



CALL NO. 200

CONTRACT ID. 251029

LYON - CALDWELL COUNTIES

FED/STATE PROJECT NUMBER NHPP 0242 (080)

DESCRIPTION I-24

WORK TYPE PAVEMENT (WITH ALTERNATES)

PRIMARY COMPLETION DATE 11/15/2027

LETTING DATE: October 23,2025

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN DAYLIGHT TIME October 23,2025. Bids will be publicly announced at 10:00 AM EASTERN DAYLIGHT TIME.

NO PLANS ASSOCIATED WITH THIS PROJECT.

DBE CERTIFICATION REQUIRED - 0%

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

TABLE OF CONTENTS

PART I	SCOPE OF WORK - PROJECT(S), COMPLETION DATE(S), & LIQUIDATED DAMAGES - CONTRACT NOTES - FEDERAL CONTRACT NOTES - TRAINEES - COMPACTION OPTION A - SPECIAL NOTE(S) APPLICABLE TO PROJECT - PORTABLE QUEUE WARNING ALERT SYSTEM - PAVER MOUNTED TEMPERATURE PROFILES - ELECTRONIC DELIVERY MANAGEMENT SYSTEM (E-TICKETING) ASPHALT - ELECTRONIC DELIVERY MANAGEMENT SYSTEM (E-TICKETING) AGGREGATE - EXPERIMENTAL KYCT AND HAMBURG TESTING - DOLOMITIC POLISH-RESISTANT AGGREGATE CLASS A 0.38-IN AND 0.50-IN NOMINAL ASPHALT MIXTURES - RECYCLED ASPHALT PAVEMENT (RAP) STOCKPILE MANAGEMENT - RIGHT OF WAY CERTIFICATION - UTILITY IMPACT & RAIL CERTIFICATION NOTES - MATERIAL SUMMARY - GUARDRAIL DELIVERY VERIFICATION SHEET
PART II	SPECIFICATIONS AND STANDARD DRAWINGS - STANDARD AND SUPPLEMENTAL SPECIFICATIONS [SN-1I] PORTABLE CHANGEABLE MESSAGE SIGNS [SN-11N] LONGITUDINAL PAVEMENT JOINT ADHESIVE - INLAID PAVEMENT MARKER ARRANGEMENTS MULTI-LANE ROADWAYS - INLAID PAVEMENT MARKER ARRANGEMENT EXIT GORE AND OFF-RAMP - INLAID PAVEMENT MARKER ARRANGEMENT FOR PARALLEL DECELERATION LANE - INLAID PAVEMENT MARKER ARRANGEMENT ON-RAMP WITH PARALLEL ACCELERATION LANE - EDGE LINE RUMBLE STRIPS PLACEMENT DETAILS - RUMBLE STRIP DETAILS MULTI-LANE ROADWAYS AND RAMPS - GUARDRAIL END TREATMENT TYPE 4A - STEEL THRIE BEAM BULLNOSE TERMINAL - GUARDRAIL AND BRIDGE END DRAINAGE FOR TWIN STRUCTURES - HIGHER FINES ZONE SIGNS - SPEED ZONE SIGNING FOR WORK ZONES
PART III	EMPLOYMENT, WAGE AND RECORD REQUIREMENTS - FEDERAL-AID CONSTRUCTION CONTRACTS - FHWA 1273 - NONDISCRIMINATION OF EMPLOYEES - EXECUTIVE BRANCH CODE OF ETHICS - TRAINING SPECIAL PROVISIONS - PROJECT WAGE RATES LOCALITY 1 / FEDERAL
PART IV	BID ITEMS

PART I

SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 01

CONTRACT ID - 251029
NHPP 0242 (080)
COUNTY - CALDWELL
PCN - DE01700242518
NHPP 0242 (081)

I-24 FROM THE LYON COUNTY LINE MP 54.842 TO MP 55.498, A DISTANCE OF 0.65 MILES.PAVEMENT REHAB
WITH PAVING ALTERNATES SYP NO. 02-20062.00.
GEOGRAPHIC COORDINATES LATITUDE 0:00:00.00 LONGITUDE 0:00:00.00
ADT 22,620

COUNTY - LYON
PCN - DE07200242518
NHPP 0242 (080)

I-24 BEGINNING AT MP 45.171 EXTENDING TO MP 54.842, A DISTANCE OF 09.67 MILES.PAVEMENT REHAB
WITH PAVING ALTERNATES SYP NO. 01-20010.00.
GEOGRAPHIC COORDINATES LATITUDE 0:00:00.00 LONGITUDE 0:00:00.00
ADT 22,620

COMPLETION DATE(S):	
COMPLETED BY 11/15/2026	INTERMEDIATE - SEE SPECIAL NOTE
COMPLETED BY 11/15/2027	CONTRACT - SEE SPECIAL NOTE

CONTRACT NOTES

INSURANCE

Refer to Kentucky Standard Specifications for Road and Bridge Construction, current edition.

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) 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 email to 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/construction-procurement). 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 state agency certifies that it is in compliance with the provisions of KRS 45A.150, "Access to contractor's books, documents, papers, records, or other evidence directly pertinent to the contract." The Contractor, as defined in KRS 45A.030, 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 agreement for the purpose of financial audit or program review. 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. Records and other prequalification information confidentially disclosed as part of the bid process shall not be deemed as directly pertinent to the agreement and shall be exempt from disclosure as provided in KRS 61.878(1)(c).

BOYCOTT PROVISIONS

If applicable, the contractor represents that, pursuant to [KRS 45A.607](#), they are not currently engaged in, and will not for the duration of the contract engage in, the boycott of a person or an entity based in or doing business with a jurisdiction with which Kentucky can enjoy open trade. **Note:** The term Boycott does not include actions taken for bona fide business or economic reasons, or actions specifically required by federal or state law.

If applicable, the contractor verifies that, pursuant to KRS 41.480, they do not engage in, and will not for the duration of the contract engage in, in energy company boycotts as defined by KRS 41.472.

LOBBYING PROHIBITIONS

The contractor represents that they, and any subcontractor performing work under the contract, have not violated the agency restrictions contained in [KRS 11A.236](#) during the previous ten (10) years, and pledges to abide by the restrictions set forth in such statute for the duration of the contract awarded.

The contractor further represents that, pursuant to [KRS 45A.328](#), they have not procured an original, subsequent, or similar contract while employing an executive agency lobbyist who was convicted of a crime related to the original, subsequent, or similar contract within five (5) years of the conviction of the lobbyist.

Revised: 1/1/2025

1.0 BUY AMERICA REQUIREMENT.

Follow the “Buy America” provisions as required by 23 U.S.C. § 313 and 23 C.F.R. § 635.410. Except as expressly provided herein all manufacturing processes of steel or iron materials including but not limited to structural steel, guardrail materials, corrugated steel, culvert pipe, structural plate, prestressing strands, and steel reinforcing bars shall occur in the United States of America, including the application of:

- Coating,
- Galvanizing,
- Painting, and
- Other coating that protects or enhances the value of steel or iron products.

The following are exempt, unless processed or refined to include substantial amounts of steel or iron material, and may be used regardless of source in the domestic manufacturing process for steel or iron material:

- Pig iron,
- Processed, pelletized, and reduced iron ore material, or
- Processed alloys.

The Contractor shall submit a certification stating that all manufacturing processes involved with the production of steel or iron materials occurred in the United States.

Produce, mill, fabricate, and manufacture in the United States of America all aluminum components of bridges, tunnels, and large sign support systems, for which either shop fabrication, shop inspection, or certified mill test reports are required as the basis of acceptance by the Department.

Use foreign materials only under the following conditions:

- 1) When the materials are not permanently incorporated into the project; or
- 2) When the delivered cost of such materials used does not exceed 0.1 percent of the total Contract amount or \$2,500.00, whichever is greater.

The Contractor shall submit to the Engineer the origin and value of any foreign material used.

2.0 – BUILD AMERICA, BUY AMERICA (BABA)

Contractor shall comply with the Federal Highway Administration (FHWA) Buy America Requirement in 23 C.F.R. § 635.410 and all relevant provisions of the Build America, Buy America Act (BABA), contained within the Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, §§ 70901-52 enacted November 15, 2021. The BABA requires iron, steel, manufactured products, and construction materials used in infrastructure projects funded by federal financial assistance to be produced in the United States. Comply with 2 C.F.R § 184.

BABA permits FHWA participation in the Contract only if domestic steel and iron will be used on the Project. To be considered domestic, all steel and iron used, and all products manufactured from steel and iron must be produced in the United States and all manufacturing processes, including application of a coating, for these materials must occur in the United States. Coating includes all processes that protect or enhance the value of the material to which the coating is applied. This requirement does not preclude a minimal use of foreign steel and iron materials, provided the cost of such materials does not exceed 0.1% of the total contract amount under the Contract or \$2,500.00 whichever is greater.

BABA permits FHWA participation in the Contract only if all “construction materials” as defined in the Act are made in the United States. The Buy America preference applies to the following construction materials incorporated into infrastructure projects: non-ferrous metals; plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables); glass (including optic glass); Fiber optic cable; optical fiber; lumber; engineered wood; and drywall. Contractor will be

required to use construction materials produced in the United States on this Project. The Contractor shall submit a certification stating that all construction materials are certified to be BABA compliant.

