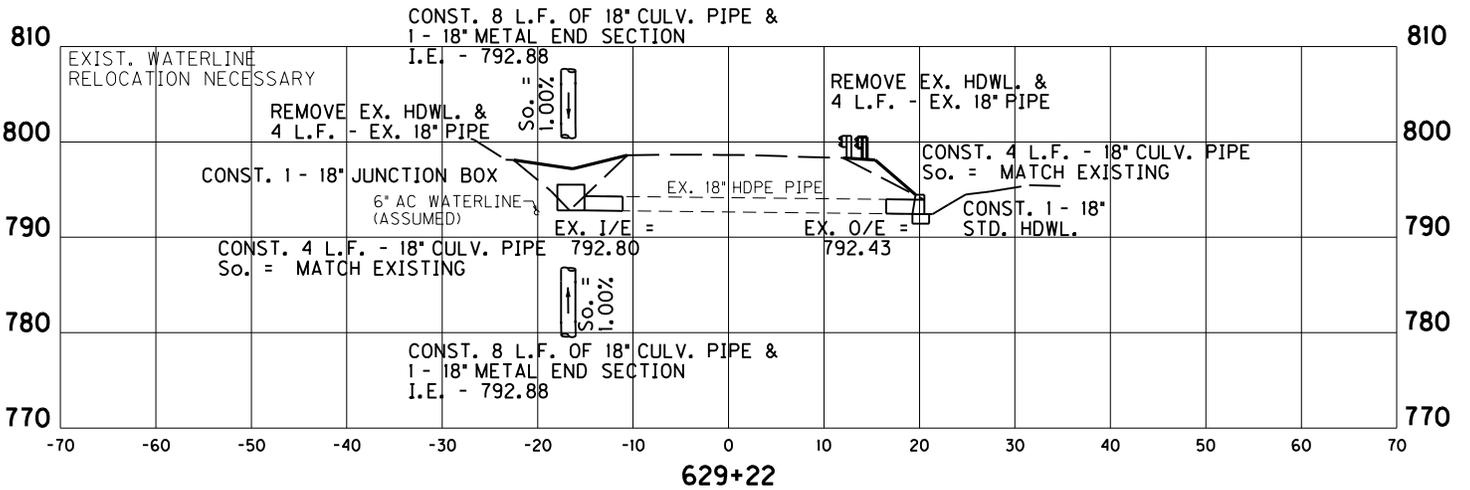
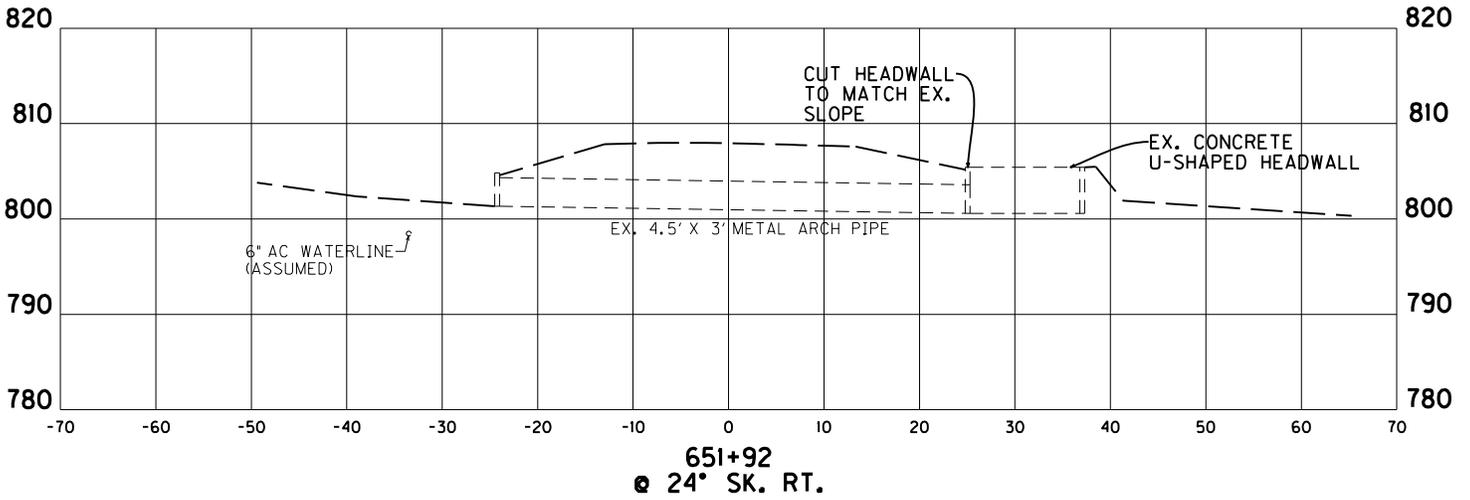
COUNTY OF	ITEM NO.
ROWAN	9-9008.00



SCALE: 1" = 20' HORIZONTAL  
1" = 20' VERTICAL

US 60  
STA. 595+74 TO STA. 615+49  
PIPE SECTIONS

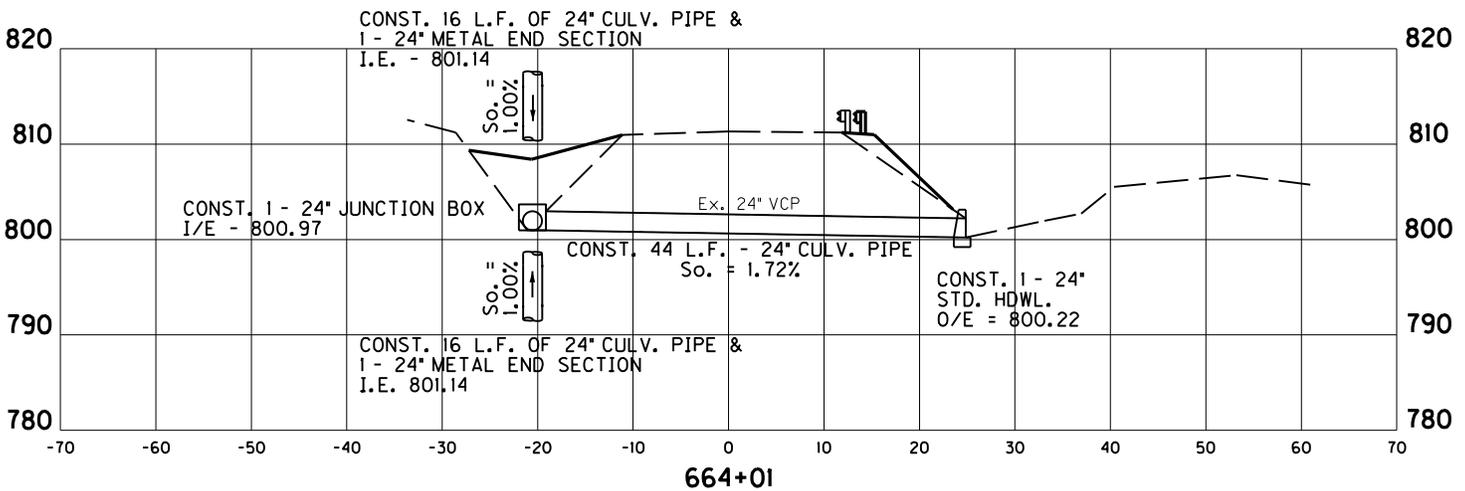
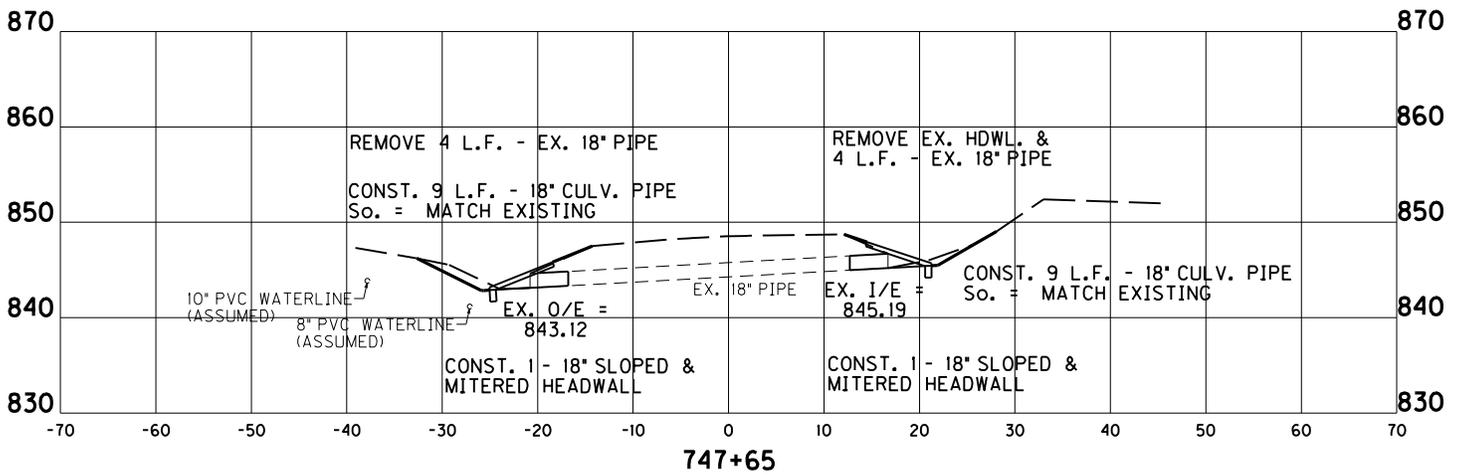
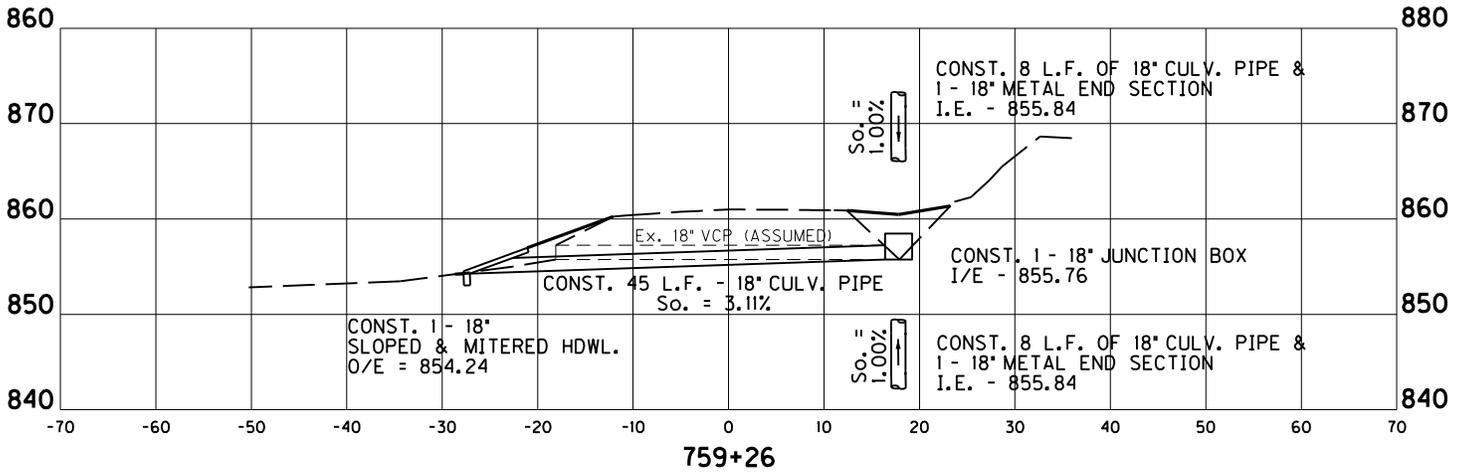
COUNTY OF	ITEM NO.
ROWAN	9-9008.00



SCALE: 1" = 20' HORIZONTAL  
 1" = 20' VERTICAL

US 60  
 STA. 623+99 TO STA. 651+92  
 PIPE SECTIONS

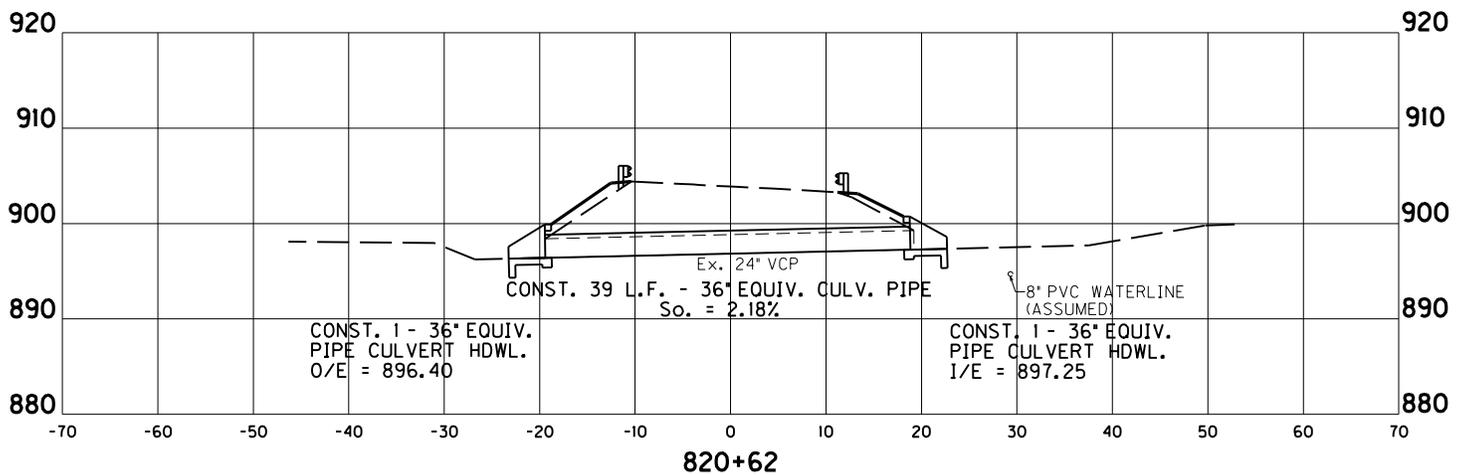
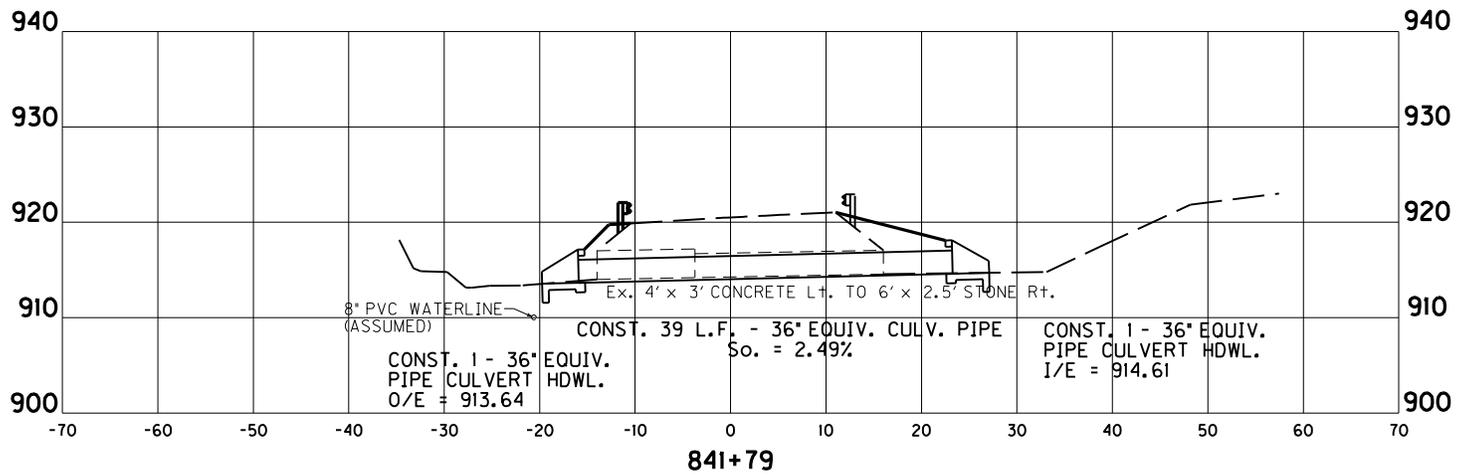
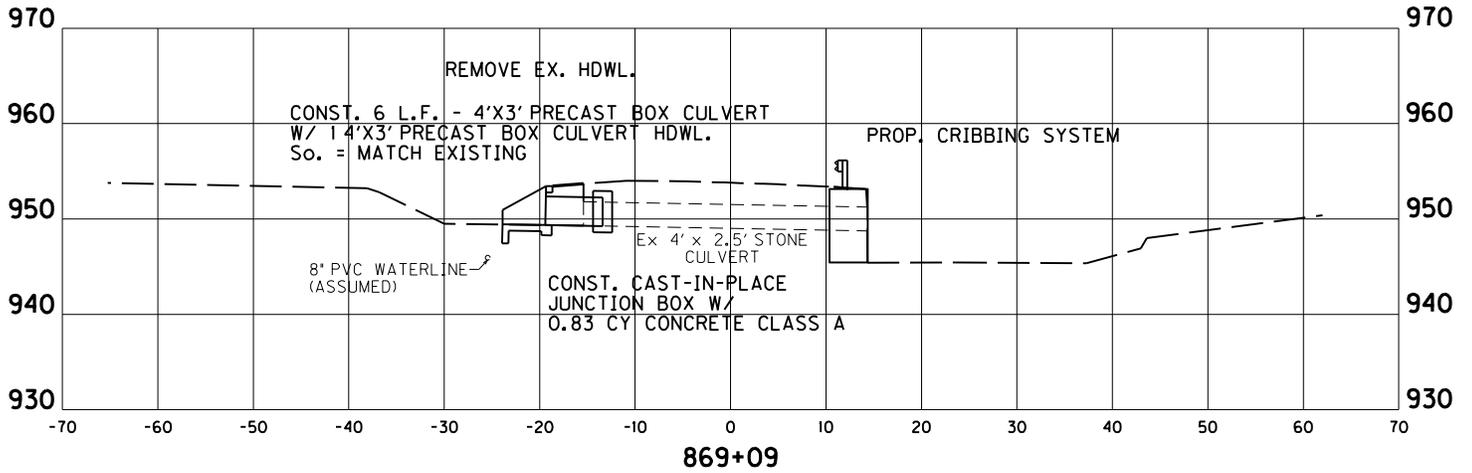
COUNTY OF	ITEM NO.
ROWAN	9-9008.00



US 60  
STA. 664+01 TO STA. 759+26  
PIPE SECTIONS

SCALE: 1" = 20' HORIZONTAL  
1" = 20' VERTICAL

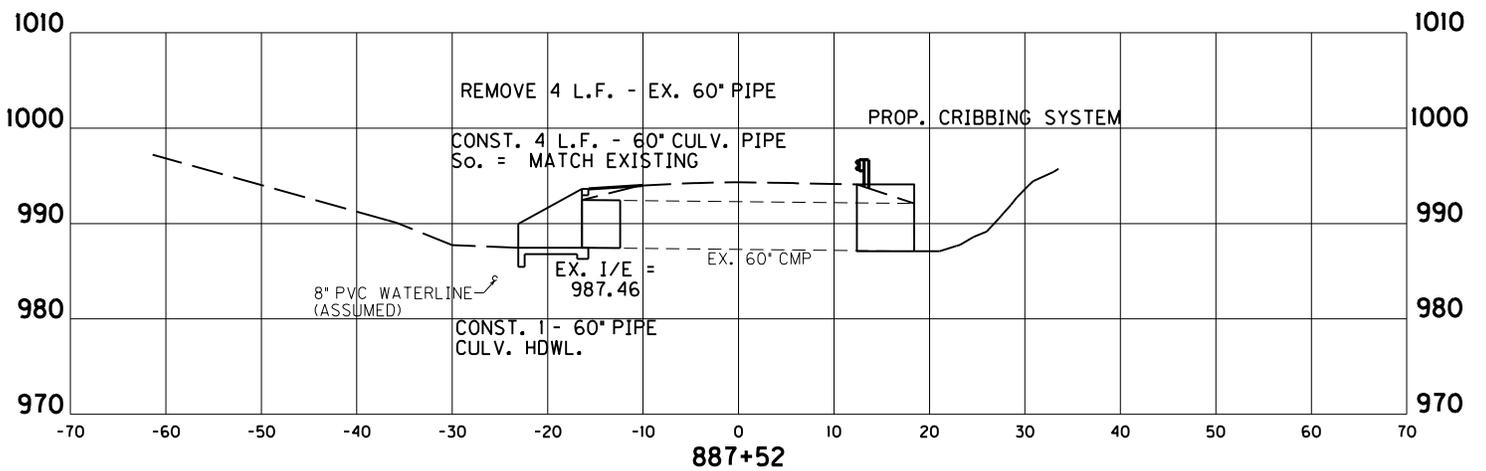
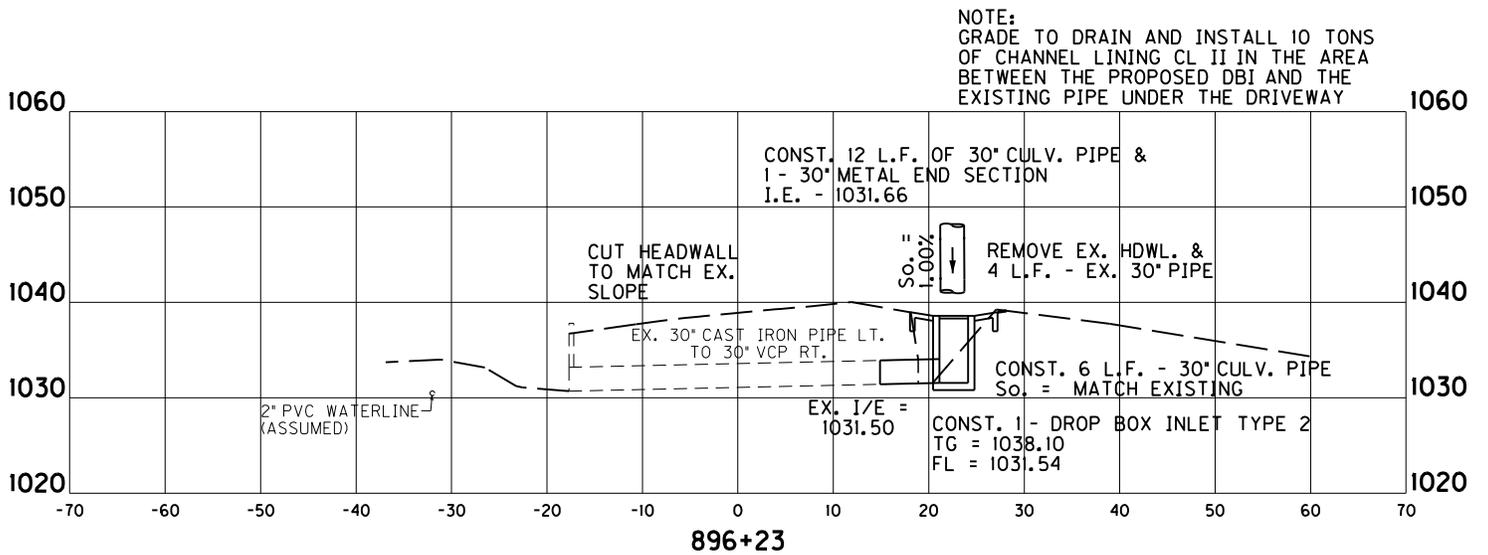
COUNTY OF	ITEM NO.
ROWAN	9-9008.00



SCALE: 1" = 20' HORIZONTAL  
1" = 20' VERTICAL

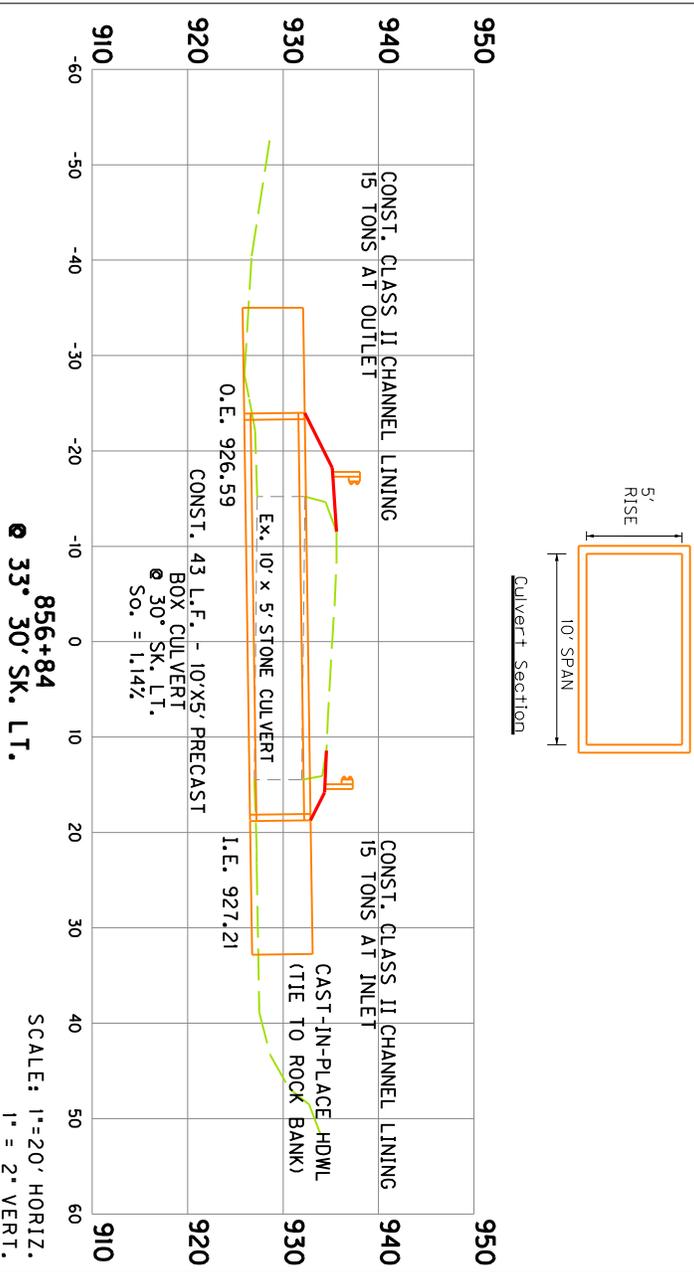
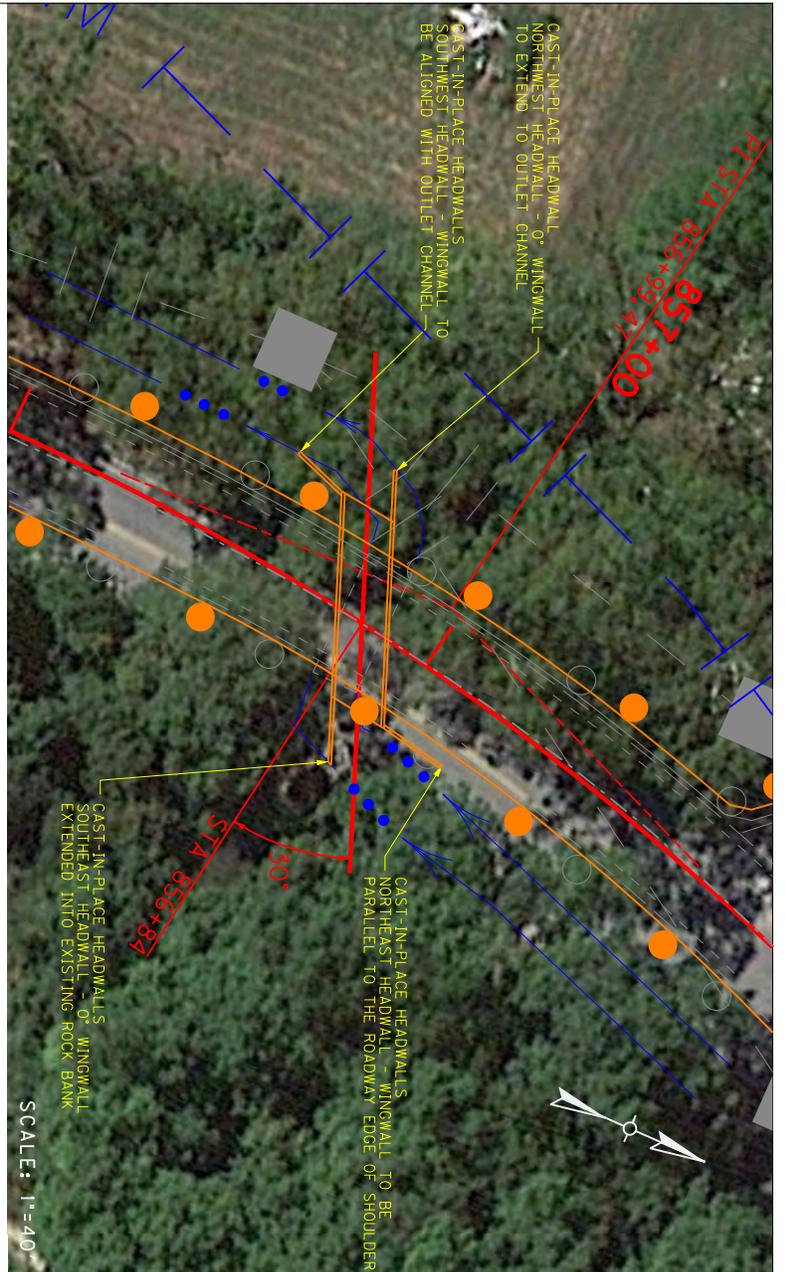
US 60  
STA. 820+62 TO STA. 869+09  
PIPE SECTIONS

COUNTY OF	ITEM NO.
ROWAN	9-9008.00



SCALE: 1" = 20' HORIZONTAL  
 1" = 20' VERTICAL

US 60  
 STA. 887+52 TO STA. 896+23  
 PIPE SECTIONS



COUNTY OF	ITEM NO.
ROWAN	9-9008.00

- OTHER ACCEPTABLE ALTERNATES AS SHOWN IN THE APPROVED LIST FOR 4-SIDED CULVERTS: 10' SPAN x 5' RISE, LISTED FLOW AREA 50 SQUARE FEET
- GENERAL NOTES
1. DIMENSIONS AND ELEVATIONS SHOWN ARE APPROXIMATE AND INTENDED TO CONVEY ENOUGH INFORMATION TO DEVELOP DETAIL STRUCTURAL DRAWINGS, AND BIDDING DOCUMENTS. IF CONTRACTOR DESIRES TO MODIFY THIS LAYOUT, NO PAYMENT ADJUSTMENTS WILL BE ALLOWED.
  2. IF A LISTED ALTERNATE IS USED, GROUND ELEVATIONS MUST BE EQUAL TO OR GREATER THAN THE MINIMUM GROUND ELEVATION SHOWN HERE. IF MODIFICATIONS TO THE LAYOUT DUE TO SELECTION OF AN ALTERNATE STRUCTURE ARE REQUIRED, NO PAYMENT ADJUSTMENTS WILL BE ALLOWED.
  3. ALL WORK TO CONSTRUCT THE 4-SIDED CULVERT IS PAID FOR UNDER THE BID ITEMS "10'X5' PRECAST BOX CULVERT" AND "FOUNDATION PREPARATION". "10'X5' PRECAST BOX CULVERT" IS A LINEAR FOOT BID ITEM THAT COVERS ALL WORK TO CONSTRUCT THE CULVERT THAT IS NOT COVERED UNDER "FOUNDATION PREPARATION". THIS INCLUDES LABOR AND MATERIALS TO CONSTRUCT FOUNDATION PREPARATION, JOINT SEALING, AND STRUCTURE DRAINAGE APPURTENANCES. AS PER SECTION 603 OF THE KYTC STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE PAID FOR AS NEEDED. GUARDRAIL WILL ALSO BE MEASURED AND PAID FOR SEPARATELY.
  4. ALL COMPONENTS MUST BE DESIGNED TO MEET STRUCTURAL REQUIREMENTS AS SET FORTH FOR EARTH, DEAD, AND HL-93 LIVE LOAD IN AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, WITH INTERIMS. ALL DESIGNS SUBMITTED FOR CONSIDERATION MUST BE PERFORMED AND STAMPED BY A QUALIFIED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF KENTUCKY.
  5. ALL FOUNDATION DESIGN MUST BE IN ACCORDANCE WITH THE APPROPRIATE PROVISIONS OF THE KENTUCKY TRANSPORTATION CABINET. THE MATERIAL SHALL CONSIST OF GRANULAR EMBANKMENT, NON-FRODIBLE ONLY, MEETING THE MATERIAL REQUIREMENTS OF SECTION 805 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, CURRENT EDITION, CONTRARY TO THE STANDARD SPECIFICATIONS. THE MAXIMUM SIZE LIMIT FOR GRANULAR EMBANKMENT IS 4 INCHES. THE EXCAVATION FOR THE GRANULAR REPLACEMENT SHALL EXTEND A MINIMUM WIDTH BEYOND THE EDGES OF THE FOOTINGS EQUAL TO THE REPLACEMENT DEPTH. THE GRANULAR REPLACEMENT SHALL BE PLACED ON A 1:1V SLOPE OR FLATTER FROM THE BASE OF THE FOOTING TO THE BOTTOM OF THE EXCAVATION. IN CASE OF A GEOTECHNICAL REPORT, A SEPARATOR BETWEEN GRANULAR EMBANKMENT AND EXISTING SOILS SHALL BE USED. THE FABRIC SHALL BE IN ACCORDANCE WITH SECTION 214 & 843 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, CURRENT EDITION.

6. ALL MATERIALS USED MUST BE IN CONFORMANCE WITH KYTC STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. THE KYTC LIST OF APPROVED MATERIALS, AND ALL APPLICABLE ASTM AND AASHTO STANDARDS.
7. ALL PRECAST COMPONENTS SHALL BE MANUFACTURED BY A FABRICATOR APPROVED BY KYTC AND BE IN STRICT COMPLIANCE WITH SECTION 805 OF THE KENTUCKY TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
8. COMPLY WITH SECTION 106.04 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION BUY AMERICAN REQUIREMENT.
9. IN ACCORDANCE WITH SECTION 106.04 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WEEP HOLES WILL BE REQUIRED FOR THESE STRUCTURES.
10. 4-SIDED STRUCTURES THAT REQUIRE SPECIAL BACKFILL CONTRARY TO KYTC STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION WILL REQUIRE A CERTIFICATION LETTER STATING THAT THE BACKFILL WAS CONSTRUCTED PROPERLY, THE LETTER WILL BE SIGNED BY THE CONTRACTOR AND THE MANUFACTURER OF THE 4-SIDED STRUCTURE AND WILL BE SUBMITTED TO THE RESIDENT ENGINEER.
11. THE MANUFACTURER OR SUPPLIER MUST PROVIDE 6 COPIES OF DETAILED SHOP DRAWINGS FOR FINAL APPROVAL FOR USE ON THIS PROJECT. BACKFILL REQUIREMENTS AND ANY SPECIFICATIONS THAT ARE CONTRARY TO THE KYTC STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SHOULD BE REVIEWED AND ARCHIVAL PURPOSES. THIS INFORMATION WILL BE SUBMITTED TO THE DIVISION OF CONSTRUCTION. ALLOW 4 WEEKS TIME FOR REVIEW OF THIS MATERIAL.

US 60  
CULVERT DETAIL SHEET  
STA. 856+84, 30° SK. LT.

DRAWING PROVIDED FOR INFORMATION ONLY.  
QUANTITIES FOR THIS DRAWING ARE USED  
TO APPROXIMATE COST ESTIMATES.