3.0 FINAL RULE – FHWA’S BUY AMERICA REGULATION TO TERMINATE GENERAL APPLICABILITY WAIVER FOR MANUFACTURED PRODUCTS

- **March 17, 2025** (effective date): For all Federal-aid projects obligated on or after March 15, 2025, all iron or steel products, as defined in § 635.410(c)(1)(iii), must comply with FHWA’s Buy America requirements for steel and iron in § 635.410(b). In addition, for all Federal-aid projects obligated on or after March 15, 2025, per § 635.410(c)(2), articles, materials, and supplies should be classified as an iron or steel product, a manufactured product, or another product as specified by law or in 2 CFR part 184 (such other products specified by law or in 2 CFR part 184 include “excluded materials” and “construction materials”); an article, material, or supply must not be considered to fall into multiple categories.
- **October 1, 2025:** The final assembly requirement will become effective for Federal-aid projects obligated on or after October 1, 2025. This means that, for manufactured product to be Buy America compliant, for Federal-aid projects obligated on or after October 1, 2025, final assembly of the manufactured product must occur in the United States.
- **October 1, 2026:** The 55 percent requirement will become effective for Federal-aid projects obligated on or after October 1, 2026. This means that, for manufactured product to be Buy America-compliant, for Federal-aid projects obligated on or after October 1, 2026, all manufactured products permanently incorporated into the project must both be manufactured in the United States (satisfy the final assembly requirement) and have the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States be greater than 55 percent of the total cost of all components of the manufactured product (satisfy the 55 percent requirement).

4.0 – ADDITIONAL REQUIREMENTS

The Contractor has completed and submitted, or shall complete and submit, to the Cabinet a Buy America/Build America, Buy America Certificate prior to the Cabinet issuing the notice to proceed, in the format below. After submittal, the Contractor is bound by its original certification.

A false certification is a criminal act in violation of 18 U.S.C. § 1001. The Contractor has the burden of proof to establish that it’s in compliance.

At the Contractor’s request, the Cabinet may, but is not obligated to, seek a waiver of Buy America requirements if grounds for the waiver exist under 23 C.F.R. § 635.410(c) or will comply with the applicable Buy America requirements if a waiver of those requirements is not available or not pursued by the Cabinet.

Please refer to the Federal Highway Administration’s Buy America webpage for more information.

[Buy America - Construction Program Guide - Contract Administration - Construction - Federal Highway Administration \(dot.gov\)](#)

Effective - June 26, 2025, Letting

BUY AMERICA / BUILD AMERICA, BUY AMERICA (ACT) MATERIALS CERTIFICATE OF COMPLIANCE

The Contractor hereby certifies that it will comply with all relevant provisions of the Build America, Buy America Act, contained within the Infrastructure Investment and Jobs Act, Pub. L. NO. 117-58, §§ 70901-52, the requirements of 23 U.S.C. § 313, 23 C.F.R. § 635.410 and 2 C.F.R § 184.

Date Submitted:_____

Contractor:_____

Signature:_____

Printed Name:_____

Title:_____

NOTE: THIS CERTIFICATION IS IN ADDITION TO ANY AND ALL REQUIREMENTS OUTLINED IN THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND/OR SPECIAL NOTES CONTAINED IN THE PROJECT PROPOSAL.

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 Transportation Cabinet, Department of Highways, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin, sex, age (over 40), religion, sexual orientation, gender identity, veteran status, disability, income- level, or Limited English Proficiency (LEP) in consideration for an award.

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 are acceptable per Section 108.01 of the Standard Specifications for Road and Bridge Construction. Sub-Contractors fulfilling a disadvantaged business enterprise goal on a project may enter into a 2nd tier subcontract with a Non-DBE Subcontractor. However, in this instance, none of the work subcontracted to the Non-DBE Contractor will count toward fulfilling the established Disadvantaged Goal for the project.

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.

AFTER PROJECT AWARD AND BEFORE NOTICE TO PROCEED/WORK ORDER IS ISSUED (SEE SECTION 103.06, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION)

Prime Contractors awarded a federally funded project with a DBE Goal greater than zero will be required to submit a fully executed DBE Subcontract, along with the attached FHWA 1273 and Certificate of Liability Insurance for each DBE Firm submitted as part of the previously approved DBE Utilization Plan (TC 14-35). A signed quote or purchase order shall be attached when the DBE subcontractor is a material supplier or broker.

The Certificate of Liability Insurance submitted must meet the requirements outlined in Section 107.18 of the Standard Specifications for Road and Bridge Construction.

Changes to **APPROVED** DBE Participation Plans must be approved by the Office for Civil Rights & Small Business Development. 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 for 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:

- Suspension of Prequalification;
- 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 and Non-DBE Subcontractors 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 for Civil Rights and Small Business Development
6th Floor West 200 Mero Street
Frankfort, KY 40622

The prime contractor should notify the KYTC Office for 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. Tony Youssefi. Mr. Youssefi's current contact information is email address – tyousseffi@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.

TRAINEES

In Compliance with the "TRAINING SPECIAL PROVISION" included in Part III of the Proposal, the Contractor will be required to employ a trainee(s) for this contract.

OPTION A

Be advised that the Department will accept compaction of asphalt mixtures furnished for driving lanes and ramps, at 1 inch (25mm) or greater, on this project according to OPTION A in accordance with Section 402 and Section 403 of the current Standard Specifications. The Department will require joint cores as described in Section 402.03.02 for surface mixtures only. The Department will accept compaction of all other asphalt mixtures according to OPTION B.

Commonwealth of Kentucky

DEPARTMENT OF HIGHWAYS

I-24

ASPHALT PAVEMENT AND ROADWAY REHABILITATION

LYON/CALDWELL COUNTY - MP 45.171 - MP 55.498
ITEM NO. 01-20010.00/02-20062.00

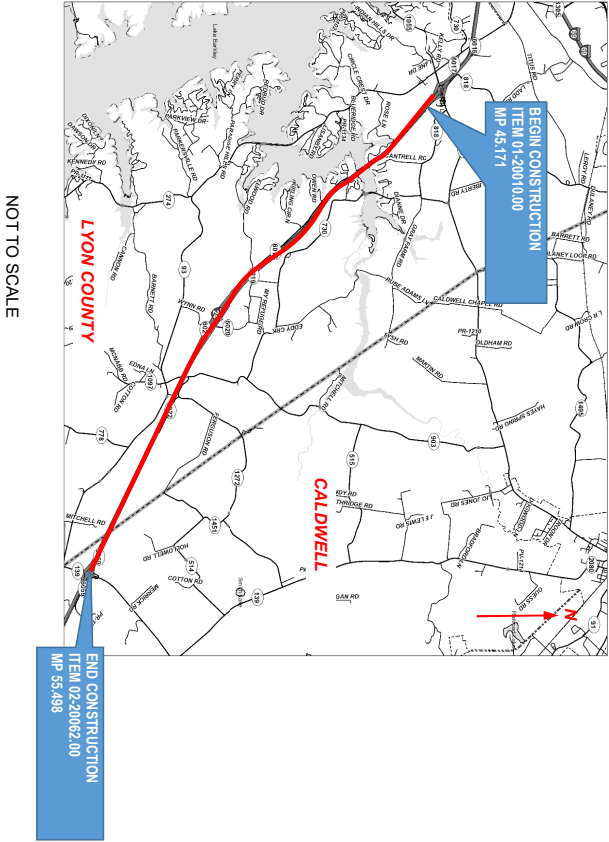
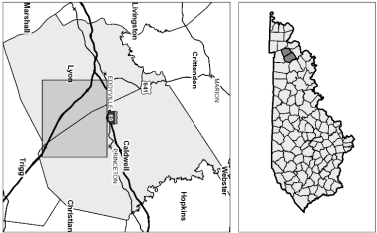
TABLE OF CONTENTS

LAYOUT SHEET
LIST OF STANDARD DRAWINGS
REFERENCES
GENERAL NOTES
GENERAL SUMMARY (ASPHALT ALTERNATE)
PAVEMENT AREAS (ASPHALT ALTERNATE)
PAVEMENT SUMMARY (ASPHALT ALTERNATE)
GENERAL SUMMARY (JPC ALTERNATE)
PAVEMENT AREAS (JPC ALTERNATE)
PAVEMENT SUMMARY (JPC ALTERNATE)
GUARDRAIL SUMMARY
UNDERDRAIN SUMMARY
GEOMETRIC CONTROL
TRAFFIC CONTROL PLAN
BULL NOSE TERMINAL POST LAYOUT
WEB WALL DETAILS
APPLICABLE SPECIAL NOTES
PERMANENT TRAFFIC DATA ACQUISITION STATIONS
TYPICAL SECTIONS (IN PROJECT RELATED INFORMATION)
PLAN / PROFILE SHEETS (IN PROJECT RELATED INFORMATION)
TYPICAL SECTIONS FOR MOT (IN PROJECT RELATED INFORMATION)
CROSSOVER DETAILS (IN PROJECT RELATED INFORMATION)
CROSS SECTIONS (IN PROJECT RELATED INFORMATION)

Prepared By:
WSP USA INC.
1792 ALYSHEBA WAY
LEXINGTON, KY 40509

KYTC 2023 Traffic Counts:
22,620 AADT 38.01% Trucks

THIS PROJECT IS A FULLY
CONTROLLED ACCESS HIGHWAY



COUNTY: LYON/CALDWELL

ITEM NO: 01-20010.00/02-20062.00

PROJECT NO(S): NHPP 0242(080) FD52 072 0024 045-055
NHPP 0242 (081) FD52 017 0024 054-056

LETTING DATE: 8/21/2025

RECOMMENDED BY: _____ DATE: _____
KYTC Project Manager

PLAN APPROVED BY: _____ DATE: _____
State Highway Engineer

FHWA APPROVED BY: _____ DATE: _____

STANDARD DRAWINGS
I-24 - LYON/CALDWELL COUNTY

APPLICABLE KENTUCKY DEPARTMENT OF HIGHWAYS STANDARD
DRAWINGS - CURRENT EDITIONS:

RBI-001	TYPICAL GUARDRAIL INSTALLATIONS
RBI-002	TYPICAL GUARDRAIL INSTALLATIONS
RBI-004	INSTALLATION OF GUARDRAIL END TREATMENT TYPE 1
RBR-001	STEEL BEAM GUARDRAIL ("W" BEAM)
RBR-005	GUARDRAIL COMPONENTS
RBR-010	GUARDRAIL TERMINAL SECTIONS
RBR-015	STEEL GUARDRAIL POSTS
RBR-055	DELINEATORS FOR GUARDRAIL
RDI-035	COATINGS, LININGS AND PAVINGS FOR NON-STRUCTURAL PLATE PIPE
RDI-040	EROSION CONTROL BLANKET SLOPE INSTALLATION
RDI-041	EROSION CONTROL BLANKET CHANNEL INSTALLATION
RDP-001	PERFORATED PIPE TYPES AND COVER HEIGHTS
RDP-005	PERFORATED PIPE FOR SUBGRADE DRAINAGE ON TWO-LANE (CLASS 2) AND MULTI-LANE ROADS
RDP-006	PERFORATED PIPE UNDERDRAINS (LONGITUDINAL AND TRANSVERSE)
RDP-007	PERFORATED PIPE DETAILS (SOLID ROCK)
RDP-010	PERFORATED PIPE HEADWALLS
RDX-050	SUBGRADE DRAINAGE CONCRETE PAVEMENT
RDX-210	TEMPORARY SILT FENCE
RDX-215	TEMPORARY SILT FENCE WITH WOVEN WIRE FENCE FABRIC
RDX-230	SILT TRAP TYPE C
RGS-001	CURVE WIDENING AND SUPERELEVATION TRANSITIONS
RGS-002	SUPERELEVATION FOR MULTILANE PAVEMENT
RGX-001	MISCELLANEOUS STANDARDS
RPM-001	PERMANENT U-TURN MEDIAN OPENING
RPM-100	CURB AND GUTTER CURBS AND VALLEY GUTTER
RPN-001	JOINTED PLAIN CONCRETE PAVEMENT FOR SHOULDERS AND MEDIANS
RPN-010	PAVEMENT TRANSITIONS & JOINT DETAILS FOR JOINTED PLAIN CONCRETE PAVEMENT AT BRIDGE ENDS
RPN-015	JOINTED PLAIN CONCRETE PAVEMENT
RPS-010	CONCRETE PAVEMENT JOINT DETAILS
RPS-020	EXPANSION AND CONTRACTION JOINT LOAD TRANSFER ASSEMBLIES
RPS-030	CONCRETE PAVEMENT JOINTS TYPES AND SPACING
RPS-034	CONCRETE PAVEMENT JOINTS TYPES AND SPACING
RPX-001	STATION MARKINGS CONCRETE PAVEMENT
RPX-010	PREFORMED COMPRESSION JOINT SEAL FOR CONCRETE PAVEMENT
RPX-015	HOT-POURED ELASTIC JOINT SEALS FOR CONCRETE PAVEMENT
RPX-020	SILICONE RUBBER SEALS FOR CONCRETE PAVEMENT
TPM-200	TYPICAL ENTRANCE RAMP MARKINGS FOR INTERSTATES AND PARKWAYS
TPM-201	TYPICAL EXIT RAMP MARKINGS FOR INTERSTATES AND PARKWAYS
TPM-202	TYPICAL EXIT RAMP MARKINGS FOR INTERSTATES AND PARKWAYS
TPM-204	TYPICAL MARKINGS FOR GORE AREAS
TPR-115	SHOULDER & EDGELINE RUMBLE STRIP PLACEMENT DETAILS

TPR-130	RUMBLE STRIP DETAILS MULTILANE ROADWAYS AND RAMPS
TTC-115	LANE CLOSURE MULTI-LANE HIGHWAY CASE I
TTC-120	LANE CLOSURE MULTI-LANE HIGHWAY CASE II
TTC-135	SHOULDER CLOSURE
TTC-145	MEDIAN CROSSOVER CASE II
TTC-146	MEDIAN CROSSOVER CASE II
TTC-160	TEMPORARY PAVEMENT MARKER ARRANGEMENTS FOR LANE CLOSURES
TTS-120	MOBILE OPERATION FOR DURABLE STRIPING CASE I

APPLICABLE KENTUCKY DEPARTMENT OF HIGHWAYS STANDARD DRAWING SEPIAS:

007	PAVEMENT MARKER ARRANGEMENTS MULTI-LANE ROADWAYS
011	PAVEMENT MARKER ARRANGEMENT EXIT GORE AND OFF-RAMP
012	PAVEMENT MARKER ARRANGEMENT FOR PARALLEL DECELL. LANE
014	PAVEMENT MARKER ARRANGEMENT ON-RAMP WITH PARALLEL ACCELERATION LANE
028	EDGE LINE RUMBLE STRIPS PLACEMENT DETAIL
030	RUMBLE STRIP DETAILS MULTI-LANE ROADWAYS AND RAMPS
034	GUARDRAIL END TREATMENT TYPE 1
035	GUARDRAIL END TREATMENT TYPE 4A
042	CONCRETE BARRIER WALLS
095	STEEL THRIE BEAM BULLNOSE TERMINAL
S-RBB-002	GUARDRAIL AND BRIDGE END DRAINAGE FOR TWIN STRUCTURES
S-TTD-120-03	HIGHER FINES ZONE SIGNS
S-TTD-130	SPEED ZONE SIGNING FOR WORK ZONES
RBR-025-06-S	GUARDRAIL END TREATMENT TYPE 2M

REFERENCES

I-24 - LYON/CALDWELL COUNTY

PAGE 1 OF 1

1. KENTUCKY TRANSPORTATION CABINET, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, CURRENT EDITION.
2. FHWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
- CURRENT EDITION WITH REVISIONS.
3. APPLICABLE KENTUCKY DEPARTMENT OF HIGHWAYS SUPPLEMENTAL SPECIFICATIONS:

SPCL. NOTE	ASPHALT MILLING AND TEXTURING
SPCL. NOTE	TYPICAL SECTION DIMENSIONS
SPCL. NOTE	BEFORE YOU DIG
SPCL. NOTE	FIXED COMPLETION DATE AND LIQUIDATED DAMAGES
SPCL. NOTE	EXPERIMENTAL KYCT AND HAMBURG TESTING
SPCL. NOTE	PORTABLE QUEUE WARNING ALERT SYSTEM
SPCL. NOTE	GUARDRAIL DELIVERY VERIFICATION SHEET
SPCL. NOTE	LONGITUDINAL PAVEMENT JOINT ADHESIVE
SPCL. NOTE	PAVER MOUNTED TEMPERATURE PROFILES
SPCL. NOTE	ELECTRONIC DELIVERY MANAGEMENT SYSTEM (e-Ticketing) - ASPHALT
SPCL. NOTE	ELECTRONIC DELIVERY MANAGEMENT SYSTEM (e-Ticketing) - AGGREGATE
SPCL. NOTE	SPEED ZONE SIGNING
SPCL. NOTE	EDGE DRAINS AND INSPECTION
SPCL. NOTE	ALTERNATE PAVEMENT BID ADJUSTMENT
SPCL. NOTE	CONNECTED ARROW PANELS
SPCL. NOTE	CONCRETE SEALING
SPCL. NOTE	KYTC RAP STOCKPILE MANAGEMENT
SPCL. NOTE	PORTABLE CHANGEABLE MESSAGE SIGNS
SPCL. NOTE	HIGH TENSION CABLE-ROPE BARRIER MEDIAN
SPCL. NOTE	CONCRETE SLURRY

GENERAL NOTES
I-24 – LYON & CALDWELL COUNTIES
PAGE 1 OF 4

I. GENERAL

Perform all work in accordance with the Kentucky Transportation Cabinet, Department of Highways, Standard Specifications for Road and Bridge Construction, Current Edition, Supplemental Specifications, any applicable Special Provisions, and applicable Standard and Sepia Drawings, except as hereafter specified. Article references are to the Standard Specifications. Furnish all materials, labor, equipment, and incidentals for the work identified in the proposal.