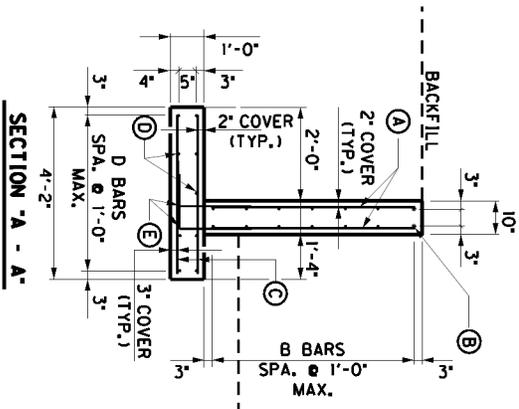
BILL OF REINFORCEMENT		
NORTHWEST WINGWALL		
MARK SIZE	NO.	LENGTH FT IN
A	4	24 5 6
B	5	14 10 6
C	4	24 3 8
D	5	10 10 6
E	4	24 4 0
F	4	14 4 0
G	4	- - -

BILL OF REINFORCEMENT		
NORTHEAST WINGWALL		
MARK SIZE	NO.	LENGTH FT IN
A	4	32 5 6
B	5	14 14 6
C	4	32 3 8
D	5	10 14 6
E	4	32 4 0
F	4	- - -
G	4	14 4 0

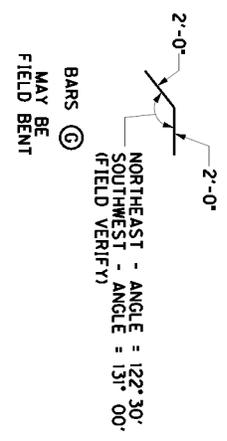
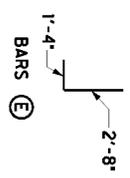
BILL OF REINFORCEMENT		
SOUTHWEST WINGWALL		
MARK SIZE	NO.	LENGTH FT IN
A	4	28 5 6
B	5	14 12 6
C	4	28 3 8
D	5	10 12 6
E	4	28 4 0
F	4	- - -
G	4	14 4 0

BILL OF REINFORCEMENT		
SOUTHEAST WINGWALL		
MARK SIZE	NO.	LENGTH FT IN
A	4	30 5 6
B	5	14 13 6
C	4	30 3 8
D	5	10 13 6
E	4	30 4 0
F	4	- - -
G	4	14 4 0

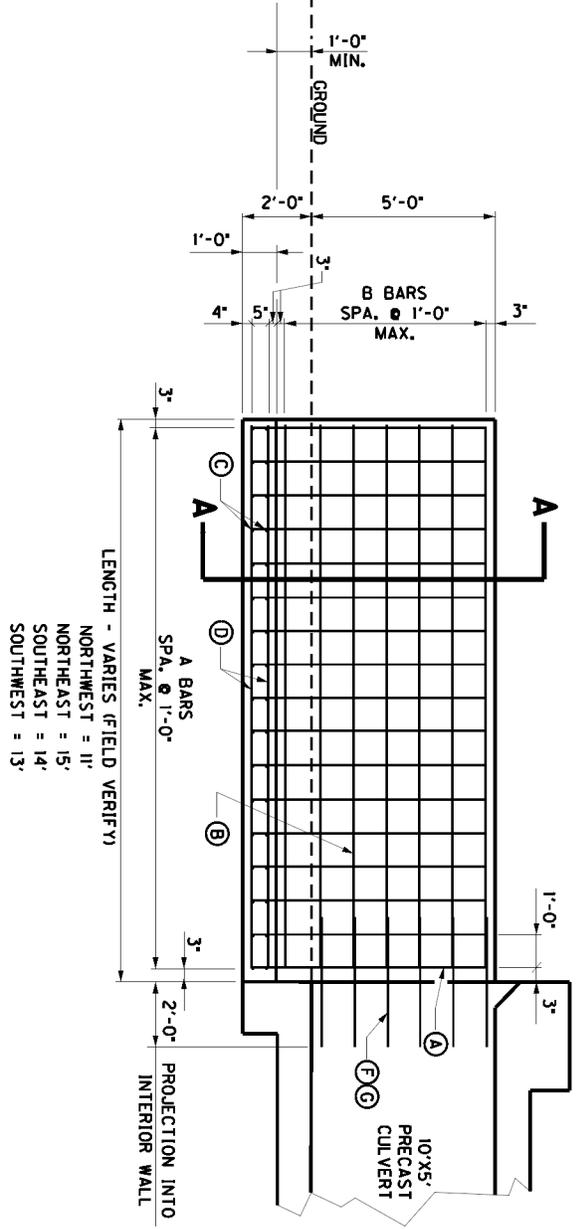
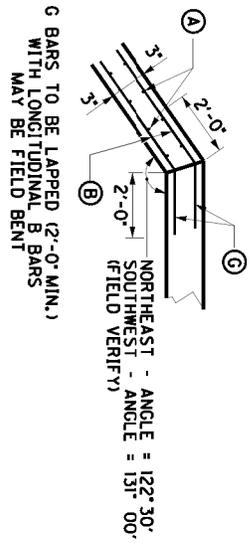
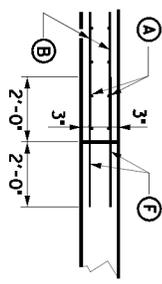
WINGWALLS - LENGTH VARIES (FIELD VERIFY)  
 NORTHWEST = 11'  
 NORTHEAST = 15'  
 SOUTHEAST = 14'  
 SOUTHWEST = 13'



**BENT BAR SHAPES**



**WINGWALL CONNECTION DETAILS**



**US 60 TYPICAL**  
**10' X 5' PRECAST CULVERT WINGWALL**  
**STEEL REINFORCEMENT**

COUNTY OF	ITEM NO.
ROWAN	9-9008.00

COUNTY OF	ITEM NO.
ROWAN	9-9008.00

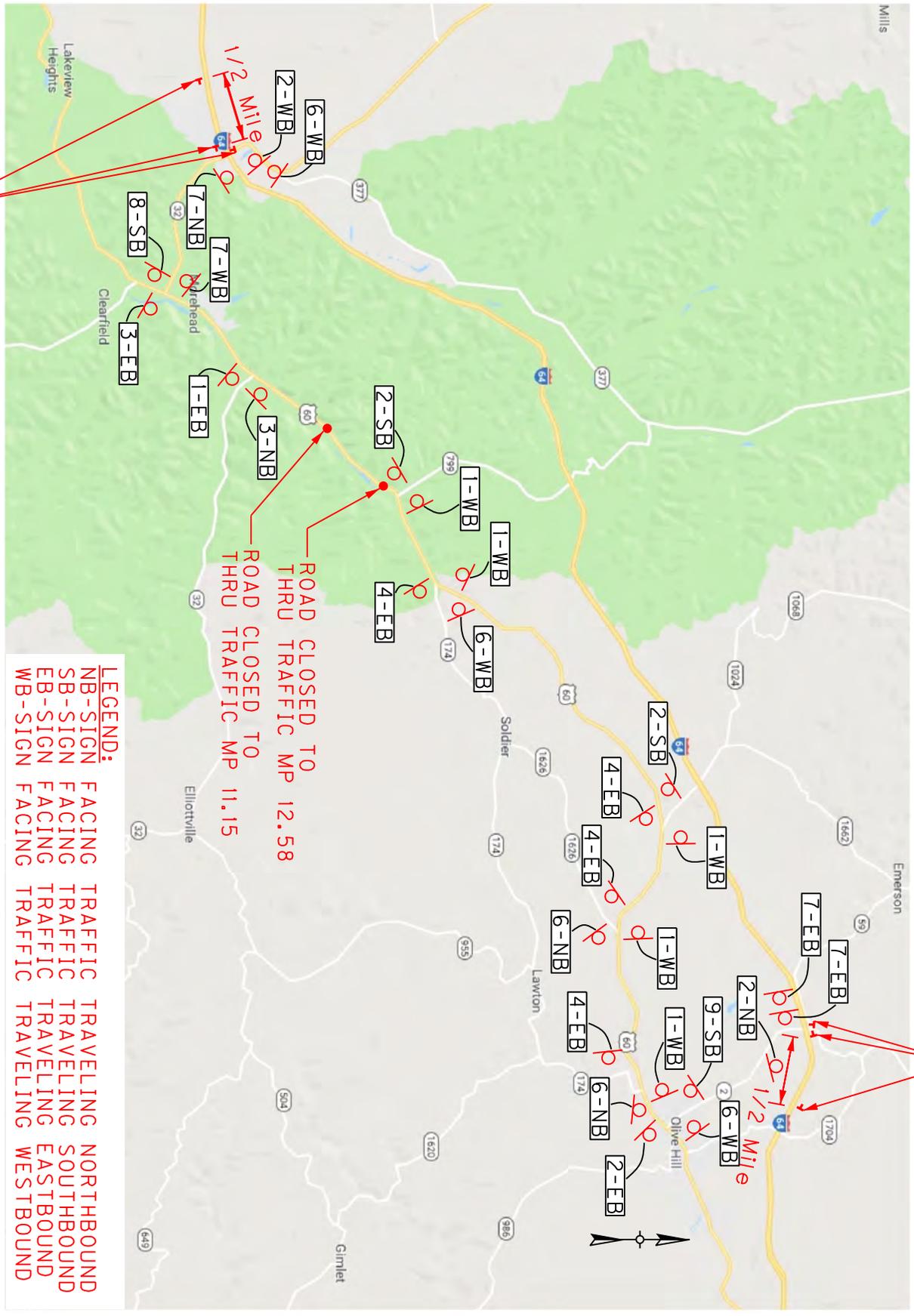
<p><b>ROAD CLOSED TO THRU TRAFFIC</b></p> <p>1 R11-4 60" X 30"</p>	<p><b>DETOUR WEST 60</b></p> <p>4 R4-8 24" X 12" M3-4 24" X 12" M1-4 24" X 24" M6-3 21" X 15"</p>	<p><b>DETOUR EAST 60</b></p> <p>7 R4-8 24" X 12" M3-2 24" X 12" M1-4 24" X 24" M5-1 21" X 15"</p>
<p><b>DETOUR WEST 60</b></p> <p>2 R4-8 24" X 12" M3-4 24" X 12" M1-4 24" X 24" M5-1 21" X 15"</p>	<p><b>DETOUR EAST 60</b></p> <p>5 R4-8 24" X 12" M3-2 24" X 12" M1-4 24" X 24" M6-3 21" X 15"</p>	<p><b>END DETOUR WEST 60</b></p> <p>8 R4-8A 24" X 18" M3-4 24" X 12" M1-4 24" X 24"</p>
<p><b>DETOUR EAST 60</b></p> <p>3 R4-8 24" X 12" M3-2 24" X 12" M1-4 24" X 24" M5-1 21" X 15"</p>	<p><b>DETOUR WEST 60</b></p> <p>6 R4-8 24" X 12" M3-4 24" X 12" M1-4 24" X 24" M5-1 21" X 15"</p>	<p><b>END DETOUR EAST 60</b></p> <p>9 R4-8A 24" X 18" M3-2 24" X 12" M1-4 24" X 24"</p>

DETOUR SHEET  
SIGN SUMMARY

DATE TO BE UPDATED  
 11.15 - 24" PIPE REPLACEMENT  
 12.58 - 24" PIPE REPLACEMENT  
 16.22 - 10'X5' RCBC REPLACEMENT

CHANGEABLE MESSAGE SIGNS  
 US 60 @ MP 12.58 CLOSED  
 TO THRU TRAFFIC FROM  
 DATE - DATE

COUNTY OF	ITEM NO.
ROWAN	9-9008.00



ROAD CLOSED TO THRU TRAFFIC MP 12.58  
 ROAD CLOSED TO THRU TRAFFIC MP 11.15

US 60 @ MP 11.15 CLOSED  
 TO THRU TRAFFIC FROM  
 DATE - DATE

CHANGEABLE MESSAGE SIGNS

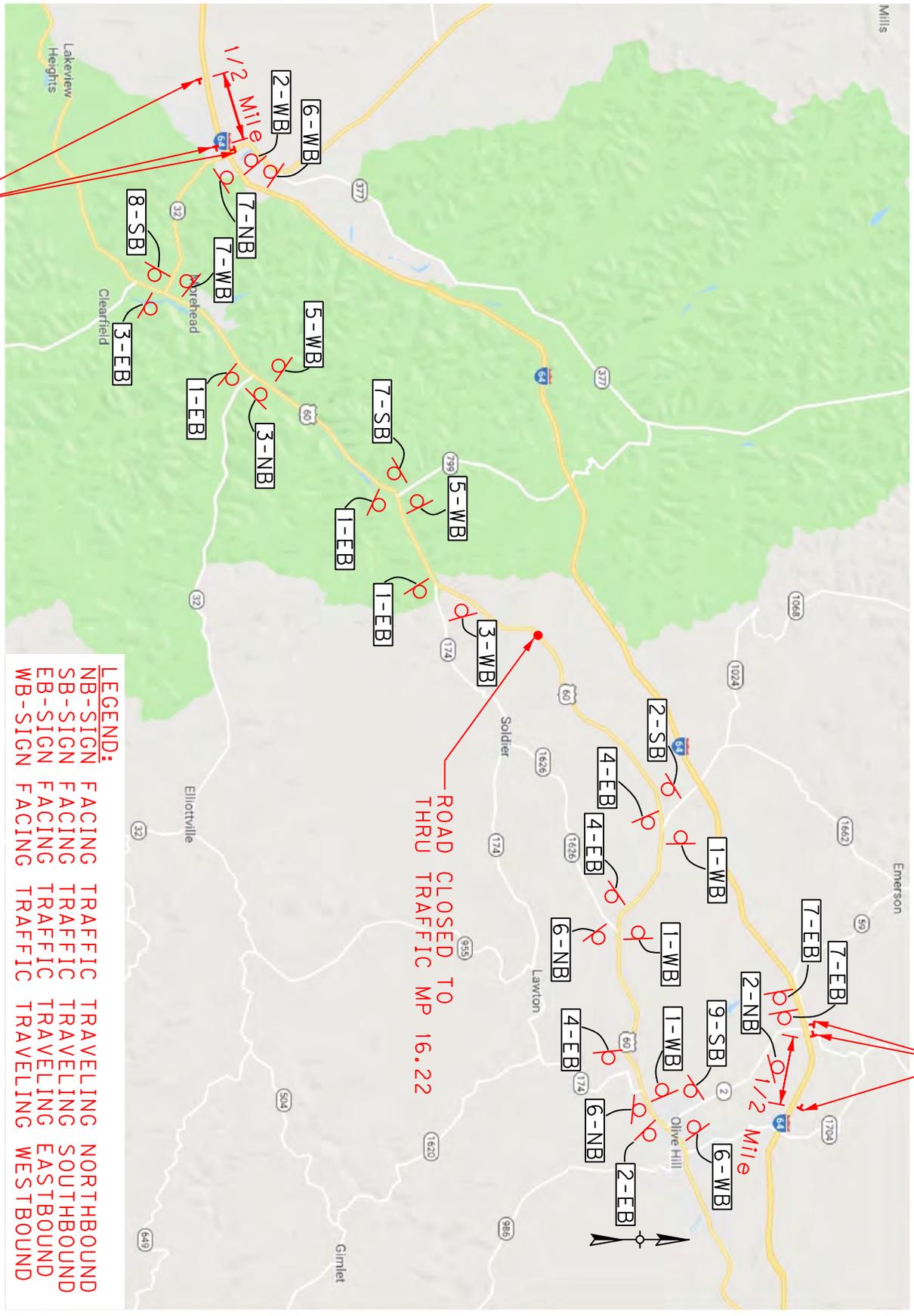
**LEGEND:**

NB-SIGN	FACING	TRAFFIC	TRAVELLING	NORTHBOUND
SB-SIGN	FACING	TRAFFIC	TRAVELLING	SOUTHBOUND
EB-SIGN	FACING	TRAFFIC	TRAVELLING	EASTBOUND
WB-SIGN	FACING	TRAFFIC	TRAVELLING	WESTBOUND

DATE TO BE UPDATED  
 11.15 - 24" PIPE REPLACEMENT  
 12.58 - 24" PIPE REPLACEMENT  
 16.22 - 10'X5' RCBC REPLACEMENT

CHANGEABLE MESSAGE SIGNS  
 US 60 @ MP 16.22 CLOSED  
 TO THRU TRAFFIC FROM  
 DATE - DATE

COUNTY OF	ITEM NO.
ROWAN	9-9008.00



**LEGEND:**  
 NB-SIGN FACING TRAFFIC TRAVELLING NORTHBOUND  
 SB-SIGN FACING TRAFFIC TRAVELLING SOUTHBOUND  
 EB-SIGN FACING TRAFFIC TRAVELLING EASTBOUND  
 WB-SIGN FACING TRAFFIC TRAVELLING WESTBOUND

US 60 @ MP 16.22 CLOSED  
 TO THRU TRAFFIC FROM  
 DATE - DATE  
 CHANGEABLE MESSAGE SIGNS

DETOUR SHEET 2

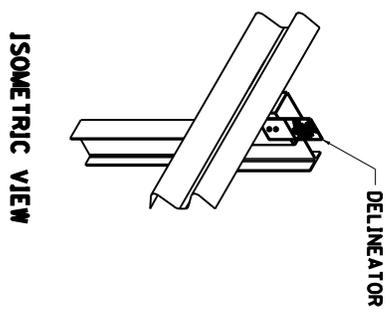
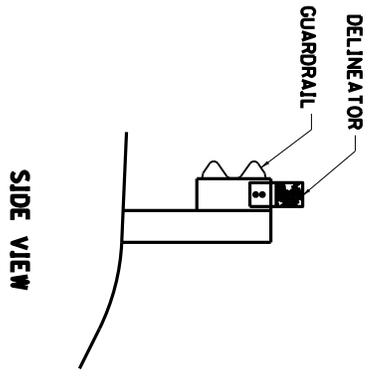
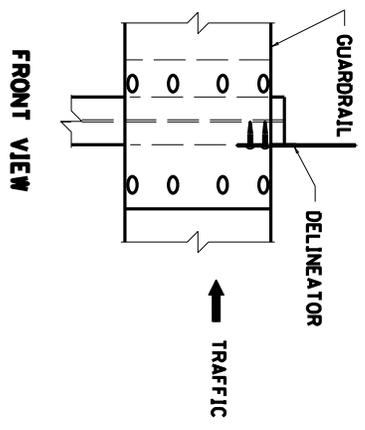
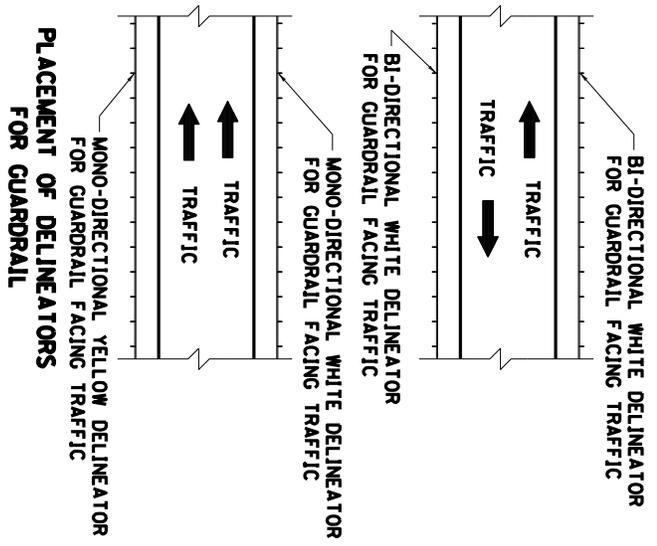
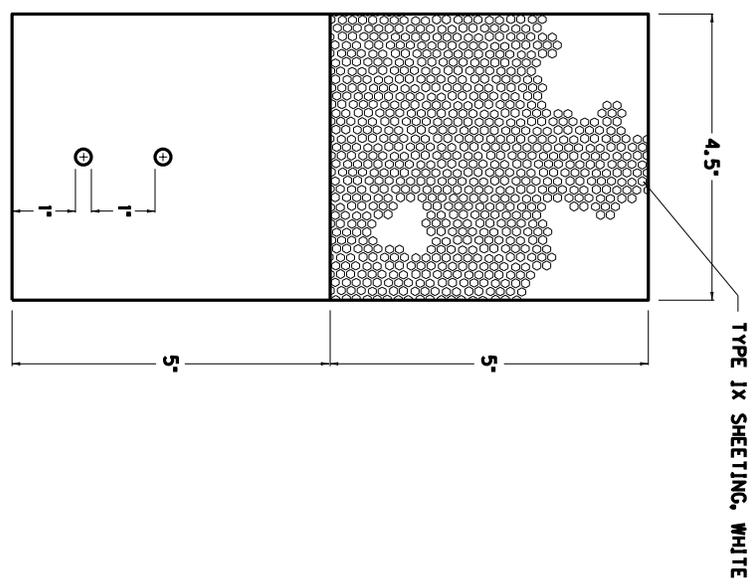
## REMOVE BOULDERS



Two (2) large boulders exist along US 60 within the roadway clear-zone at Rt. Sta. 583+14 and Sta. 583+42. The Contractor shall remove and dispose of the existing boulders as approved by the Engineer. The Department will measure the removal of boulders as Each.

**NOTES**

- BID ITEMS AND UNIT TO BID**
- | DELINERATOR FOR GUARDRAIL (SPECIAL) B/W  | EACH |
|--|------|
| 1. BI-DIRECTIONAL WHITE GUARDRAIL DELINEATORS MADE FROM 0.125" ALUMINUM SHEETING MEASURING 4.5" WIDE AND 10" TALL. RETROREFLECTIVE WHITE SHEETING MUST BE TYPE XI AND COVER TOP HALF OF EACH SIDE. TWO 1/4" HOLES 1" APART BEGINNING 1" FROM BOTTOM EDGE SHALL BE PRE-DRILLED IN THE BOTTOM HALF TO AIDE INSTALLATION. |      |



**APPROXIMATE DELINEATOR SPACING**

SPACING	CURVE
100'	TANGENT
50'	CURVE

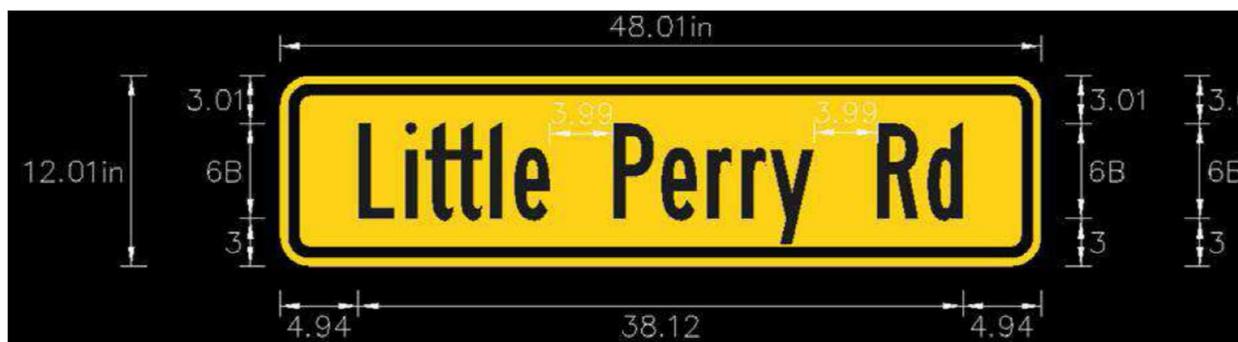
SPACING SHOULD BE ADJUSTED IN CURVES SO THAT SEVERAL DELINEATORS ARE ALWAYS SIMULTANEOUSLY VISIBLE TO THE ROAD USER.

NOT TO SCALE

DETAIL SHEET  
DELINERATORS (SPECIAL)  
FOR GUARDRAIL

COUNTY OF	ITEM NO.
ROWAN	9-9008.00

### Street Name Warning Plaques



### End XX Speed Limit Sign



Custom 24x30;

1.5" Radius, 0.4" Border, 0.6" Indent, Black on White;

"END" E; "35" E; "SPEED" E;

"LIMIT" E;

FIGURE 1

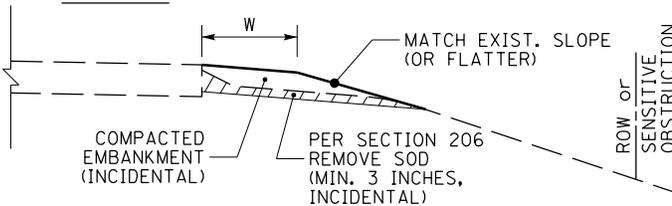


FIGURE 2

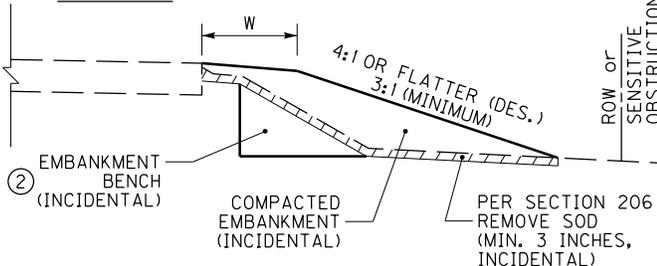


FIGURE 3

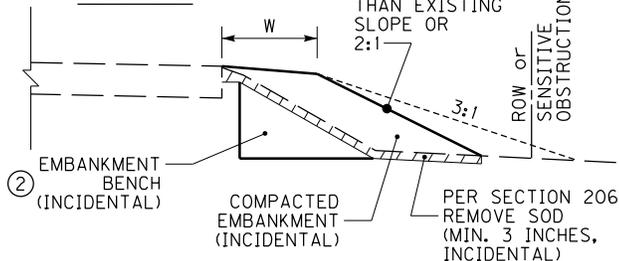


FIGURE 4

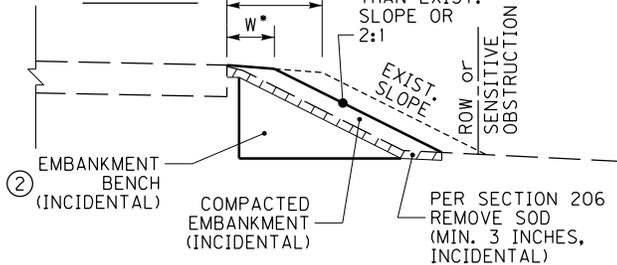


FIGURE 5

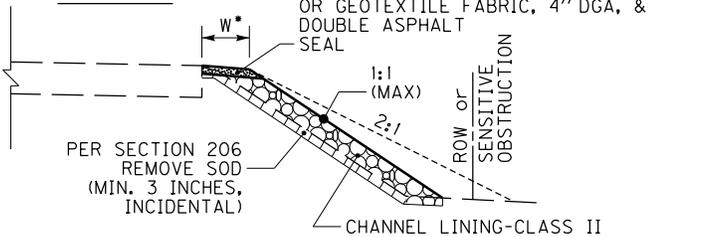
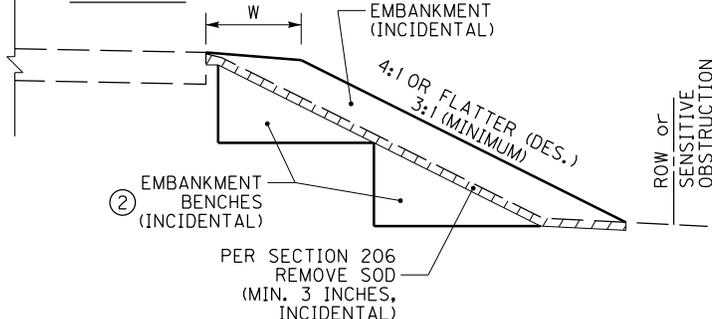


FIGURE 6



~ NOTES ~

BID ITEM AND UNIT TO BID:

2575 - DITCHING & SHOULDERING - LF

1. THE BID ITEM 'DITCHING & SHOULDERING' SHALL CONSIST OF ANY AND ALL NECESSARY CLEARING & GRUBBING, GRADING, AND/OR RESHAPING OF THE EXISTING SHOULDER, DITCH, AND/OR ROADSIDE TO ACHIEVE THE PROPOSED SHOULDER, DITCH, AND/OR ROADSIDE DIMENSIONS, AS DETAILED ON THE TYPICAL SECTIONS. FINAL PAYMENT WILL BE BASED ON THE ACTUAL LINEAR FEET OF DITCHING AND SHOULDERING PERFORMED, AND WILL INCLUDE ALL WORK AND INCIDENTALS NECESSARY TO PERFORM THE DITCHING AND SHOULDERING ACCORDING TO THESE DETAILS, NOTES, AND ANY OTHER INFORMATION FOUND ELSEWHERE IN THE PROPOSAL OR STANDARD SPECIFICATIONS. IN THE CASE OF A DISCREPANCY, REFER TO SECTION 105.05 OF THE STANDARD SPECIFICATIONS. DEPENDING ON THE EXISTING CONDITIONS ENCOUNTERED, DITCHING AND SHOULDERING MAY ALSO INCLUDE, BUT IS NOT LIMITED TO:

- PROVIDING ADDITIONAL EARTH MATERIAL AND GRADING, SHAPING, AND COMPACTING THE EARTH MATERIAL TO ACHIEVE THE DIMENSIONS SHOWN ON THE TYPICAL SECTIONS. COMPACT MATERIAL ACCORDING TO SECTION 206 OF THE STANDARD SPECIFICATIONS.
- NOTE: ADDITIONAL EARTH MATERIAL PROVIDED SHALL BE SUITABLE FOR VEGETATION GROWTH.
- EXCAVATING AND REMOVING EXCESS MATERIAL TO ACHIEVE THE DIMENSIONS SHOWN ON THE TYPICAL SECTIONS
- EMBANKMENT BENCHING

2. EMBANKMENT BENCHING WILL BE REQUIRED WHEN THE EXISTING GROUNDLINE HAS AN INCLINE GREATER THAN 15% (APPROX. 6:1). ANY AND ALL REQUIRED EMBANKMENT BENCHING SHALL BE INCIDENTAL TO THE BID ITEM 'DITCHING AND SHOULDERING'. THE FOLLOWING ARE GUIDELINES FOR EMBANKMENT BENCHING USED IN CONJUNCTION WITH THE BID ITEM 'DITCHING AND SHOULDERING':

- THE TYPICAL HEIGHT (OR RISE) IS 1' TO 6'
- THE TYPICAL WIDTH (OR RUN) WILL VARY BASED ON THE HEIGHT OF THE BENCH
- MULTIPLE SMALL BENCHES MAY BE USED, AND MAY BE MORE ADVANTAGEOUS AS THIS WILL REQUIRE PROCESSING LESS EARTHWORK.

3. AS SHOWN IN FIGURE 1, IN SOME SITUATIONS, MINOR SHOULDERING, WITH MINIMAL ADDITIONAL EARTH MATERIAL, MAY BE ALL THAT IS REQUIRED TO RESHAPE THE EARTH SHOULDER TO THE PROPOSED WIDTH AND BRING IT FLUSH WITH THE EDGE OF PAVEMENT.
4. AS SHOWN IN FIGURE 2, MOST SITUATIONS WILL REQUIRE ADDITIONAL EARTH MATERIAL TO ACHIEVE THE PROPOSED EARTH SHOULDER WIDTH. IT IS DESIRED THAT THE RESULTING FILL SLOPE BE INSTALLED AS FLAT AS POSSIBLE AND REMAIN WITHIN THE RIGHT-OF-WAY AND/OR AVOID SENSITIVE OBSTRUCTIONS.
5. AS SHOWN IN FIGURE 3, IF A 3:1 FILL SLOPE WILL RESULT IN THE TOE OF SLOPE EXTENDING BEYOND THE RIGHT-OF-WAY OR IMPACT A SENSITIVE OBSTRUCTION, THEN THE FILL SLOPE MAY BE INSTALLED STEEPER THAN 3:1, BUT NO STEEPER THAN THE EXISTING FILL SLOPE, OR A 2:1, WHICHEVER IS FLATTER.
6. AS SHOWN IN FIGURE 4, IF MATCHING THE EXISTING FILL SLOPE OR INSTALLING A 2:1 FILL SLOPE (WHICHEVER IS FLATTER) STILL RESULTS IN THE TOE OF SLOPE EXTENDING BEYOND THE RIGHT-OF-WAY OR STILL IMPACTS A SENSITIVE OBSTRUCTION, THEN THE PROPOSED EARTH SHOULDER WIDTH MAY BE REDUCED SO THAT THE RESULTING TOE OF SLOPE WILL REMAIN WITHIN THE RIGHT-OF-WAY AND/OR NOT IMPACT THE SENSITIVE OBSTRUCTION.

7. AS SHOWN IN FIGURE 5, IF THE EXISTING FILL SLOPE IS STEEPER THAN 2:1 AND THERE IS NOT ENOUGH SPACE TO INSTALL A 2:1 FILL SLOPE WITHOUT EXTENDING BEYOND THE RIGHT-OF-WAY AND/OR IMPACTING A SENSITIVE OBSTRUCTION, THEN CLASS II CHANNEL LINING MAY BE INSTALLED ALONG THE STEEP EXISTING SLOPE IN ORDER TO ESTABLISH A WIDTH OF AGGREGATE SHOULDER. THESE LOCATIONS WILL BE NOTED ELSEWHERE IN THE PROPOSAL AS SLOPE PROTECTION. THE CHANNEL LINING IS TO BE CAPPED WITH GEOTEXTILE FABRIC TYPE IV AND 4" OF CRUSHED STONE BASE, OR 4" OF DGA WITH DOUBLE ASPHALT SEAL COAT.
8. AS SHOWN IN FIGURE 6, AS THE HEIGHT OF THE FILL INCREASES, MULTIPLE EMBANKMENT BENCHES MAY BE REQUIRED.

SEE SHEET 2 FOR NOTES 9 THRU 13

KENTUCKY  
DEPARTMENT OF HIGHWAYS

DITCHING & SHOULDERING  
AND EMBANKMENT  
BENCHING DETAILS  
(SHEET 1 OF 2)

NOT TO SCALE

FIGURE 7

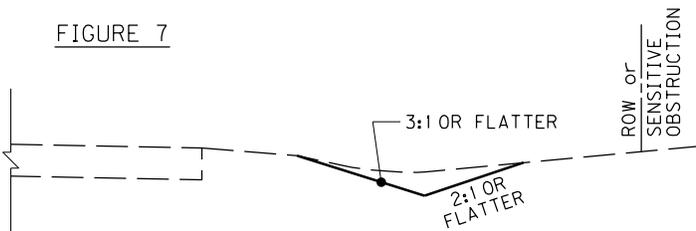


FIGURE 8

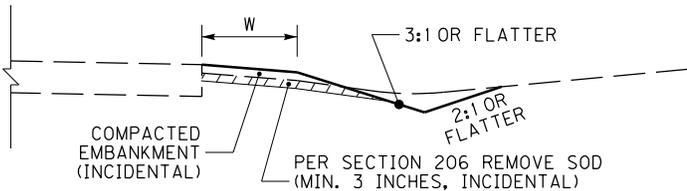


FIGURE 9

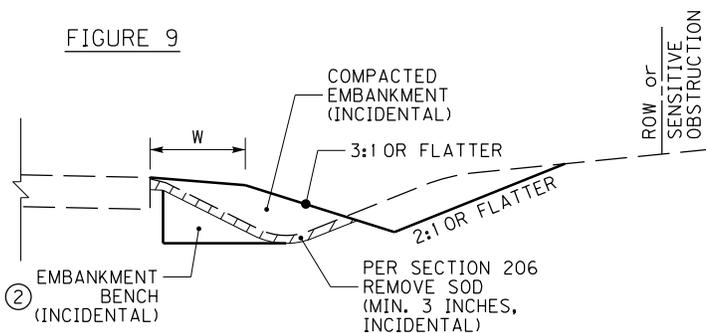


FIGURE 10

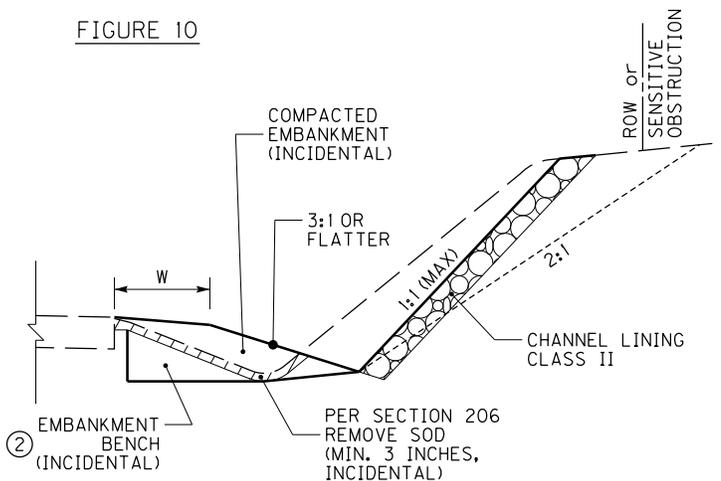
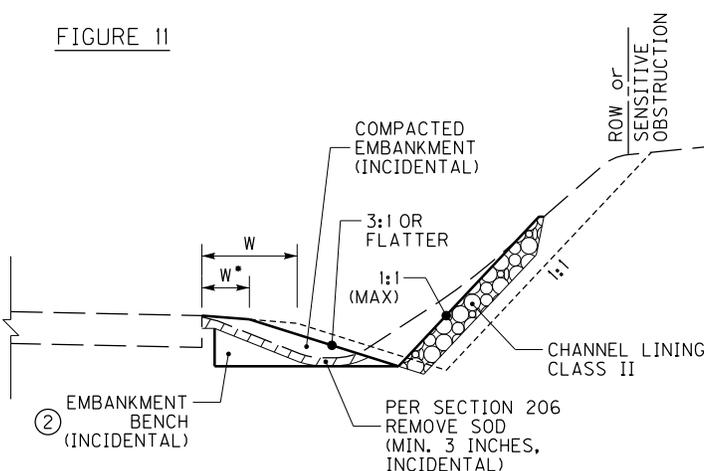


FIGURE 11



~ NOTES ~

BID ITEM AND UNIT TO BID:  
2575 - DITCHING & SHOULDERING - LF

1. THE BID ITEM 'DITCHING & SHOULDERING' SHALL CONSIST OF ANY AND ALL NECESSARY CLEARING & GRUBBING, GRADING, AND/OR RESHAPING OF THE EXISTING SHOULDER, DITCH, AND/OR ROADSIDE TO ACHIEVE THE PROPOSED SHOULDER, DITCH, AND/OR ROADSIDE DIMENSIONS, AS DETAILED ON THE TYPICAL SECTIONS. FINAL PAYMENT WILL BE BASED ON THE ACTUAL LINEAR FEET OF DITCHING AND SHOULDERING PERFORMED, AND WILL INCLUDE ALL WORK AND INCIDENTALS NECESSARY TO PERFORM THE DITCHING AND SHOULDERING ACCORDING TO THESE DETAILS, NOTES, AND ANY OTHER INFORMATION FOUND ELSEWHERE IN THE PROPOSAL OR STANDARD SPECIFICATIONS. IN THE CASE OF A DISCREPANCY, REFER TO SECTION 105.05 OF THE STANDARD SPECIFICATIONS. DEPENDING ON THE EXISTING CONDITIONS ENCOUNTERED, DITCHING AND SHOULDERING MAY ALSO INCLUDE, BUT IS NOT LIMITED TO:

- PROVIDING ADDITIONAL EARTH MATERIAL AND GRADING, SHAPING, AND COMPACTING THE EARTH MATERIAL TO ACHIEVE THE DIMENSIONS SHOWN ON THE TYPICAL SECTIONS. COMPACT MATERIAL ACCORDING TO SECTION 206 OF THE STANDARD SPECIFICATIONS.
- NOTE: ADDITIONAL EARTH MATERIAL PROVIDED SHALL BE SUITABLE FOR VEGETATION GROWTH.
- EXCAVATING AND REMOVING EXCESS MATERIAL TO ACHIEVE THE DIMENSIONS SHOWN ON THE TYPICAL SECTIONS
- EMBANKMENT BENCHING

② EMBANKMENT BENCHING WILL BE REQUIRED WHEN THE EXISTING GROUNDLINE HAS AN INCLINE GREATER THAN 15% (APPROX. 6:1). ANY AND ALL REQUIRED EMBANKMENT BENCHING SHALL BE INCIDENTAL TO THE BID ITEM 'DITCHING AND SHOULDERING'. THE FOLLOWING ARE GUIDELINES FOR EMBANKMENT BENCHING USED IN CONJUNCTION WITH THE BID ITEM 'DITCHING AND SHOULDERING':

- THE TYPICAL HEIGHT (OR RISE) IS 1' TO 6'
- THE TYPICAL WIDTH (OR RUN) WILL VARY BASED ON THE HEIGHT OF THE BENCH
- MULTIPLE SMALL BENCHES MAY BE USED, AND MAY BE MORE ADVANTAGEOUS AS THIS WILL REQUIRE PROCESSING LESS EARTHWORK.

SEE SHEET 1 FOR NOTES 3. THRU 8.