II. MATERIALS

Except as specified in these notes or on the drawings, all materials will be according to the Standard Specifications and applicable Special Provisions and Special Notes. The Department will sample and test all materials according to Department's Sampling Manual and the Contractor will have the 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.

III. CONSTRUCTION METHODS

A. Maintain and Control Traffic

See Traffic Control Plan and Standard Specifications.

B. Site Preparation

Be responsible for all site preparation. Do not disturb existing signs unless noted on the plans. This item will include, but is not limited to, incidental excavation and backfilling; removal of all obstructions or any other items; disposal of materials; sweeping and removal of debris; shoulder preparation and restoration, temporary and permanent erosion and pollution control; and all incidentals. Site preparation will be only as approved or directed by the Engineer. Other than the bid items listed, no direct payment will be made for site preparation, but will be incidental to the other items of work.

B. Disposal of Waste

Dispose of all cuttings, debris, and other waste off the right-of-way at approved sites obtained by the Contractor at no additional cost to the Department. The Contractor will be responsible for obtaining any necessary permits for this work. Temporary openings in the right of way fence for direct access to waste sites off the right of way or for access to other public roads will not be allowed. No separate payment will be made for the disposal of waste and debris from the project or obtaining the necessary permits but will be incidental to the other items of the work.

C. Final Dressing, Clean Up, and Seeding and Protection

After all work is completed, completely remove all debris from the job site. Perform Class A Final Dressing on all disturbed areas. Sow disturbed earthen areas with Seed Mixture No. 1. These items are incidental to other items in the contract.

E. Pavement Striping and Pavement Markers

Permanent striping will be in accordance with Sections 112 and 714, except that:

- (1) Permanent and/or temporary striping will be in place before a lane is opened to traffic; and
- (2) Permanent striping will be Durable Tape Type 1 and Extruded Thermoplastic Markings. Contrary to Section 714.02.05 of the Standard Specifications for Road and Bridge Construction, application of 6 inch and 12 inch white and yellow "long-line" thermoplastic striping will be required to be by ribbon-extrusion gun at all locations that are to be applied over milled rumble strips in lieu of an extrusion die application. Also, ribbon-extrusion gun application may be used for all other 6 inch and 12 inch white and yellow "long-line" thermoplastic striping on this project in lieu of an extrusion die application.

GENERAL NOTES
I-24 – LYON & CALDWELL COUNTIES
PAGE 2 OF 4

F. On-Site Inspection

Each Contractor submitting a bid for this work will make a thorough inspection of the site prior to submitting a bid and will thoroughly familiarize themselves with 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. Any claims resulting from site conditions will not be honored by the Department.

G. Caution

Information shown on the drawings and in this proposal and the types and quantities of work listed are not to be taken as an accurate or complete evaluation of the material and conditions to be encountered during construction. The bidder must draw their own conclusions as to the conditions encountered. The Department does not give any guarantee as to the accuracy of the data and no claim will be considered for additional compensation if the conditions encountered are not in accordance with the information above.

H. Utility Clearance

It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, if 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.

IV. METHOD OF MEASUREMENT

A. Maintain and Control Traffic

See Traffic Control Plan.

B. Site Preparation

Other than the bid items listed, site preparation will not be measured for payment, but will be incidental to the other items of work.

C. Inlaid Pavement Markers and Permanent Striping

Permanent striping is measured per linear foot. Inlaid Pavement Markers are measured as each.

V. BASIS OF PAYMENT

No direct payment will be made other than for the bid items listed. All other items required to complete the construction will be incidental to the bid items listed. Existing signs (not to be disturbed) that are damaged by the Contractor will be replaced by the Contractor at his expense.

A. Maintain and Control Traffic

See Traffic Control Plan.

B. Site Preparation

Other than the bid items listed, no direct payment will be allowed for site preparation, but will be incidental to the other items of work.

C. Crushed Stone Base

See Section 302 of the Standard Specifications.

D. Inlaid Pavement Markers and Permanent Striping

See Traffic Control Plan.

E. Lane Closures

Contrary to Section 112, lane closures will not be measured for payment but will be incidental to the bid item "Maintain and Control Traffic". Arrow boards, portable message boards, and signs shall be paid for one time regardless of how many times they are moved.

GENERAL NOTES
I-24 – LYON & CALDWELL COUNTIES
PAGE 3 OF 4

VI. MISCELLANEOUS

- A. The dimensions shown on the typical sections for pavement and shoulder widths and thickness are nominal or typical dimensions. The actual dimensions to be constructed may be varied to fit existing conditions as directed or approved by the Engineer. It is not intended that existing pavement or shoulders be widened unless specified in the Proposal.
- B. The Contractor is advised that locations of low wires crossing the roadway exist. These and all other utilities should be avoided on this project. If any utility is impacted, it will be the Contractor's responsibility to contact the affected utility and cover any costs associated with the impact.
- C. Guardrail, End Treatments, and Terminal Sections to be replaced are listed by mileposts. Exact placement to be approved by the Engineer on construction.
- D. Any signs (not to be replaced), light poles, and other items that are damaged during Construction are to be replaced at the Contractor's expense.
- E. For the concrete pavement alternative, pavement rideability requirements in accordance with Section 501 Category A of the standard specifications shall apply on this project.
- F. For the asphalt pavement alternative, pavement rideability requirements in accordance with Section 410 Category A of the standard specifications shall apply on this project.
- G. The Department will accept the compaction of asphalt mixtures furnished for the driving lanes at one inch or greater on this project by Option A according to subsections 402 and 403 of the Standard Specifications. The Department will accept the compaction of all other mixtures by Option B.
- H. The Contractor shall be responsible for the repair of any pavement in the traveled lanes that becomes detrimental or hazardous to the traveling public during construction. Areas needing repair will be at the discretion of the Engineer. Repair or reconstruction of shoulder pavement due to maintenance of traffic will be paid for with the pavement construction bid items in the contract.
- I. No tree cutting is allowed nor should it be necessary.
- J. Depth of existing base material of existing pavement is not reflected on the cross sections.
- K. Delineators shall meet the requirements of Section 830 and 838 of the Standard Specifications. Delineators shall be placed in accordance with Section 3F of the M.U.T.C.D., current edition and Kentucky Standard Drawings, current edition.
- L. The interior of the Bull Nose Terminal shall have 4 inches of CSB and receive two applications of Asphalt seal coat.
- M. Removal of temporary crossovers and grading of median shall be incidental to the bid item "Crossover". This includes the removal of the existing crossover at MP 55.2.
- N. Locations of pavement subsurface drainage outlets are listed. These locations may be adjusted by the Engineer. Engineer may elect to add or reduce the number of outlets.
- O. Cement Stabilized Roadbed – Stabilize the top 8 inches of the finished roadbed with Portland cement in accordance with section 208 of the standard specifications. Use selected soils, with a minimum CBR value of 3, for this purpose. The Portland cement content is 6.0 percent by weight, and the estimated plan quantity uses an average dry density of 120 lbs./cubic feet.
- P. The removal of the existing edge drain system shall be incidental to Remove Pavement.
- Q. Quantities are shown for two pavement alternates, Asphalt pavement and Concrete pavement. Only one of these alternates shall be bid.
- R. If bidding the asphalt alternate, the westbound asphalt surface of travel lanes and inside shoulder shall be paved in echelon.

GENERAL NOTES
I-24 – LYON & CALDWELL COUNTIES
PAGE 4 OF 4

- S. Typical Sections, Plan Sheets, Profile Sheets, Crossover Detail Sheets, Maintenance of Traffic Typical Sections, and cross sections are placed in project related information.
- T. Contrary to Section 714.02.05 of the Standard Specifications for Road and Bridge Construction, application of 6 inch and 12 inch white and yellow “long-line” thermoplastic striping will be required to be by ribbon-extrusion gun at all locations that are to be applied over milled rumble strips in lieu of an extrusion die application. Also, ribbon-extrusion gun application may be used for all other 6 inch and 12 inch white and yellow “long-line” thermoplastic striping on this project in lieu of an extrusion die application.
- U. Asphalt Seal Aggregate shall use 8m or 9m sized aggregate.

GENERAL SUMMARY - ASPHALT ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	UNIT	NOTES	QUANTITIES		
				CALDWELL COUNTY	LYON COUNTY	TOTALS
00003	CRUSHED STONE BASE	TON		10,153	146,994	157,147
00008	CEMENT STABILIZED ROADBED	SQYD		15,843	228,018	243,861
00071	CRUSHED AGGREGATE SIZE NO. 57	TON	3		100	100
00078	CRUSHED AGGREGATE SIZE NO. 2	TON	2	24	326	350
00100	ASPHALT SEAL AGGREGATE	TON		125	1,793	1,918
00103	ASPHALT SEAL COAT	TON		15	215	230
00190	LEVELING & WEDGING PG64-22	TON	5	6	80	86
00214	CL3 ASPH BASE 1.00D PG64-22	TON		1,374	19,776	21,150
00217	CL4 ASPH BASE 1.00D PG64-22	TON		4,140	59,590	63,730
00219	CL4 ASPH BASE 1.00D PG76-22	TON		1,885	27,132	29,017
00312	CL3 ASPH SURF 0.50D PG64-22	TON		335	4,823	5,158
00335	CL4 ASPH SURF 0.50A PG76-22	TON		1,043	13,783	14,826
00356	ASPHALT MATERIAL FOR TACK	TON		27	380	407
00358	ASPHALT CURING SEAL	TON		32	456	488
01006	PERFORATED PIPE EDGE DRAIN-6 IN	LF		6,732	98,421	105,153
01011	NON-PERFORATED PIPE - 6 IN	LF		264	3,524	3,788
01015	INSPECT AND CERTIFY EDGE DRAIN SYSTEM	LS		1	1	1
01021	PERF PIPE HEADWALL TY 1 - 6 IN	EACH			16	16
01025	PERF PIPE HEADWALL TY 2 - 6 IN	EACH			6	6
01029	PERF PIPE HEADWALL TY 3 - 6 IN	EACH			10	10
01033	PERF PIPE HEADWALL TY 4 - 6 IN	EACH		24	294	318
01982	DELINEATOR FOR GUARDRAIL M/W	EACH			168	168
01983	DELINEATOR FOR GUARDRAIL M/Y	EACH			24	24
02003	RELOCATE TEMP CONC BARRIER	LF	5		22,500	22,500
02014	BARRICADE-TYPE III	EACH	5	16	10	26
02058	REMOVE PCC PAVEMENT	SQYD		15,437	222,171	237,608
02351	GUARDRAIL-STEEL W BEAM-S FACE	LF			8,963	8,963
02367	GUARDRAIL END TREATMENT TYPE 1	EACH			1	1
02370	GUARDRAIL END TREATMENT TYPE 2M	EACH			9	9

GENERAL SUMMARY - ASPHALT ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	UNIT	NOTES	QUANTITIES		
				CALDWELL COUNTY	LYON COUNTY	TOTALS
02372	REMOVE GUARDRAIL CON TO BR END	EACH			11	11
02373	GUARDRAIL END TREATMENT TYPE 3	EACH			6	6
02381	REMOVE GUARDRAIL	LF			9,030	9,030
02403	REMOVE CONCRETE MASONRY	CUYD	7		15	15
02403	REMOVE CONCRETE MASONRY	CUYD	8		15	15
02542	CEMENT	TON		308	4,433	4,741
02562	TEMPORARY SIGNS	SQFT	5	625	1,875	2,500
02568	MOBILIZATION	LS		1	1	1
02569	DEMOBILIZATION	LS		1	1	1
02650	MAINTAIN & CONTROL TRAFFIC	LS		1	1	1
02654	TRUCK MOUNTED ATTENUATOR	EACH	5	1	1	2
02655	CROSSOVER (#1)	LS	5		1	1
02655	CROSSOVER (#2)	LS	5		1	1
02655	CROSSOVER (#3)	LS	5		1	1
02655	CROSSOVER (#4)	LS	5	1		1
02671	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	5	2	2	4
02677	ASPHALT PAVE MILLING & TEXTURING	TON	11		707	707
02697	EDGE LINE RUMBLE STRIPS	LF		7,312	153,363	160,675
02701	TEMP SILT FENCE	LF	6	1,000	1,000	2,000
02702	SAND FOR BLOTTER	TON		63	912	975
02705	SILT TRAP TYPE C	EACH	6	2	6	8
02708	CLEAN SILT TRAP TYPE C	EACH	6	2	6	8
02726	STAKING	LS		1	1	1
02898	RELOCATE CRASH CUSHION	EACH	5	1	3	4
03171	CONCRETE BARRIER WALL TY 9T	LF	5	1,750	29,100	30,850
04793	CONDUIT 1 1/4 INCH	LF	12		30	30
04795	CONDUIT 2 INCH	LF	12		10	10
04820	TRENCHING AND BACKFILLING	LF	12		35	35
04830	LOOP WIRE	LF	12		800	800

GENERAL SUMMARY - ASPHALT ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	UNIT	NOTES	QUANTITIES		
				CALDWELL COUNTY	LYON COUNTY	TOTALS
04895	LOOP SAW SLOT AND FILL	LF	12		150	150
05953	TEMP SEEDING AND PROTECTION	SQYD	6	500	1,500	2,000
05963	INITIAL FERTILIZER	TON	6	0.1	0.1	0.2
05964	MAINTENANCE FERTILIZER	TON	6	0.1	0.1	0.2
05985	SEEDING AND PROTECTION	SQYD		500	1,500	2,000
05992	AGRICULTURAL LIMESTONE	TON		0.4	1.0	1.4
06511	PAVE STRIPING-TEMP PAINT-6 IN	LF	5	16,818	242,050	258,868
06542	PAVE STRIPING-THERMO-6 IN W	LF		5,486	106,148	111,634
06543	PAVE STRIPING-THERMO-6 IN Y	LF		3,657	93,560	97,217
06546	PAVE STRIPING-THERMO-12 IN W	LF		150		150
06556	PAVE STRIPING-DUR TY 1-6 IN W	LF	10	4,571	30,169	34,740
06557	PAVE STRIPING-DUR TY 1-6 IN Y	LF	10	3,657	15,493	19,150
06585	PAVEMENT MARKER TY IVA-MW TEMP	EACH	4,5	65	108	173
06586	PAVEMENT MARKER TY IVA-MY TEMP	EACH	4,5	65	108	173
06613	INLAID PAVEMENT MARKER-B W/R	EACH		46	658	704
08001	STRUCTURE EXCAVATION - COMMON	CY	7		17	17
08001	STRUCTURE EXCAVATION - COMMON	CY	8		16	16
08100	CONCRETE CLASS "A"	CY	7		27	27
08100	CONCRETE CLASS "A"	CY	8		27	27
08150	STEEL REINFORCEMENT	LBS	7		1,583	1,583
08150	STEEL REINFORCEMENT	LBS	8		1,583	1,583
08912	CRASH CUSHION TY VI CLASS T TL3	EACH	5	1	3	4
10203ND	PAVEMENT ADJUSTMENT	LS		1	1	1
20071EC	JOINT ADHESIVE	LF		3,656	52,619	56,276
20191ED	OBJECT MARKER TY 3	EACH			1	1
20359NN	GLAVANIZED STEEL CABINET	EACH	12		1	1
20360ES818	WOOD POST	EACH	12		2	2
20391NS835	ELECTRICAL JUNCTION BOX TYPE A	EACH	12		1	1
20411ED	LAW ENFORCEMENT OFFICER	HOURL	5	200	1,000	1,200

GENERAL SUMMARY - ASPHALT ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	UNIT	NOTES	QUANTITIES		
				CALDWELL COUNTY	LYON COUNTY	TOTALS
21380ES719	THRIE BEAM GUARDRAIL	LF			625	625
22664EN	WATER BLASTING EXISTING STRIPE	LF		16,818	242,050	258,868
23147EN	HIGH TENSION CABLE-ROPE	LF	13	600		600
23148EN	END ANCHORS	EACH	9	2	2	4
23378EC	CONCRETE SEALING	SQFT	7		1,488	1,488
23378EC	CONCRETE SEALING	SQFT	8		1,474	1,474
24255EC	REMOVE CABLE GUARDRAIL BARRIER SYSTEM	LF		600	337	937
24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT	SF		150,385	2,029,751	2,180,136
25078ED	THRIE BEAM GUARDRAIL TRANSITION TL-3	EACH			7	7
26136EC	PORTABLE QUEUE WARNING ALERT SYSTEM	MONT	5	90	90	180
26137EC	QUEUE WARNING PCMS	MONT	5	90	90	180
26138EC	QUEUE WARNING PORTABLE RADAR SENSORS	MONT	5	90	90	180
26233EC	MOBILIZATION - FOR CONCRETE SURFACE TREAT	LS			1	1
26236EC	THRIE BEAM BULLNOSE TERMINAL	EACH			6	6
26237EC	CONNECTED ARROW PANEL	MONT	5	9	36	45
26248EC	ELECTRONIC DELIVERY MGMT SYSTEM-AGG	LS		1	1	1

GENERAL SUMMARY - ASPHALT ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	UNIT	NOTES	QUANTITIES		
				CALDWELL COUNTY	LYON COUNTY	TOTALS

NOTES:

1. Quantities from all other summary sheets have been included in this General Summary Sheet
2. For perforated pipe headwalls.
3. For sinkhole remediation. To be used as directed by The Engineer.
4. Install temporary pavement markers at 40' intervals for temporary crossovers.
5. For maintenance of traffic.
6. For erosion control of temporary crossovers.
7. For construction of web walls at Friendship Road.
8. For construction of web walls at KY 903.
9. 1 for temporary anchor, 2 for permanent anchor.
10. For striping bridges and eastbound concrete section.
11. For filling existing rumble strips during maintenance of traffic.
12. For Permanent Traffic Data Acquasitions Stations.
13. For reinstallation following removal of temporary crossover #2.