9. AS SHOWN IN FIGURE 7, IN SOME SITUATIONS, ALL THAT MAY BE REQUIRED IS TO CLEAN OUT THE EXISTING DITCH AND RESHAPE IT TO THE PROPOSED DIMENSIONS. THE MATERIAL EXCAVATED FROM THE DITCH MAY BE RE-USED ELSEWHERE ON THE PROJECT, PROVIDED THE ENGINEER DETERMINES THE MATERIAL REMOVED FROM THE DITCH IS SUITABLE FOR THE INTENDED RE-USE.
10. AS SHOWN IN FIGURE 8, IN SOME SITUATIONS, THE DITCH AND SHOULDER MAY ONLY NEED MINOR REGRADING AND/OR RESHAPING. THE MATERIAL EXCAVATED FROM THE DITCH MAY BE USED TO RESHAPE THE EARTH SHOULDER, PROVIDED THE ENGINEER DETERMINES THE MATERIAL REMOVED FROM THE DITCH IS SUITABLE FOR SHOULDERING. IF THE MATERIAL IS NOT SUITABLE, ADDITIONAL EARTH MATERIAL MAY BE REQUIRED.
11. AS SHOWN IN FIGURE 9, IN MOST SITUATIONS, REGRADING AND RESHAPING THE ROADSIDE TO ACHIEVE THE PROPOSED SHOULDER, DITCH, AND/OR ROADSIDE DIMENSIONS WILL RESULT IN MOVING THE DITCH FURTHER AWAY FROM THE ROADWAY. IT IS DESIRED THAT DITCH FORESLOPES BE 3:1 OR FLATTER AND DITCH BACKSLOPES BE 2:1 OR FLATTER.
12. AS SHOWN IN FIGURE 10, IF INSTALLING A 2:1 DITCH BACKSLOPE WILL RESULT IN THE TOP OF CUT EXTENDING BEYOND THE RIGHT-OF-WAY OR IMPACTING A SENSITIVE OBSTRUCTION, THEN THE DITCH BACK SLOPE MAY BE INSTALLED STEEPER THAN 2:1, UP TO 1:1 MAXIMUM. IN THIS SITUATION, THE DITCH BACKSLOPE SHALL HAVE CLASS II CHANNEL LINING INSTALLED FOR SLOPE PROTECTION.
13. AS SHOWN IN FIGURE 11, IF USING A 1:1 DITCH BACKSLOPE STILL RESULTS IN THE TOP OF CUT EXTENDING BEYOND THE RIGHT-OF-WAY OR STILL IMPACTS A SENSITIVE OBSTRUCTION, THEN THE PROPOSED EARTH SHOULDER WIDTH MAY BE REDUCED SO THAT THE STEEP DITCH BACKSLOPE CAN BE INSTALLED WITHIN THE RIGHT-OF-WAY AND/OR TO AVOID A SENSITIVE OBSTRUCTION.

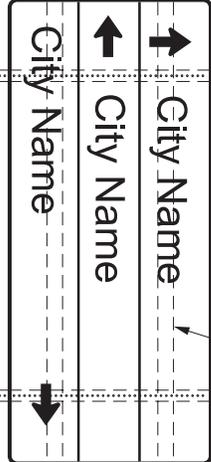
KENTUCKY  
DEPARTMENT OF HIGHWAYS

DITCHING & SHOULDERING  
AND EMBANKMENT  
BENCHING DETAILS  
(SHEET 2 OF 2)

NOT TO SCALE



COUNTY OF	ITEM NO.	SHEET NO.



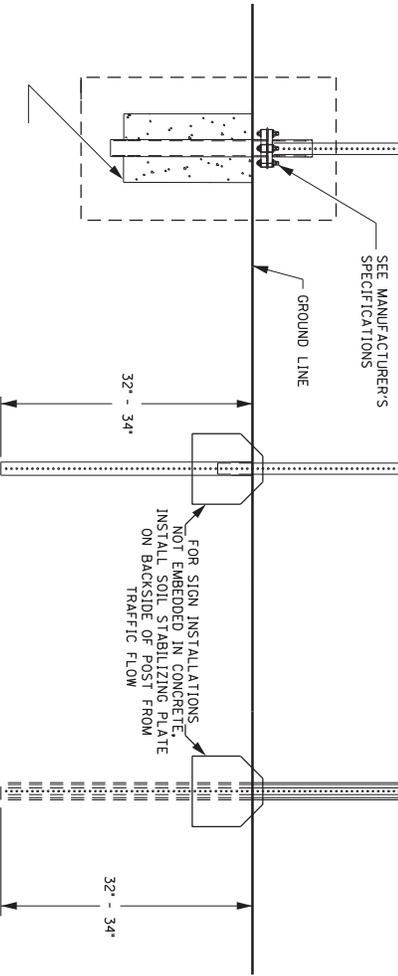
SEE SHEETING SIGN DETAIL SHEET 2 OF 2 FOR BRACING REQUIREMENTS

NOTE: SEE SIGN DETAIL SHEETS FOR QUANTITY, LENGTH, SIZE AND GAUGE OF TYPE I POSTS

PLAN VIEW  
NOT TO SCALE

PLAN VIEW  
NOT TO SCALE

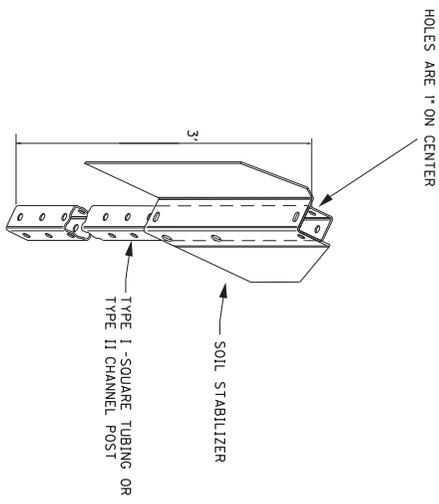
PLAN VIEW  
NOT TO SCALE



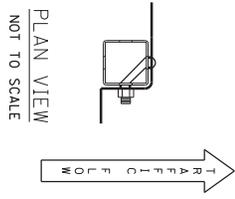
TYPE I  
SQUARE TUBING POST  
WITH TYPE "D" SUPPORT

TYPE I  
SQUARE TUBING POST  
WITH SOIL STABILIZER

TYPE II  
CHANNEL POST  
WITH SOIL STABILIZER



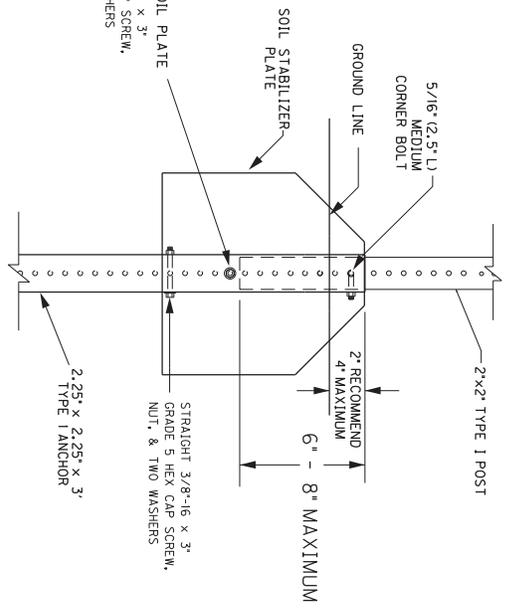
SOIL STABILIZER DETAIL



PLAN VIEW  
NOT TO SCALE

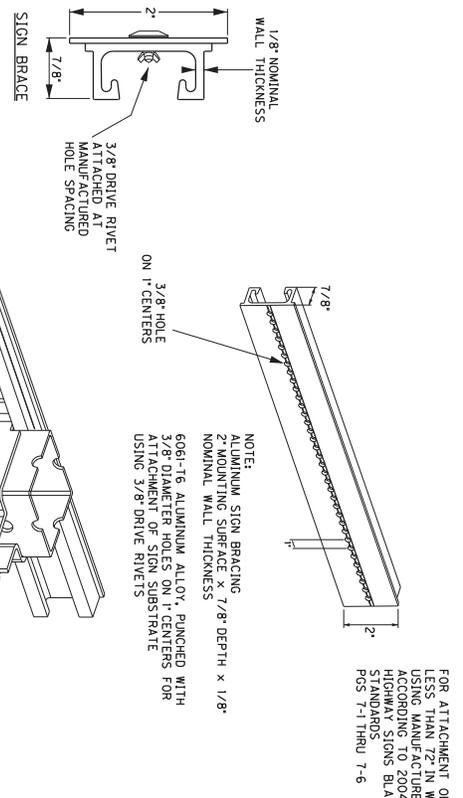
ADDED HOLE IN SOIL PLATE  
STRAIGHT 3/8"-16 x 3"  
GRADE 5 HEX CAP SCREW,  
NUT, & TWO WASHERS

SOIL STABILIZER DETAIL  
FOR TYPE I POST



NOT TO SCALE

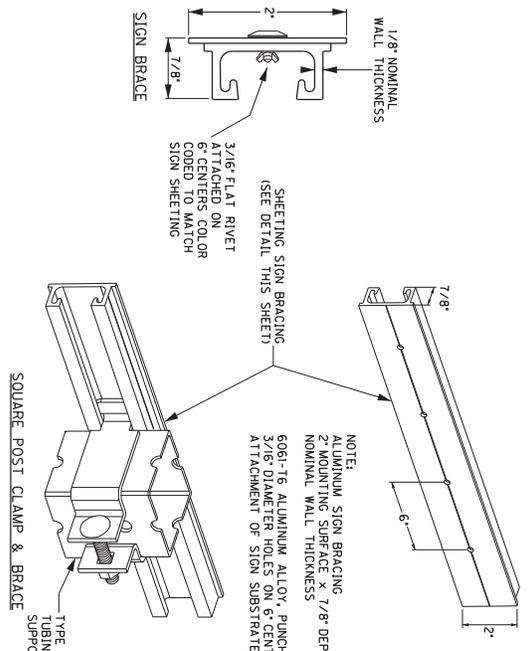
SHEETING SIGN DETAIL  
SHEET 1 OF 2



FOR ATTACHMENT OF SIGNS LESS THAN 72" IN WIDTH USING MANUFACTURED 3/8" HOLES ACCORDING TO 2004 STANDARD HIGHWAY SIGNS BLANK STANDARDS POST 7-1 THRU 7-6

NOTE:  
ALUMINUM SIGN BRACING 2" MOUNTING SURFACE x NOMINAL WALL THICKNESS  
6061-T6 ALUMINUM ALLOY, PUNCHED WITH 3/8" DIAMETER HOLES ON 1" CENTERS FOR ATTACHMENT OF SIGN SUBSTRATE USING 3/8" DRIVE RIVETS

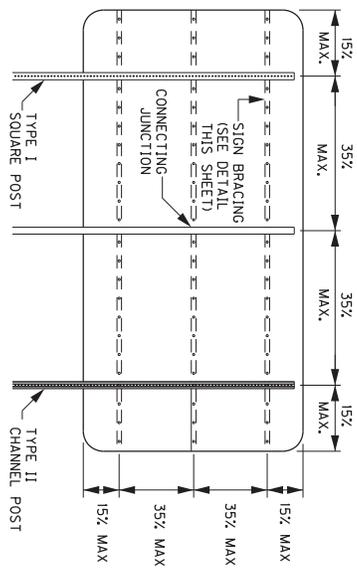
SQUARE POST CLAMP & BRACE  
TYPE I SQUARE POST



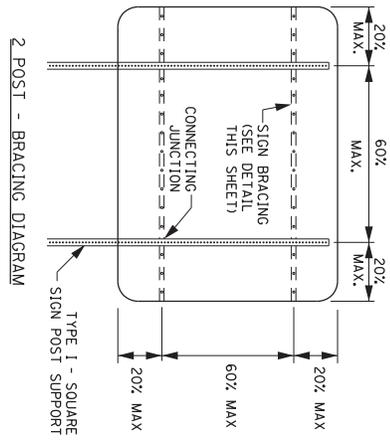
FOR ATTACHMENT OF SIGNS GREATER THAN, OR EQUAL TO, 72" IN WIDTH, RIVETS SHALL BE COLOR CODED TO MATCH SHEETING IN ORDER TO MINIMIZE GLARE FROM RIVETS

NOTE:  
ALUMINUM SIGN BRACING 2" MOUNTING SURFACE x 7/8" DEPTH x 1/8" NOMINAL WALL THICKNESS  
6061-T6 ALUMINUM ALLOY, PUNCHED WITH 3/8" DIAMETER HOLES ON 6" CENTERS FOR ATTACHMENT OF SIGN SUBSTRATE USING RIVETS

SQUARE POST CLAMP & BRACE  
TYPE I SQUARE TUBING SIGN SUPPORT



3 POST - BRACING DIAGRAM  
NOTE:  
1. MAXIMUM AREA PER CONNECTING JUNCTION = 16 SQ. FT.  
2. BRACING SHOULD NOT BE SPLICED WITHIN 6" OF A BRACE TO POST JUNCTION.

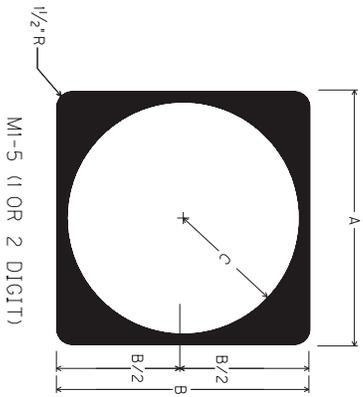
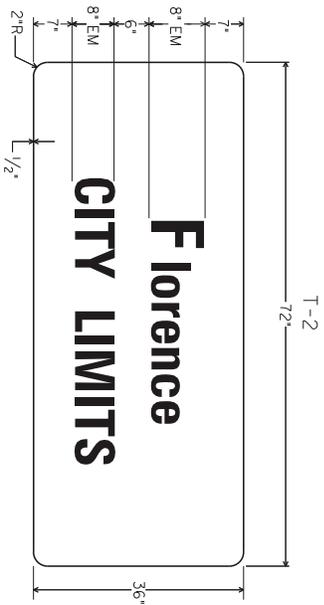
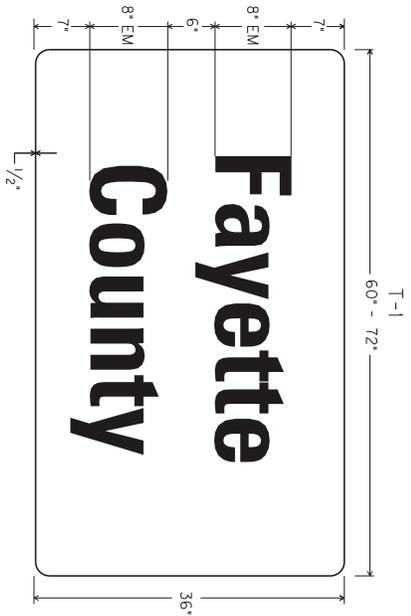


NOTE:  
USE OF SIGN BRACING NOT SHOWN ON THIS SHEET MAY BE PERMITTED BY PROJECT ENGINEER AND/OR DISTRICT TRAFFIC ENGINEER.

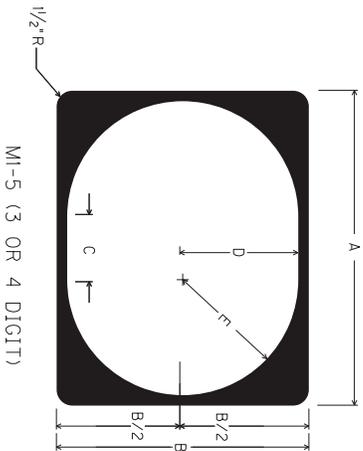
SHEETING SIGN DETAIL  
SHEET 2 OF 2

COUNTY OF	ITEM NO.	SHEET NO.

COUNTY OF	ITEM NO.	SHEET NO.



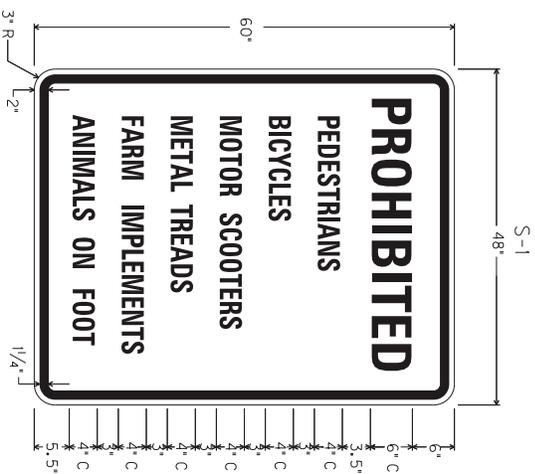
	A	B	C	FONT
CONVENTIONAL	24"	24"	11"	12D
EXPRESSWAY/ FREEWAY	36"	36"	17"	18D



	A	B	C	D	E	FONT	
						3 DIGIT	4 DIGIT
CONVENTIONAL	30"	24"	6"	11"	11"	12D	12B
EXPRESSWAY/ FREEWAY	45"	36"	9"	16.5"	16.5"	18D	18B

NOTE: FOR ROUTE MARKERS, IF NECESSARY, ADJUSTMENTS TO THE DIGIT LAYOUT AND/OR FONT TYPE MAY BE MADE TO ENSURE VISUAL ACUITY

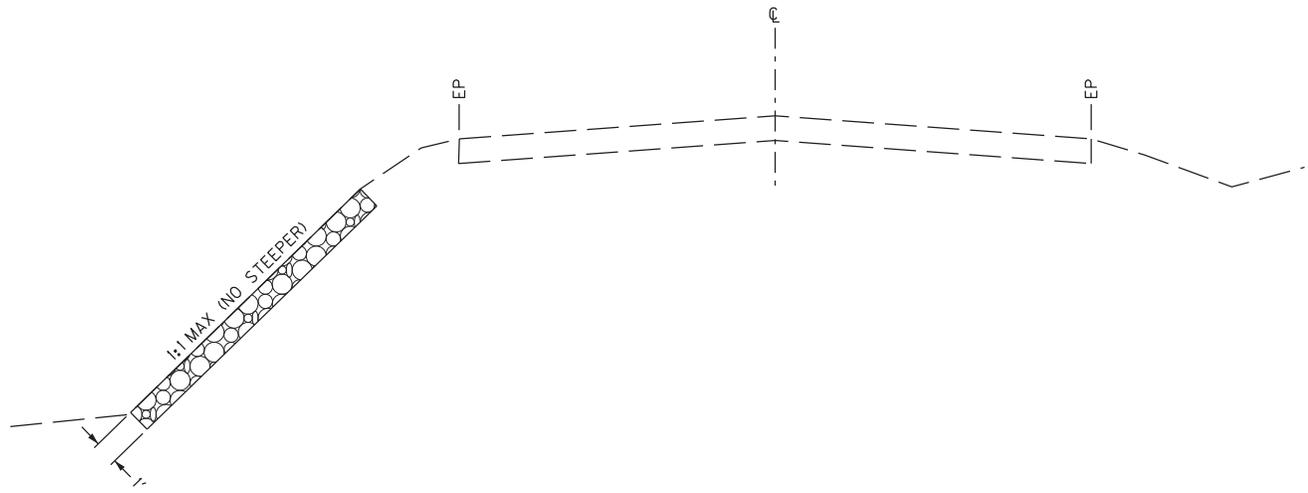
NOTE: EXPRESSWAY/FREEWAY DEFINED AS A DIVIDED HIGHWAY WITH PARTIAL OR FULL CONTROL OF ACCESS



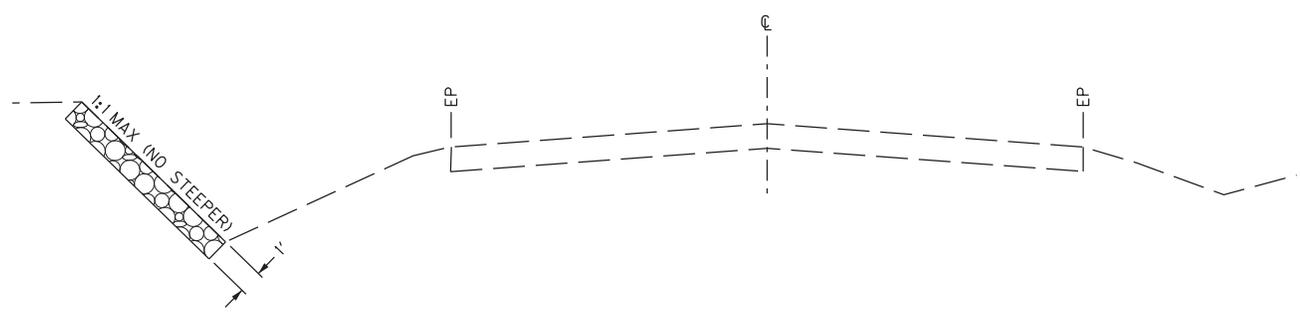
NOT TO SCALE

TYPICAL SIGNS

COUNTY OF	ITEM NO.	SHEET NO.



**PROTECTION DETAIL FOR EMBANKMENT FILL SLOPE**

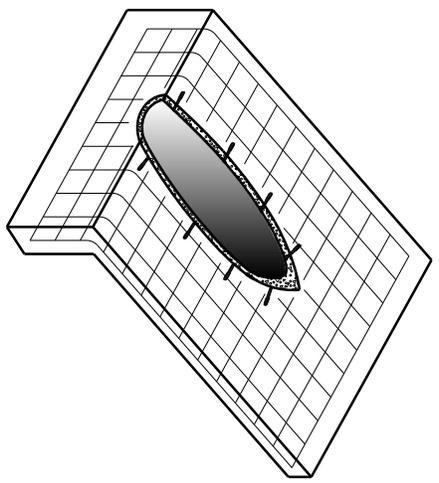
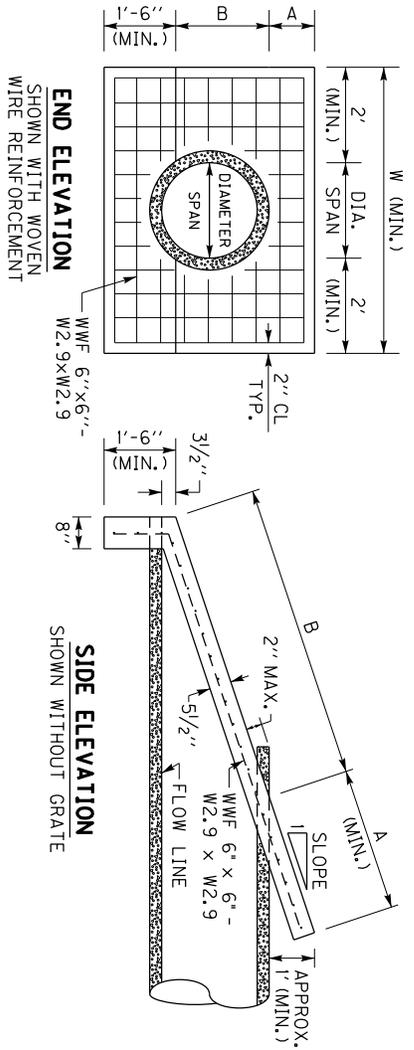


**PROTECTION DETAIL FOR DITCH BACKSLOPE**

NOTES:

1. SEE CHANNEL LINING SUMMARY FOR APPROXIMATE LOCATIONS OF SLOPE PROTECTION.
2. FINAL LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. EXCAVATION IS INCIDENTAL TO THE PLACEMENT OF THE CHANNEL LINING.

SLOPE PROTECTION DETAILS



**ISOMETRIC VIEW**  
SHOWN WITH WOVEN  
WIRE REINFORCEMENT  
AND WEDGE ANCHORS

**DIMENSIONS AND CONCRETE QUANTITIES**

PIPE SIZE	3:1 SLOPE			4:1 SLOPE			6:1 SLOPE			GRATE REQUIRED
	A	B	W	A	B	W	A	B	W	
15"	3'-7 1/2"	5'-3"	0.74	4'-8 3/4"	5'-3"	0.93	6'-11 3/4"	5'-3"	1.29	NO
18"	3'-4'-5 3/4"	5'-6"	0.85	4'-5'-10"	5'-6"	1.05	8'-7 1/4"	5'-6"	1.48	NO
24"	3'-6'-2 1/2"	6'-0"	1.05	4'-8'-1"	6'-0"	1.32	11'-11"	6'-0"	1.87	SEE ⑦
30"	3'-7'-10 3/4"	6'-6"	1.43	4'-10'-3 3/4"	6'-6"	1.80	15'-2 1/2"	6'-6"	2.28	SEE ⑦

NOTE: CONCRETE QUANTITIES ARE LISTED FOR INFORMATIONAL PURPOSES ONLY.

**NOTES**

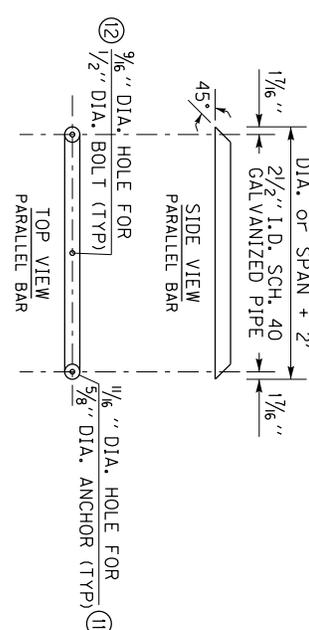
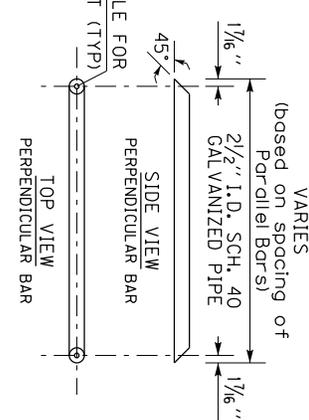
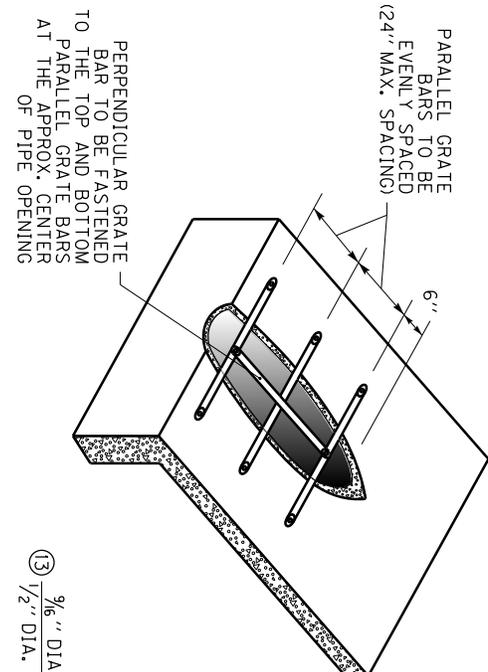
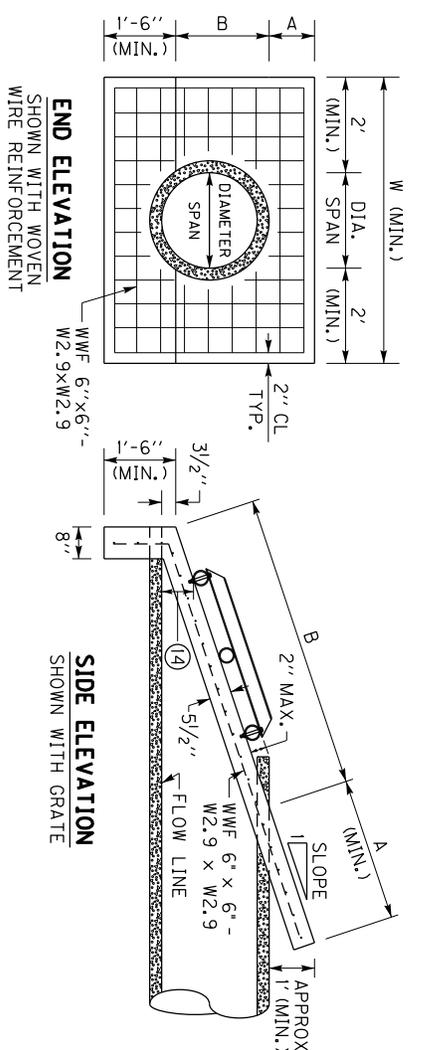
- BID ITEM AND UNIT TO BID: 24575ES610 HEADWALL (SLOPED & MITERED CONCRETE-FOR 1" INCH PIPE) - EACH
- THE EMBANKMENT FILL MATERIAL IS TO BE PLACED, COMPACTED, AND GRADED AROUND THE PIPE BEFORE THE CONCRETE SLOPE PAVING IS PLACED. THE INTENT IS FOR THE SLOPED & MITERED HEADWALL TO MATCH THE FINAL EMBANKMENT SLOPE.
- THE PIPE SHALL BE MITERED AFTER THE CONCRETE SLOPE PAVING HAS BEEN PLACED AND SUFFICIENTLY CURED. THE PIPE SHOULD BE MITERED AS CLOSE TO FLUSH WITH THE SLOPE PAVING AS POSSIBLE, AND NO HIGHER THAN 2" ABOVE THE SLOPE PAVING. HAND FINISHING AND/OR CUTTING MAY BE NECESSARY.
- THE DIMENSION 'A' IS BASED ON THE FINAL GRADED SLOPE. THE DIMENSION 'B' IS BASED ON CIRCULAR REINFORCED CONCRETE PIPE AT 0° SKEW FOR THE LISTED SLOPE. THE DIMENSION 'W' IS BASED ON THE DIAMETER, OR SPAN, OF THE PIPE. NOTE: THE HEADWALL DIMENSIONS AND CONCRETE QUANTITIES MAY VARY BASED ON THE FINAL GRADED SLOPE, PIPE SKEW, AND/OR TYPE OF PIPE.
- WOVEN WIRE REINFORCEMENT (WWF 6"x6" - W2.9xW2.9) IS REQUIRED FOR THE SLOPE PAVING AND TOE WALL. UTILIZE 2" CLEARANCE FROM ALL EDGES.
- CONCRETE QUANTITIES SHOWN ARE FOR ONE (1) HEADWALL.
- AFTER THE PIPE HAS BEEN MITERED, ANCHOR THE PIPE TO THE CONCRETE SLOPE PAVING BY CORE DRILLING AND INSTALLING 1/2" DIAMETER x 7" LENGTH STEEL WEDGE ANCHORS (3" MINIMUM EMBEDMENT) ON 18" CENTERS ALONG THE SIDES OF THE PIPE. HOLE SIZE & DEPTH, TORQUE, & INSTALLATION PROCEDURES PER RECOMMENDATION OF ANCHOR MANUFACTURE. NOTE: STEEL WEDGE ANCHORS ARE NOT REQUIRED FOR REINFORCED CONCRETE PIPE.
- THE FOLLOWING SITUATIONS REQUIRE A HEADWALL WITH A GRATE:
  - 24" DIAMETER PIPE ON GREATER THAN 30° SKEW
  - 30" DIAMETER PIPE ON GREATER THAN 15° SKEW
  - PIPE WITH GREATER THAN 30" DIAMETER.
  - ELLIPTICAL PIPE GREATER THAN 24" EQUIVALENT DIAMETER
- SEE SHEET 2 FOR GRATE DETAILS
- ALL BOLTS AND HARDWARE SHALL BE RUST RESISTANT: ZINC PLATED, STAINLESS STEEL, OR STEEL THAT HAS BEEN GALVANIZED IN ACCORDANCE WITH AASHTO M 232.

NOT TO SCALE

SEE SHEET 2 FOR DIMENSIONS OF HEADWALLS FOR PIPE OVER 30" DIAMETER

<b>KENTUCKY</b>
<b>DEPARTMENT OF HIGHWAYS</b>
SLOPED & MITERED CONCRETE HEADWALL (SHEET 1 OF 2)

COUNTY OF	TRACT NO.	SHEET NO.
-----------	-----------	-----------



- ~ NOTES ~
1. BID ITEM AND UNIT TO BID: 24575ES610 HEADWALL (SLOPED & MITERED CONCRETE-FOR 1 INCH PIPE) - EACH SEE SHEET 1 FOR NOTES 1 THRU 5
  2. THE FOLLOWING SITUATIONS REQUIRE A HEADWALL WITH A GRATE:
    7. 24" DIAMETER PIPE ON GREATER THAN 30° SKEW
    8. 30" DIAMETER PIPE ON GREATER THAN 15° SKEW
    9. PIPE WITH GREATER THAN 30" DIAMETER
    10. ELLIPTICAL PIPE GREATER THAN 24" EQUIVALENT DIAMETER
  3. ALL BOLTS AND HARDWARE SHALL BE RUST RESISTANT: ZINC PLATED, STAINLESS STEEL, OR STEEL THAT HAS BEEN GALVANIZED IN ACCORDANCE WITH AASHTO M 232.
  4. THE PIPE USED TO CONSTRUCT THE GRATE SHALL BE STEEL, SCHEDULE 40, CONFORMING TO ASTM A53, AND GALVANIZED IN ACCORDANCE WITH AASHTO M 111 AFTER FABRICATION.
  5. ANY RAW METAL EXPOSED BY FIELD CUTTING AND/OR DRILLING SHALL BE TREATED WITH A COLD GALVANIZING COMPOUND.
  6. FASTEN PARALLEL BARS TO HEADWALL WITH 5/8" DIA. x 4 1/2" LENGTH STEEL WEDGE ANCHORS, MINIMUM EMBEDMENT = 2 3/4" HOLE SIZE AND DEPTH, TORQUE, & INSTALLATION PROCEDURES PER RECOMMENDATION OF ANCHOR MANUFACTURE
  7. CENTER BOLT HOLE SHALL ONLY BE DRILLED IN THE TOP AND BOTTOM PARALLEL BARS.
  8. FASTEN THE PERPENDICULAR BAR TO THE TOP AND BOTTOM PARALLEL BARS WITH 1/2" DIA. x 4" LENGTH HEX HEAD BOLTS, HEX HEAD NUTS, & FLAT WASHERS.
  9. THE BOTTOM PARALLEL BAR IS TO BE PLACED SO THAT IT IS APPROX. 6" ABOVE THE FLOWLINE OF THE PIPE.

**PIPE FOR GRATE DETAILS**  
SEE NOTE 6 TO DETERMINE IF GRATE IS REQUIRED

DIMENSIONS AND CONCRETE QUANTITIES													
PIPE SIZE	3:1 SLOPE		4:1 SLOPE		6:1 SLOPE		GRATE REQUIRED						
	A	B	W	CU. YDS. CONCRETE	A	B		W	CU. YDS. CONCRETE				
36"	3'	9'-7 1/2"	7'-0"	1.51	4'	12'-6 1/2"	7'-0"	1.91	6'	18'-6"	7'-0"	2.42	YES
42"	3'	11'-4"	7'-6"	1.76	4'	14'-9 1/4"	7'-6"	2.23	6'	21'-9 1/2"	7'-6"	3.19	YES

NOTE: CONCRETE QUANTITIES ARE LISTED FOR INFORMATIONAL PURPOSES ONLY.

SEE SHEET 1 FOR DIMENSIONS OF HEADWALLS FOR PIPE 30" DIAMETER & LESS

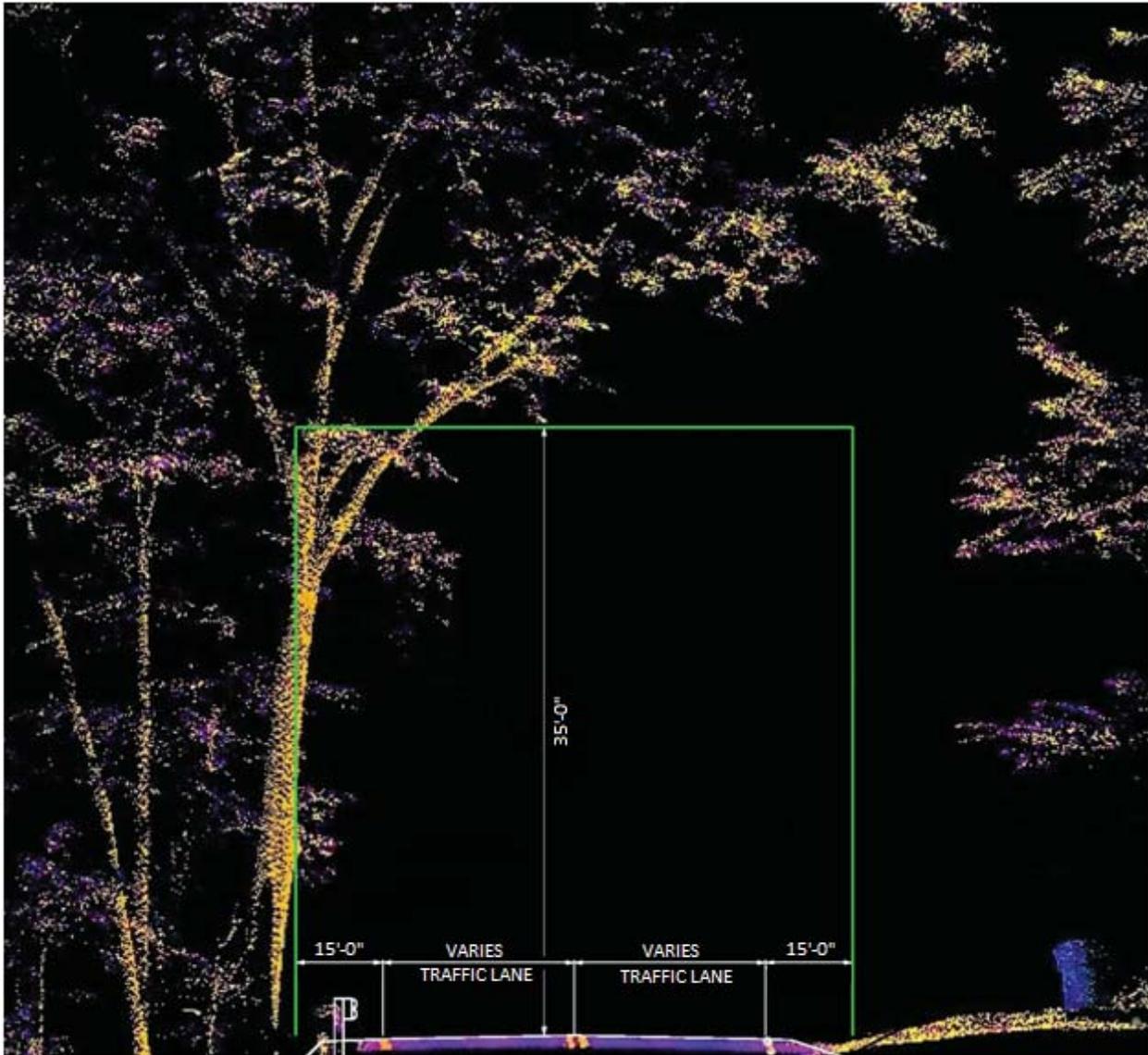
NOT TO SCALE

**KENTUCKY**  
**DEPARTMENT OF HIGHWAYS**

SLOPED & MITERED CONCRETE HEADWALL (SHEET 2 OF 2)

## TREE CLEARING DETAIL

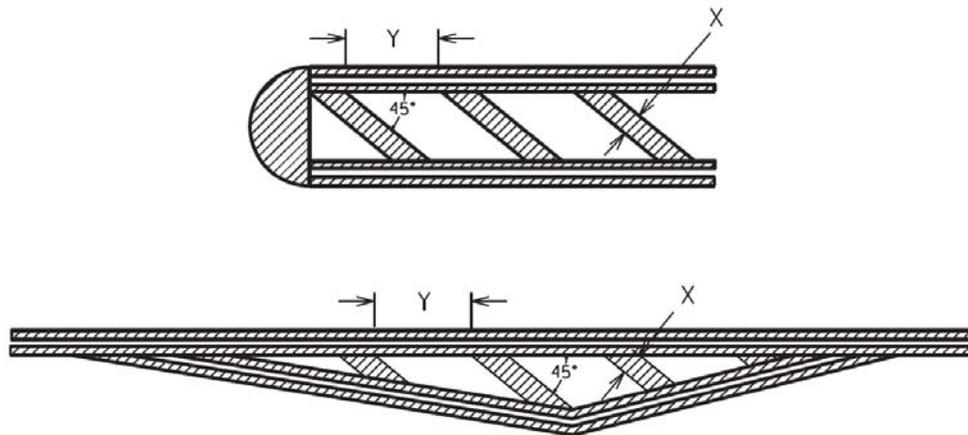
Clearing offset: 15 feet from edge of pavement, both sides, cutting with a vertical reach of 35 feet



## CROSS-HATCH PAVEMENT MARKINGS DETAIL

---

### TYPICAL CROSS-HATCH MARKINGS



The cross-hatch pavement marking width (X) and spacing (Y) will usually be specified in the plans. The width to spacing values usually have a ratio of 1:10. If the plans do not specify the width (X) and spacing (Y) the Engineer will provide the contractor with the X and Y values for each cross-hatch installation. If necessary, the Engineer may obtain guidance from the District Traffic Engineer and/or the Division of Traffic Operations.