PAVING AREAS - ASPHALT ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	NOTES	DEPTH (inches)	SQUARE YARDS		
				CALDWELL COUNTY	LYON COUNTY	I-24
00003	CRUSHED STONE BASE SHOULDER		17.00	1,625	23,386	25,011
00003	CRUSHED STONE BASE WEDGE	1	8.50	4,604	66,262	70,866
00003	CRUSHED STONE BASE		6.00	11,628	167,359	178,988
00003	CRUSHED STONE BASE		9.50	4,215	60,659	64,873
00003	CRUSHED STONE BASE	3	4.00		3,803	3,803
00008	CEMENT STABILIZED ROADBED		8.00	15,843	228,018	243,861
00100	ASPHALT SEAL AGGREGATE		----	6,229	89,648	95,877
00103	ASPHALT SEAL COAT		----	6,229	89,648	95,877
00190	LEVELING & WEDGING PG64-22	5	0.50	203	2,923	3,126
00214	CL3 ASPH BASE 1.00D PG64-22		3.00	4,113	59,197	63,310
00214	CL3 ASPH BASE 1.00D PG64-22		3.00	4,215	60,659	64,873
00217	CL4 ASPH BASE 1.00D PG64-22		3.00	11,527	165,897	177,424
00217	CL4 ASPH BASE 1.00D PG64-22		3.50	11,628	167,359	178,988
00219	CL4 ASPH BASE 1.00D PG76-22		3.00	11,425	164,436	175,861
00312	CL3 ASPH SURF 0.50D PG64-22		1.50	4,062	58,466	62,528
00335	CL4 ASPH SURF 0.50A PG76-22		1.50	12,647	167,062	179,709
00356	ASPHALT MATERIAL FOR TACK		--	16,859	242,634	259,493
00358	ASPHALT CURING SEAL	2	----	15,843	228,018	243,861
02058	REMOVE PCC PAVEMENT		10.00	15,437	222,171	237,608
02542	CEMENT	2	----	15,843	228,018	243,861
02677	ASPHALT PAVE MILLING & TEXTURING	3	1.50		8,572	8,572
02702	SAND FOR BLOTTER	2	----	15,843	228,018	243,861
24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT		--	16,709	225,528	242,237

- NOTES:
- 1. Depth shown is equivalent and is based on the average depth over the cross section of the pavement material.
 - 2. For cement stabilized roadbed.
 - 3. For milling existing rumble strips.
 - 4. For interior of Thrie Beam Bullnose Terminal
 - 5. For maintenance of shoulders during MOT as directed by The Engineer.

PAVING SUMMARY - ASPHALT ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	NOTES	UNIT	CALDWELL COUNTY	LYON COUNTY	TOTALS
00003	CRUSHED STONE BASE	2	TON	10,153	146,994	157,147
00008	CEMENT STABILIZED ROADBED		SQYD	15,843	228,018	243,861
00100	ASPHALT SEAL AGGREGATE	5	TON	125	1,793	1,918
00103	ASPHALT SEAL COAT	6	TON	15	215	230
00190	LEVELING & WEDGING PG64-22	3	TON	6	80	86
00214	CL3 ASPH BASE 1.00D PG64-22	3	TON	1,374	19,776	21,150
00217	CL4 ASPH BASE 1.00D PG64-22	3	TON	4,140	59,590	63,730
00219	CL4 ASPH BASE 1.00D PG76-22	3	TON	1,885	27,132	29,017
00312	CL3 ASPH SURF 0.50D PG64-22	3	TON	335	4,823	5,158
00335	CL4 ASPH SURF 0.50A PG76-22	3	TON	1,043	13,783	14,826
00356	ASPHALT MATERIAL FOR TACK	4	TON	27	380	407
00358	ASPHALT CURING SEAL	7	TON	32	456	488
02058	REMOVE PCC PAVEMENT		SQYD	15,437	222,171	237,608
02542	CEMENT	8	TON	308	4,433	4,741
02677	ASPHALT PAVE MILLING & TEXTURING	3	TON		707	707
02702	SAND FOR BLOTTER	9	TON	63	912	975
20071EC	JOINT ADHESIVE		LF	3,656	52,619	56,276
24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT		SF	150,385	2,029,751	2,180,136

- NOTES:
- 1. Quantities are carried over and included in General Summary.
 - 2. Estimated at 115 lbs. per sq. yd. per inch of depth.
 - 3. Estimated at 110 lbs. per sq. yd. per inch of depth.
 - 4. Estimated at 0.84 lbs. per sq. yd.
 - 5. Estimated at 20 lbs. per sq. yd. (two applications).
 - 6. Estimated at 2.4 lbs. per sq. yd. (two applications).
 - 7. Estimated at 2 lbs. per sq. yd. (two applications)
 - 8. Estimated at 6% by weight with a dry density of 108 lbs. per cubic foot.
 - 9. Estimated at 5 lbs. per sq. yd.

GENERAL SUMMARY - JPC ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	UNIT	NOTES	QUANTITIES		
				CALDWELL COUNTY	LYON COUNTY	TOTALS
00003	CRUSHED STONE BASE	TON		8,966	131,164	140,131
00008	CEMENT STABILIZED ROADBED	SQYD		15,843	228,018	243,861
00071	CRUSHED AGGREGATE SIZE NO. 57	TON	3		100	100
00078	CRUSHED AGGREGATE SIZE NO. 2	TON	2	24	326	350
00100	ASPHALT SEAL AGGREGATE	TON		125	1,793	1,918
00103	ASPHALT SEAL COAT	TON		15	215	230
00190	LEVELING & WEDGING PG64-22	TON	5	6	80	86
00214	CL3 ASPH BASE 1.00D PG64-22	TON		1,374	19,776	21,150
00312	CL3 ASPH SURF 0.50D PG64-22	TON		335	5,531	5,866
00356	ASPHALT MATERIAL FOR TACK	TON		2	26	28
00358	ASPHALT CURING SEAL	TON		32	456	488
01006	PERFORATED PIPE EDGE DRAIN-6 IN	LF		6,732	98,421	105,153
01011	NON-PERFORATED PIPE - 6 IN	LF		264	3,524	3,788
01015	INSPECT AND CERTIFY EDGE DRAIN SYSTEM	LS		1	1	1
01021	PERF PIPE HEADWALL TY 1 - 6 IN	EACH			16	16
01025	PERF PIPE HEADWALL TY 2 - 6 IN	EACH			6	6
01029	PERF PIPE HEADWALL TY 3 - 6 IN	EACH			10	10
01033	PERF PIPE HEADWALL TY 4 - 6 IN	EACH		24	294	318
01982	DELINEATOR FOR GUARDRAIL M/W	EACH			168	168
01983	DELINEATOR FOR GUARDRAIL M/Y	EACH			24	24
02003	RELOCATE TEMP CONC BARRIER	LF	5		22,500	22,500
02014	BARRICADE-TYPE III	EACH	5	16	10	26
02058	REMOVE PCC PAVEMENT	SQYD		15,437	222,171	237,608
02086	JPC PAVEMENT-13 IN	SQYD		12,647	167,062	179,709
02351	GUARDRAIL-STEEL W BEAM-S FACE	LF			8,963	8,963
02367	GUARDRAIL END TREATMENT TYPE 1	EACH			1	1

GENERAL SUMMARY - JPC ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	UNIT	NOTES	QUANTITIES		
				CALDWELL COUNTY	LYON COUNTY	TOTALS
02370	GUARDRAIL END TREATMENT TYPE 2M	EACH			9	9
02372	REMOVE GUARDRAIL CON TO BR END	EACH			11	11
02373	GUARDRAIL END TREATMENT TYPE 3	EACH			6	6
02381	REMOVE GUARDRAIL	LF			9,030	9,030
02403	REMOVE CONCRETE MASONRY	CUYD	7		15	15
02403	REMOVE CONCRETE MASONRY	CUYD	8		15	15
02542	CEMENT	TON		308	4,433	4,741
02562	TEMPORARY SIGNS	SQFT	5	625	1,875	2,500
02568	MOBILIZATION	LS		1	1	1
02569	DEMOBILIZATION	LS		1	1	1
02650	MAINTAIN & CONTROL TRAFFIC	LS		1	1	1
02654	TRUCK MOUNTED ATTENUATOR	EACH		1	1	2
02655	CROSSOVER (#1)	LS	5		1	1
02655	CROSSOVER (#2)	LS	5		1	1
02655	CROSSOVER (#3)	LS	5		1	1
02655	CROSSOVER (#4)	LS	5	1		1
02671	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	5	2	2	4
02677	ASPHALT PAVE MILLING & TEXTURING	TON	11		707	707
02696	SHOULDER RUMBLE STRIPS	LF	9	3,656	52,620	56,276
02697	EDGE LINE RUMBLE STRIPS	LF		3,656	100,743	104,399
02701	TEMP SILT FENCE	LF	6	1,000	1,000	2,000
02702	SAND FOR BLOTTER	TON		63	912	975
02705	SILT TRAP TYPE C	EACH	6	2	6	8
02708	CLEAN SILT TRAP TYPE C	EACH	6	2	6	8
02726	STAKING	LS		1	1	1
02898	RELOCATE CRASH CUSHION	EACH	5	1	3	4