NOTE: Adjust the width and spacing of the cross-hatch pavement markings as necessary so that a minimum of three (3) cross-hatch markings are placed within the area being marked. The 1:10 ratio between width and spacing values should be maintained as much as possible.

Refer to Section 717 of the Standard Specifications for Road and Bridge Construction, current edition, for more information concerning Material and Construction specifications.

The Department will measure the finished in-place area of Cross-Hatch Pavement Markings in Square Feet. The Department will NOT measure overlaps or the void space between cross-hatching. See Section 717.04 for additional measurement information.

When listed in the bid items, the Department will make payment for the completed and accepted quantities of Cross-Hatch Pavement Markings under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
06569	Pave Marking-Thermo Cross-Hatch	Square Foot
23253ES717	Pave Mark TY 1 Tape Cross Hatch	Square Foot

### TYPICAL SECTION DEPICTING INSTALLATION OF RECYCLED RAILROAD RAIL PLACED IN DRILLED SOCKET FOR LANDSLIDE CORRECTION

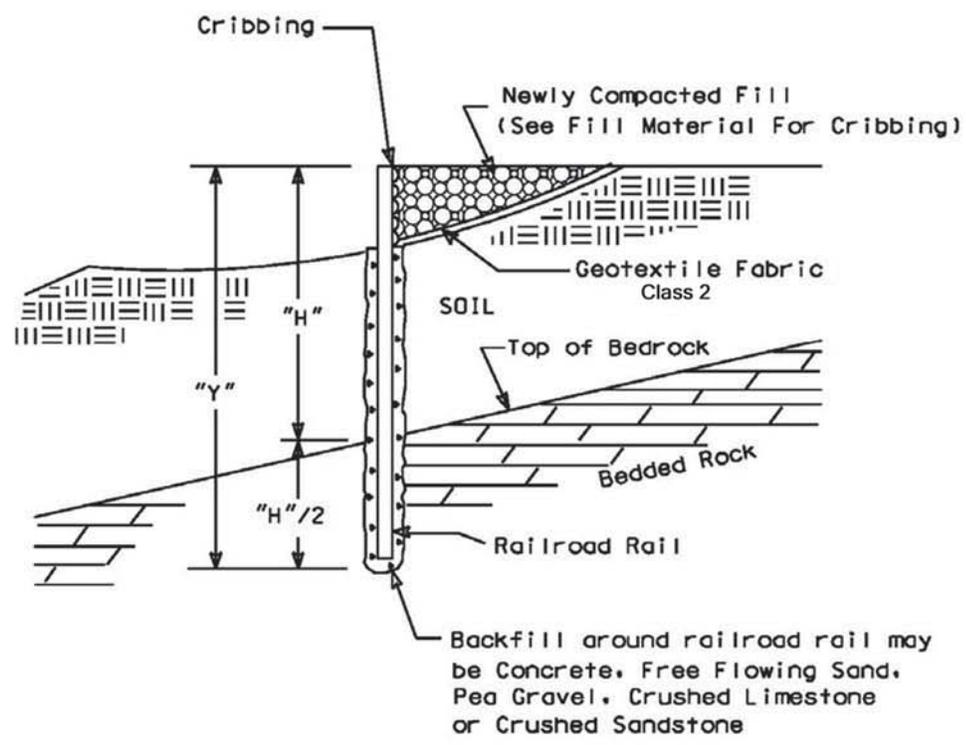
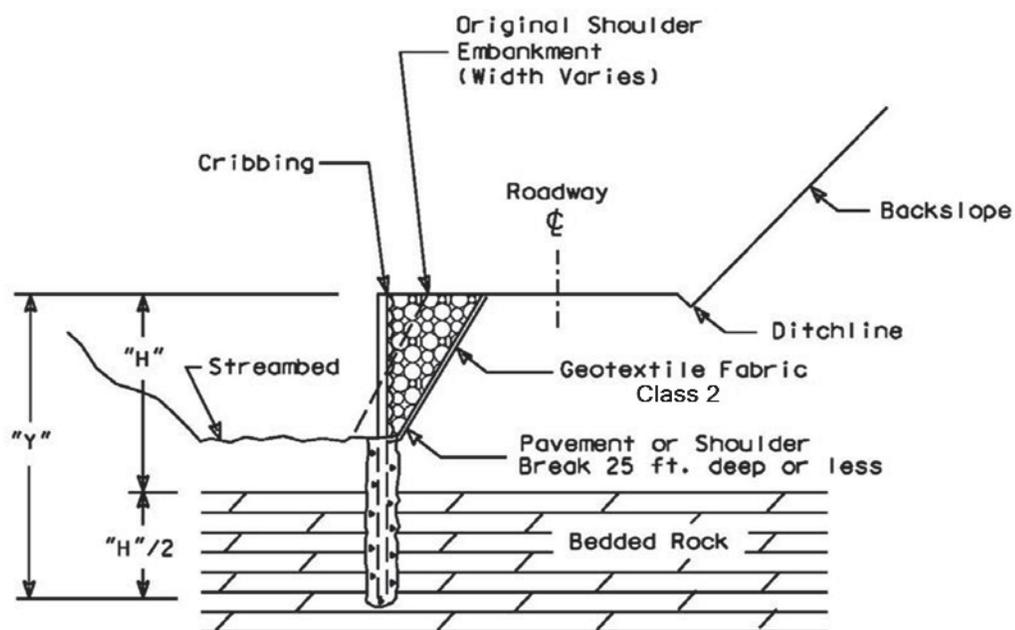


Figure 1

## TYPICAL CROSS SECTION OF ROADWAY REPAIRS UTILIZING RECYCLED RAILROAD RAILS IN DRILLED SOCKETS FOR EMBANKMENT EROSION CORRECTION

NOTE:  
Spacing from edge to  
edge of drilled  
socket : 3 ft. max.



NOTE :  
"H"/2 Depth of Rail into bedded rock =  
1/3 total length where rock is present.

Figure 2

### ALTERNATE SCHEMES FOR INSTALLING RAILROAD RAILS IN DRILLED SOCKETS

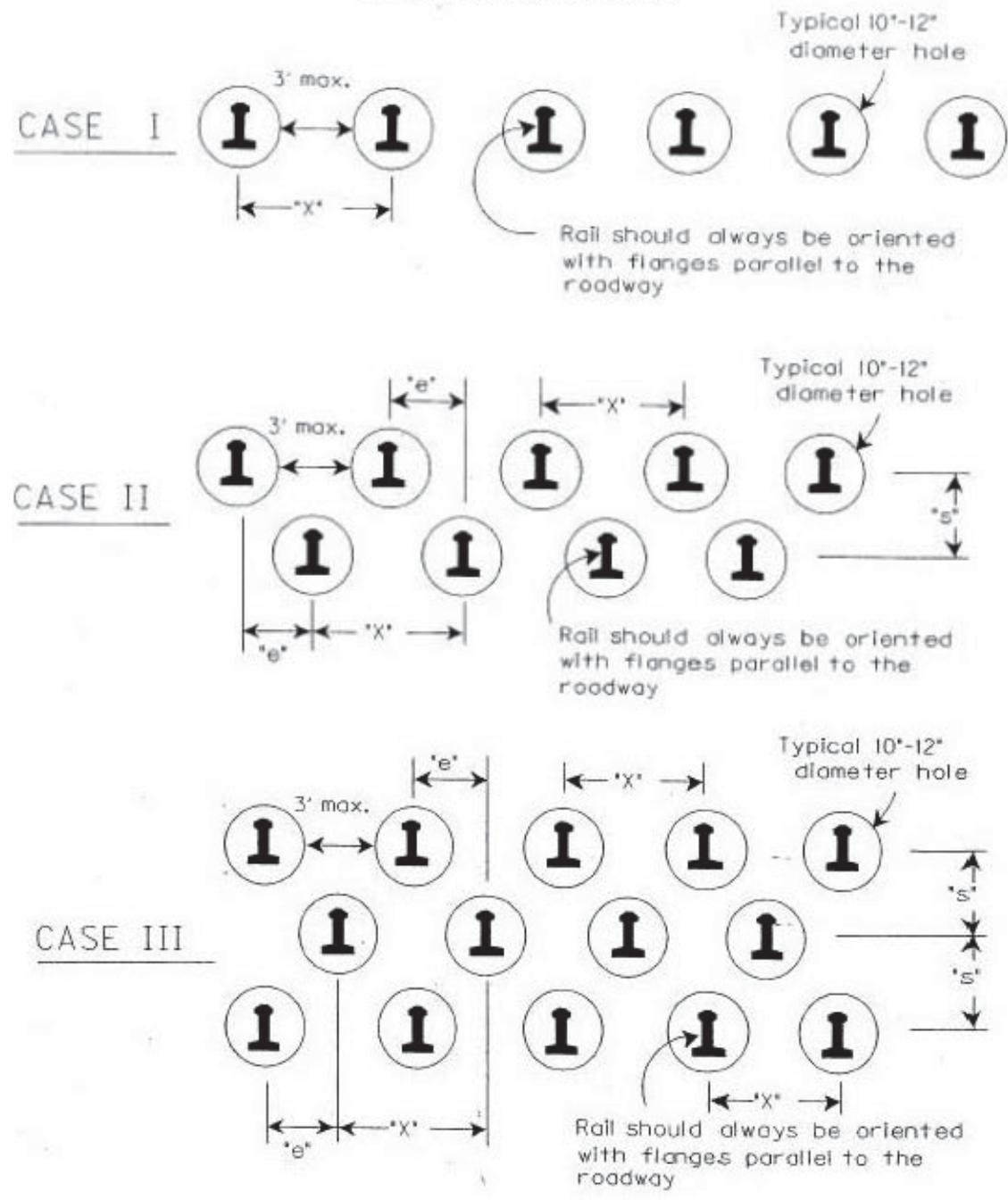


FIGURE 3

**DESIGN CHART FOR 130LBS/YD TO 133 LBS/YD RECYCLED (USED) RAILROAD RAILS  
FACTOR OF SAFETY = 1**

Soil Depth to Bedded Rock "H" (Feet)	Minimum Embedment into Bedded Rock "H/2" (Feet)	Total Length of Installed Railroad Rail "Y" (Feet)	Required Number of Rows	Maximum Spacing Between Rails "X" (Max. 48") (Inches)	Effective Spacing Between Rows of Rails "e" (Inches)
8	4	12	1	48	N/A
9	4.5	13.5	1	48	N/A
10	5	15	1	48	N/A
11	5.5	16.5	1	48	N/A
12	6	18	1	48	N/A
13	6.5	19.5	1	48	N/A
14	7	21	1	32	N/A
15	7.5	22.5	2	48	24
16	8	24	2	44	22
17	8.5	25.5	2	36	18
18	9	27	2	28	14
19	9.5	28.5	2	24	12
20	10	30	3	33	11
21	10.5	31.5	3	28.5	9.5
>21	N/A	N/A	N/A	N/A	N/A

- NOTES:**
1. REFER TO FIGURES 1, 2, & 3 FOR DIMENSIONS SHOWN
  2. FOR SOIL DEPTHS "H" GREATER THAN 21 FEET CONTACT THE ENGINEER.

**TABLE I**

# IDENTIFICATION OF RAILROAD RAIL SIZES

1. Typically classified in units of lbs-per-yard.

Examples :

155 lbs/yd, 140 lbs/yd, 132 lbs/yd, 90 lbs/yd

2. Each rail has a classification stamped in web:

Example :

112 25 RE OH ILLINOIS USA 1935 IIIIII



Weight in lbs/yd

# GUARDRAIL DELIVERY VERIFICATION SHEET

Contract Id: \_\_\_\_\_

Contractor: \_\_\_\_\_

Section Engineer: \_\_\_\_\_

District & County: \_\_\_\_\_

<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QTY LEAVING PROJECT</u>	<u>QTY RECEIVED@BB YARD</u>
GUARDRAIL (Includes End treatments & crash cushions)	LF	_____	_____
STEEL POSTS	EACH	_____	_____
STEEL BLOCKS	EACH	_____	_____
WOOD OFFSET BLOCKS	EACH	_____	_____
BACK UP PLATES	EACH	_____	_____
CRASH CUSHION	EACH	_____	_____
NUTS, BOLTS, WASHERS	BAG/BCKT	_____	_____
DAMAGED RAIL TO MAINT. FACILITY	LF	_____	_____
DAMAGED POSTS TO MAINT. FACILITY	EACH	_____	_____

**\*Required Signatures before Leaving Project Site**

Printed Section Engineer's Representative \_\_\_\_\_ & Date \_\_\_\_\_

Signature Section Engineer's Representative \_\_\_\_\_ & Date \_\_\_\_\_

Printed Contractor's Representative \_\_\_\_\_ & Date \_\_\_\_\_

Signature Contractor's Representative \_\_\_\_\_ & Date \_\_\_\_\_

**\*Required Signatures after Arrival at Bailey Bridge Yard (All material on truck must be counted & the quantity received column completed before signatures)**

Printed Bailey Bridge Yard Representative \_\_\_\_\_ & Date \_\_\_\_\_

Signature Bailey Bridge Yard Representative \_\_\_\_\_ & Date \_\_\_\_\_

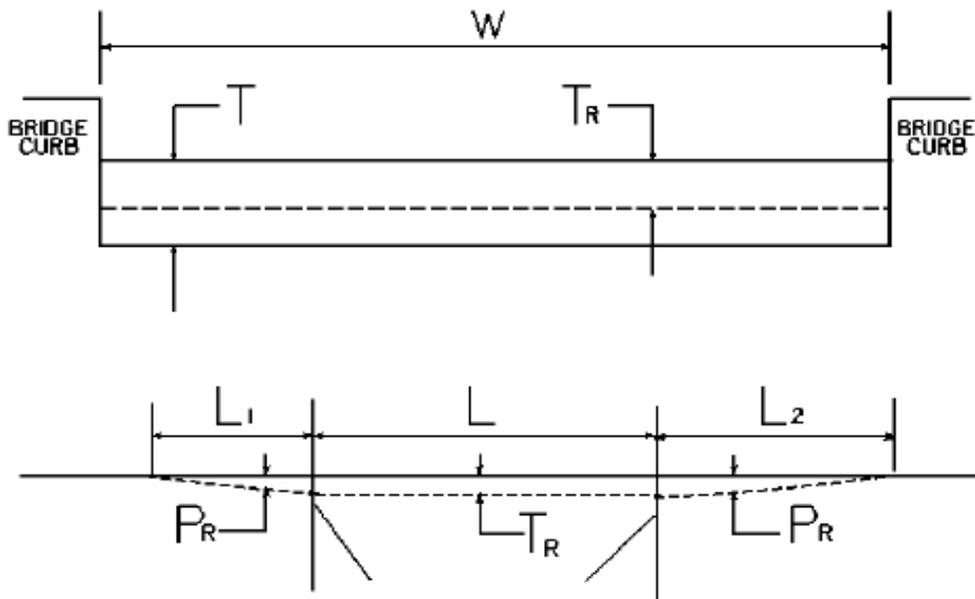
Printed Contractor's Representative \_\_\_\_\_ & Date \_\_\_\_\_

Signature Contractor's Representative \_\_\_\_\_ & Date \_\_\_\_\_

\*\*Payment for the bid item remove guardrail will be based upon the quantities shown in the Bailey Bridge Yard received column. Payment will not be made for guardrail removal until the guardrail verification sheets are electronically submitted to the Section Engineer by the Bailey Bridge Yard Representative.

Completed Form Submitted to Section Engineer Date: \_\_\_\_\_ By: \_\_\_\_\_

### BRIDGE DETAIL FOR PAVING PROJECT



W = bridge width curb to curb  
 T = thickness of existing asphalt overlay  
 L = length of bridge  
 L<sub>1</sub> & L<sub>2</sub> = length of approach pavement to be removed  
 T<sub>R</sub> = thickness to be removed and replaced on bridge  
 P<sub>R</sub> = thickness to be removed and replaced on pavement  
 Note: L<sub>1</sub> & L<sub>2</sub> lengths shall be determined by using a transition rate of 100 ft/in of thickness

Route	Bridge No.	MP	W (ft)	T (in)	L <sub>1</sub> (ft)	L <sub>2</sub> (ft)	T <sub>R</sub> (in)	L (ft)	P <sub>R</sub> (in)
US 60	B000078N	14.555	28.000	0.000	100.000	100.000	0.000	90.000	1.000
US 60	B000006N	14.918	65.000	0.000	100.000	100.000	0.000	105.000	1.000
US 60	B000090N	15.222	60.000	0.000	100.000	100.000	0.000	124.000	1.000

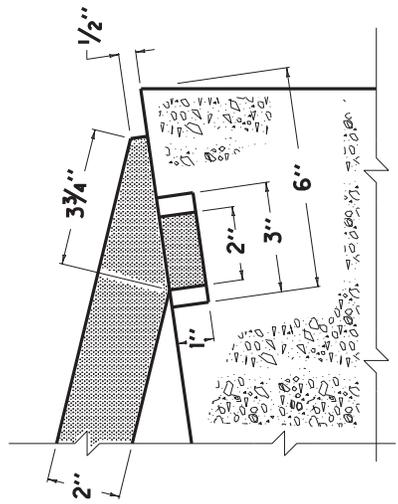
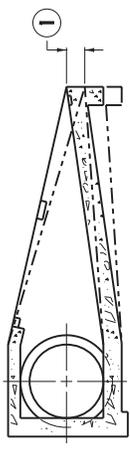
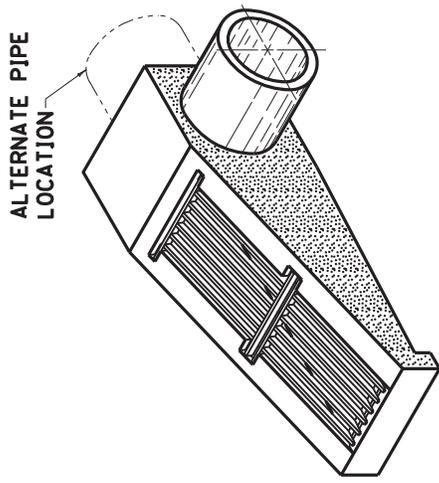
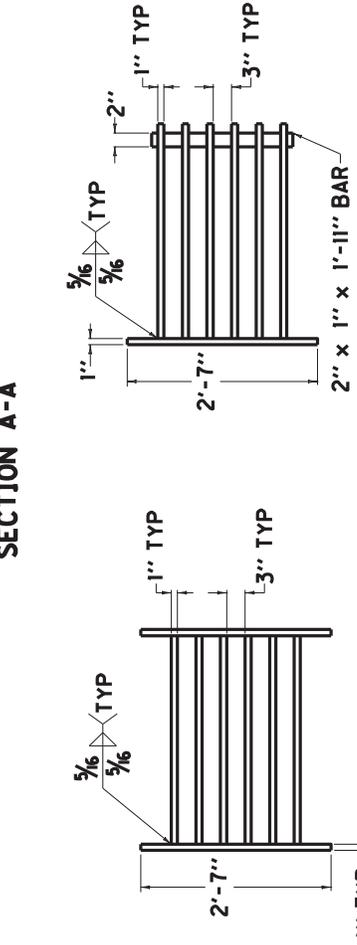
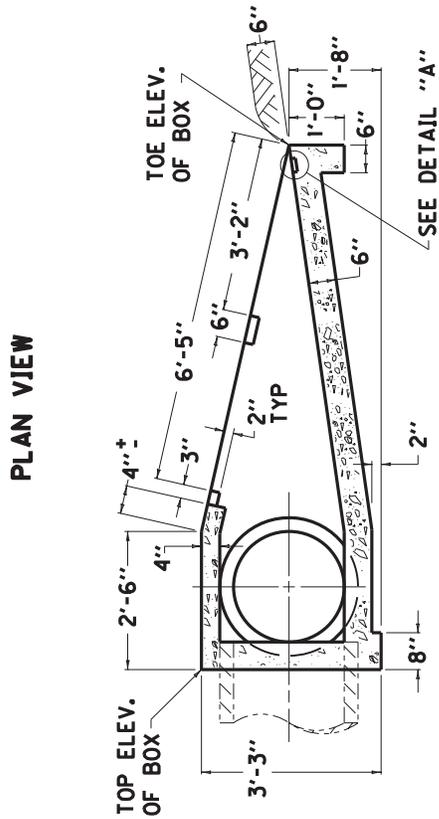
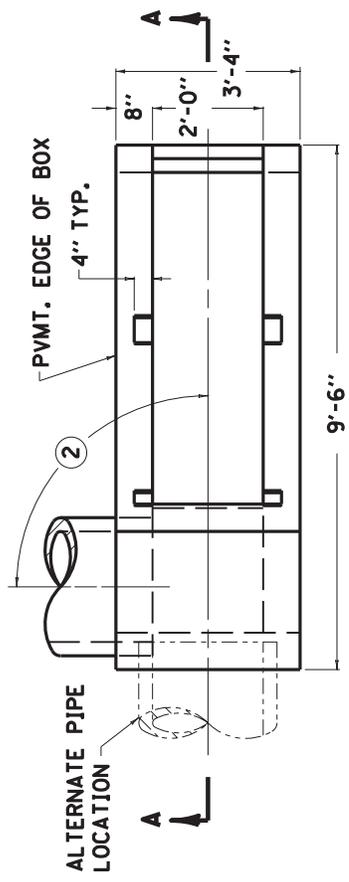
01/01/2009

COUNTY OF	ITEM NO.	SHEET

**NOTES**

- ITEM CODE    BID ITEM    UNIT
- 1726    SAFETY BOX INLET-18 INCH SDB-1    EACH
- 1727    SAFETY BOX INLET-24 INCH SDB-1    EACH
- THE UNIT BID FOR EACH STRUCTURE SHALL INCLUDE ALL CONCRETE, STRUCTURAL STEEL GRATING, EXCAVATION, LABOR AND INCIDENTALS NECESSARY FOR ITS CONSTRUCTION AS DETAILED ON THIS SHEET.
- ① TOE OF BOX SHALL BE RAISED OR LOWERED TO FIT EXISTING FIELD CONDITIONS.
- ② SKEW OF BOX SHALL VARY TO FIT EXISTING FIELD CONDITIONS.

APPROXIMATE QUANTITIES			
CLASS "A"	GRATE	LBS. STRUCTURAL STEEL	TOTAL POUNDS
CUBIC YARDS	NUMBER	EACH GRATE	
1.44	1	145	298
	2	153	



KENTUCKY  
 DEPARTMENT OF HIGHWAYS

SAFETY TYPE  
 BOX INLET  
 (18" OR 24")

Contract No. 204117  
 Page 07 of 248

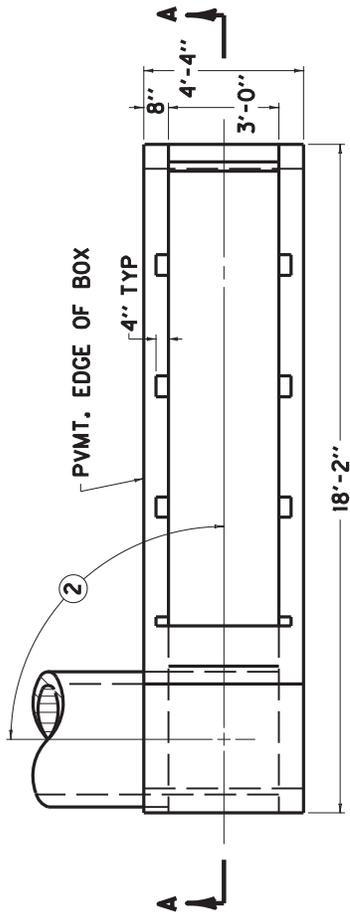
APPROVED \_\_\_\_\_  
 PROJECT ENGINEER

COUNTY OF	ITEM NO.	SHEET

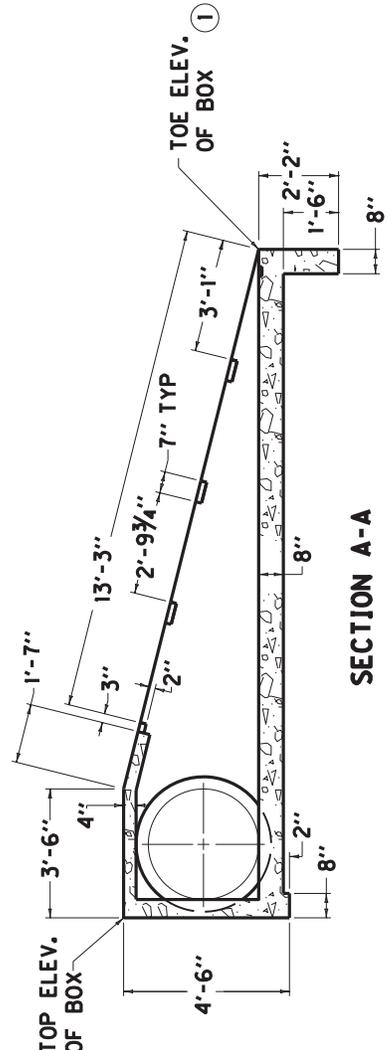
**NOTES**

- ITEM CODE    BID ITEM    UNIT
- 23044NS710    SAFETY BOX INLET-36 INCH SDB-1    EACH
- THE UNIT BID FOR EACH STRUCTURE SHALL INCLUDE ALL CONCRETE, STRUCTURAL STEEL GRATING, EXCAVATION, LABOR AND INCIDENTALS NECESSARY FOR ITS CONSTRUCTION AS DETAILED ON THIS SHEET.
- TOE OF BOX SHALL BE RAISED OR LOWERED TO FIT EXISTING FIELD CONDITIONS.
  - SKEW OF BOX SHALL VARY TO FIT EXISTING FIELD CONDITIONS.
  - ALL QUANTITIES ARE FOR ONE HEADWALL.

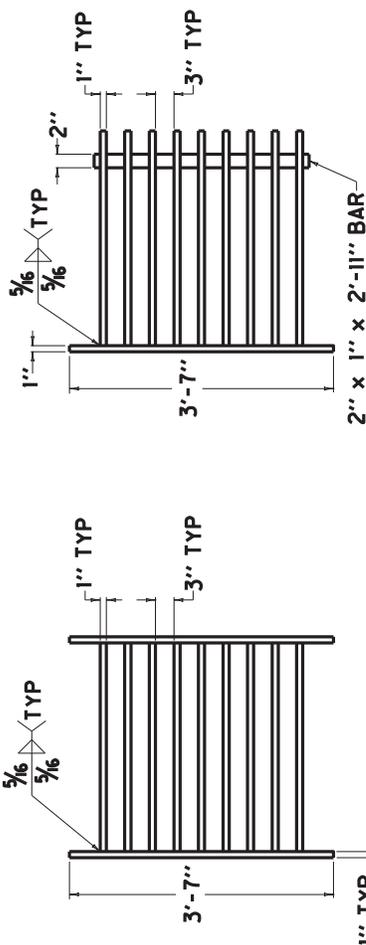
APPROXIMATE QUANTITIES					
CLASS "A" CONC.	CUBIC YARDS	GRATE NUMBER	NO. OF GRATES REQ'D.	LBS.	
				STRUCTURAL STEEL	REINF. STEEL
1	4.51	1	3	222	896
2		2	1	230	261



**PLAN VIEW**

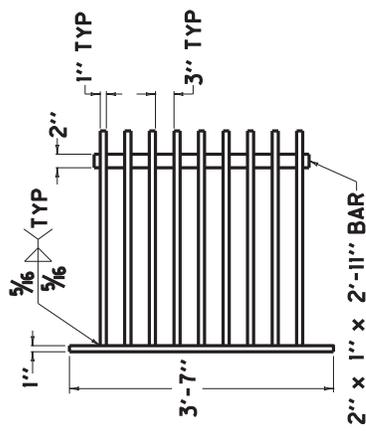


**SECTION A-A**



**GRATE NO. 1  
 PLAN VIEW**

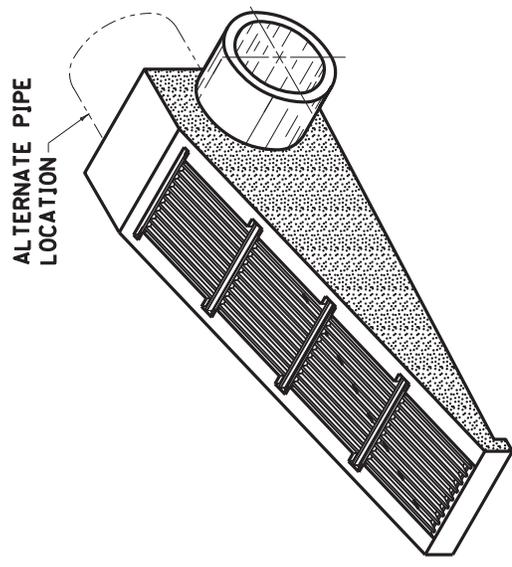
**GRATE NO. 1  
 SIDE ELEVATION**



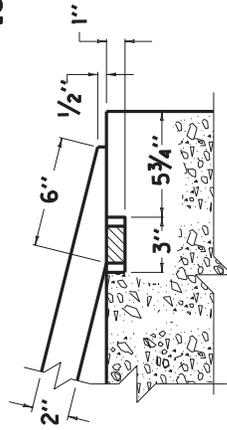
**GRATE NO. 2  
 PLAN VIEW**



**GRATE NO. 2  
 SIDE ELEVATION**



**ISOMETRIC VIEW**



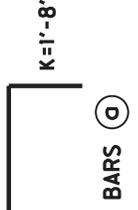
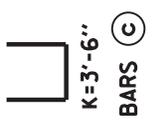
**DETAIL "A"**

COUNTY OF	ITEM NO.	SHEET NO.

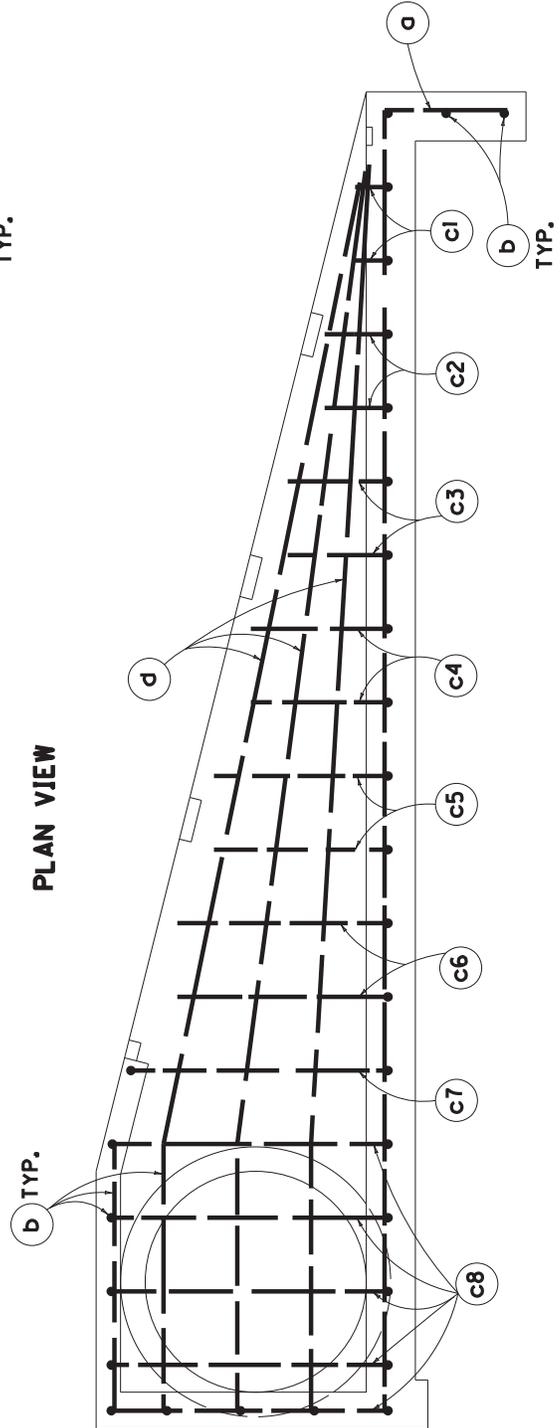
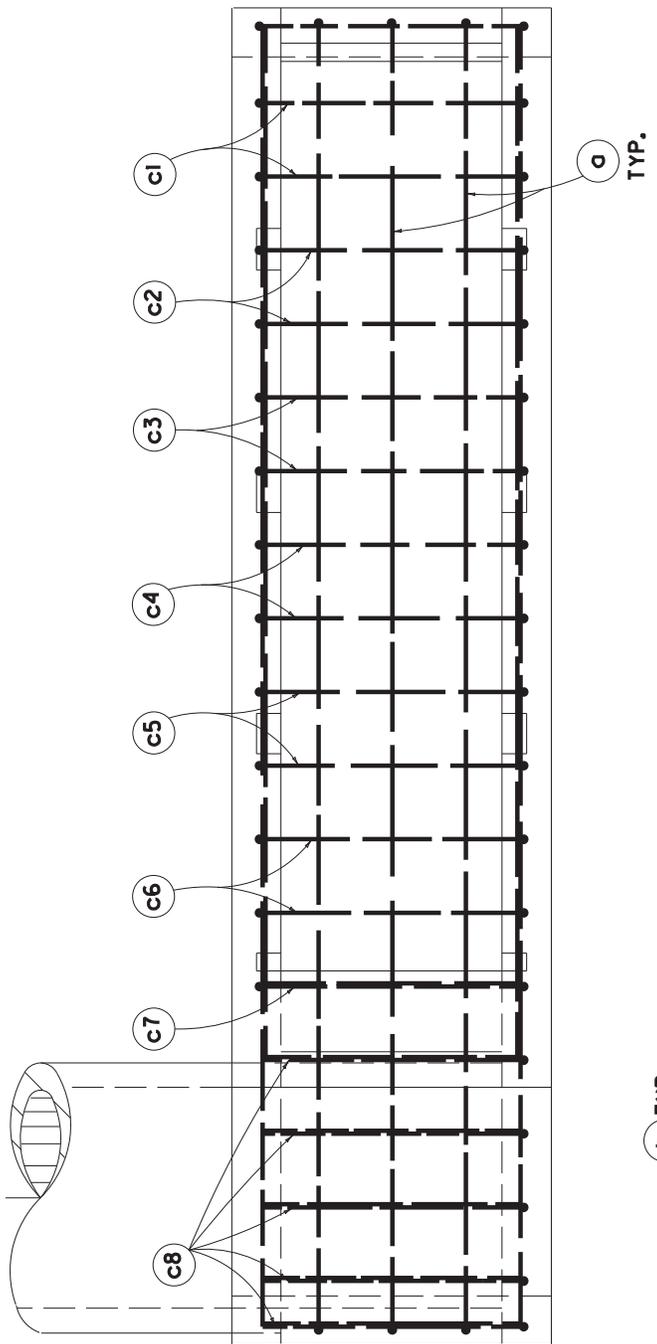
**NOTES**

1. NUMBER OF BARS IN ONE HEADWALL.
2. DIMENSIONS ARE O. TO O. OF BARS.
3. ALL BARS ARE STRAIGHT EXCEPT THOSE SHOWN BELOW.

**BENT BAR SHAPES**



MARK	S	NO	LGTH	K	
				①	②
36"					
a	4	5	19	6	1 8
b	4	16	3	6	
c1	4	2	5	0	3 6
c2	4	2	5	10	3 6
c3	4	2	6	10	3 6
c4	4	2	7	10	3 6
c5	4	2	8	10	3 6
c6	4	2	9	10	3 6
c7	4	1	11	0	3 6
c8	4	5	11	6	3 6
d	4	6	13	4	





**PART II**  
**SPECIFICATIONS AND STANDARD DRAWINGS**

### **SPECIFICATIONS REFERENCE**

Any reference in the plans or proposal to previous editions of the *Standard Specifications for Road and Bridge Construction* and *Standard Drawings* are superseded by *Standard Specifications for Road and Bridge Construction, Edition of 2019* and *Standard Drawings, Edition of 2020*.

## **SUPPLEMENTAL SPECIFICATIONS**

The contractor shall use the Supplemental Specifications that are effective at the time of letting.  
The Supplemental Specifications can be found at the following link:

<http://transportation.ky.gov/Construction/Pages/Kentucky-Standard-Specifications.aspx>

### SPECIAL NOTE FOR BARCODE LABEL ON PERMANENT SIGNS

**1.0 DESCRIPTION.** Install barcode label on sheeting signs. Section references herein are to the Department’s Standard Specifications for Road and Bridge Construction, current edition.

**2.0 MATERIALS.** The Department will provide the Contractor with a 2 inch x 1 inch foil barcode label for each permanent sheeting sign. A unique number will be assigned to each barcode label.

The Contractor shall contact the Operations and Pavement Management Branch in the Division of Maintenance at (502) 564-4556 to obtain the barcode labels.

**3.0 CONSTRUCTION.** Apply foil barcode label in the lower right quadrant of the sign back. Signs where the bottom edge is not parallel to the ground, the lowest corner of the sign shall serve as the location to place the barcode label. The barcode label shall be placed no less than one-inch and no more than three inches from any edge of the sign. The barcode must be placed so that the sign post does not cover the barcode label.

Barcodes shall be applied in an indoor setting with a minimum air temperature of 50°F or higher. Prior to application of the barcode label, the back of the sign must be clean and free of dust, oil, etc. If the sign is not clean, an alcohol swab shall be used to clean the area. The area must be allowed to dry prior to placement of the barcode label.

Data for each sign shall include the barcode number, MUTCD reference number, sheeting manufacturer, sheeting type, manufacture date, color of primary reflective surface, installation date, latitude and longitude using the North American Datum of 1983 (NAD83) or the State Plane Coordinates using an x and y ordinate of the installed location.

Data should be provided electronically on the TC 71-229 Sign Details Information and TC 71-230 Sign Assembly Information forms. The Contractor may choose to present the data in a different format provided that the information submitted to the Department is equivalent to the information required on the Department TC forms. The forms must be submitted in electronic format regardless of which type of form is used. The Department will not accept PDF or handwritten forms. These completed forms must be submitted to the Department prior to final inspection of the signs. The Department will not issue formal acceptance for the project until the TC 71-229 and TC-230 electronic forms are completed for all signs and sign assemblies on the project.

**4.0 MEASUREMENT.** The Department will measure all work required for the installation of the barcode label and all work associated with completion and submission of the sign inventory data (TC 71-229 and TC 71-230).

The installation of the permanent sign will be measured in accordance to Section 715.

**5.0 PAYMENT.** The Department will make payment for the completed and accepted quantities under the following:

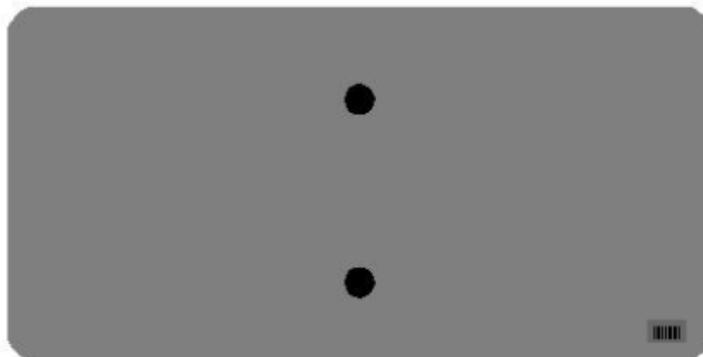
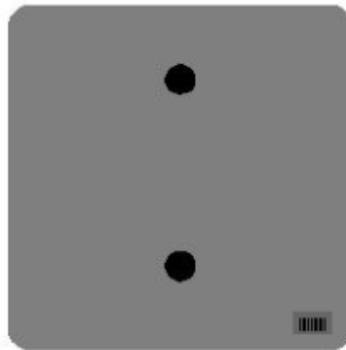
<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24631EC	Barcode Sign Inventory	Each

The Department will not make payment for this item until all barcodes are installed and sign inventory is complete on every permanent sign installed on the project. The Department will make payment for installation of the permanent sign in accordance to Section 715. The Department will consider payment as full compensation for all work required under this special note.

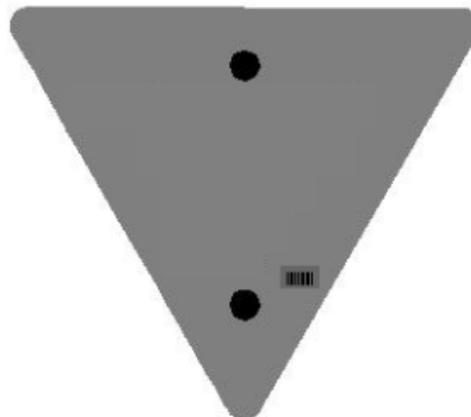
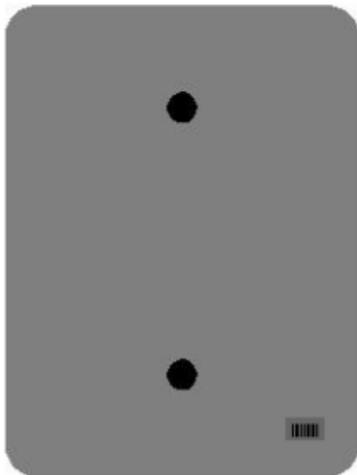
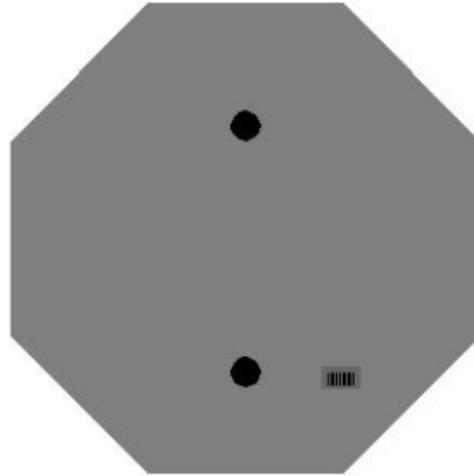
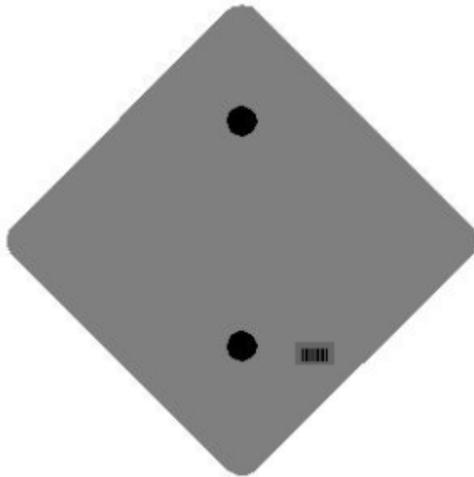
### One Sign Post



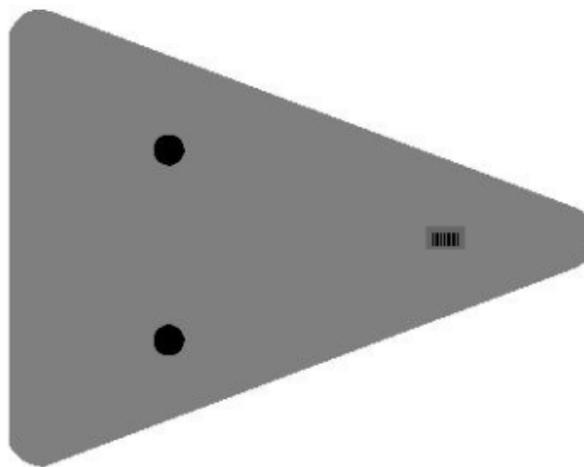
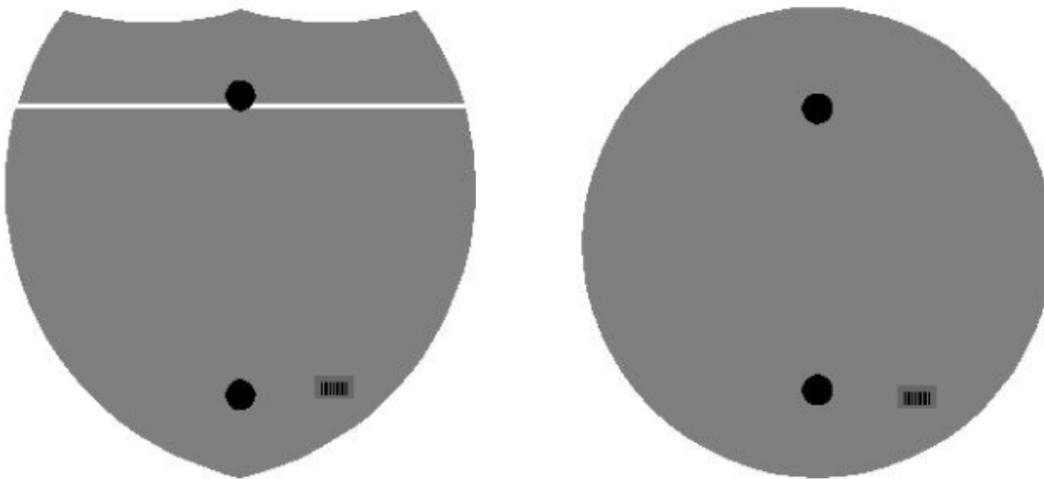
↑  
2" Wide Post



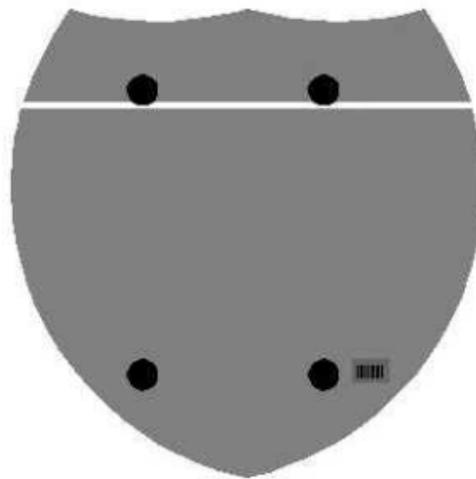
### One Sign Post



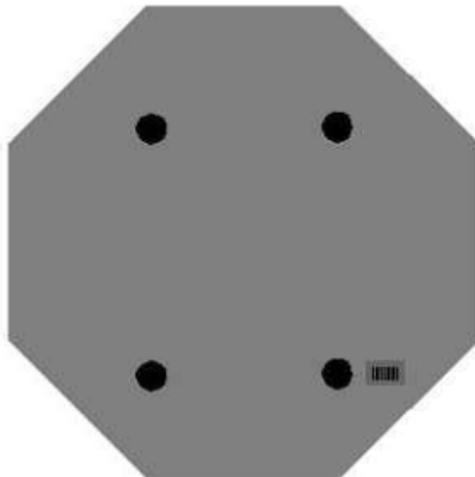
### One Sign Post



### Double Sign Post



Interstate  
Shield

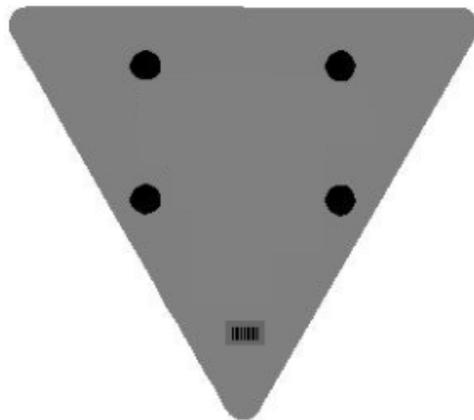


48" Stop

### 2 Post Signs



↑  
2" Wide Post



**2020 STANDARD DRAWINGS THAT APPLY**

**ROADWAY  
~ BARRIERS ~**

**TYPICAL BARRIER INSTALLATIONS**

TYPICAL GUARDRAIL INSTALLATIONS .....	RBI-001-12
TYPICAL GUARDRAIL INSTALLATIONS .....	RBI-002-07
TYPICAL INSTALLATION FOR GUARDRAIL END TREATMENT TYPE 2A .....	RBI-003-09
INSTALLATION OF GUARDRAIL END TREATMENT TYPE 1 .....	RBI-004-06

**GUARDRAIL HARDWARE**

STEEL BEAM GUARDRAIL (W-BEAM) .....	RBR-001-13
GUARDRAIL COMPONENTS .....	RBR-005-11
GUARDRAIL TERMINAL SECTIONS .....	RBR-010-06
STEEL GUARDRAIL POSTS .....	RBR-015-06
GUARDRAIL SYSTEM TRANSITION .....	RBR-018
GUARDRAIL END TREATMENT TYPE 1 .....	RBR-020-07
GUARDRAIL END TREATMENT TYPE 2A .....	RBR-025-06
GUARDRAIL END TREATMENT TYPE 3 .....	RBR-030-05
GUARDRAIL END TREATMENT TYPE 3 PIPE DRAINAGE DETAIL .....	RBR-031-01
GUARDRAIL END TREATMENT TYPE 3 ALTERNATE ANCHOR .....	RBR-032
GUARDRAIL END TREATMENT TYPE 4A .....	RBR-035-12
DELINEATORS FOR GUARDRAIL .....	RBR-005-01
STEEL BEAM GUARDRAIL (THRIE BEAM) .....	RBR-100-07

**~ DRAINAGE ~**

**BOX INLETS AND OUTLETS**

*SLOPED BOXES*

METAL END SECTION TYPE 1 & 2 (PARALLEL STRUCTURES) .....	RDB-150-02
METAL END SECTION TYPE 3 & 4 (CROSS STRUCTURES) .....	RDB-155-02
DIMENSIONS FOR METAL END SECTIONS .....	RDB-160-02

**PIPE AND BOX CULVERT HEADWALLS**

CONCRETE HEADWALLS FOR 12"-27" CIRCULAR PIPE CULVERTS .....	RDH-005-02
SLOPED & FLARED HEWADWALLS FOR 12" TO 27" PIPE .....	RDH-020-03
PIPE CULVERT HEADWALLS 0 SKEW .....	RDH-110-02
DIMENSIONS & QUANTITIES 30" – 108" HEADWALLS CIRCULAR PIPE 0 SKEW .....	RDH-210-03
DIMENSIONS & QUANTITIES 30" – 72" HEADWALLS NON-CIRCULAR PIPE 0 SKEW .....	RDH-220-02
BILL OF REINFORCEMENT 30" TO 90" DIAMETER CIRCULAR PIPE HEADWALLS 0 SKEW .....	RDH-310-04
BILL OF REINFORCEMENT 30" TO 72" DIAMETER NON-CIRCULAR PIPE HEADWALLS 0 SKEW .....	RDH-350-03
PRECAST BOX CULVERT H-WALLS-15 -30 & 45 SK .....	RDH-1010-02
DIMENSIONS 10'X5' – 11'X11' HEADWALLS PRECSAST BOX CULVERT 30 SKEW .....	RDH-1150-02
QUANTITIES 3'X2' – 12'X12' H-WALLS PRECAST BOX CULVERTS 30 SKEW .....	RDH-1210-02
BILL OF REINFORCEMENT 10'X5' – 10'X8' HEADWALLS PRECAST BOX CULVERTS 30 SKEW .....	RDH-1338-03

Standard Drawings That Apply  
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TYPICAL DRAINAGE INSTALLATIONS

CULVERT, ENTRANCE & STORM SEWER PIPE TYPES & COVER HEIGHTS (12" – 24" PIPE) .....	RDI-001-10
CULVERT, ENTRANCE & STORM SEWER PIPE TYPES & COVER HEIGHTS (27" – 42" PIPE) .....	RDI-002-05
CULVERT & STORM SEWER PIPE TYPES & COVER HEIGHTS (48" – 54" PIPE).....	RDI-003-05
CULVERT & STORM SEWER PIPE TYPES & COVER HEIGHTS (60" – 66" PIPE).....	RDI-004-04
CULVERT, ENTRANCE & STORM SEWER PIPE TYPES & COVER HEIGHTS (NON-CIRCULAR, 15" – 60" PIPE) .....	RDI-011-03
PIPE BEDDING FOR CULVERTS, ENTRANCE, AND STORM SEWER PIPE .....	RDI-020-10
PIPE BEDDING FOR CULVERTS, ENTRANCE, AND STORM SEWER, REINFORCED CONC. PIPE .....	RDI-021-01
PIPE BEDDING, TRENCH CONDITION .....	RDI-025-06
PIPE BEDDING, TRENCH CONDITION, REINFORCED CONC. PIPE .....	RDI-026-01
EROSION CONTROL BLANKET SLOPE INSTALLATION.....	RDI-040-01
EROSION CONTROL BLANKET CHANNEL INSTALLATION.....	RDI-041-01
TYPICAL MEDIAN DRAIN INSTALLATIONS.....	RDI-045-02
FILL HEIGHTS FOR PRECAST REINFORCED CONCRETE BOX CULVERTS.....	RDI-100-05
BEDDING FOR PRECAST BOX CULVERTS, SEWERS, STORM DRAINS, AND THEIR COMBINATIONS.....	RDI-120-04

MISCELLANEOUS DRAINAGE

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JUNCTION BOX (DIMENSIONS AND QUANTITIES).....	RDX-002-04
INTERMEDIATE AND END ANCHORS FOR CIRCULAR PIPE.....	RDX-060-04
INTERMEDIATE AND END ANCHORS FOR NON-CIRCULAR PIPE .....	RDX-065-04
TEMPORARY SILT FENCE.....	RDX-210-03
SILT TRAP - TYPE A .....	RDX-220-05
SILT TRAP - TYPE B.....	RDX-225-01
SILT TRAP - TYPE C.....	RDX-230-01
PRECAST BOX CULVERT EXTENSION.....	RDX-300-04

*~ GENERAL ~*

CURVE WIDENING AND SUPERELEVATION

CURVE WIDENING AND SUPERELEVATION TRANSITIONS.....	RGS-001-07
SUPERELEVATION FOR MULTILANE PAVEMENTS.....	RGS-002-06

MISCELLANEOUS STANDARDS

MISCELLANEOUS STANDARDS .....	RGX-001-06
TYPICAL EMBANKMENT FOUNDATION BENCHES.....	RGX-010-04
GABION RETAINING WALLS .....	RGX-050-02

*~ PAVEMENT ~*

MEDIANS, CURBS, APPROACHES, ENTRANCES, ETC.

APPROACHES, ENTRANCES, AND MAIL BOX TURNOUT.....	RPM-110-07
SIDEWALK RAMPS.....	RPM-170-09
SIDEWALK RAMP WITH HANDRAIL .....	RPM-172-07

Standard Drawings That Apply  
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**TRAFFIC**  
**~ PERMANENT ~**  
**MARKERS**

PAVEMENT STRIPING DETAILS FOR TWO LANE TWO WAY ROADWAYS .....	TPM-175
TYPICAL MARKINGS FOR GORE AREAS.....	TPM-204
TYPICAL MARKINGS FOR ISLANDS AND MEDIANS .....	TPM-205
TYPICAL MARKINGS FOR TURN LANES PAGE 1.....	TPM-206
TYPICAL MARKINGS FOR TURN LANES PAGE 2.....	TPM-207

**RUMBLE STRIPS**

SHOULDER & EDGELINE RUMBLE STRIPS PLACEMENT DETAILS .....	TPR-115
EDGELINE RUMBLE STRIP DETAILS TWO LANE ROADWAYS .....	TPR-120
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**~ TEMPORARY ~**  
**TRAFFIC CONTROL**

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DOUBLE LANE CLOSURE .....	TTC-125-04
SHOULDER CLOSURE.....	TTC-135-03
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PAVEMENT CONDITION WARNING SIGNS.....	TTD-125-03

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MOBILE OPERATION FOR PAINT STRIPING CASE II .....	TTS-105-02
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MOBILE OPERATION FOR DURABLE STRIPING CASE II .....	TTS-125-02

## **PART III**

### **EMPLOYMENT, WAGE AND RECORD REQUIREMENTS**

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

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)

**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.

**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).

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 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.

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.

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.

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.

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).

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.

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 immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

**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 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.

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.

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
- (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> 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 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 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 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 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

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 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.

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**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.

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.

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**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 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.

**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.

**KENTUCKY TRANSPORTATION CABINET  
DEPARTMENT OF HIGHWAYS**

**EMPLOYMENT REQUIREMENTS  
RELATING TO  
NONDISCRIMINATION OF EMPLOYEES  
(APPLICABLE TO FEDERAL-AID SYSTEM CONTRACTS)**

**AN ACT OF THE KENTUCKY GENERAL ASSEMBLY  
TO PREVENT DISCRIMINATION IN EMPLOYMENT**

**KRS CHAPTER 344  
EFFECTIVE JUNE 16, 1972**

The contract on this project, in accordance with KRS Chapter 344, provides that during the performance of this contract, the contractor agrees as follows:

1. The contractor shall not fail or refuse to hire, or shall not discharge any individual, or otherwise discriminate against an individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, national origin, sex, disability or age (forty and above); or limit, segregate, or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, national origin, sex, disability or age forty (40) and over. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor shall not print or publish or cause to be printed or published a notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by the employment agency, indicating any preference, limitation, specification, or discrimination, based on race, color, religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, except that such a notice or advertisement may indicate a preference, limitation, or specification based on religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, when religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, is a bona fide occupational qualification for employment.

3. If the contractor is in control of apprenticeship or other training or retraining, including on-the-job training programs, he shall not discriminate against an individual because of his race, color, religion, national origin, sex, disability or age forty (40) and over, in admission to, or employment in any program established to provide apprenticeship or other training.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

Revised: January 25, 2017

### Standard Title VI/Non-Discrimination Assurances

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, **Federal Highway Administration**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor’s obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the **Federal Highway Administration** to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the **Federal Highway Administration**, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor’s noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the **Federal Highway Administration** may determine to be appropriate, including, but not limited to:
  - a. withholding payments to the contractor under the contract until the contractor complies; and/or
  - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the **Federal Highway Administration** may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

### Standard Title VI/Non-Discrimination Statutes and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq.*)

## EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

KRS 11A.040 (7) provides:

No present or former public servant shall, within six (6) months following termination of his office or employment, accept employment, compensation, or other economic benefit from any person or business that contracts or does business with, or is regulated by, the state in matters in which he was directly involved during the last thirty-six (36) months of his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, or for which he received, prior to his state employment, a professional degree or license, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved during the last thirty-six (36) months of his tenure in state government. This subsection shall not prohibit the performance of ministerial functions, including but not limited to filing tax returns, filing applications for permits or licenses, or filing incorporation papers, nor shall it prohibit the former officer or public servant from receiving public funds disbursed through entitlement programs.

KRS 11A.040 (9) states:

A former public servant shall not represent a person or business before a state agency in a matter in which the former public servant was directly involved during the last thirty-six (36) months of his tenure, for a period of one (1) year after the latter of:

- a) The date of leaving office or termination of employment; or
- b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, 3 Fountain Place, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Revised: January 27, 2017

"General Decision Number: KY20200038 08/28/2020

Superseded General Decision Number: KY20190038

State: Kentucky

Construction Type: Highway

Counties: Anderson, Bath, Bourbon, Boyd, Boyle, Bracken, Breckinridge, Bullitt, Carroll, Carter, Clark, Elliott, Fayette, Fleming, Franklin, Gallatin, Grant, Grayson, Greenup, Hardin, Harrison, Henry, Jefferson, Jessamine, Larue, Lewis, Madison, Marion, Mason, Meade, Mercer, Montgomery, Nelson, Nicholas, Oldham, Owen, Robertson, Rowan, Scott, Shelby, Spencer, Trimble, Washington and Woodford Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/03/2020
1	08/14/2020
2	08/28/2020

BRIN0004-003 06/01/2017

BRECKENRIDGE COUNTY

	Rates	Fringes
BRICKLAYER.....	\$ 26.80	12.38

BRKY0001-005 06/01/2017

BULLITT, CARROLL, GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE,  
MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, & TRIMBLE  
COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 26.80	12.38
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BRKY0002-006 06/01/2017		

BRACKEN, GALLATIN, GRANT, MASON & ROBERTSON COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 27.81	13.01
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BRKY0007-004 06/01/2017		

BOYD, CARTER, ELLIOT, FLEMING, GREENUP, LEWIS & ROWAN COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 32.98	19.02
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BRKY0017-004 06/01/2017		

ANDERSON, BATH, BOURBON, BOYLE, CLARK, FAYETTE, FRANKLIN,  
HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS,  
OWEN, SCOTT, WASHINGTON & WOODFORD COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 26.47	12.76
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CARP0064-001 05/01/2015		

	Rates	Fringes
CARPENTER.....	\$ 27.50	16.06
Diver.....	\$ 41.63	16.06
PILEDRIVERMAN.....	\$ 27.75	16.06
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ELEC0212-008 06/03/2019		

BRACKEN, GALLATIN and GRANT COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 30.18	18.89
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ELEC0212-014 11/26/2018		

BRACKEN, GALLATIN & GRANT COUNTIES:

	Rates	Fringes
Sound & Communication Technician.....	\$ 24.35	10.99
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ELEC0317-012 06/01/2019		

BOYD, CARTER, ELLIOT & ROWAN COUNTIES:

	Rates	Fringes
ELECTRICIAN (Wiremen)		
Electrician.....	\$ 34.35	25.70
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ELEC0369-007 05/28/2019		

ANDERSON, BATH, BOURBON, BOYLE, BRECKINRIDGE, BULLITT, CARROLL,  
CLARK, FAYETTE, FRAONKLIN, GRAYSON, HARDIN, HARRISON, HENRY,  
JEFFERSON, JESSAMINE, LARUE, MADISON, MARION, MEADE, MERCER,  
MONTGOMERY, NELSON, NICHOLAS, OLDHAM, OWEN, ROBERTSON, SCOTT,  
SHELBY, SPENCER, TRIMBLE, WASHINGTON, & WOODFORD COUNTIES:

	Rates	Fringes
ELECTRICIAN.....	\$ 32.44	17.22
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ELEC0575-002 05/27/2019		

FLEMING, GREENUP, LEWIS & MASON COUNTIES:

	Rates	Fringes
ELECTRICIAN.....	\$ 33.75	17.19
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* ENGI0181-018 07/01/2020		

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 33.95	17.25
GROUP 2.....	\$ 31.09	17.25
GROUP 3.....	\$ 31.54	17.25
GROUP 4.....	\$ 30.77	17.25

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - A-Frame Winch Truck; Auto Patrol; Backfiller;  
Batcher Plant; Bituminous Paver; Bituminous Transfer  
Machine; Boom Cat; Bulldozer; Mechanic; Cableway; Carry-All  
Scoop; Carry Deck Crane; Central Compressor Plant; Cherry  
Picker; Clamshell; Concrete Mixer (21 cu. ft. or Over);  
Concrete Paver; Truck-Mounted Concrete Pump; Core Drill;  
Crane; Crusher Plant; Derrick; Derrick Boat; Ditching &  
Trenching Machine; Dragline; Dredge Operator; Dredge  
Engineer; Elevating Grader & Loaders; Grade-All; Gurries;  
Heavy Equipment Robotics Operator/Mechanic; High Lift;  
Hoe-Type Machine; Hoist (Two or More Drums); Hoisting  
Engine (Two or More Drums); Horizontal Directional Drill  
Operator; Hydrocrane; Hyster; KeCal Loader; LeTourneau;  
Locomotive; Mechanic; Mechanically Operated Laser Screed;  
Mechanic Welder; Mucking Machine; Motor Scraper; Orangepeel  
Bucket; Overhead Crane; Piledriver; Power Blade; Pumpcrete;  
Push Dozer; Rock Spreader, attached to equipment; Rotary  
Drill; Roller (Bituminous); Rough Terrain Crane; Scarifier;  
Scoopmobile; Shovel; Side Boom; Subgrader; Tailboom;  
Telescoping Type Forklift; Tow or Push Boat; Tower Crane  
(French, German & other types); Tractor Shovel; Truck  
Crane; Tunnel Mining Machines, including Moles, Shields or  
similar types of Tunnel Mining Equipment

GROUP 2 - Air Compressor (Over 900 cu. ft. per min.);

Bituminous Mixer; Boom Type Tamping Machine; Bull Float;  
Concrete Mixer (Under 21 cu. ft.); Dredge Engineer;  
Electric Vibrator; Compactor/Self-Propelled Compactor;  
Elevator (One Drum or Buck Hoist); Elevator (When used to  
Hoist Building Material); Finish Machine; Firemen & Hoist  
(One Drum); Flexplane; Forklift (Regardless of Lift  
Height); Form Grader; Joint Sealing Machine; Outboard Motor  
Boat; Power Sweeper (Riding Type); Roller (Rock); Ross  
Carrier; Skid Mounted or Trailer Mounted Concrete Pump; Skid  
Steer Machine with all Attachments; Switchman or Brakeman;  
Throttle Valve Person; Tractair & Road Widening Trencher;  
Tractor (50 H.P. or Over); Truck Crane Oiler; Tugger;  
Welding Machine; Well Points; & Whirley Oiler

GROUP 3 - All Off Road Material Handling Equipment,  
including Articulating Dump Trucks; Greaser on Grease  
Facilities servicing Heavy Equipment

GROUP 4 - Bituminous Distributor; Burlap & Curing Machine;  
Cement Gun; Concrete Saw; Conveyor; Deckhand Oiler; Grout  
Pump; Hydraulic Post Driver; Hydro Seeder; Mud Jack; Oiler;  
Paving Joint Machine; Power Form Handling Equipment; Pump;  
Roller (Earth); Steerman; Tamping Machine; Tractor (Under  
50 H.P.); & Vibrator

CRANES - with booms 150 ft. & Over (Including JIB), and where  
the length of the boom in combination with the length of  
the piling leads equals or exceeds 150 ft. - \$1.00 over  
Group 1 rate

EMPLOYEES ASSIGNED TO WORK BELOW GROUND LEVEL ARE TO BE PAID  
10%  
ABOVE BASIC WAGE RATE. THIS DOES NOT APPLY TO OPEN CUT WORK.

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IRON0044-009 06/01/2020

BRACKEN, GALLATIN, GRANT, HARRISON, ROBERTSON,  
BOURBON (Northern third, including Townships of Jackson,  
Millersburg, Ruddel Mills & Shawhan);  
CARROLL (Eastern third, including the Township of Ghent);  
FLEMING (Western part, excluding Townships of Beechburg, Colfax,  
Elizaville, Flemingsburg, Flemingsburg Junction, Foxport,  
Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills,  
Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar  
Plains, Ringos Mills, Tilton & Wallingford);  
MASON (Western two-thirds, including Townships of Dover,  
Lewisburg, Mays Lick, Maysville, Minerva, Moranburg,  
Murphysville, Ripley, Sardis, Shannon, South Ripley &  
Washington);  
NICHOLAS (Townships of Barefoot, Barterville, Carlisle,  
Ellisville, Headquarters, Henryville, Morningglory, Myers &  
Oakland Mills);  
OWEN (Townships of Beechwood, Bromley, Fairbanks, Holbrook,  
Jonesville, Long Ridge, Lusby's Mill, New, New Columbus, New  
Liberty, Owenton, Poplar Grove, Rockdale, Sanders, Teresita &  
Wheatley);  
SCOTT (Northern two-thirds, including Townships of Biddle,  
Davis, Delaplain, Elmville, Longlick, Muddy Ford, Oxford,  
Rogers Gap, Sadieville, Skinnersburg & Stonewall)

Rates Fringes

IRONWORKER		
Fence Erector.....	\$ 28.95	21.20
Structural.....	\$ 30.47	21.20

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 IRON0070-006 06/01/2020

ANDERSON, BOYLE, BRECKINRIDGE, BULLITT, FAYETTE, FRANKLIN,  
 GRAYSON, HARDIN, HENRY, JEFFERSON, JESSAMINE, LARUE, MADISON,  
 MARION, MEADE, MERCER, NELSON, OLDHAM, SHELBY, SPENCER,  
 TRIMBLE, WASHINGTON & WOODFORD  
 BOURBON (Southern two-thirds, including Townships of Austerlity,  
 Centerville, Clintonville, Elizabeth, Hutchison, Littlerock,  
 North Middletown & Paris);  
 CARROLL (Western two-thirds, including Townships of Carrollton,  
 Easterday, English, Locust, Louis, Prestonville & Worthville);  
 CLARK (Western two-thirds, including Townships of Becknerville,  
 Flanagan, Ford, Pine Grove, Winchester & Wyandotte);  
 OWEN (Eastern eighth, including Townships of Glenmary, Gratz,  
 Monterey, Perry Park & Tacketts Mill);  
 SCOTT (Southern third, including Townships of Georgetown, Great  
 Crossing, Newtown, Stampling Ground & Woodlake);

	Rates	Fringes
IRONWORKER.....	\$ 30.42	23.15

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 IRON0769-007 06/01/2020

BATH, BOYD, CARTER, ELLIOTT, GREENUP, LEWIS, MONTGOMERY & ROWAN  
 CLARK (Eastern third, including townships of Bloomingdale,  
 Hunt, Indian Fields, Kiddville, Loglick, Rightangele & Thomson);  
 FLEMING (Townships of Beechburg, Colfax, Elizaville,  
 Flemingsburg, Flemingsburg Junction, Foxport, Grange City,  
 Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton,  
 Pecksville, Plummers Landing, Plummers Mill, Poplar Plains,  
 Ringos Mills, Tilton & Wallingford);  
 MASON (Eastern third, including Townships of Helena, Marshall,  
 Orangeburg, Plumville & Springdale);  
 NICHOLAS (Eastern eighth, including the Township of Moorefield  
 Sprout)

	Rates	Fringes
IRONWORKER		
ZONE 1.....	\$ 32.75	26.34
ZONE 2.....	\$ 33.15	26.34
ZONE 3.....	\$ 34.75	26.34

ZONE 1 - (no base rate increase) Up to 10 mile radius of  
 Union Hall, 1643 Greenup Ave, Ashland, KY.  
  
 ZONE 2 - (add \$0.40 per hour to base rate) 10 to 50 mile  
 radius of Union Hall, 1643 Greenup Ave, Ashland, KY.  
  
 ZONE 3 - (add \$2.00 per hour to base rate) 50 mile radius &  
 over of Union Hall, 1643 Greenup Ave, Ashland, KY.

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 LABO0189-003 07/01/2018

BATH, BOURBON, BOYD, BOYLE, BRACKEN, CARTER, CLARK, ELLIOTT,  
 FAYETTE, FLEMING, FRANKLIN, GALLATIN, GRANT, GREENUP, HARRISON,

JESSAMINE, LEWIS, MADISON, MASON, MERCER, MONTGOMERY, NICHOLAS,  
OWEN, ROBERTSON, ROWAN, SCOTT, & WOOLFORD COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 23.07	14.21
GROUP 2.....	\$ 23.32	14.21
GROUP 3.....	\$ 23.37	14.21
GROUP 4.....	\$ 23.97	14.21

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushhammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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LABO0189-008 07/01/2018

ANDERSON, BULLITT, CARROLL, HARDIN, HENRY, JEFFERSON, LARUE,  
MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE &  
WASHINGTON COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 23.07	14.21

GROUP 2.....	\$ 23.32	14.21
GROUP 3.....	\$ 23.37	14.21
GROUP 4.....	\$ 23.97	14.21

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushhammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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 LABO0189-009 07/01/2018

BRECKINRIDGE & GRAYSON COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 23.07	14.21
GROUP 2.....	\$ 23.32	14.21
GROUP 3.....	\$ 23.37	14.21
GROUP 4.....	\$ 23.97	14.21

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson;

Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushhammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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 PAIN0012-005 06/11/2005

BATH, BOURBON, BOYLE, CLARK, FAYETTE, FLEMING, FRANKLIN, HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS, ROBERTSON, SCOTT & WOODFORD COUNTIES:

	Rates	Fringes
PAINTER		
Bridge/Equipment Tender and/or Containment Builder..\$	18.90	5.90
Brush & Roller.....\$	21.30	5.90
Elevated Tanks; Steeplejack Work; Bridge & Lead Abatement.....\$	22.30	5.90
Sandblasting & Waterblasting.....\$	22.05	5.90
Spray.....\$	21.80	5.90

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 PAIN0012-017 05/01/2015

BRACKEN, GALLATIN, GRANT, MASON & OWEN COUNTIES:

	Rates	Fringes
PAINTER (Heavy & Highway Bridges - Guardrails - Lightpoles - Striping) Bridge Equipment Tender		

and Containment Builder.....	\$ 20.73	9.06
Brush & Roller.....	\$ 23.39	9.06
Elevated Tanks; Steeplejack Work; Bridge & Lead Abatement.....	\$ 24.39	9.06
Sandblasting & Water Blasting.....	\$ 24.14	9.06
Spray.....	\$ 23.89	9.06

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PAIN0118-004 06/01/2018

ANDERSON, BRECKINRIDGE, BULLITT, CARROLL, GRAYSON, HARDIN,  
HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY,  
SPENCER, TRIMBLE & WASHINGTON COUNTIES:

	Rates	Fringes
PAINTER		
Brush & Roller.....	\$ 22.00	12.52
Spray, Sandblast, Power Tools, Waterblast & Steam Cleaning.....	\$ 23.00	12.52

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PAIN1072-003 12/01/2018

BOYD, CARTER, ELLIOTT, GREENUP, LEWIS and ROWAN COUNTIES

	Rates	Fringes
Painters:		
Bridges; Locks; Dams; Tension Towers & Energized Substations.....	\$ 33.33	18.50
Power Generating Facilities.....	\$ 30.09	18.50

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PLUM0248-003 06/01/2018

BOYD, CARTER, ELLIOTT, GREENUP, LEWIS & ROWAN COUNTIES:

	Rates	Fringes
Plumber and Steamfitter.....	\$ 36.00	20.23

-----  
PLUM0392-007 06/01/2018

BRACKEN, CARROLL (Eastern Half), GALLATIN, GRANT, MASON, OWEN &  
ROBERTSON COUNTIES:

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 32.01	19.67

-----  
PLUM0502-003 08/01/2020

BRECKINRIDGE, BULLITT, CARROLL (Western Half), FRANKLIN  
(Western three-fourths), GRAYSON, HARDIN, HENRY, JEFFERSON,  
LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE &  
WASHINGTON COUNTIES

	Rates	Fringes
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cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

-----  
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"

Fringe benefit amounts are applicable for all hours worked except when otherwise noted.

No laborer, workman or mechanic shall be paid at a rate less than that of a Journeyman except those classified as bona fide apprentices.

Apprentices or trainees shall be permitted to work as such subject to Administrative Regulations adopted by the Commissioner of Workplace Standards. Copies of these regulations will be furnished upon request from any interested person.

Before using apprentices on the job the contractor shall present to the Contracting Officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U. S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the contractor shall submit evidence of approval and registration by the U. S. Bureau of Apprenticeship and Training.