GENERAL SUMMARY - JPC ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	UNIT	NOTES	QUANTITIES		
				CALDWELL COUNTY	LYON COUNTY	TOTALS
03171	CONCRETE BARRIER WALL TY 9T	LF	5	1,750	29,100	30,850
04793	CONDUIT 1 1/4 INCH	LF	13		30	30
04795	CONDUIT 2 INCH	LF	13		10	10
04820	TRENCHING AND BACKFILLING	LF	13		35	35
04830	LOOP WIRE	LF	13		800	800
04895	LOOP SAW SLOT AND FILL	LF	13		150	150
05953	TEMP SEEDING AND PROTECTION	SQYD	6	500	1,500	2,000
05963	INITIAL FERTILIZER	TON	6	0.1	0.1	0.2
05964	MAINTENANCE FERTILIZER	TON	6	0.1	0.1	0.2
05985	SEEDING AND PROTECTION	SQYD		500	1,500	2,000
05992	AGRICULTURAL LIMESTONE	TON		0.4	1.0	1.4
06511	PAVE STRIPING-TEMP PAINT-6 IN	LF		16,818	242,050	258,868
06542	PAVE STRIPING-THERMO-6 IN W	LF	12		50,604	50,604
06543	PAVE STRIPING-THERMO-6 IN Y	LF	12		40,484	40,484
06556	PAVE STRIPING-DUR TY 1-6 IN W	LF		9,143	86,393	95,536
06557	PAVE STRIPING-DUR TY 1-6 IN Y	LF		7,314	68,803	76,117
06560	PAVE STRIPING-DUR TY 1-12 IN W	LF		150		150
06585	PAVEMENT MARKER TY IVA-MW TEMP	EACH	4,5	65	108	173
06586	PAVEMENT MARKER TY IVA-MW TEMP	EACH	4,5	65	108	173
06613	INLAID PAVEMENT MARKER-B W/R	EACH		46	658	704
08001	STRUCTURE EXCAVATION - COMMON	CY	7		17	17
08001	STRUCTURE EXCAVATION - COMMON	CY	8		16	16
08100	CONCRETE CLASS "A"	CY	7		27	27
08100	CONCRETE CLASS "A"	CY	8		27	27
08150	STEEL REINFORCEMENT	LBS	7		1,583	1,583
08150	STEEL REINFORCEMENT	LBS	8		1,583	1,583

GENERAL SUMMARY - JPC ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	UNIT	NOTES	QUANTITIES		
				CALDWELL COUNTY	LYON COUNTY	TOTALS
08912	CRASH CUSHION TY VI CLASS T TL3	EACH	5	1	3	4
10203ND	PAVEMENT ADJUSTMENT	LS		1	1	1
20191ED	OBJECT MARKER TY 3	EACH			1	1
20359NN	GLAVANIZED STEEL CABINET	EACH	13		1	1
20360ES818	WOOD POST	EACH	13		2	2
20391NS835	ELECTRICAL JUNCTION BOX TYPE A	EACH	13		1	1
20411ED	LAW ENFORCEMENT OFFICER	HOURL	5	200	1,000	1,200
21380ES719	THRIE BEAM GUARDRAIL	LF			625	625
22664EN	WATER BLASTING EXISTING STRIPE	LF		16,818	242,050	258,868
23147EN	HIGH TENSION CABLE-ROPE	LF	14	600		600
23148EN	END ANCHORS	EACH	10	2	2	4
23378EC	CONCRETE SEALING	SQFT	7		1,488	1,488
23378EC	CONCRETE SEALING	SQFT	8		1,474	1,474
24255EC	REMOVE CABLE GUARDRAIL BARRIER SYSTEM	LF		600	337	937
25078ED	THRIE BEAM GUARDRAIL TRANSITION TL-3	EACH			7	7
26136EC	PORTABLE QUEUE WARNING ALERT SYSTEM	MONT	5	90	90	180
26137EC	QUEUE WARNING PCMS	MONT	5	90	90	180
26138EC	QUEUE WARNING PORTABLE RADAR SENSORS	MONT	5	90	90	180
26233EC	MOBILIZATION - FOR CONCRETE SURFACE TREAT	LS			1	1
26236EC	THRIE BEAM BULLNOSE TERMINAL	EACH			6	6
26237EC	CONNECTED ARROW PANEL	MONT	5	9	36	45
26248EC	ELECTRONIC DELIVERY MGMT SYSTEM-AGG	LS		1	1	1

GENERAL SUMMARY - JPC ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	UNIT	NOTES	QUANTITIES		
				CALDWELL COUNTY	LYON COUNTY	TOTALS

- NOTES:
- 1. Quantities from all other summary sheets have been included in this General Summary Sheet.
 - 2. For perforated pipe headwalls.
 - 3. For sinkhole remediation. To be used as directed by The Engineer.
 - 4. Install temporary pavement markers at 40' intervals for temporary crossovers.
 - 5. For maintenance of traffic.
 - 6. For erosion control of temporary crossovers.
 - 7. For construction of web walls at Friendship Road.
 - 8. For construction of web walls at KY 903.
 - 9. For Westbound Inside Shoulder.
 - 10. 1 for temporary anchor, 2 for permanent anchor.
 - 11. For filling existing rumble strips during maintenance of traffic.
 - 12. For Eastbound Asphalt pavement.
 - 13. For Permanent Traffic Data Acquisitions Stations.
 - 14. For reinstallation following removal of temporary crossover #2.

PAVING AREAS - JPC ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	NOTES	DEPTH (inches)	SQUARE YARDS		
				CALDWELL COUNTY	LYON COUNTY	I-24
00003	CRUSHED STONE BASE SHOULDER		17.00	1,625	23,386	25,011
00003	CRUSHED STONE BASE WEDGE	1	8.50	4,604	66,262	70,866
00003	CRUSHED STONE BASE		4.00	12,647	167,062	179,709
00003	CRUSHED STONE BASE		9.50	4,062	67,038	71,101
00003	CRUSHED STONE BASE	4	4.00		3,803	3,803
00008	CEMENT STABILIZED ROADBED		8.00	15,843	228,018	243,861
00100	ASPHALT SEAL AGGREGATE		----	6,229	89,648	95,877
00103	ASPHALT SEAL COAT		----	6,229	89,648	95,877
00190	LEVELING & WEDGING PG64-22	5	0.50	203	2,923	3,126
00356	ASPHALT MATERIAL FOR TACK		----	4,215	60,659	64,873
00214	CL3 ASPH BASE 1.00D PG64-22		3.00	4,113	59,197	63,310
00214	CL3 ASPH BASE 1.00D PG64-22		3.00	4,215	60,659	64,873
00312	CL3 ASPH SURF 0.50D PG64-22		1.50	4,062	67,038	71,101
00358	ASPHALT CURING SEAL	2	----	15,843	228,018	243,861
02058	REMOVE PCC PAVEMENT		10.00	15,437	222,171	237,608
02086	JPC PAVEMENT-13 IN		13.00	12,647	167,062	179,709
02542	CEMENT	2	----	15,843	228,018	243,861
02677	ASPHALT PAVE MILLING & TEXTURING	3	1.50		8,572	8,572
02702	SAND FOR BLOTTER	2	----	15,843	228,018	243,861

- NOTES:
1.

Depth shown is equivalent and is based on the average depth over the cross section of the pavement material.
2.

For cement stabilized roadbed.
3.

For milling existing rumble strips.
4.

For interior of Thrie Beam Bullnose Terminal
5.

For maintenance of shoulders during MOT as directed by The Engineer.

PAVING SUMMARY - JPC ALTERNATE						
I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00						
BID CODE	ITEM	NOTES	UNIT	CALDWELL COUNTY	LYON COUNTY	TOTALS
00003	CRUSHED STONE BASE	2	TON	8,966	131,164	140,131
00008	CEMENT STABILIZED ROADBED		SQYD	15,843	228,018	243,861
00100	ASPHALT SEAL AGGREGATE	5	TON	125	1,793	1,918
00103	ASPHALT SEAL COAT	6	TON	15	215	230
00190	LEVELING & WEDGING PG64-22	3	TON	6	80	86
00214	CL3 ASPH BASE 1.00D PG64-22	3	TON	1,374	19,776	21,150
00312	CL3 ASPH SURF 0.50D PG64-22	3	TON	335	5,531	5,866
00356	ASPHALT MATERIAL FOR TACK	4	TON	2	26	28
00358	ASPHALT CURING SEAL	7	TON	32	456	488
02058	REMOVE PCC PAVEMENT		SQYD	15,437	222,171	237,608
02086	JPC PAVEMENT-13 IN		SQYD	12,647	167,062	179,709
02542	CEMENT	8	TON	308	4,433	4,741
02677	ASPHALT PAVE MILLING & TEXTURING	3	TON		707	707
02702	SAND FOR BLOTTER	9	TON	63	912	975

- NOTES:
- 1. Quantities are carried over and included in General Summary.
 - 2. Estimated at 115 lbs. per sq. yd. per inch of depth.
 - 3. Estimated at 110 lbs. per sq. yd. per inch of depth.
 - 4. Estimated at 0.84 lbs. per sq. yd.
 - 5. Estimated at 20 lbs. per sq. yd. (two applications).
 - 6. Estimated at 2.4 lbs. per sq. yd. (two applications).
 - 7. Estimated at 2 lbs. per sq. yd. (two applications)
 - 8. Estimated at 6% by weight with a dry density of 108 lbs. per cubic foot.
 - 9. Estimated at 5 lbs. per sq. yd.