The contractor shall submit to the Contracting Officer, written evidence of the established apprenticeship-journeyman ratios and wage rates in the project area, which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

**TO: EMPLOYERS/EMPLOYEES**

**PREVAILING WAGE SCHEDULE:**

**The wages indicated on this wage schedule are the least permitted to be paid for the occupations indicated. When an employee works in more than one classification, the employer must record the number of hours worked in each classification at the prescribed hourly base rate.**

**OVERTIME:**

**Overtime is to be paid to an employee at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty (40) hours in such workweek. Wage violations or questions should be directed to the designated Engineer or the undersigned.**

Director  
Division of Construction Procurement  
Frankfort, Kentucky 40622  
502-564-3500

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION  
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY  
(Executive Order 11246)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

<b>GOALS FOR MINORITY PARTICIPATION IN EACH TRADE</b>	<b>GOALS FOR FEMALE PARTICIPATION IN EACH TRADE</b>
2.5%	6.9%

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 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 to meet the goals. 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 Part 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 ten (10) working days of award of any construction subcontract in excess of \$10,000.00 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 of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed. The notification shall be mailed to:

**Evelyn Teague, Regional Director  
Office of Federal Contract Compliance Programs  
61 Forsyth Street, SW, Suite 7B75  
Atlanta, Georgia 30303-8609**

4. As used in this Notice, and in the contract resulting from this solicitation, the "**covered area**" is Rowan County.

**PART IV**  
**INSURANCE**

Refer to  
*Kentucky Standard Specifications for Road and Bridge Construction,*  
current edition

**PART V**  
**BID ITEMS**

### PROPOSAL BID ITEMS

204117

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Report Date 8/28/20

#### Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	401.00	TON		\$	
0020	00100		ASPHALT SEAL AGGREGATE	43.40	TON		\$	
0030	00103		ASPHALT SEAL COAT	5.30	TON		\$	
0040	00190		LEVELING & WEDGING PG64-22	793.00	TON		\$	
0050	00212		CL2 ASPH BASE 1.00D PG64-22	448.00	TON		\$	
0060	00301		CL2 ASPH SURF 0.38D PG64-22	3,694.00	TON		\$	
0070	00356		ASPHALT MATERIAL FOR TACK	34.40	TON		\$	

#### Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0080	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE (SPECIAL)	228.00	EACH		\$	
0090	02014		BARRICADE-TYPE III	4.00	EACH		\$	
0100	02159		TEMP DITCH	16,574.00	LF		\$	
0110	02160		CLEAN TEMP DITCH	8,287.00	LF		\$	
0120	02351		GUARDRAIL-STEEL W BEAM-S FACE	10,787.50	LF		\$	
0130	02355		GUARDRAIL-STEEL W BEAM-S FACE A	100.00	LF		\$	
0140	02360		GUARDRAIL TERMINAL SECTION NO 1	27.00	EACH		\$	
0150	02363		GUARDRAIL CONNECTOR TO BRIDGE END TY A	4.00	EACH		\$	
0160	02367		GUARDRAIL END TREATMENT TYPE 1	13.00	EACH		\$	
0170	02369		GUARDRAIL END TREATMENT TYPE 2A	1.00	EACH		\$	
0180	02373		GUARDRAIL END TREATMENT TYPE 3	2.00	EACH		\$	
0190	02381		REMOVE GUARDRAIL	11,437.50	LF		\$	
0200	02403		REMOVE CONCRETE MASONRY	7.00	CUYD		\$	
0210	02562		TEMPORARY SIGNS	603.70	SQFT		\$	
0220	02575		DITCHING AND SHOULDERING	16,069.00	LF		\$	
0230	02650		MAINTAIN & CONTROL TRAFFIC (US 60)	1.00	LS		\$	
0240	02671		PORTABLE CHANGEABLE MESSAGE SIGN	6.00	EACH		\$	
0250	02676		MOBILIZATION FOR MILL & TEXT (US 60)	1.00	LS		\$	
0260	02677		ASPHALT PAVE MILLING & TEXTURING	279.00	TON		\$	
0270	02697		EDGE LINE RUMBLE STRIPS	28,200.00	LF		\$	
0280	02701		TEMP SILT FENCE	16,574.00	LF		\$	
0290	02703		SILT TRAP TYPE A	12.00	EACH		\$	
0300	02704		SILT TRAP TYPE B	12.00	EACH		\$	
0310	02705		SILT TRAP TYPE C	12.00	EACH		\$	
0320	02706		CLEAN SILT TRAP TYPE A	12.00	EACH		\$	
0330	02707		CLEAN SILT TRAP TYPE B	12.00	EACH		\$	
0340	02708		CLEAN SILT TRAP TYPE C	12.00	EACH		\$	
0350	02726		STAKING (US 60)	1.00	LS		\$	
0360	03234		RAILROAD RAILS-DRILLED	636.00	LF		\$	
0370	03235		EXCAVATION AND BACKFILL	571.00	CUYD		\$	

### PROPOSAL BID ITEMS

Report Date 8/28/20

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0380	03236		CRIBBING	1,793.00	SQFT		\$	
0390	03269		TRIM & REMOVE TREES & BRUSH	590.00	LF		\$	
0400	05950		EROSION CONTROL BLANKET	10,000.00	SQYD		\$	
0410	05952		TEMP MULCH	38,397.00	SQYD		\$	
0420	05953		TEMP SEEDING AND PROTECTION	28,798.00	SQYD		\$	
0430	05963		INITIAL FERTILIZER	1.78	TON		\$	
0440	05964		MAINTENANCE FERTILIZER	3.00	TON		\$	
0450	05985		SEEDING AND PROTECTION	57,596.00	SQYD		\$	
0460	05992		AGRICULTURAL LIMESTONE	36.00	TON		\$	
0470	06406		SBM ALUM SHEET SIGNS .080 IN	616.25	SQFT		\$	
0480	06407		SBM ALUM SHEET SIGNS .125 IN	72.28	SQFT		\$	
0490	06410		STEEL POST TYPE 1	1,239.00	LF		\$	
0500	06510		PAVE STRIPING-TEMP PAINT-4 IN	63,270.00	LF		\$	
0510	06542		PAVE STRIPING-THERMO-6 IN W	27,917.00	LF		\$	
0520	06543		PAVE STRIPING-THERMO-6 IN Y	27,917.00	LF		\$	
0530	06556		PAVE STRIPING-DUR TY 1-6 IN W	222.00	LF		\$	
0540	06557		PAVE STRIPING-DUR TY 1-6 IN Y	222.00	LF		\$	
0550	06569		PAVE MARKING-THERMO CROSS-HATCH	475.00	SQFT		\$	
0560	06600		REMOVE PAVEMENT MARKER TYPE V	35.00	EACH		\$	
0570	08018		RETAINING WALL (POLYPROPYLENE BARRIER WALL)	2,450.00	SQFT		\$	
0580	10020NS		FUEL ADJUSTMENT	7,619.00	DOLL	\$1.00	\$	\$7,619.00
0590	10030NS		ASPHALT ADJUSTMENT	19,137.00	DOLL	\$1.00	\$	\$19,137.00
0600	20748ED		SHOULDER MILLING/TRENCHING	2,442.00	SQYD		\$	
0610	21134ND		REMOVE-STORE AND REINSTALL SIGN	2.00	EACH		\$	
0620	21289ED		LONGITUDINAL EDGE KEY	9,128.00	LF		\$	
0630	21373ND		REMOVE SIGN	105.00	EACH		\$	
0640	24189ER		DURABLE WATERBORNE MARKING-6 IN W	38,157.00	LF		\$	
0650	24190ER		DURABLE WATERBORNE MARKING-6 IN Y	38,157.00	LF		\$	
0660	24631EC		BARCODE SIGN INVENTORY	179.00	EACH		\$	
0670	24894EC		REMOVE BOULDERS (STA 583+14 AND 583+42)	2.00	EACH		\$	

### Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0680	00462		CULVERT PIPE-18 IN	131.00	LF		\$	
0690	00464		CULVERT PIPE-24 IN	159.00	LF		\$	
0700	00466		CULVERT PIPE-30 IN	75.00	LF		\$	
0710	00472		CULVERT PIPE-60 IN	4.00	LF		\$	
0720	00496		CULVERT PIPE-36 IN EQUIV	78.00	LF		\$	
0730	01204		PIPE CULVERT HEADWALL-18 IN	3.00	EACH		\$	
0740	01208		PIPE CULVERT HEADWALL-24 IN	2.00	EACH		\$	
0750	01213		PIPE CULVERT HEADWALL-36 IN EQUIV	4.00	EACH		\$	
0760	01220		PIPE CULVERT HEADWALL-60 IN	1.00	EACH		\$	
0770	01374		METAL END SECTION TY 1-30 IN	1.00	EACH		\$	
0780	01381		METAL END SECTION TY 2-18 IN	6.00	EACH		\$	
0790	01383		METAL END SECTION TY 2-24 IN	2.00	EACH		\$	
0800	01493		DROP BOX INLET TYPE 2	1.00	EACH		\$	

**PROPOSAL BID ITEMS**

204117

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Report Date 8/28/20

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0810	01642		JUNCTION BOX-18 IN	3.00	EACH		\$	
0820	01643		JUNCTION BOX-24 IN	1.00	EACH		\$	
0830	01726		SAFETY BOX INLET-18 IN SDB-1	1.00	EACH		\$	
0840	01727		SAFETY BOX INLET-24 IN SDB-1	1.00	EACH		\$	
0850	02483		CHANNEL LINING CLASS II	640.00	TON		\$	
0860	02603		FABRIC-GEOTEXTILE CLASS 2	1,237.00	SQYD		\$	
0870	02625		REMOVE HEADWALL	10.00	EACH		\$	
0880	08003		FOUNDATION PREPARATION ( STA 856+84)	1.00	LS		\$	
0890	08003		FOUNDATION PREPARATION (STA 869+09)	1.00	LS		\$	
0900	08100		CONCRETE-CLASS A	46.80	CUYD		\$	
0910	08150		STEEL REINFORCEMENT	2,430.00	LB		\$	
0920	20092ES611		PRECAST CONCRETE BOX CULVERT (10'X5')	43.00	LF		\$	
0930	20092ES611		PRECAST CONCRETE BOX CULVERT (4'X3')	6.00	LF		\$	
0940	23044NS710		SAFETY BOX INLET-36 IN SDB-1	2.00	EACH		\$	
0950	24544EC		REMOVE (CULVERT STA 841+79)	30.00	LF		\$	
0960	24575ES610		HEADWALL (SLOPED AND MITERED CONCRETE - 18 IN)	3.00	EACH		\$	
0970	24575ES610		HEADWALL (SLOPED AND MITERED CONCRETE - 30 IN)	1.00	EACH		\$	
0980	24695ED		BOX CULVERT HEADWALL (PRECAST 4'X3')	1.00	EACH		\$	

**Section: 0004 - WATERLINE**

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0990	14024		W MAIN POINT RELOCATE	6.00	EACH		\$	
1000	14059		W PIPE PVC 06 INCH	400.00	LF		\$	
1010	14082		W SERV PE/PLST SHORT SIDE 1 IN	4.00	EACH		\$	
1020	14105		W VALVE 06 INCH	3.00	EACH		\$	

**Section: 0005 - DEMOBILIZATION**

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1030	02569		DEMOBILIZATION	1.00	LS		\$	



# **DEVELOPERS STANDARD SPECIFICATIONS**



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ROWAN WATER, INC.

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**SECTION 016000  
 PRODUCT REQUIREMENTS**

**PART 1 - GENERAL**

**1.01 COMPLIANCE WITH SAFETY REGULATIONS**

The equipment items furnished shall comply with all governing Federal and State laws regarding safety, including all requirements of the Occupational Safety and Health Act of 1970 (OSHA).

**PART 2 - PRODUCTS**

**2.01 REFERENCES**

- A. General Provisions: Section 10 Correction and Guarantee of Work, Section 13 Materials and Equipment.
- B. Section 331413 – Water Distribution Piping
- C. Section 331419 – Valves & Hydrants.
- D. All material shall meet applicable American Water Works Association (AWWA), American Standard Testing Methods (ASTM), Underwriters Laboratories (UL), Factory Mutual (FM), National Sanitation Foundation (NSF) standards.

**ROWAN WATER, INC.**

The following is a list of possible manufacturers for the materials to be provided on the project. All material shall meet applicable AWWA, ASTM, Underwriters Laboratories, and Factory Mutual standards. The Owner and Engineer shall approve the materials submitted during the shop drawing review process.

<b>MATERIAL/ITEM</b>	<b>APPROVED MANUFACTURER</b>
Air Release Valve (Water and Sewer)	Val-Matic, Apco, ARI, Primer Corp or Approved Equal
All Brass Fittings (AWWA brass)	Ford, or Approved Equal
Aluminum Hatch	N/A
Blowoff Hydrant Assembly	Hydrants shall be post type Model No. A-411 as manufactured by Mueller Co. or Approved Equal.
Blowoff Assembly (Underground)	Valve with PVC Pipe to Daylight
Bolted Cast Couplings	Dresser, Smith & Blair, Ford, Viking-Johnson, JCM, Powerseal or Approved Equal
Brass Nipples and Pipe	State Origin
Brass Service Saddles for PVC Pipe	Ford or Approved Equal
Butterfly Valves (Class 150)	Mueller Linesal III or Approved Equal

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MATERIAL/ITEM	APPROVED MANUFACTURER
Butterfly Valves (Class 250)	Mueller Lineseal XP or Approved Equal
Casing Spacers	Advance Product or approved equal
DI Transition Sleeves from PVC to DI	Griffin, Clow or approved equal
Control Valve	N/A
Cooper Tracing Wire 14 AWG	State Origin
Customer Individual Pressure Reducing Valve	Watts N55BUM1 or Approved Equal
Customer Meter	Badger Radio Read
Customer Meter Box & Cover	Plastic Box & Flat CI Lid as provided by HD Supply
Customer Meter Setter	Ford or Approved Equal
DI and Cast Iron Full Body Tapping Sleeves	Mueller, Clow, US Pipe, American Flow or Approved Equal or Approved Equal
Double Strap Service Saddles for DI Pipe	Mueller, Ford, Smith & Blair, JCM or Approved Equal
DI Pipe Class 350	Griffin, Clow, US Pipe, American DI Pipe or Approved Equal
Dual Disc Check Valve	N/A
Fire Hydrant Assembly w/Flexible Tee	Mueller® Super Centurion 250 ® Model A-423 or Approved Equal
Flushing Hydrant Assembly w/Flexible Tee	Mueller® – Super Centurion 250, Model No. A-423 or Approved Equal (Sized Accordingly)
Full Circle Repair Clamps (all stainless steel)	Mueller, Smith & Blair, Ford, Powerseal, Cascade or Approved Equal
Grip Rings	Romac or approved equal
Gate Valves	Mueller Resilient Seat or Approved Equal
Individual Pressure Reducing Valve	Watts Model No. N55BUM1 or Approved Equal
Mainline Pressure Reducing Valve	N/A
Manhole Ring and Cover	J. R. Hoe & Sons or Approved Equal
Master Meter	Sensus Omni T2 or Approved Equal
MJ Fittings Compact/Full Body MJ Packs	McWayne (Tyler/Union, Clow), Griffin, US Pipe, American DI Pipe or Approved Equal
Precast Concrete Manholes	Cloud, Sherman-Dixie or Approved Equal
PVC Couplings	JM Manufacturing, Harrington, Multi-Fittings or Approved Equal
PVC Pipe Class 250	Diamond, JM Manufacturing, Napco, Freedom, ETI, National, Pioneer or Approved Equal
Restraint Joint Collar Fittings	Mueller, McWayne, Ford, EBBA or Approved Equal
Service Tubing – Polyethylene Tubing (CTS Service Tubing)	ENDOT Blue 250 psi or Approved Equal

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<b>MATERIAL/ITEM</b>	<b>APPROVED MANUFACTURER</b>
Service Tubing - Type K Copper Soft	N/A
Tapping Valves and SS Sleeves (Check Working Pressure) w/SS bolts	Mueller, Kennedy, Ford or Approved Equal
Underground Detectable Tape	Shall be Lineguard brand encased aluminum foil, Type III. The identification tape is manufactured by Lineguard, Inc., P. O. Box 426, Wheaton, IL 60187 or Approved Equal

-END OF SECTION-

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MATERIAL & EQUIPMENT

## SECTION 312316

### EXCAVATION

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED

- A. Structure excavation.
- B. Shoring excavations.

##### 1.02 RELATED WORK

- A. Geotechnical Report in these specifications.
- B. SECTION 014500 - Quality Control.
- C. SECTION 312317 - Rock Removal.
- D. SECTION 312213 - Rough Grading.
- E. SECTION 312333 – Trenching & Backfilling.

##### 1.03 REGULATORY REQUIREMENTS

- A. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation.
- B. Underpin adjacent structures which may be damaged by excavation work, including service utilities and pipe chases.
- C. Notify Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.
- D. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.
- E. Grade excavation top perimeter to prevent surface water run-off into excavation.

#### PART 2 - PRODUCTS

##### 2.01 MATERIALS

- A. Subsoil: Excavated material, graded free of lumps larger than 12 inches, rocks larger than 12 inches, and debris.
- B. # 57's or # 9's: Mineral aggregate graded 1/4 inch to 5/8 inch, free of soil, subsoil, clay, shale, or foreign matter.

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**PART 3 - EXECUTION**

**3.01 PREPARATION**

Identify required liens, levels, contours, and datum.

**3.02 EXCAVATION**

- A. Excavate subsoil required for structure foundations, construction operations, and other work. All excavation shall be unclassified excavation.
- B. Contractor is responsible to adequately brace open cuts and protect workmen and equipment from cave-in.
- C. Remove lumped subsoil, boulders, and rock up to 1/3 cu. yd., measured by volume. Remove larger material under Section 312317.
- D. Correct unauthorized excavation at no cost to Owner.
- E. Fill over-excavated areas under structure bearing surfaces in accordance with direction by Engineer.
- F. Stockpile excavated material in area designated on site.

**3.03 FIELD QUALITY CONTROL**

Provide for visual inspection of rock surfaces under provisions of Section 014500.

- END OF SECTION -

EXCAVATION

**SECTION 02228**  
**ROCK REMOVAL**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This Section includes removal to the widths and depths shown on the Contract Drawings or as directed by the Engineer, including the loosening, removing, transporting, storing and disposal of all materials requiring blasting, barring, or wedging for removal from their original beds, and backfill of rock excavations with acceptable materials
- B. Use of explosives for rock removal shall be used only with prior permission from both the Engineer and Owner. **Blasting will NOT be permitted in this project.**
- C. Rock removal is part of and incidental to unclassified excavation. No separate payment shall be made for rock removal.

**1.02 SUBMITTALS**

- A. In addition to those submittals identified in the General Provisions, the following items shall be submitted:
  - 1. Before any blasting operations begin the Contractor shall obtain all permits and licenses required.

**1.03 DEFINITIONS**

- A. Rock
  - 1. All pieces of ledge or bedrock, boulders or masonry larger than one-half cubic yard in volume.
  - 2. Any material requiring blasting, barring, or wedging for removal from its original bed.

**PART 2 PRODUCTS**

NOT USED

**PART 3 EXECUTION**

**3.01 BLASTING (Use of explosives for rock removal shall be used only with prior permission from both the Engineer and Owner.)**

- A. General
  - 1. Handling of explosives and blasting shall be done only by experienced persons.

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2. Handling and blasting shall be in accordance with all Federal, State and local laws, rules and regulations relating to the possession, handling, storage and transportation and use of explosives.
3. All blasts in open cut shall be properly covered and protected with approved blasting mats.
4. Charges shall be of such size that the excavation will not be unduly large and shall be so arranged and timed that adjacent rock, upon or against which pipelines or structures are to be built, will not be shattered.
5. Blasting will not be permitted within 25 feet of pipelines or structures.
6. All existing pipes or structures exposed during excavation shall be adequately protected from damage before proceeding with the blasting.
7. NFPA 495 - Code for Manufacture, Transportation, Storage and Use of Explosive Materials.
8. Commonwealth of Kentucky Department of Mines and Minerals, Laws and Regulations Governing Explosives and Blasting.

**B. Repair of Damages Due to Blasting**

1. Any injury or damage to the work or to existing pipes or structures shall be repaired or rebuilt by the Contractor at his expense.
2. Whenever blasting may damage adjacent rock, pipes or structures, blasting shall be discontinued and the rock removed by drilling, barring, wedging or other methods.

**C. Explosives**

1. At no time shall an excessive amount of explosives be kept at the site of the work. Such explosives shall be stored, handled and used in conformity with all applicable laws and regulations.
2. Accurate daily records shall be kept showing the amounts of explosives on hand, both at the site and at any storage magazine, the quantities received and issued, and the purpose for which issued.
3. The Contractor shall be responsible for any damage or injury to any persons, property or structures as a result of his handling, storage or use of explosives.

**D. Rock Clearance in Trenches**

1. Ledge rock, boulders and large stones shall be removed from the sides and bottom of the trench to provide clearance for the specified embedment of each pipe section, joint or appurtenance; but in no instance shall the clearance be less than 6 inches. Additional clearance at the pipe bell or joint shall be provided to allow for the proper make-up of the joint.
2. At the transition from an earth bottom to a rock bottom the minimum bottom clearance shall be 12 inches for a distance of not less than 5 feet.

**E. Rock Clearance at Structures**

ROCK REMOVAL

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1. Concrete for structures shall be placed directly on the rock and the excavation shall be only to the elevations and grades shown on the Contract Drawings.

**3.02 EXCAVATION AND BACKFILL**

- A. Rock removal and backfilling shall be performed in accordance with the applicable provisions of the Section entitled "Earthwork".
- B. The rock excavated which cannot be incorporated into the backfill material, as specified, shall be disposed of as spoil and shall be replaced with the quantity of acceptable material required for backfilling.

-END OF SECTION-

ROCK REMOVAL

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## SECTION 312333

### TRENCHING, BACKFILLING AND COMPACTING

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. This Section includes excavation and backfill as required for pipe installation or other construction in the trench, and removal and disposal of water, in accordance with the applicable provisions of the Section entitled "Earthwork" unless modified herein.

#### PART 2 PRODUCTS

NOT USED

#### PART 3 EXECUTION

##### 3.01 EXCAVATION

- A. The trench excavation shall be located as shown on the Contract Drawings or as specified. Under ordinary conditions, excavation shall be by open cut from the ground surface. Where the depth of trench and soil conditions permit, tunneling may be required beneath cross walks, curbs, gutters, pavements, trees, driveways, railroad tracks and other surface structures. No additional compensation will be allowed for such tunneling over the price bid for open cut excavation of equivalent depths below the ground surface unless such tunnel excavation is specifically provided for in the Contract Documents.
- B. Trenches shall be excavated to maintain the depths as shown on the Contract Drawings or as specified for the type of pipe to be installed.
- C. The alignment and depth shall be determined and maintained by the use of a string line installed on batter boards above the trench, a double string line installed along side of the trench or a laser beam system.
- D. The minimum width of trench excavation shall be 6-inches on each side of the pipe hub for 21-inch diameter pipe and smaller and 12-inches on each side of the pipe hub for 24-inch diameter pipe and larger.
- E. Trenches shall not be opened for more than 300 feet in advance of pipe installation nor left unfilled for more than 100 feet in the rear of the installed pipe when work is in progress without the consent of the Engineer. Open trenches shall be protected and barricaded as required.
- F. Bridging across open trenches shall be constructed and maintained where required.

##### 3.02 SUBGRADE PREPARATION FOR PIPE

- A. Where pipe is to be laid on undisturbed bottom of excavated trench, mechanical excavation shall not extend lower than the finished subgrade elevation at any point.
- B. Where pipe is to be laid on special granular material the excavation below subgrade shall be to the depth specified or directed. The excavation below subgrade shall be refilled with special granular material as specified or directed, shall be deposited in layers not to

exceed 6 inches and shall be thoroughly compacted prior to the preparation of pipe subgrade.

- C. The subgrade shall be prepared by shaping with hand tools to the contour of the pipe barrel to allow for uniform and continuous bearing and support on solid undisturbed ground or embedment for the entire length of the pipe.
- D. Pipe subgrade preparation shall be performed immediately prior to installing the pipe in the trench. Where bell holes are required they shall be made after the subgrade preparation is complete and shall be only of sufficient length to prevent any part of the bell from becoming in contact with the trench bottom and allowing space for joint assembly.

### **3.03 STORAGE OF MATERIALS**

- A. Traffic shall be maintained at all times in accordance with the applicable Highway Permits. Where no Highway Permit is required at least one-half of the street must be kept open for traffic.
- B. Where conditions do not permit storage of materials adjacent to the trench, the material excavated from a length as may be required, shall be removed by the Contractor, at his cost and expense, as soon as excavated. The material subsequently excavated shall be used to refill the trench where the pipe had been built, provided it be of suitable character. The excess material shall be removed to locations selected and obtained by the Contractor.
  - 1. The Contractor shall, at his cost and expense, bring back adequate amounts of satisfactory excavated materials as may be required to properly refill the trenches.
- C. If directed by the Engineer, the Contractor shall refill trenches with select fill or other suitable materials and excess excavated materials shall be disposed of as spoil.

### **3.04 REMOVAL OF WATER AND DRAINAGE**

- A. The Contractor shall at all times provide and maintain proper and satisfactory means and devices for the removal of all water entering the trench, and shall remove all such water as fast as it may collect, in such manner as shall not interfere with the prosecution of the work.
- B. The removal of water shall be in accordance with the Section entitled "Earthwork".

### **3.05 PIPE EMBEDMENT**

- A. All pipe shall be protected from lateral displacement and possible damage resulting from superimposed backfill loads, impact or unbalanced loading during backfilling operations by being adequately embedded in suitable pipe embedment material. To ensure adequate lateral and vertical stability of the installed pipe during pipe jointing and embedment operations, a sufficient amount of the pipe embedment material to hold the pipe in rigid alignment shall be uniformly deposited and thoroughly compacted on each side, and back of the bell, of each pipe as laid.
- B. Concrete cradle and encasement of the class specified shall be installed where and as shown on the Contract Drawings or ordered by the Engineer. Before any concrete is placed, the pipe shall be securely blocked and braced to prevent movement or flotation. The concrete cradle or encasement shall extend the full width of the trench as excavated

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unless otherwise authorized by the Engineer. Where concrete is to be placed in a sheeted trench it shall be poured directly against sheeting to be left in place or against a bond-breaker if the sheeting is to be removed.

- C. Embedment materials placed above the centerline of the pipe or above the concrete cradle to a depth of 12 inches above the top of the pipe barrel shall be deposited in such manner as to not damage the pipe. Compaction shall be as required for the type of embedment being installed.

### **3.06 BACKFILL ABOVE EMBEDMENT**

- A. The remaining portion of the pipe trench above the embedment shall be refilled with suitable materials compacted as specified.
  - 1. Where trenches are within the ditch-to-ditch limits of any street or road or within a driveway or sidewalk, or shall be under a structure, the trench shall be refilled in horizontal layers not more than 8 inches in thickness, and compacted to obtain 95% maximum density, and determined as set forth in the Section entitled "Earthwork".
  - 2. Where trenches are in open fields or unimproved areas outside of the ditch limits of roads, the backfilling may be by placing the material in the trench and mounding the surface.
  - 3. Hand tamping shall be required around buried utility lines or other subsurface features that could be damaged by mechanical compaction equipment.
- B. Backfilling of trenches beneath, across or adjacent to drainage ditches and water courses shall be done in such a manner that water will not accumulate in unfilled or partially filled trenches and the backfill shall be protected from surface erosion by adequate means.
  - 1. Where trenches cross waterways, the backfill surface exposed on the bottom and slopes thereof shall be protected by means of stone or concrete rip-rap or pavement.
- C. All settlement of the backfill shall be refilled and compacted as it occurs.

**-END OF SECTION-**

## SECTION 321216

### ASPHALT PAVING

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. The hot-mix asphalt paving work includes the construction of an aggregate base course, asphalt base and wearing courses as specified herein. This work is to replace paving disturbed by the construction and any damages to paving by Contractor's operations, as well as new pavement and driveways, within the limits shown on the plans.

##### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. The general provisions of the Contract, including General Conditions and General Requirements apply to the work specified in this section.
- B. Earthwork: Section 31 20 00

##### 1.03 APPLICABLE STANDARDS

- A. All references in this section to the Standard Specifications shall refer to the most recent Edition of Standard Specifications for Road and Bridge Construction with all amendments thereto as published by the Kentucky Transportation Cabinet (KYTC).

##### 1.04 SUBMITTALS

- A. Job-Mix Designs: For each job mix proposed for the Work.
- B. Comply with the requirements of Section 013323.

##### 1.05 QUALITY ASSURANCE

- A. Hot Mix Asphalt Producer Qualifications: Engage a firm experienced in producing hot-mix asphalt similar to that indicated for this Project and with a record of successful in-service performance.
- B. Producer firms shall be qualified through the Kentucky Transportation Cabinet as an approved Asphalt Mix Producing Firm.
- C. Testing and inspection: The Contractor shall retain a qualified testing laboratory for testing and inspection.

##### 1.06 PROJECT CONDITIONS

- A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp. Comply with the provisions of KYTC Standard Specifications Section 403.03.01 for temperature requirements.
- B. Grade Control: Establish and maintain required lines and elevations.

## **PART 2 – PRODUCTS**

### **2.01 AGGREGATES**

- A. General: Use materials and gradations that have performed satisfactorily in previous installations.
- B. Aggregate Base Course: Dense Graded Aggregate Base (DGA) complying with Section 302 and 805 of the Standard Specifications.
- C. Coarse Aggregate: Sound, angular crushed stone, or crushed gravel, complying with Standard Specifications Section 805.

### **2.02 ASPHALT MATERIALS**

- A. Asphalt Binder: AASHTO MP 1, Performance Graded Binder PG 64-22 for general applications.
- B. Tack Coat: Comply with provisions in KYTC Standard Specifications Section 406.

### **2.03 MIXES**

- A. Hot-Mix Asphalt: Hot-laid, hot-mix asphalt plant mixes meeting the requirements of the Standard Specifications of the Kentucky Transportation Cabinet (KYTC) or Asphalt Institute (AI) MS-2 and complying with the following requirements:
  - 1. Base Course: Produce KYTC mixture designation Class 2 Base. There shall be no restrictions on polish resistant aggregates (utilize KYTC Type "D" aggregates). Recycled Asphalt Pavement (RAP) may be utilized in accordance with Standard Specifications Section 409.
  - 2. Surface Course: KYTC mixture designation Class 2 Surface. The mixture gradation may pass through the restricted zone and there shall be no restriction on polish resistant aggregates (utilize KYTC Type "D" aggregates). Recycled Asphalt Pavement (RAP) may be utilized in accordance with Standard Specifications Section 409.
- B. Hot-Mix Asphalt: Hot-laid, hot-mix asphalt plant mixes designed according to procedures established by the Kentucky Transportation Cabinet (KYTC) and complying with the following requirements:
  - 1. Provide mixes complying with composition, grading, and tolerance requirements Standard Specifications for the following nominal, maximum aggregate sizes:
    - a. Base Course: Mixture with a nominal maximum aggregate size of 0.75 inch with a minimum Voids in the Mineral Aggregate (VMA) of 12 percent.
    - b. Surface Course: Mixture with a nominal maximum aggregate size of 0.38 inch with a minimum VMA of 14 percent.

## **PART 3 - EXECUTION**

### **3.01 INSPECTION**

- A. Pavement installer must examine the areas excavated and backfilled and conditions under which pavement is to be constructed. Notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until satisfactory embankments and subgrade have been established to a uniform line, properly shaped and compacted.
- B. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.
- C. Proof-roll subbase using loaded dump trucks or heavy rubber-tired construction equipment to locate areas that are unstable or that require further compaction.
- D. Proceed with paving only after unsatisfactory conditions have been corrected.
- E. Repairs to Base Course: Fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact flush with adjacent surface.
- F. Patching: Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.

### **3.02 AGGREGATE BASE COURSES**

- A. Place aggregate base course on subgrades free of mud, frost, snow, or ice in accordance with Section 302 of the Standard Specifications.
- B. On prepared subgrade, place base course as follows:
  - 1. Shape base course to required crown elevations and cross-slope grades.
  - 2. Place base course that exceeds 9 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
  - 3. Compact base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 98 percent of maximum dry unit weight according to ASTM D698 or in accordance with Section 302.03.04 of the Standard Specifications.

### **3.03 SURFACE PREPARATION**

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
  - 1. Sweep loose granular particles from surface of unbound-aggregate base course. Do not dislodge or disturb aggregate embedded in compacted surface of base course.
- B. Tack Coat: Comply with provisions in Standard Specifications Section 406. Apply to the surface of concrete surfaces, existing asphalt surfaces and, when necessary, to newly constructed asphalt surfaces.

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### 3.04 HOT-MIX ASPHALT PLACING

- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Comply with applicable provisions of KYTC Standard Specifications Section 403 for delivery, placement, spreading and compaction of the mixture.
  - 1. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent.

### 3.05 FIELD QUALITY CONTROL

- A. Thickness Tolerances: Compact each course to produce the thickness indicated within the following tolerances:
  - 1. Aggregate and asphalt base Course: Plus or minus 1/2 inch.
  - 2. Asphalt surface course: Plus or minus 1/4 inch.
  - 3. Provide a minimum fall of 2% to facilitate drainage unless otherwise indicated on the Drawings.
- B. Surface Smoothness: Compact each course to produce a surface smoothness with the following tolerances as determined using a 10-foot straightedge applied transversely or longitudinally to paved areas:
  - 1. Aggregate base course: 3/8 inch.
  - 2. Asphalt base course: 1/4 inch.
  - 3. Asphalt surface course: 1/8 inch.
  - 4. Crowned surfaces: Test with crowned template centered and at a right angle to crown. Maximum allowable variance from template is 1/4 inch.
- C. In-Place Density: Field density test of in-place compacted aggregate base will be determined by nuclear method in accordance with ASTM D 2940. Field density of in-place compacted pavement will be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726. Test will be made for every 1,000 square yards or less of installed pavement.
- D. Core Sampling: If required to confirm either thickness tolerances or compaction of asphalt courses, core samples shall be taken and tested according to ASTM D 3549 for thickness and ASTM D 1188 or ASTM D 2726 for compaction. Determination of need for core samples will be made by the Engineer.

- END OF SECTION -

## SECTION 321540

### CRUSHED STONE SURFACING

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. Furnish and install crushed stone for miscellaneous uses as shown on the Drawings, as called for in the Specifications.
- B. Sizes, types, and quality of crushed stone are specified in this Section, but its use for replacement of unsuitable material, pavement base, and similar uses is specified in detail elsewhere in the Specifications. The Engineer may order the use of crushed stone for purposes other than those specified in other Sections, if, in his opinion, such use is advisable. Payment for same will be subject to negotiation.

#### PART 2 - PRODUCTS

##### 2.01 MATERIALS

- A. When referred to in these Specifications, crushed stone shall be Number 57 graded in accordance with the Kentucky Department of Highways, Standard Specifications, latest edition, unless otherwise noted.
- B. When referred to in these Specifications, dense graded aggregate (DGA) shall be crushed stone classified by the Kentucky Department of Highways, Standard Specifications, latest edition, and conforming to the following requirements:

<u>Sieve Size</u>	<u>Percent Passing</u>
1 Inch	100
3/4 Inch	70 - 100
1/2 Inch	50 - 80
#4	30 - 65
#10	17 - 50
#40	8 - 30
#200	2 - 10

#### PART 3 - EXECUTION

##### 3.01 INSTALLATION

- A. Crushed stone shall be placed and compacted in accordance with the Kentucky Department of Highways, Standard Specifications.
- B. Crushed stone shall be placed in those areas as shown on the Drawings.

-- END OF SECTION --

**SECTION 329200**  
**TURF & GRASSES**

**PART 1 - GENERAL**

**1.01 DESCRIPTION OF WORK**

- A. Provide all labor, materials, equipment, and services required for seeding of all disturbed areas caused by construction activities and for installation of sod where indicated on the Contract Drawings or specified herein. **The Rowan Water Inc. KY 158 project, the contractor shall complete final cleanup at the end of each work day.**

**1.02 RELATED DOCUMENTS**

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to Work of this Section.
- B. SECTION 312000 – EARTH MOVING

**1.03 MAINTENANCE**

- A. Maintenance shall begin immediately following the last operation of installation for each portion of lawn.
- B. Lawns shall be maintained by watering, mowing, and for resodding for a period of forty-five (45) days. At the end of this period an inspection will be made and any deficiencies, which may be attributable to the Contractor, will be noted in writing. At this time, the Owner will assume the maintenance. Another inspection will be made at the beginning of the next planting season, and any of the previously noted deficiencies still existing shall be repaired by the Contractor.

**1.04 INSPECTION FOR ACCEPTANCE**

- A. The Inspection of the Work:
  - 1. The inspection of the work of lawns to determine the completion of contract work exclusive of the possible replacement of plants, will be made by the Architect/Engineer upon written notice requesting such inspection submitted by the Contractor at least ten (10) days prior to the anticipated date.
- B. Acceptance:
  - 1. After inspection, the Contractor will be notified in writing by the Owner of acceptance of all work of this Section, exclusive of the possible replacement of plants subject to guaranty, or if there are any deficiencies of the requirements of completion of the Work.

**PART 2 - PRODUCTS**

**2.01 WATER**

- A. Water used in this work shall be suitable for irrigation and free from ingredients harmful to plant life.
- B. Hose and other watering equipment required for the Work shall be furnished by the Contractor.

**2.02 TOPSOIL**

- A. The Contractor shall furnish and place sufficient topsoil for the seeding and installation of sod.

**2.03 FERTILIZER**

- A. Commercial fertilizer for lawn areas shall be complete fertilizer, formula 10-10-10, for lawns and shall conform to the applicable state fertilizer laws. Fertilizer shall be uniform in composition, dry and free flowing and shall be delivered to the site in the original, unopened containers, each bearing the manufacturer's guarantee analysis. Any fertilizer which becomes caked or otherwise damaged making it unsuitable for use will not be accepted.
- B. Fertilizer shall be applied at the rate of 25 pounds per 1,000 square feet.

**2.04 GRASS SEED**

- A. The seed mixture to be sown shall be in the following proportions:

<u>Common Name</u>	<u>Proportion By Weight</u>	<u>% of Purity</u>	<u>% of Germination</u>
Fine Lawn Fescue	40	90	85
Chewings Fescue	25	90	85
Italian Rye Grass	20	90	85
Red Top	10	90	85
White Clover	5	95	90

- B. All seed shall be fresh and clean and shall be delivered mixed, in unopened packages, bearing a guaranteed analysis of the seed mixture.
- C. Germination must be certified to conform to the following minimums:

Purity	90%
Germination	85%

**2.05 SOD**

- A. Sod shall be at least 70% Bluegrass, strongly rooted and free of pernicious weeds.
- B. It shall be mowed to a height not to exceed 3" before lifting, and shall be of uniform thickness with not over 1-1/2" or less than 1" of soil.

**2.06 MULCH**

- A. Mulch for seeded areas shall be Conwed Hydro Mulch, Silva-Fiber, or equal. It shall be suitable for use in a water slurry or for application with hydraulic equipment.

- B. Clean straw is acceptable as mulch. It shall be spread at the rate of one (1) bale per 1,000 feet (approximately 2 inch loose depth).
- C. Mulch on slopes greater than 1: 3 shall be held in place with erosion control netting.
- D. Mulch on areas subject to surface water run-off or in drainage ditches shall be held in place with erosion control netting.

### **PART 3 - EXECUTION**

#### **3.01 TIME OF PLANTING**

- A. Planting operations shall be conducted under favorable weather conditions during seasons which are normal for such work as determined by accepted practice in the locality of the project. At the option and on full responsibility of the Contractor, planting operations may be conducted under unseasonable conditions without additional compensation.

#### **3.02 LAWNS**

- A. Areas to be sodded are designated on the Drawings. All other lawn areas, including areas of cut and fill and where existing ground has been disturbed by construction operations shall be seeded.
- B. Fertilizer:
  - 1. Fertilizer shall be applied at the rate of 25 pounds per 1,000 square feet to the lawn area being prepared for planting and mixed lightly into the top few inches of topsoil. Fertilizer may be mixed with and distributed with grass seed.
- C. Planting of Lawns:
  - 1. Sowing of Seed:
    - a. Immediately before any seed is to be sown, the ground shall be scarified as necessary, and shall be raked until the surface is smooth, friable and of uniformly fine texture. Lawn areas shall be seeded evenly with a mechanical spreader at the rate of 4 pounds per 1,000 square feet of area, lightly raked, rolled with a 200-pound roller and watered with a fine spray. The method of seeding may be varied at the discretion of the Contractor on his own responsibility to establish a smooth, uniform turf composed of the grasses specified. The sowing of seed shall be done only within the season extending from March 1st to May 15th and from September 1st to October 15th, unless other seasons may be approved by the Owner.
  - 2. Laying of Sod:
    - a. Before any sod is laid, all soft spots and inequalities in grade shall be corrected. Fertilizer spread shall be raked in. Sod shall be laid so that no voids occur, tamped or rolled and then thoroughly watered. The complete sodded surface shall be true to finished grade, even and firm at all points. Sodding shall be done only within the seasons extending from

March 1st to May 15th and from September 1st to October 15th, unless other seasons may be approved by the Owner.

3. Sod on Slopes:

- a. Sod on slopes 2 to 1 or steeper shall be held in place by wooden pins about 1-inch square and about 6 inches long driven through the sod into the soil until they are flush with the top of the sod, or by other approved methods for holding the sod in place.

4. Mulching:

- a. All seeded areas are to be mulched with Conwed Hydro Mulch, Silva-Fiber, or equal, or with clean straw as specified under PRODUCTS. Mulch shall be applied at the rate of 1,500 pounds per acre. It may be applied with hydraulic equipment or may be added to the water slurry in a hydraulic seeder and the seeding and mulching combined in one operation. Clean straw may be spread by hand to cover the seeded areas at a depth of two (2) inches. Erosion control netting shall be installed and anchored per manufacturer's instructions in areas of slopes, ditches, or surface water runoff.

**3.03 CLEAN UP**

- A. All soil, peat or similar material which has been brought over paved areas by hauling operations or otherwise, shall be removed promptly, keeping these areas clean at all times. Upon completion of the planting all excess soil, stone and debris which have not previously been cleaned up shall be removed from the site or disposed of as directed by the Owner. All lawns shall be prepared for final inspection.

**3.04 OTHER WORK**

- A. The Contractor also shall be responsible for the repair of any damage caused by his activities or those of his subcontractors, such as the storage of topsoil or other materials, operations or equipment, or other usages to all on-site areas outside the contract limits. Such repair operations shall include any regrading, seeding or other work necessary to restore such areas to an acceptable condition.

**3.05 QUALITY CONTROL**

- A. Areas seeded shall be protected until a uniform stand develops, when it will be accepted and the Contractor relieved of further responsibility for maintenance. Displaced mulch shall be replaced or any damage to the seeded area shall be repaired promptly, both in a manner to cause minimum disturbance to the existing stand of grass. If necessary to obtain a uniform stand, the Contractor shall fertilize, reseed and remulch as needed. Scattered bare spots up to one (1) square yard in size will be allowed up to a maximum of 10 percent of any area.

- END OF SECTION -

**SECTION 330507**  
**BORING AND JACKING**

**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. Provide all labor, materials, equipment and services required to furnish and install all bored and jacked carrier pipes in encasement pipes under railroad and highway crossings as shown on the Drawings and/or specified herein.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. SECTION 312000 – EARTH MOVING
- B. SECTION 312213 – ROUGH GRADING
- C. SECTION 331413 – WATER DISTRIBUTION PIPING

**1.03 SUBMITTALS**

- A. Descriptive literature, catalog cuts, and dimensional prints clearly indicating all dimensions and materials of construction, shall be submitted on all items specified herein to the Engineer for review before ordering.
- B. At the time of submission, the Contractor shall, in writing, call the Engineer's attention to any deviations that the submittals may have from the requirements of the Contract Drawings and Specifications.
- C. Comply with all requirements of DIVISION 01.

**1.04 EXISTING CONDITIONS**

- A. The existing piping and other utilities shown on the Contract Drawings is based on the best available information. The Engineer makes no guarantee as to the accuracy of the locations or type of piping or utility depicted. All new piping which ties into existing lines must be made compatible with that piping.
- B. So that piping conflicts may be avoided, Contractor shall locate the utility (vertically & horizontally) well ahead of the pipe laying operation to confirm exact locations of existing piping before installing any new piping.
- C. Contractor shall provide all fittings and adapters necessary to complete all connections to existing piping.

**PART 2 - PRODUCTS**

**2.01 CARRIER PIPE**

- A. Carrier pipe shall be as specified in the applicable Division 33 section unless otherwise noted.

**2.02 CASING PIPE**

- A. Casing pipe shall be steel, plain end, have a minimum yield point strength of 35,000 psi and conform to ASTM A 252 Grade 2 or ASTM A 139 Grade B without hydrostatic tests. The steel pipe shall have welded joints and be in at least 18 foot lengths.
- B. The diameter of the casing pipe shall be as follows:

Carrier Pipe Nominal Diameter (Inches)															
4	6	8	10	12	14	16	18	20	22	24	27	30	33	36	
Casing Pipe Nominal Diameter (Inches)															
10	12	14	16	18	20	22	24	27	30	33	36	42	48	54	60

For carrier pipe sizes greater than 36-inches nominal diameter, the casing pipe diameter size shall be determined by the Engineer or as shown on the Contract Drawings.

- C. The wall thickness of the casing pipe shall be as follows:

Casing Pipe Nominal Diameter (Inches)								
Under 20	20 & 22	24	30	36	38	42	48	50
Casing Pipe Nominal Thickness (Inches)								
.375"	.375"	.375"	.406"	.469"	.500"	.562"	.625"	.656"

However, should casing pipe thickness be specified or required on Highway or Railroad permit approval sheets, said permit thickness requirement shall govern. Permit approval sheets will be made available to the Contractor.

**2.3 CASING SPACERS**

- A. **Stainless Steel Casing Spacers:** Stainless steel casing spacers shall be bolt-on style with a shell made in two (2) sections of heavy T-304 stainless steel. Connecting flanges shall be ribbed for extra strength. The shell shall be lined with a PVC liner .090" thick with 85-90 durometer. All nuts and bolts are to be 18-8 stainless steel. Runners shall be made of ultra high molecular weight polymer with inherent high abrasion resistance and a low coefficient of friction. Runners shall be supported by risers made of heavy T-304 stainless steel. The supports shall be mig welded to the shell and all welds shall be fully passivated. Stainless steel casing spacers shall be made by Cascade Waterworks Mfg. Co., or equal.

- B. Solid Polyethylene Casing Spacers (to be used with PVC pipe only): Solid polyethylene casing spacers shall be bolt-on style with a shell made in two (2) sections. Carrier pipe shall be wrapped with rubber strap inside casing space to prevent slippage. All nuts and bolts are to be 18-8 stainless steel. Solid polyethylene casing spacers shall be made by Calpico Inc., Advance Products & Systems, Inc., or equal.

## **2.04 CASING END SEALS**

- A. Wrap-around end seals - Wrap-around end seals shall be made of a waterproof flexible coal tar membrane reinforced with fiberglass, or synthetic rubber. The two exposed edges of the wrap-around seal shall be adhesively bonded forming a watertight seal. The ends of the wrap shall be sealed on the casing and carrier pipe by stainless steel bands. Wrap-around end seals shall be made by Calpico Inc., Advance Products & Systems, Inc., or equal.
- B. Upon approval the by Engineer, in lieu of wrap-around end seals, each end of the casing pipe and the carrier pipe shall be wrapped with two (2) layers of roofing felt.

## **PART 3 - EXECUTION**

### **3.01 CROSSINGS - GENERAL**

- A. Where designated on the drawings, crossings beneath state maintained roads, not to be disturbed shall be accomplished by boring and jacking a casing pipe.
- B. Steel casing pipe for crossings shall be bored and/or jacked (or open cut installed where indicated on the Drawings) into place to the elevations shown on the drawings. All joints between lengths shall be solidly butt-welded with a smooth non-obstructing joint inside. The casing pipe shall be installed without bends. The carrier pipe shall be installed after the casing pipe is in place, and shall extend a minimum of two (2) feet beyond each end of the casing to facilitate making joint connections. The carrier shall be braced and centered with casing spacers within the casing pipe to preclude possible flotation. Casing spacers shall be installed a maximum of eight (8) feet apart along the length of the carrier pipe within the casing pipe, within two (2) feet of each side of a pipe joint, and the rest evenly spaced. The height of the supports and runners combined shall be sufficient to keep the carrier pipe at least 0.75" from the casing pipe wall at all times. Manufacturer's recommendations may govern these requirements.
- C. At each end of the casing pipe, the carrier pipe shall be sealed with casing end seals. The end seals shall extend a minimum of 12 inches in each direction from the end of the casing pipe.
- D. Wood skids are not an acceptable method of supporting the carrier pipe.

### **3.02 BORING AND JACKING**

- A. The Contractor shall excavate his own pits, as he may deem necessary, and will set his own line and grade stakes which shall be checked by the Engineer. Permits, as required, will be furnished or obtained by the Owner, but shall be in the Contractor's hands before any excavating is commenced.

- B. The boring method shall consist of pushing the pipe into the earth with a boring auger rotating within the pipe to remove the spoil.
1. The front of the pipe shall be provided with mechanical arrangements or devices that will positively prevent the auger from leading the pipe so that there will be no unsupported excavation ahead of the pipe.
  2. The auger and cutting head arrangement shall be removable from within the pipe in the event an obstruction is encountered. If the obstruction cannot be removed without excavation in advance of the pipe, the pipe shall be abandoned in place and immediately filled with grout.
  3. The over-cut by the cutting head shall not exceed the outside diameter of the pipe by more than 2 inch. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe by more than approximately 1 inch, grouting or other approved methods must be used to fill such voids.
  4. The face of the cutting head shall be arranged to provide a reasonable obstruction to the free flow of soft or poor material.
  5. Any method which does not have this boring arrangement will not be permitted. Contractor's boring arrangement plans and methods must be submitted to, and approved by, the Engineer.
- C. In the event an obstruction is encountered in boring which cannot be removed and it becomes necessary to withdraw the casing and commence elsewhere, the hole from which the casing is withdrawn shall be completely backfilled with coarse sand rammed in.
- D. Insurance to be furnished by the Contractor to cover this type of work shall be adequate to meet the requirements of the Railroad and/or State or County Highway Departments. Insurance shall consist of comprehensive general liability and automobile liability insurance.
- E. Before award of the contract, the Contractor shall furnish a statement of his experience of such work, or if inexperienced, shall advise the Owner as to whom he will sublet the work and give a statement of the experience of the subcontractor, which shall be satisfactory to the Owner.

### **3.03 CONTRACTOR'S RESPONSIBILITIES**

- A. Obtain a copy of the Highway Encroachment and/or Railroad Permit before beginning construction.
- B. Attend a preconstruction meeting at the construction site with the City Inspector, Railroad Inspector, Highway Inspector Engineer, and Contractor being present.

- END OF SECTION -

**SECTION 331413**  
**WATER DISTRIBUTION PIPING**

**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. Provide all labor, materials, equipment and services required for furnishing and installing all piping and appurtenances specified herein.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. SECTION 331419 – VALVES & HYDRANTS

**1.03 SUBMITTALS**

- A. A notarized certification shall be furnished for all pipe and fittings that verifies compliance with all applicable specifications.
- B. The requirement for this certification does not eliminate the need for shop drawings submittals in compliance with DIVISION 01.

**1.04 EXISTING CONDITIONS**

- A. The existing piping shown on the Contract Drawings is based on the best available information. The Engineer makes no guarantee as to the accuracy of the locations or type of piping depicted. All new piping which ties into existing lines must be made compatible with that piping.
- B. So that piping conflicts may be avoided, Contractor shall open up his trench well ahead of the pipe laying operation to confirm exact locations of existing piping before installing any new piping.
- C. Contractor shall provide all fittings and adapters necessary to complete all connections to existing piping.

**1.05 UTILITY LINE ACTIVITIES COVERED UNDER NATIONWIDE PERMIT # 12**

- A. All activities involving utility line construction covered under the US Army Corps of Engineers NATIONWIDE PERMIT # 12 shall meet the following conditions:
  - 1. Utility Line Activities. Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project. Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity.
  - 2. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures,

work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

3. Notification: The permittee must submit a pre-construction notification to the US Army Corps district engineer prior to commencing the activity if any of the following criteria are met: (1) The activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials.

- B. All activities involving utility line construction covered under KENTUCKY GENERAL CERTIFICATION of Nationwide Permit # 12 shall meet the following conditions:

The general Water Quality Certification applies to surface waters of the Commonwealth as defined in 401KAR10:001 Chapter 10, Section 1(80): Surface waters means those waters having well-defined banks and beds, either constantly or intermittently flowing, lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface.

1. The activity will not occur within surface waters of the Commonwealth identified by the Kentucky Division of Water as Outstanding State or National Resource Water, Cold Water Aquatic Habitat, or Exceptional Waters.
2. The activity will not occur within surface waters of the Commonwealth identified as perpetually-protected (e.g. deed restriction, conservation easement) mitigation sites.
3. This general water quality certification does not authorize the installation of utility lines in a linear manner within the stream channel or below the top of the stream bank.
4. For a single crossing, impacts from the construction and maintenance corridor in surface waters shall not exceed 50 feet of bank disturbance.
5. This general certification shall not apply to nationwide permits issued for individual crossings which are part of a larger utility line project where the total cumulative impacts from a single and complete linear project exceed 1/2 acre of wetlands or 300 linear feet of surface waters. Cumulative impacts include utility line crossings, permanent or temporary access roads, headwalls, associated bank stabilization areas, substations, pole or tower foundations, maintenance corridor, and staging areas.
6. Stream impacts under Conditions 4 and 5 of this certification are defined as the length of bank disturbed. For the utility line crossing and roads, only one bank length is used in calculation of the totals.

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7. Stream impacts covered under this General Water Quality Certification and undertaken by those persons defined as an agricultural operation under the Agricultural Water Quality Act must be completed in compliance with the Kentucky Agricultural Water Quality Plan (KWQP).
8. The Kentucky Division of Water may require submission of a formal application for an individual certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.
9. Activities that do not meet the conditions of this General Water Quality Certification require an Individual Section 401 Water Quality Certification.
10. Blasting of stream channels, even under dry conditions, is not allowed under this general water quality certification.
11. Utility lines placed parallel to the stream shall be located at least 50 feet from an intermittent or perennial stream, measured from the top of the stream bank. The cabinet may allow construction within the 50 foot buffer if avoidance and minimization efforts are shown and adequate methods are utilized to prevent soil from entering the stream.
12. Utility line stream crossings shall be constructed by methods that maintain flow and allow for a dry excavation. Water pumped from the excavation shall be contained and allowed to settle prior to re-entering the stream. Excavation equipment and vehicles shall operate outside of the flowing portion of the stream. Spoil material from the excavation shall not be allowed to enter the flowing portion of the stream.
13. The activities shall not result in any permanent changes in pre-construction elevation contours in surface waters or wetlands or stream dimension, pattern or profile.
14. Utility line activities which impact wetlands shall not result in conversion of the area to non-wetland status. Mechanized land clearing of forested wetlands for the installation or maintenance of utility lines is not authorized under this certification.
15. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:
  - a. Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur.
  - b. Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities.

- c. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
  - d. Removal of riparian vegetation shall be limited to that necessary for equipment access.
  - e. To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.
  - f. Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.
  - g. Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement.
  - h. If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done.
  - i. Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling (800) 928-2380.
16. Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.

#### 1.06 CONSTRUCTION IN A FLOODPLAIN

- A. No material shall be placed in the stream or in the flood plain to form construction pads, coffer dams, access roads, etc. unless prior approval has been obtained from the Environmental and Public Protection Cabinet.
- B. The trench shall be backfilled as closely as possible to the original contour. All excess material from construction of the trench shall be disposed of outside the flood plain unless the applicant has received prior approval from the Cabinet to fill within the flood plain.

### PART 2 - PRODUCTS

#### 2.01 POLYVINYL CHLORIDE PLASTIC (PVC) PIPE

- A. AWWA C-900
  - 1. 4-inch through 12-inch - PVC plastic pipe shall conform to ANSI/AWWA C-900, DR 18 pressure class 235. PVC pipe shall have a maximum laying length of 20 feet, with bell end and elastomeric gasket, and with plain end for cast-iron or ductile-iron fittings. Elastomeric gasket shall conform with the requirements of ASTM F-477. The seal of the National Sanitation Foundation Testing Laboratory must appear on each pipe
- B. CLASS 200 & 250
  - 1. Polyvinyl chloride (PVC) pipe for water mains shall be Class 200 (SDR 21) or Class 250 (SDR 17) PVC pressure rated pipe as shown on the Drawings or indicated in

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the proposal form with either twin gasket joints or integral bell joints with rubber O-ring seals.

2. All PVC pipe shall conform to the latest revisions of ASTM D-1784 (PVC Compounds), ASTM D-2241 (PVC Plastic Pipe, SDR) and ASTM D-2672 (Bell-End PVC Pipe). Rubber gasketed joints shall conform to ASTM D-3139. The gaskets for the PVC pipe joint shall conform to ASTM F-477 and D-1869.
  3. Couplings shall be furnished by the pipe manufacturer and shall accommodate the pipe for which they are used. Rubber gasket joints shall provide adequate expansion to allow for a 50 degree change in temperature on one length of pipe. Lubrication for rubber connected couplings shall be water soluble, non-toxic, be non-objectionable in taste and odor and have no deteriorating affect on the PVC or rubber gaskets and shall be as supplied by the pipe manufacturer. Couplings shall conform to ASTM D-3139; SDR-21, 200 psi.
  4. All pipe and couplings shall bear identification markings that will remain legible during normal handling, storage and installation, which have been applied in a manner that will not reduce the strength of the pipe or coupling or otherwise damage them. Pipe and coupling markings shall include the normal size and OD base, material code designation, dimension ratio number, ASTM Pressure Class, ASTM designation number for this standard, manufacturer's name or trademark, seal (mark) of the testing agency that verified the suitability of the pipe material for potable-water service. Each marking shall be applied at intervals of not more than 5 feet for the pipe and shall be marked on each coupling.
- C. Fittings shall be pressure class 350 ductile iron and have mechanical-joints or push-on joints in accordance with ANSI/AWWA C110/A21.10, latest revision, and shall conform to the details and dimensions shown therein. Fittings shall have interior cement-mortar lining as specified hereinbefore for the pipe. Compact ductile iron fittings meeting the requirements of ANSI/AWWA C153/A21.53, latest revision, will also be acceptable.
- D. The basis of acceptance of PVC plastic water main pipe will be a written, notarized certification, accompanied by a copy of test results, that the pipe and pipe material has been sampled, tested and inspected in accordance with the designated standard specifications. These certifications shall be obtained from the manufacturer and delivered to the Engineer's or Owner's representative on the project site. A sufficient number of tests and certifications shall be made so as to be representative of the complete project. Copies of the test results shall be kept on file by the manufacturer and shall be available for review by the Engineer or Owner upon request.
- E. Pipe shall be visually inspected on the project site for proper markings which shall include manufacturer's name or trademark, nominal pipe size, pressure rating for water at 73.4 degrees F., plastic pipe material designation code (e.g. PVC 1120), dimension ratio, AWWA or ASTM designation and pressure class with which the pipe complies, and the National Sanitation Foundation NSF 14 Seal of Approval for drinking water.

## 2.02 DUCTILE IRON PIPE (D.I.P.)

### A. AWWA C150/AWWA C151

1. Ductile iron pipe (D.I.P.) shall conform to ANSI/AWWA C150/A21.50, ANSI/AWWA C151/A21.51 Standard. The pipe shall conform to thickness class 350 unless noted otherwise. All pipe, fittings and joints should be capable of accommodating pressure up to 350 psi. Joint restraints required. SEE SECTION 012500 PRODUCTS & SUBSTITUTIONS.

2. All pipe shall be tar coated outside and shall receive a standard cement lining with bituminous seal coat on the inside in accordance with ASA Specification A21.40 (AWWA-C104).
3. Cement mortar lining and seal coating for pipe where applicable, shall be in accordance with ANSI/AWWA C104/A21.4. Bituminous outside coating shall be in accordance with ANSI/AWWA C151/A21.51 for pipe and ANSI/AWWA C110/A21.10 for fittings.
4. No separate pay item has been established for fittings and no determination of the number of fittings required on the job has been made. The Contractor, during the bidding phase, shall determine the number of fittings required on the job and include the cost of the fittings and installation in the unit price for pipe.
5. Push-on type joints shall be single rubber gasket, with cast gasket socket and recessed bell with a tapered annular opening and flared socket and shall conform to ANSI/AWWA C111/A21.11. Plain spigot ends shall be suitably beveled to permit easy entry into the bell, centering and compressing the gasket.
6. Ductile iron flanged joint pipe shall conform to ANSI/AWWA C115/A 21.15 Standard and have a Class of 350. The pipe shall have a rated working pressure of 350 psi with Class 125 flanges. Gaskets shall be ring gaskets with a thickness of 1/8-inch. Flange bolts shall conform to ANSI B16.1.
7. Flanged fittings shall meet all requirements of ANSI/AWWA C110/A21.10 and have Class 125 flanges. Fittings shall accommodate a working pressure up to 350 psi and be supplied with all accessories.
8. River crossing pipe shall be ductile iron with ball and socket type joint. The joint shall be boltless with restraint provided by a bayonet-type locking of the retainer over the bell. All pipe components shall be rugged, high strength ductile iron. The barrel is cast of 60-42-10 ductile iron in accordance with American National Standard A21.51. The bell, ball, and retainer are cast of 70-50-05 ductile iron in accordance with the applicable requirements of American National Standard A21.10. The gasket will be of high quality rubber and symmetrical in shape. The first and last section of river crossing pipe shall be furnished with mechanical joint ends suitable for connection to the remaining system piping.
9. Restraint glands or fittings shall be either "Meg-a-Lug" or "Series 100" or "Series 1200" as manufactured by EBBA Iron Sales, Inc., Eastland, Texas.
10. Restrained Joint Pipe:
  - a. Restrained joints for 4" through 16" push-on joint pipe installation is required and indicated in the project plans or specifications, restrained push-on joint pipe and fittings utilizing ductile iron components shall be provided.
  - b. Restrained joint pipe shall be ductile iron manufactured in accordance with the requirements of ANSI/AWWA C151/A21.51. Push-on joints for such pipe shall be in accordance with ANSI/AWWA C111/A21.11. Pipe thickness shall be designed in accordance with ANSI/AWWA C150/A21.50, and shall be based on laying conditions and internal

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pressures as stated in the project plans and specifications. Pipe shall be U.S. Pipe TR FLEX pipe or equal.

- c. Restrained joint fittings shall be ductile iron in accordance with applicable requirements of ANSI/AWWA C110/A21.10 with the exception of the manufacturer's proprietary design dimensions. Push-on joints for such fittings shall be in accordance with ANSI/AWWA C111/A21.11. Fittings shall be U.S. Pipe TR FLEX fittings or equal.
- d. Cement mortar lining and seal coating for pipe and fittings, where applicable, shall be in accordance with ANSI/AWWA C104/A21.4. Bituminous outside coating shall be in accordance with ANSI/AWWA C151/A21.51 for pipe and ANSI/AWWA C110/A21.10 for fittings.
- e. Restrained push-on joints for pipe and fittings shall be designed for a water working pressure of 350 psi in sizes 4" through 24" and 250 psi for sizes 30" through 54".
- f. Restrained push-on joint pipe and fittings shall be capable of being deflected after assembly.

## **2.03 HIGH-DENSITY POLYETHYLENE AWWA C906**

### **A. AWWA C906**

- 1. General: This section is for High-density Polyethylene AWWA C906 and NSF 14 Approved Pipe for Potable Water Service in Sizes 4" to 24" DIPS (Ductile Iron Pipe Size) and defines the characteristics and properties of high-density polyethylene pipe. This specification governs the material, pipe, fittings, butt fusion, and general construction practice for HDPE piping systems.
  - a. Pipe shall have a hydrostatic design stress rating of 800 psi based on a material with a 1,600 psi at 23° hydrostatic design basis as determined in accordance with ASTM D-2837.
  - b. Fittings shall be molded or fabricated from material meeting the same standards as the pipe.
  - c. Joints shall be made by the thermal butt fusion system. All joints shall be completely watertight, airtight and as strong as or stronger than the pipe wall, in strict accordance with the manufacturer's recommendations.
  - d. Sections of polyethylene pipe shall be joined into continuous lengths on the job site above ground. The joining method shall be the heat fusion method and shall be performed in strict accordance with the pipe manufacturer's recommendations. The heat fusion equipment used in the joining procedures shall be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, temperature requirements of 400°F, alignment, and 150 psi interfacial fusion pressure.
  - e. Heat fusion joining shall be 100% efficient offering a joint weld strength equal to or greater than the tensile strength of the pipe. Socket fusion shall not be used.

2. **References:** Where all or part of a Federal, ASTM, ANSI, AWWA, etc., standard specification is incorporated by reference in these Specifications, the reference standard shall be the latest edition and revision and considered a part of these specifications.
3. **Material:** Materials used for the manufacture of polyethylene pipe and fittings shall be extra high molecular weight, high density PE 3408 polyethylene resin. The material shall be listed by PPI (Plastics Pipe Institute, a division of the Society of the Plastics Industry) in PPI TR-4 with a 73°F hydrostatic design basis of 1,600 psi and a 140°F hydrostatic design basis of 800 psi. The PPI listing shall be in the name of the pipe manufacturer and shall be based on ASTM D 2837 testing.
4. **Pipe and Fittings: Qualification of Manufacturers.** The Manufacturer shall have manufacturing and quality assurance facilities capable of producing and assuring the quality of the pipe and fittings required by these Specifications. The Manufacturer's production facilities shall be open for inspection by the Owner or his Authorized Representative.
  - a. **Pipe:** Pipe supplied under this specification shall have a nominal DIPS (Ductile Iron Pipe Size) OD unless otherwise specified. The DR (Dimension Ratio) and the pressure rating of the pipe supplied shall be as shown on the drawings. The pipe shall be produced from approved HDPE pipe grade resin with the nominal physical properties as specified in the appropriate ASTM specifications for the sizes indicated. Pipe having a diameter 3" and larger will be made to the dimensions and tolerances specified in ASTM F 714.

The pipe shall contain no recycled compound except that generated in the manufacturer's own plant. The pipe shall be homogeneous throughout and free of visible cracks, holes, voids, foreign inclusions, or other defects that may affect the wall integrity.

- b. **Pipe Performance:** The pipe will be extruded from resin meeting the specifications of ASTM D 3350 with a minimum cell classification of 345464C.
- c. **Fittings:** HDPE fittings shall be in accordance with ASTM D 3261 and shall be manufactured by injection molding, a combination of extrusion and machining, or fabrication from HDPE pipe conforming to this specification. The fittings shall be fully pressure rated and provide a working pressure equal to that of the pipe with an included 2:1 safety factor. The fittings shall be manufactured from the same base resin type and cell classification as the pipe itself. The fittings shall be homogeneous throughout and free from cracks, holes, foreign inclusions, voids, or other injurious defects.
- d. **Molded Fittings.** Molded fittings shall be manufactured and tested in accordance with ASTM D 3261 and shall be so marked. Molded fittings shall be tested in accordance with AWWA C906.
- e. **X-Ray Inspection.** The Manufacturer shall submit samples from each molded fittings production lot to x-ray inspection.
- f. **Fabricated Fittings.** Fabricated fittings shall be made by heat fusion joining specially machined shapes cut from pipe, polyethylene sheet stock or molded fittings. Fabricated fittings shall be rated for internal pressure



"NSF-PW"  
Pipe Test Category  
Plant Code & Extruder  
Production Date  
Operator Number (Shift Letter optional)  
Resin Supplier Code

10. Pipe Packaging, Handling, & Storage: The manufacturer shall package the pipe in a manner designed to deliver the pipe to the project neatly, intact, and without physical damage. The transportation carrier shall use appropriate methods and intermittent checks to insure the pipe is properly supported, stacked, and restrained during transport such that the pipe is not nicked, gouged, or physically damaged. Pipe shall be stored on clean, level ground to prevent undue scratching or gouging. If the pipe must be stacked for storage, such stacking shall be done in accordance with the pipe manufacturer's recommendations. The pipe shall be handled in such a manner that it is not pulled over sharp objects or cut by chokers or lifting equipment. Sections of pipe having been discovered with cuts or gouges in excess of 10% of the pipe wall thickness shall be cut out and removed. The undamaged portions of the pipe shall be rejoined using the heat fusion joining method. Fused segments of pipe shall be handled so as to avoid damage to the pipe. Chains or cable type chokers must be avoided when lifting fused sections of pipe. Nylon slings are preferred. Spreader bars are recommended when lifting long fused sections.
  
11. Testing:
  - a. Fusion Quality. The Contractor shall ensure the field set-up and operation of the fusion equipment, and the fusion procedure used by the Contractor's fusion operator while on site. Upon request by the Owner, the Contractor shall verify field fusion quality by making and testing a trial fusion. The trial fusion shall be allowed to cool completely; then test straps shall be cut out and bent strap tested in accordance with ASTM D 2657. If the bent strap test of the trial fusion fails at the joint, the field fusions represented by the trial fusion shall be rejected. The Contractor at his expense shall make all necessary corrections to equipment, set-up, operation and fusion procedure, and shall re-make the rejected fusions.
  
  - b. Hydro-Test: Pipelines shall be tested to the requirements and specifications of the engineer of record. HDPE pressure pipe shall be tested in accordance with the specifications and requirements of the engineer of record and/or with the manufacturer's recommendations. The pressure rating of the pipe is a function of temperature at the time of hydro-test. Refer to the manufacturer's temperature related pressure ratings. At a minimum and if not specified elsewhere, hydro-test the piping system at 1.5 times the pressure rating of the pipe for 2 to 3 hours per Driscopipe Technical Note #35. If a system component such as a fabricated or mechanical fitting has a pressure rating less than that of the pipe, the piping system should be pressure tested to manufacturer's guidelines on that component.

## 2.04 COUPLING AND ADAPTORS

- A. Flexible couplings shall be of the sleeve type with a middle ring, two wedge shaped resilient gaskets at each end, two follower rings, and a set of steel trackhead bolts. The middle ring shall be flared at each end to receive the wedge portion of the gaskets. The follower rings shall confine the outer ends of the gaskets, and tightening of the bolts shall cause the

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follower rings to compress the gaskets against the pipe surface, forming a leak-proof seal. Flexible couplings shall be steel with minimum wall thickness of the middle ring or sleeve installed on pipe being 5/16-inch for pipe smaller than 10 inches, 3/8-inch for pipe 10 inches or larger. The minimum length of the middle ring shall be 5-inches for pipe sizes up to 10 inches and 7 inches for pipe 10 inches to 30 inches. The pipe stop shall be removed. Gaskets shall be suitable for 250 psi pressure rating or at rated working pressure of the connecting pipe. Couplings shall be harnessed and be designed for 250 psi.

- B. Flanged adapters shall have one end suitable for bolting to a pipe flange and the other end of flexible coupling similar to that described hereinbefore. All pressure piping with couplings or adapters shall be harnessed with full threaded rods spanning across the couplings or adapters. The adapters shall be furnished with bolts of an approved corrosion resistant steel alloy, extending to the adjacent pipe flanges. Flanges on flanged adapter (unless otherwise indicated or required) shall be faced and drilled ANSI B16.1 Class 125.
- C. Flexible couplings and flanged adapters shall be as manufactured by Dresser, Rockwell, or equal, per the following, unless otherwise specified and/or noted on the Drawings:
- D. Steel couplings for joining same size, plain-end, steel, cast iron, and PVC plastic pipe.

<u>Dresser</u>	<u>Rockwell</u>
Style 138	411

- E. Transition couplings for joining pipe of different outside diameters-

<u>Dresser</u>	<u>Rockwell</u>
Style 162 (4"-12")	413 steel (2"-24")
Style 62 (2"-24")	415 steel (6"-48")
	433 cast (2"-16")
	435 cast (2"-12")

- F. Flanged adapters for joining plain-end pipe to flanged pipe, fittings, valves and equipment.

<u>Dresser</u>	<u>Rockwell</u>
Style 127 cast (3"-12")	912 cast (3"-12")
Style 128 steel (3"-48" C.I. Pipe)	913 steel (3" and larger)
Style 128 steel (2"-96" steel pipe)	

**2.05 DETECTABLE UNDERGROUND UTILITY WARNING TAPES**

- A. Detectable underground utility warning tapes which can be located from the surface by a pipe detector shall be installed directly above nonmetallic (PVC, polyethylene, concrete) pipe.
- B. The tape shall consist of a minimum thickness 0.35 mils solid aluminum foil encased in a protective inert plastic jacket that is impervious to all known alkalis, acids, chemical reagents and solvents found in the soil.
- C. The minimum overall thickness of the tape shall be 5.5 mils and the width shall not be less than 2" with a minimum unit weight of 2-1/2 pounds/1" x 1,000'. The tape shall be color coded and imprinted with the legend as follows:

<u>Type of Utility</u>	<u>Color Code</u>	<u>Legend</u>
Water	Blue	Caution Buried Water Line Below

- D. Detectable underground tape shall be "Detect Tape" as manufactured by Allen Systems, or equal.
- E. Installation of detectable tapes shall be per manufacturer's recommendations and shall be as close to the grade as is practical for optimum protection and detectability. Allow a minimum of 18" between the tape and the line.
- F. Payment for detectable tapes shall be included in the linear foot price bid of the appropriate bid item(s) unless it is listed as a separate payment item in the bid schedule.

**2.06 TRACER WIRE**

- A. Tracer wire shall be 12 gauge copper wire with 30-mil polyethylene jacket. Tracer wire shall be installed with all buried piping, "duct" taped to top of pipe.
- B. Split Bolt connectors are required when connecting two (2) pieces of tracer wire. Wire and connector shall be wrapped with electrical tape.
- C. Tracer wire shall be brought up into locator boxes with grounding devices. Locator boxes shall be valve boxes with a polystyrene donut that fits around the box to serve as a termination point for tracer wire. Locator boxes shall be installed at a maximum of 3000 linear feet apart, or where shown on the Drawings.
- D. Payment for tracer wire and boxes shall be included in the linear foot price bid of the appropriate bid item(s) unless it is listed as a separate payment item in the bid schedule.

**2.07 CONCRETE PIPE ANCHORS, THRUST BLOCKS, CRADLE OR ENCASEMENT**

- A. Where indicated on the Drawings, required by the Specifications or as directed by the Engineer, concrete pipe anchors, thrust blocks, cradles or encasements shall be installed.
- B. Concrete shall be 3,500 psi, and reinforcing bars shall be installed as indicated on the details.

**2.08 CONNECTION OF NEW WATER MAINS TO EXISTING SYSTEM**

- A. The Contractor shall connect the new water main to existing water main where shown on the Drawings or directed by the Engineer, and shall furnish all necessary equipment and materials required to complete the connection.

**2.09 POLYETHYLENE (PE) TUBING**

- A. Customer service tubing, sizes 3/4-inch and 1-inch, shall be Polyethylene (PE) DR-9 (200 psi) and conform to AWWA C901, ASTM F 741 with a pipe designation of PE 3408 defined per ASTM D 3035 for IPS sizes and ASTM D 2737 for CTS sizes.

**2.10 CUSTOMER SERVICE RELOCATIONS AND RE-CONNECTIONS**

Where water service lines are disturbed, the Contractor shall reconnect the existing service line to the new water main. The Contractor shall furnish and install the necessary piping, couplings, fittings, etc. necessary to complete the service line re-connection.

- A. Service Lines Not Crossing a Road
  - 1. Unless indicated otherwise on the plans, all service lines shall be of PE tubing.
  - 2. Water service connections shall be made in accordance with the details shown on the Drawings and/or set forth herein. Locations of the various sizes shall be as directed by the Engineer and as shown on the Drawings.
- B. Service Lines Crossing a County Road or City Streets
  - 1. Same as subparagraph A, except that in general all pipe may be jacked beneath certain paved or blacktopped city streets or county roads, unless solid rock prevents using this method in which case, the open trench method will be used. Schedule 40 steel pipe shall be used as casing pipe unless otherwise indicated by the plans. The open trench method generally will be used on all unpaved city streets, county roads and private driveways. In general, blacktopped private driveways shall also be jacked under. In all cases where lines are under traffic, a minimum cover of thirty-six (36) inches shall be provided. All backfill shall be compacted by air tampers in layers no greater than 6-inch depth. Specific instructions as to the type of crossing to be installed will be shown on the plans.
- C. Service Lines Crossing a State Highway
  - 1. Services shall be jacked or pushed under paving. If solid rock is encountered, trench will be open-cut, pipe placed and backfilled all in accordance with current requirements of the State Highway Department or the crossing will be relocated to permit boring or jacking. Specific details will be shown on the plans. Where required on the plans or by the ENGINEER service pipe shall be encased under highways. Schedule 40 steel pipe shall be used as casing pipe unless otherwise indicated by the plans.
- D. Existing Galvanized Iron Services
  - 1. All galvanized services are to be replaced in their entirety, including service piping from the main to the meter, corporation stops, water meters, meter setters, meter boxes, and service piping five (5) feet past the meter. Service connections shall be made in accordance with the details shown on the Drawings and/or set forth herein.

## 2.11 CORPORATION STOPS AND FITTINGS FOR HOUSE SERVICE RECONNECTIONS

- A. Corporation stops, of the size required, shall be tapped directly into the water main for Ductile Iron Pipe or by the use of a tapping saddle for PVC pipe.
- B. Corporation stops shall have AWWA C800-66 C.S. threaded inlet. Outlets shall be suitable for the type of service piping furnished and laid, and the Contractor shall verify compatibility with "iron pipe size" or "copper tubing size" service piping as required before ordering stops.
- C. Corporation stops shall match the listed manufacturer listed in SECTION 012500 – PRODUCTS & SUBSTITUTIONS or Owner and Engineer approved equal.
- D. Fittings shall be brass.

## PART 3 - EXECUTION

### 3.01 EXCAVATION FOR PIPELINE TRENCHES

- A. Unless otherwise directed by the Engineer, trenches in which pipes are to be laid shall be excavated in open cut to the depths required by field conditions or as specified by the Engineer. In general this shall be interpreted to mean that machine excavation in earth shall not extend below an elevation permitting the pipe to be properly bedded. Installation shall be in accordance with ANSI/AWWA C600 for ductile iron and Cast Iron O.D. (AWWA) PVC pipe or ASTM F-645 for Iron Pipe O.D. (ASTM) PVC pipe except as modified herein.
- B. If the foundation is good firm earth and the machine excavation has been accomplished as set out hereinbefore, the remainder of the material shall be excavated by hand, then the earth pared or molded to give full support to the lower quadrant of the barrel of each pipe. Where bell and spigot is involved, bell holes shall be excavated during this latter operation to prevent the bells from being supported on undisturbed earth. If for any reason the machine excavation in earth is carried below an excavation that will permit the type of bedding specified above, then a layer of granular material shall be placed so that the lower quadrant of the pipe will be securely bedded in compact granular fill.
- C. Excavation may be undercut to a depth below the required invert elevation that will permit laying the pipe in a bed of granular material to provide continuous support for the bottom quadrant of the pipe. When this method is used, the bedding shall be as set out in Paragraph 3.02 hereinafter.
- D. Trenches shall be of sufficient width to provide free working space on each side of the pipe and to permit proper backfilling around the pipe, but unless specifically authorized by the Engineer, trenches shall in no case be excavated or permitted to become wider than 2'-0" plus the nominal diameter of the pipe at the level of or below the top of the pipe. If the trench does become wider than 2'-0" at the level of or below the top of the pipe, special precaution may be necessary, such as providing compacted, granular fill up to top of the pipe or providing pipe with additional crushing strength as determined by the Engineer after taking into account the actual trench loads that may result and the strength of the pipe being used. The Contractor shall bear the cost of such special precautions as are necessary.

- E. All excavated materials shall be placed a minimum of two feet (2') back from the edge of the trench.
- F. Before laying the pipe, the trench shall be opened far enough ahead to reveal obstructions that may necessitate changing the line or grade of the pipeline.
- G. The trench shall be straight and uniform so as to permit laying pipe to lines and grades given by the Engineer. It shall be kept free of water during the laying of the pipe and until the pipeline has been backfilled. Removal of trench water shall be at the Contractor's expense. Dry conditions shall be maintained in the excavations until the backfill has been placed. During the excavation, the grade shall be maintained so that it will freely drain and prevent surface water from entering the excavation at all times. When directed by Owner, temporary drainage ditches shall be installed to intercept or direct surface water which may affect work. All water shall be pumped or drained from the excavation and disposed of in a suitable manner without damage to adjacent property or to other work.
- H. Minimum cover of 30" shall be provided for all pipelines, except those located in the State Highway Right of Way. Those shall have a minimum cover of 42".

### 3.02 PIPE BEDDING

- A. All pipe shall be supported on a bed of granular material, unless the trench has been prepared in accordance with Paragraph 3.1B. In no case shall pipe be supported directly on rock. Bedding shall not be a separate pay item unless otherwise set out in the Detailed Specifications. Bedding shall be provided in earth bottom trenches, as well as rock bottom trenches. Bedding material shall be free from large rock, foreign material, frozen earth, and shall be acceptable to the Engineer. Bedding shall be a minimum of 6" below pipe barrel.
- B. In all cases the foundation for pipes shall be prepared so that the entire load of the backfill on top of the pipe will be carried on the barrel of the pipe so that none of the load will be carried on the bells.
- C. Where flexible pipe is used, the bedding shall be placed up to at least the spring line (horizontal center line) of the pipe. The bedding material and procedures shall conform to ASTM D 2321 and any Technical Specifications set out hereinafter. If conditions warrant, the Engineer may require the bedding to be placed above the springline of the pipe. Granular bedding shall be Size #9-m or ASTM C 33, Size #7 crushed stone, fine gravel, or sand, and is not a separate pay item.
- D. Where undercutting and granular bedding is involved it shall be of such depth that the bottom of the bells of the pipe will be at least three inches above the bottom of the trench as excavated. Undercutting is not a separate pay item.
- E. In wet, yielding mucky locations where pipe is in danger of sinking below grade or floating out of line or grade, or where backfill materials are of such a fluid nature that such movements of the pipe might take place during the placing of the backfill, the pipe must be weighted or secured permanently in place by such means as will prove effective. When ordered by the Engineer, yielding and mucky materials in subgrades shall be removed below ordinary trench depth in order to prepare a proper bed for the pipe. Crushed stone or other such granular material, if necessary, as determined by the Engineer to replace poor subgrade material, shall be a separate pay item and classified as "Special Granular Fill". Removal of poor material is not a separate pay item.
- F. Installation shall be in accordance with ASTM D 2321 except as modified hereinafter.

### 3.03 SPECIAL GRANULAR FILL

- A. As noted in Paragraph 3.2E, granular material for "Special Granular Fill" when directed by the Engineer shall be Department of Transportation crushed limestone, Size #57. Payment for "Special Granular Fill" must have approval from the Engineer prior to installation.

### 3.04 LAYING PIPE

- A. The laying of pipe in finished trenches shall be commenced at the lowest point so the spigot ends point in the direction of flow.
- B. All pipes shall be laid with ends abutting and true to line and grade as given by the Engineer. Supporting of pipes shall be as set out hereinbefore under "Pipe Bedding" and in no case shall the supporting of pipes on blocks be permitted.
- C. Before each piece of pipe is lowered into the trench, it shall be thoroughly inspected to insure that it is clean. Each piece of pipe shall be lowered separately unless special permission is given otherwise by the Engineer. No piece of pipe or fitting which is known to be defective shall be laid or placed in the lines. If any defective pipe or fitting shall be discovered after the pipe is laid, it shall be removed and replaced with a satisfactory pipe or fitting without additional charge. In case a length of pipe is cut to fit in a line it shall be so cut as to leave a smooth end at right angles to the longitudinal axis of the pipe.
- D. Pipe shall not be laid on solid rock. A pad of granular material as specified in Paragraph 3.02 "Pipe Bedding", shall be used as a pipe bedding. Pipe bedding is not a separate pay item. Irregularities in subgrade in an earth trench shall be corrected by use of granular material.
- E. When ordered by the Engineer, unsuitable materials in subgrades shall be removed below ordinary trench depth in order to prepare a proper bed for the pipe.
- F. When laying of pipe is stopped for any reason, the exposed end of such pipe shall be closed with a plywood or fabricated plug fitted into the pipe bell, so as to exclude earth or other material, and precautions taken to prevent flotation of pipe by runoff into trench.
- G. No backfilling (except for securing pipe in place) over pipe will be allowed until the Engineer has had an opportunity to make an inspection of the joints, alignment and grade, in the section laid.

### 3.05 BACKFILLING PIPELINE TRENCHES

- A. Backfilling of pipeline trenches shall be accomplished as shown on the Drawings and with details set forth hereinafter. Before final acceptance, the Contractor will be required to level off all trenches or to bring the trench up to grade. The Contractor shall also remove from roadways, rights-of-way and/or private property all excess earth or other materials resulting from construction. In the event that pavement is not placed immediately following trench backfilling in paved areas, the Contractor shall be responsible for maintaining the trench surface in a level condition at proper pavement grade at all times. Under pavement, all trench backfill shall be in accordance with Method C as shown on the Detail Drawings. All other trench backfill shall be in accordance with Method A or B.
- B. Method "A" - Backfilling in Open Terrain:  
  
Backfilling of pipeline trenches in open terrain shall be accomplished in the following manner:

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1. The lower portion of the trench, from the pipe bedding to a point 12" above the top of the pipe, shall be backfilled with material free from rock and/or material acceptable to the Engineer. This material shall be placed in a manner approved by the Engineer, and shall be carefully compacted to avoid displacement of the pipe. Compaction shall be accomplished by hand-tamping or by approved mechanical methods.
2. The upper portion of the trench above the compacted portion shall be backfilled with material which is free from large rock. Incorporation of rock having a volume exceeding one-half cubic foot is prohibited. Backfilling this portion of the trench may be accomplished by any means approved by the Engineer. The trench backfill shall be heaped over or leveled as directed by the Engineer.

C. Method "B" - Backfilling Under Sidewalks & Unpaved Driveways:

Backfilling of pipeline trenches under sidewalks and unpaved driveways shall be accomplished in the following manner.

1. The lower portion of the trench, from the pipe bedding to a point 12 inches above the top of the pipe, shall be backfilled with material free from rock and/or material acceptable to the Engineer. This material shall be placed in a manner to avoid displacement of the pipe. Compaction shall be accomplished by hand-tapping or by approved mechanical methods.
2. The middle portion of the trench, from a point 12" above the top of the pipe to a point 6" below the grade line, shall be backfilled with material free from rock and/or acceptable to the Engineer. This material shall be placed and compacted in layers of approximately 6 inches. Water (puddling) may be used as required to obtain maximum compaction.
  - a. Upon approval of the Engineer, the Contractor may backfill the middle portion of the trench with crushed stone, fine gravel, or sand in lieu of materials which require compaction.
3. The upper portion of the trench shall be temporarily backfilled and maintained with crushed stone or gravel until such time as the sidewalk is constructed or the driveway surface is restored.

D. Method "C" - Backfilling Under Streets, Roads, and Paved Driveways:

Backfilling of pipeline trenches under streets, roads and paved driveways shall be accomplished in the following manner:

1. The lower portion of the trench from the pipe bedding to a point 6" below the bottom of the pavement or concrete sub-slab, shall be backfilled with # 9 crushed stone.
2. The upper portion of the trench, from a point 6" below the bottom of the pavement or concrete sub-slab to grade, shall be backfilled with a base course of dense graded aggregate. At such time that pavement replacement is accomplished, the excess base course shall be removed as required.

- E. Trenches outside existing sidewalks, driveways, streets, and highways shall be backfilled in accordance with Method "A". Trenches within the limits of sidewalk and unpaved driveways shall be backfilled in accordance with Method "B". Trenches within the paving limits of existing streets, highways and driveways shall be backfilled in accordance with Method "C". All methods are shown on the Detail Drawings. When directed by the Engineer, the Contractor shall wet backfill material to assure maximum compaction.

1. Before final acceptance, the Contractor will be required to level off all trenches or to bring the trench up to grade. The Contractor shall also remove from roadways, rights-of-ways and/or private property all excess earth or other materials resulting from construction.
2. In the event that pavement is not placed immediately following trench backfilling in streets and highways, the Contractor shall be responsible for maintaining the trench surface in a level condition at proper pavement grade at all times.

### **3.06 SETTLEMENT OF TRENCHES**

- A. Whenever lines are in, or cross, driveways and streets, the Contractor shall be responsible for any trench settlement which occurs within these rights-of-way within one (1) year from the time of final acceptance of the work. If paving shall require replacement because of trench settlement within this time, it shall be replaced by the Contractor at no extra cost to the Owner. Repair of settlement damage shall meet the approval of the Owner.

### **3.07 CONCRETE THRUST BLOCKS, CRADLE, ANCHORS OR ENCASEMENT**

- A. Concrete thrust blocks, cradle, anchors or encasement shall be placed where shown on the Drawings, required by the Specifications, or as directed by the Engineer.
- B. For cradle and encasement, concrete shall be 3000 psi and shall be mixed sufficiently wet to permit it to flow under the pipe to form a continuous bed.
- C. For thrust blocks and anchors, concrete shall be 3000 psi, and shall be formed or be sufficiently stiff to maintain the forms indicated on the Details.
- D. In tamping concrete, care shall be taken not to disturb the grade or line of the pipe or injure the joints. Concrete placed outside the specified limits or without authorization from the Engineer will not be subject to payment.
- E. Water mains shall have concrete thrust or "kicker" blocks at all pipe intersections and changes of direction to resist forces acting on the pipeline. All reducers (increasers) shall be anchored.

### **3.08 BITUMINOUS CONCRETE HIGHWAY, STREET AND DRIVEWAY REPLACEMENT**

- A. The Contractor shall replace those sections of existing roads, streets and driveways required to be removed to install the pipe lines under this contract. He shall construct same to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition than that which existed prior to the operations.
- B. Prior to trenching, the pavement shall be scored or cut to straight edges at least twelve (12) inches outside each edge of the proposed trench to avoid unnecessary damage to the remainder of the paving. Edges of the existing pavement shall be re-cut and trimmed to square, straight edges after the pipeline has been installed and prior to placing the new base and pavement.
- C. Backfilling of the trench shall be in accordance with Method "C" as described hereinbefore. Base course for the paving shall be dense graded crushed limestone furnished and placed in accordance with the current requirements of the Standard Specifications for Road and Bridge Construction of the Department of Transportation, to a depth of six (6) inches in roads and streets and four (4) inches in driveways.

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- D. A subslab of reinforced concrete shall be placed for state maintained highways as indicated on the Drawings. The subslab shall have a minimum thickness of 6 inches. Concrete for the subslab shall be 3000 psi, in accordance with the Details shown on the Drawings.

**3.09 UNPAVED DRIVEWAY (CRUSHED STONE) SURFACE REPLACEMENT**

- A. The Contractor shall replace those sections of existing driveways and parking areas required to be removed to install the pipe lines under this contract. He shall construct same to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition than that which existed prior to the operations.
- B. Material for backfilling of the pipeline trench shall be dense-graded aggregate in accordance with Method "B" as described hereinbefore.

**3.10 REMOVING AND REPLACING CONCRETE CURB AND GUTTER OR SIDEWALK**

- A. The Contractor shall remove the curb and gutter or sidewalk when encountered when required for laying the pipe. Only that portion of the curb and gutter or sidewalk needed to lay the pipe shall be removed.
- B. Where concrete curb and gutter or sidewalk is removed or disturbed during the construction work, it shall be replaced, using 3000 psi concrete, in fully as good or better condition than that which existed prior to the Contractor's operation.

**3.11 REPLACEMENT OF EXISTING MAIL BOXES, CULVERTS, CLOTHES LINE POSTS, FENCES AND OTHER SUCH FACILITIES**

- A. Existing mail boxes, drainage culverts, clothes line posts, fences and the like shall not be damaged or disturbed unless necessary, in which case, they shall be replaced in as good condition as found as quickly as possible. Existing materials shall be reused in replacing such facilities when materials have not been damaged by the Contractor's operations. Existing facilities damaged by Contractor's operation shall be replaced with new materials of the same type at the Contractor's expense. Work in this category is not a pay item.
- B. Replacement of paved drainage ditches within highway right-of-way shall be accomplished in accordance with Department of Transportation specifications.

**3.12 PORTLAND CEMENT CONCRETE DRIVEWAY REPLACEMENT**

- A. Wherever Portland cement concrete driveways are removed, they shall be reconstructed to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition than existed prior to the operation.
- B. The existing concrete paving shall be sawed or cut to straight edges 12-inches outside the edges of the trench or broken out to an existing joint, as directed by the Engineer. The concrete pavement shall be equal to the existing pavement thickness but not less than 6-inches in thickness for driveways.
- C. Pavement shall be reinforced with 6 x 6 #10-10 wire mesh and shall be constructed with 3000 psi concrete.

### **3.13 RIP-RAP STREAM BANK SLOPE PROTECTION**

- A. The Contractor shall install rip-rap stream bank slope protection at locations directed by the Engineer. Rip-rap slope protection shall be 12-inches thick and shall meet State D.O.T. Standard Specifications.

### **3.14 TESTING**

- A. All pressure piping (lines not laid to grade) shall be given a hydrostatic test of at least 1.5 times the normal operating pressure of the pipe (at its lowest elevation), but not to exceed the rated working pressure of the pipe or valves. Note: Engineer shall verify test pressure. Loss of pressure during the test shall not exceed 0 psi in a 4 hour period and 5 psi in a 24 hour period. Any test results that do not meet either of these requirements shall constitute a failure of the pressure test.
- B. Leakage in pipelines, when tested under the hydrostatic test described above, shall not exceed 10 gallons per 24 hours per inch of diameter per mile of pipe.
- C. Contractor shall furnish a recording gauge and water meter for measuring water used during leakage test and recording pressure charts during duration of test. Recording pressure charts shall be turned over to the Engineer at conclusion of tests. The pressure recording device shall be suitable for outside service, with a range from 0-200 psig, 24- hour spring wound clock, designed for 9-inch charts, and shall be approved by the Engineer.
- D. Pipelines shall be tested before backfilling at joints except where otherwise required by necessity or convenience.
- E. Duration of test shall be not less than four (4) hours where joints are exposed and not less than 24 hours where joints are covered.
- F. Where leaks are visible at exposed joints, evident on the surface where joints are covered, and/or identified by isolating a section of pipe, the joints shall be repaired and leakage must be minimized, regardless of total leakage as shown by test.
- G. All pipe, fittings, valves, and other materials found to be defective under test shall be removed and replaced at no additional expense to the Owner.
- H. Lines which fail to meet tests shall be repaired and retested as necessary until test requirements are complied with.
- I. Where nonmetallic joint compounds are used, pipelines should be held under normal operating pressure for at least three days before testing.
- J. The Owner will provide initial water for testing the pressure piping. Should the first test fail to pass, all additional water required for subsequent tests shall be furnished at the Contractor's expense.
- K. The cost of testing of pressure piping is incidental and is to be included in the Contractor's unit Contract Price.

### **3.15 CLEAN UP**

- A. Upon completion of installation of the piping and appurtenances, the Contractor shall remove all debris and surplus construction materials resulting from the Work. The

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Contractor shall grade the ground along each side of pipe trenches in a uniform and neat manner leaving the construction area in a shape as near as possible to the original ground line.

### **3.16 DISINFECTION OF POTABLE WATER LINES**

- A. The new potable waterlines shall not be placed in service—either temporarily or permanently—until they have been thoroughly disinfected in accordance with AWWA Standard C651-05, 2005 and to the satisfaction of the Engineer.
- B. After testing, a solution of hypochlorite using HTH or equal shall be introduced into the section of the line being disinfected sufficient to insure a chlorine dosage of at least 50 ppm in the main. While the solution is being applied, the water should be allowed to escape at the ends of the line until tests indicate that a dosage of at least 50 ppm has been obtained throughout the pipe. Open and close all valves and cocks while chlorinating agent is in the piping system. The chlorinated water shall be allowed to remain in the pipe for 24 hours, after which a residual of at least 25 ppm shall be obtained. The disinfection shall be repeated until 25 ppm is obtained after which time the main shall be thoroughly flushed until the residual chlorine content is not greater than 1.0 ppm, and then may be connected to the system. Also, no additional payment will be allowed for providing taps for chlorine injection and/or flushing, if necessary. The Contractor is responsible for the disposal of highly chlorinated water flushed from the main.
- C. The new water line shall not be put into service until bacteriological samples taken at the points specified herein are examined and shown to be negative after disinfection, following the requirements of "Standard Methods for Examination of Water and Wastewater". Two consecutive sets of acceptable samples, taken at least 24 hours apart shall be collected from the new line. Samples are to be taken and tested at every 1200 feet of new water line, at each branch and at each dead end.
- D. If trench water has entered the pipe, or excessive quantities of dirt or debris have entered the pipe, samples shall be taken at intervals of approximately 200 feet and the locations identified. Samples shall be taken of water that has stood in the new line for at least 16 hours after flushing is completed.
- E. If the initial disinfection does not produce satisfactory bacteriological results, the new line shall be refushed and resampled. If samples fail, the line shall be rechlorinated by the continuous-feed or slug method until satisfactory results are obtained.
- F. All testing documentation shall be submitted to the Owner.

- END OF SECTION -



**SECTION 331419**  
**VALVES & HYDRANTS**

**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. Provide all labor, materials, equipment and services required for furnishing and installing all hydrants and appurtenances specified herein.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. SECTION 312200 – GRADING
- B. SECTION 331413 – WATER DISTRIBUTION PIPING

**1.03 SUBMITTALS**

- A. Submit shop drawings and product data in accordance with DIVISION 01 of this specification.
- B. Descriptive literature, catalog cuts, and dimensional prints clearly indicating all dimensions and materials of construction, shall be submitted on all items specified herein to the Engineer for review before ordering.
- C. At the time of submission, the Contractor shall, in writing, call Engineer's attention to any deviations that the submittals may have from the requirements of the Engineer's Contract Drawings & Specifications.

**PART 2 - PRODUCTS**

**2.01 FLUSHING HYDRANTS**

- A. The Contractor shall furnish and install fire hydrants and auxiliary gate valves where shown on the Drawings or directed by the Engineer. Hydrants shall conform in all respects to the most recent requirements of AWWA C502. Hydrant barrel shall have safety breakage feature above the ground line. All flushing hydrant, type 1 shall have 6-inch mechanical joint shoe connection, two (2) 2-1/2-inch discharge nozzles, and one (1) 4 1/2-inch pumper nozzle with rubber gasketed caps fitted with cap chains. All Flushing Hydrant, Type 2 shall have a 6-inch mechanical joint shoe connection and two (2) 2-1/2-inch discharge nozzles with rubber gasketed caps fitted cap chains. Cap nuts are to be five (5) sided. Connection threads shall be National Standard Thread. Main valve shall have 5-1/4-inch full opening and be of the compression type opening against water pressure so that valve remains closed should barrel be broken off.
- B. Hydrants shall be fully bronze mounted. Main valve shall have a threaded bronze seat ring assembly of such design that it is easily removable by unscrewing from a threaded bronze drain ring. Bronze drain ring shall have multiple ports providing positive automatic drainage as the main valve is opened or closed. Drainage waterways shall be completely bronze to prevent rust and corrosion.

- C. The operating nut shall be five (5) sided bronze or bronze with a five (5) sided ductile iron cap, and mounted so that a counter clockwise motion will open the valve. There must be cast on top an arrow and the word "Open" indicating the direction of turn to open the hydrant.
- D. Operating stem shall be equipped with anti-friction thrust bearing to reduce operating torque and assure easy opening. Stop shall be provided to limit stem travel. Stem threads shall be enclosed in a permanently sealed lubricant reservoir protected from weather and the waterway with O-ring seals.
- E. Hydrants shall be shop tested to 300 psi pressure with main valve both opened and closed. Under test the valve shall not leak, the automatic drain shall function and there shall be no leakage into the bonnet.
- F. Type of shoe connection shall be mechanical joint and size shall be six inches (6").
- G. Hydrants shall be given two (2) coats of enamel high visibility paint to be selected by the Owner.
- H. Hydrants shall be provided as described in DIVISION 01.

## **2.02 GATE VALVES**

- A. Gate valves shall conform with AWWA C-509 standard, and shall be of the resilient seat type, iron body, fully bronze mounted, non-rising stem and have a design working pressure of 250 psi. All assembly bolts shall be stainless steel. Valves shall be of standard manufacturer and of the highest quality both as to materials and workmanship.
- B. All gate valves shall be furnished with mechanical joint connections, unless otherwise shown on the Drawings or specified hereinafter.
- C. An epoxy coating conforming to AWWA C-550 shall be applied to the interior and exterior ferrous surfaces of the valve except for finished or seating surfaces.
- D. All gate valves shall have the name or monogram of the manufacturer, the year the valve casting was made, the size of the valve, and the working water pressure cast on the body of the valve.
- E. Gate valves 12" and smaller shall be installed in a vertical position. Gate valves greater than 12" shall have the bonnet mounted in the horizontal position and have a bevel gear actuator. Gate valves shall be provided with a 2-inch square operating nut and shall be opened by turning to the left (counter-clockwise). All valve operating nuts shall be set within a cast iron valve box. There shall be a maximum 48" depth of valve operating nut. Contractor must use extension stems, if necessary, to raise operator nut within 48" of final grade.

## **2.02 GATE VALVES - BURIED**

- A. Gate valves shall conform to the Specifications of Section 331219, Paragraph 2.2, except be designed for buried service, have mechanical joint ends, have all exterior surfaces shop painted with two coats of Fed. Spec. TT-V-51F Asphalt Varnish, with 2-inch square nut operator in a vertical position for use in a valve box.

### 2.03 VALVE BOXES - BURIED VALVES

- A. Valve boxes shall be of 5-1/4 inch standard cast iron, two-piece, screw type valve box with drop cover marked "WATER", "SEWER", "DRAIN", as applicable. Valve boxes for gate valves larger than 8 inches shall be three-piece. Valve boxes shall be accurately centered over valve operating nut, and backfill thoroughly tamped about them. Valve boxes shall not rest on the valves but shall be supported on crushed stone fill. They shall be set vertically and properly cut and/or adjusted so that the tops of boxes will be at grade in any paving, walk or road surface, and in grass plots, fields, woods or other open terrain. Valve boxes and covers shall be as manufactured by Tyler Corporation, Opelika Foundry, Bingham & Taylor, or equal.
- B. Wherever valve boxes fall outside of the pavement, the top of the box shall be set in a cast-in-place concrete slab 24" x 24" x 6" thick with the top of the slab and box flush with the top of the ground. This provision shall apply to all new and all existing valve boxes which fall within the limits of the contract, unless otherwise stated on the plans or ordered by the Engineer.

### 2.04 TAPPING SLEEVES AND VALVES

- A. DI tapping sleeves for use in connections to existing water lines, where indicated on the drawings or as directed by the Engineer, shall be constructed of ductile iron conforming to the requirements of ASTM A-536, and have the body of the tapping sleeve seal around the carrier pipe by use of mechanical joints on each end. Tapping outlet connections shall be flanged with drillings in accordance with ANSI class 125#/150#. Tapping sleeves shall be suitable for working pressures of 250 psi and shall be Mueller No. H-615, American Valve and Hydrant No. 2800-C, or approved equal.
- B. SST tapping sleeves for use in connections to existing water lines, where indicated on the drawings or as directed by the Engineer, shall have the body and neck constructed of ASTM A-240 type 304 stainless steel and shall be compressed to the carrier pipe by use of heavy gauge triangular sidebars running the length of the body. Bolts, nuts and washers shall be constructed of type 304 stainless steel. The gasket between the tapping sleeve and carrier pipe shall be constructed of Buna N rubber and be NSF 61 approved. The gasket shall have a grid pattern to help secure it in place and have seal around the full circumference of the pipe. Tapping outlet connections shall be constructed of ductile iron conforming to ASTM A-536 and have either a mechanical joint connection conforming to AWWA C-111, or a flanged connection with drillings in accordance with ANSI class 125#/150#. Tapping Sleeves shall be suitable for the following working pressures: 4"-12" 250 psi, 14"-24" 200 psi and shall be Mueller No. H-304, Romac Industries SST III, or approved equal.
- C. Tapping valves shall meet the requirements of paragraph 2.1 hereinbefore and shall be coordinated to connect to the tapping sleeve with either a flanged end or a mechanical joint end.
- D. All existing water mains to be tapped under this contract shall be exposed in order to verify line sizes prior to ordering tapping sleeves and valves.

## **PART 3 - EXECUTION**

### **3.01 SETTING OF FIRE HYDRANTS**

#### **A. Location:**

1. Hydrants shall be located as shown or as directed so as to provide complete accessibility and minimize the possibility of damage from vehicles or injury to pedestrians.
2. When placed behind the curb, the hydrant barrel shall be set so that the pumper or hose nozzle cap will be a minimum of five feet (5') from the back of curb.
3. When set in the lawn space between the curb and the sidewalk or between the sidewalk and the property line, no portion of the hydrant or nozzle cap shall be within six inches (6") of the sidewalk.

#### **B. Position:**

1. All hydrants shall be set plumb with not less than two (2) cubic feet of crushed stone and shall have their nozzles parallel with the roadway, with the pumper nozzle facing toward the roadway. Hydrants shall be set to the established grade, with nozzles at least eighteen inches (18") above the ground, as shown or as directed by the Engineer.

#### **C. Connection to Main:**

1. Each hydrant shall be connected to the main with a six-inch (6") restrained joint ductile iron branch controlled by an independent six -inch (6") gate valve, unless otherwise specified.

#### **D. Hydrant Drainage in Pervious Soil:**

1. Whenever a hydrant is set in soil that is pervious, drainage shall be provided at the base of the hydrant by placing uncrushed course aggregate (AAHSTO M-43) No. 57 from the bottom of the trench to at least six inches (6") above the drain opening in the hydrant and to a distance of one foot (1') around the elbow. No drainage system shall be connected to a sewer.

#### **E. Hydrant Drainage in Impervious Soil:**

1. Whenever a hydrant is set in clay or impervious soil, a drainage pit two feet (2') in diameter and three feet (3') deep shall be excavated below each hydrant and filled compactly with uncrushed course aggregate (AASHTO M-43) No. 57 under and around the elbow of the hydrant and to a level of six inches (6") above the drain opening. No drainage pit shall be connected to a sewer (see Standard Details).

### **3.02 ANCHORAGE**

- #### **A.**
- The bowl of each hydrant shall be tied to the pipe with suitable anchor couplings, as shown on the Standard Details in the Drawings or as directed by the Owner or Engineer.

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**3.03 FIRE HYDRANT WRENCHES**

- A. One (1) hydrant wrench shall be furnished for each ten (10) hydrants or less. When the number of hydrants furnished and installed exceeds twenty-five (25), one (1) hydrant repair kit shall be supplied at no additional cost to the Owner.

**3.04 INSTALLATION OF VALVES**

- A. All valves shall be installed in accordance with details on the Contract Drawings and with the manufacturer's recommendations.
- B. All valves shall be anchored in accordance with the details on the Contract Drawings.

- END OF SECTION -

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**SECTION 331900**  
**METERING EQUIPMENT**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This Section includes service pipelines constructed of CTS polyethelene tubing as shown on the Contract Drawings, complete with fittings and accessories.
- B. Certain features of the CTS tubing shall be as scheduled.
- C. The Contractor shall furnish all labor, tools, equipment, and materials necessary to complete the meter service connections as shown on the Contract Drawings and herein specified.

**1.02 REFERENCES**

- A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:
  - 1. American Society for Testing and Materials (ASTM)
  - 2. American Water Works Association (AWWA)

**1.03 SUBMITTALS**

- A. In addition to those submittals identified in the General Provisions, the following items shall be submitted:
  - 1. Manufacturer's certification that all materials furnished are in compliance with the applicable requirements of the referenced standards and this specification.
  - 2. Layout drawings showing the location of copper tube including details of the support system, sleeves, unions and appurtenances.

**PART 2 PRODUCTS**

**2.01 SERVICE CLAMPS**

All service connections of all sizes shall be made through the use of service clamps or saddles. Service saddles shall have ductile iron body, double strapped with O-ring resilient gasket, suitable for use on ductile iron pipe or PVC pipe, and tapped with same threads as the corporation stops. Saddles for all mains shall be double strap type saddles and have a maximum working pressure of 350 psi SEE SECTION 01600 MATERIAL AND EQUIPMENT for APPROVED MANUFACTURE.

**2.02 CORPORATION STOPS**

Corporation stops for use in service clamps shall be equal for 3/4", 1" and 2" service tubing and have a maximum working pressure of 350 psi. Corporation stops shall have iron pipe threads with compression coupling connection for copper tubing outlets. A rigid stainless steel insert

stiffener shall be used inside the PE tubing, when encountered. SEE SECTION 01600 MATERIAL AND EQUIPMENT for APPROVED MANUFACTURE.

### 2.03 SERVICE TUBING 3/4", 1" AND 2" POLYETHYLENE TUBING (CTS SERVICE TUBING)

- A. Pipe shall be made from virgin, ultra-high molecular weight polyethylene resin meeting the requirements of Type III, Class C, Category P34 polyethylene as defined by ASTM D-1248, latest revision, "Polyethylene Plastics Molding and Extrusion Materials". **All service tubing for Rowan Water, Inc. shall be 1" unless otherwise noted.**
- B. Dimensions and tolerances shall meet the values as listed in AWWA C-901, latest revision, "Polyethylene (PE) Pressure Pipe Tubing and Fittings". Standard dimension ratio shall be DR-7.3 (OD base), Pressure Class 200 psi.
- C. Pipe shall be rated for use with water at 73.4 degrees F. at a hydrostatic design stress of 630 psi and a maximum working pressure of 200 psi. The pipe shall sustain a water pressure as defined in ASTM D 1598 for 1000 hours with water at 73.4 degrees F.
- D. Surface shall be homogeneous inside and out and completely free of irregularity. Random testing shall be performed at intervals during all production runs to assure uniformity in all respects. The tubing shall carry the National Sanitation Foundation seal of approval for drinking water.
- E. Pipe shall be marked in lettering at intervals of not more than five (5) feet and such marking shall include nominal size; manufacturer's name or trademark; pressure rating for water at 73.4 degrees F., 200 psi; applicable ASTM specification; ASTM material specification, PE 3406; standard dimension ratio, DR-7.3; the National Sanitation Foundation Seal of Approval (NSF mark) and production code.
- F. Pipe shall be guaranteed in writing against rot, corrosion and defects for 50 years from date of installation, with pipe replacement and labor cost warranted in writing for 25 years from date of installation.

### 2.04 RESERVED

### 2.05 METER SETTING EQUIPMENT

- A. Meters shall be placed inside meter boxes using coppersettlers with 3/4" or 1" saddle nut connection for the meter. SEE SECTION 01600 MATERIAL AND EQUIPMENT for APPROVED MANUFACTURE. All coppersettlers shall have a ball angle meter valve (lockable) stop at the meter inlet and dual check valve on the outlet. coppersettlers shall be 12 inches in height with connections for the appropriate service tubing and have a maximum working pressure of 300 psi. .
- B. For larger meters (1-1/2" and 2") the meters shall be installed with ball meter valves on inlet side and the meter outlet side. Meters shall be placed on concrete block or equivalent support inside the meter box.
- C. For individual meter with pressure reducing valves or more than one meter the coppersettlers shall be the Tandem type coppersettlers as manufactured by Ford, Mueller or Engineer approved equal and 12 inches in height and placed in meter boxes with 18" I.D.
- D. A rigid stainless steel insert stiffener shall be used inside the PE tubing at all connections to the coppersettlers.

## 2.06 SERVICE METERS

The service meter main body shall be of high grade bronze, with hinges, single lid cover and raised characters cast on the body indicating the direction of flow. Meter shall have a working pressure rating of 150 psi. The register shall be straight reading gallon type. The register unit shall be hermetically sealed, and driven by permanent magnets. The register shall have a center sweep hand and a test circle shall be divided into 100 equal parts and include a flow finder. The register shall carry a minimum 10-year warranty.

The meters shall be manufactured by **BADGER (RADIO READ)**. The entire unit is to be pre-assembled in a workmanlike manner with all components fitted snugly into the box and fastened to prevent movement. All joints shall be sealed with Teflon tape. The inlet and outlet is to be equipped with compression couplings.

## 2.08 METER BOXES

Meter boxes shall be precast concrete with dimension as shown on the Drawings. The meter box where installation is to be roadways or sidewalks shall be of concrete construction for vehicular traffic. The meter box, cover and meter setting shall be constructed as shown on the drawings or as directed by the Owner or Engineer. SEE SECTION 01600 MATERIAL AND EQUIPMENT for APPROVED MANUFACTURE.

## 2.08 ACCESSORIES

### A. Fittings and Couplings

1. Fittings for copper tube shall be wrought copper or cast bronze for soldered joints and brass for flared joints.
2. Flexible couplings as shown or required for copper tube shall be flexible metal hose couplings.

### B. Joints

1. Joints for seamless copper water tube to be installed in concrete and underground shall be flared type and shall have threads in accordance with AWWA C 800.
2. Joints for seamless copper water tube and copper drainage tube installed exposed and inside structures shall be soldered.
  - a. Solder and flux used in joints of water lines, shall contain no more than 0.2% lead.
  - b. Solder shall be Tin-Silver or approved equal.
  - c. Solder flux shall be as recommended by the solder manufacturer.
3. Joints for bright annealed seamless copper tube used in liquid fuel lines shall have flared joints, approved by Underwriter's Laboratories.
4. Joints for small tubing (3/8 inch and smaller) shall be of the locking type compression fittings or soldered as shown in the piping schedule and as directed.

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION OF METER SERVICES**

All customer meter services shall be reconnected at the closest distance from the existing service line. All locations of the meters shown on the plans are approximate locations. The Owner reserves the right to change the location of the connections from the existing line to the new main.

#### **3.02 INSTALLATION OF SERVICE TUBING**

- A. All service tubing installed beneath bituminous or concrete roads shall be jacked under the roads. When State maintained roads are being jacked and rock is encountered, permission to open cut the road shall be obtained by the Contractor from the Department of Transportation's District Permit Engineer. If permission is refused, the Contractor shall attempt to jack at another location and shall continue to do so until a successful crossing is obtained.
- B. Minimum cover for all service lines shall be 36 inches (at all locations) when within the proposed and existing highway right-of-way and construction easements. Additional cover may be required at proposed drainage ditch, storm sewer, or other noted locations.

#### **3.03 BACKFILLING SERVICE TUBING**

When service tubing is laid in an open cut across a road of any type surface (crushed stone, bituminous or concrete), the backfill shall consist of Class II granular material (dense graded aggregate) and shall be placed full depth. Payment for Class II material used will not be paid as a separate pay item, but will be included in the price for installing the service tubing.

#### **3.04 INSTALLATION OF COPPER TUBING (Not Approved)**

- A. Install copper tubing, fittings, specials, and accessories in accordance with the applicable configuration shown on the Contract Drawings and the provisions of the Sections entitled "Trenching, Backfilling and Compacting" and "Pipeline Installation".
- B. Exposed copper tube shall be carefully erected and neatly arranged.
  - 1. Copper tube shall be run parallel with walls inside structures and shall be pitched to drain.
  - 2. Drain valves shall be installed at the low points of liquid filled systems.
  - 3. Valved fill connections shall be provided for closed systems.
- C. Copper tube installed for a compressed air or gas system shall be pitched in the direction of flow.
  - 1. Connections shall be at the top of the main.
  - 2. Low points of the system shall have drip pipes not less than 12 inches long and drain pet-cocks unless automatic moisture traps are shown.
- D. Unions shall be provided on copper tube systems with soldered joints.

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1. Unions shall be located at control valves, solenoid valves, moisture and steam traps, other items of connected equipment and as shown on Contract Drawings.
  2. Unions shall be of cast bronze or brass construction.
  3. Dielectric unions shall be used when connecting copper tube to ferrous metals.
- E. Copper tubing shall be supported and anchored in place by the use of copper or brass units spaced not greater than 10 feet on center and each side of each change of direction.

**3.05 FIELD TESTING AND CHLORINATION**

- A. Perform hydrostatic and leakage tests in accordance with the applicable provisions of the Section entitled "Leakage Tests", at the test pressure specified or scheduled.
- B. Disinfect piping and appurtenances in accordance with the Section entitled "Chlorination", where specified or scheduled.

-END OF SECTION-