SCHEDULE AND SUMMARY OF GUARDRAIL

I-24 - LYON/CALDWELL COUNTY - ITEM NO. 01-20010.00/02-20062.00

LOCATION				ITEM								
COUNTY	OFFSET	STATIONS	MILEPOINTS	NOTES		LIN. FT.	EACH					
				GUARDRAIL - STEEL W BEAM - S FACE	REMOVE GUARDRAIL	DELINEATOR FOR GUARDRAIL M/W	DELINEATOR FOR GUARDRAIL M/Y	GUARDRAIL END TREATMENT TYPE 2M	REMOVE GUARDRAIL CON TO BR END	GUARDRAIL END TREATMENT TYPE 3	THRIE BEAM GUARDRAIL TRANSITION TL-3	THRIE BEAM BULLNOSE TERMINAL
LYON	LT	4032+70 TO 4046+74	45.79 TO 46.06	02351	02381	01982	01983	02370	02372	02373	25078ED	26236EC
				1412.5	1407	30		1		1		
LYON	LT	4050+71 TO 4057+45	46.13 TO 46.26	687.5	684	15		1		1		
LYON	LT	4072+74 TO 4079+49	46.55 TO 46.68	675	674	15		1	1		1	
LYON	RT	4083+22 TO 4086+04	46.75 TO 46.80	287.5	284		7	1	1		1	
LYON	LT	4083+61 TO 4098+93	46.75 TO 47.04	1537.5	1533	32			1	1	1	
LYON	LT	4104+18 TO 4112+57	47.14 TO 47.30	837.5	836	18		1		1		
LYON	LT	4133+56 TO 4151+28	47.70 TO 48.04	1775	1775	37		1		1		
LYON	LT	4216+69 TO 4225+65	49.27 TO 49.44	375	364	9		1		1		
LYON	RT	4226+12 TO 4228+08	49.45 TO 49.49	200	131		5		2			2
LYON	RT	4344+23 TO 4346+22	51.69 TO 51.73	200	199		5		2			2
LYON	LT	4433+58 TO 4435+60	53.38 TO 53.42	212.5	201	6		1	1		1	
LYON	RT	4433+69 TO 4435+59	53.38 TO 53.42	275	337		7		2		2	2
LYON	LT	4437+02 TO 4439+27	53.45 TO 53.49	225	225	6		1	1		1	
LYON	RT	4437+02 TO 4438+89	53.45 TO 53.48	262.5	380							
I-24 TOTALS:				8,963	9,030	168	24	9	11	6	7	6

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP				NOTES							
LEFT	RIGHT	STATION		MILEPOINT		TON	LIN. FT.	LIN. FT.	PERFOR ATED PIPE OUTLET	PERFOR ATED PIPE OUTLET	PERFOR ATED PIPE OUTLET	PERFOR ATED PIPE OUTLET	
I-24 WESTBOUND													
						CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON- PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	
						00078	01006	01011	01021	01025	01029	01033	
X		4000+00	TO	4003+00	45.171	TO	45.228	1	1	300	11.0		1
	X	4000+00	TO	4003+00	45.171	TO	45.228		1	300	11.0		1
X		4003+00	TO	4006+00	45.228	TO	45.285	1	1	300	11.0		1
	X	4003+00	TO	4006+00	45.228	TO	45.285		1	300	11.0		1
X		4006+00	TO	4009+00	45.285	TO	45.341	1	1	300	11.0		1
	X	4006+00	TO	4009+00	45.285	TO	45.341		1	300	11.0		1
X		4009+00	TO	4012+00	45.341	TO	45.398	1	1	300	11.0		1
	X	4009+00	TO	4012+00	45.341	TO	45.398		1	300	11.0		1
X		4012+00	TO	4015+00	45.398	TO	45.455	1	1	300	11.0		1
	X	4012+00	TO	4015+00	45.398	TO	45.455		1	300	11.0		1
X		4015+00	TO	4018+00	45.455	TO	45.512	1	1	300	11.0		1
	X	4015+00	TO	4018+00	45.455	TO	45.512		1	300	11.0		1
X		4018+00	TO	4021+00	45.512	TO	45.569	1	1	300	11.0		1
	X	4018+00	TO	4021+00	45.512	TO	45.569		1	300	11.0		1
X		4021+00	TO	4024+00	45.569	TO	45.626	1	1	300	11.0		1
	X	4021+00	TO	4024+00	45.569	TO	45.626		1	300	11.0		1
X		4024+00	TO	4027+00	45.626	TO	45.682	1	1	300	11.0		1
	X	4024+00	TO	4027+00	45.626	TO	45.682		1	300	11.0		1
X		4027+00	TO	4030+00	45.682	TO	45.739	1	1	300	9.0		
	X	4027+00	TO	4030+00	45.682	TO	45.739		1	300	11.0		1

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP		MILEPOINT		NOTES		TON	LIN. FT.	LIN. FT.	PERFOR ATED PIPE OUTLET	PERFOR ATED PIPE OUTLET	PERFOR ATED PIPE OUTLET	PERFOR ATED PIPE OUTLET
LEFT	RIGHT	STATION						CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON- PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)
								00078	01006	01011	01021	01025	01029	01033
X		4030+00	TO	4033+00	45.739	TO	45.796	1	300	8.5	1			
	X	4030+00	TO	4033+00	45.739	TO	45.796	1	300	11.0				1
X		4033+00	TO	4035+41	45.796	TO	45.842	1	241	8.5	1			
	X	4033+00	TO	4035+41	45.796	TO	45.842	1	241	11.0				1
		4035+41						0	38	0.0				
X		4035+41	TO	4038+00	45.842	TO	45.891	1	259	8.5	1			
	X	4035+41	TO	4038+00	45.842	TO	45.891	1	259	11.0				1
X		4038+00	TO	4041+00	45.891	TO	45.948	1	300	8.5	1			
	X	4038+00	TO	4041+00	45.891	TO	45.948	1	300	11.0				1
X		4041+00	TO	4044+00	45.948	TO	46.004	1	300	8.5	1			
	X	4041+00	TO	4044+00	45.948	TO	46.004	1	300	11.0				1
X		4044+00	TO	4046+57	46.004	TO	46.053	1	257	10.0			1	
	X	4044+00	TO	4047+00	46.004	TO	46.061	1	300	11.0				1
	X	4047+00	TO	4050+00	46.061	TO	46.118	1	300	11.0				1
	X	4050+00	TO	4053+39	46.118	TO	46.182	1	339	0.0				
	X	4053+39	TO	4056+00	46.182	TO	46.232	1	261	11.0				1
	X	4056+00	TO	4059+00	46.232	TO	46.288	1	300	11.0				1
X		4059+00	TO	4062+00	46.288	TO	46.345	1	300	11.0				1
	X	4059+00	TO	4062+00	46.288	TO	46.345	1	300	11.0				1
X		4062+00	TO	4065+00	46.345	TO	46.402	1	300	11.0				1
	X	4062+00	TO	4065+00	46.345	TO	46.402	1	300	11.0				1

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP			NOTES									
LEFT	RIGHT	STATION	MILEPOINT	TON	LIN. FT.	LIN. FT.	PERFOR	PERFOR	PERFOR	PERFOR				
							ATED PIPE OUTLET EACH	ATED PIPE OUTLET EACH	ATED PIPE OUTLET EACH	ATED PIPE OUTLET EACH				
X		4065+00 TO	4068+00 TO	46.402 TO	46.459 TO	46.459 TO	1	1	300	11.0				1
	X	4065+00 TO	4068+00 TO	46.402 TO	46.459 TO	46.459 TO	1	1	300	11.0				1
X		4068+00 TO	4071+00 TO	46.459 TO	46.516 TO	46.516 TO	1	1	300	10.0			1	
	X	4068+00 TO	4071+00 TO	46.459 TO	46.516 TO	46.516 TO	1	1	300	11.0				1
X		4071+00 TO	4074+00 TO	46.516 TO	46.573 TO	46.573 TO	1	1	300	10.0			1	
	X	4071+00 TO	4074+00 TO	46.516 TO	46.573 TO	46.573 TO	1	1	300	11.0				1
X		4074+00 TO	4077+00 TO	46.573 TO	46.629 TO	46.629 TO	1	1	300	9.0		1		
	X	4074+00 TO	4077+00 TO	46.573 TO	46.629 TO	46.629 TO	1	1	300	11.0				1
X		4077+00 TO	4078+00 TO	46.629 TO	46.648 TO	46.648 TO	1	1	100	8.5		1		
	X	4077+00 TO	4078+00 TO	46.629 TO	46.648 TO	46.648 TO	1	1	100	11.0				1
		4083+81				0	38	0.0						
X		4083+81 TO	4085+00 TO	46.758 TO	46.781 TO	46.781 TO	1	1	119	8.5	1			
	X	4083+81 TO	4085+00 TO	46.758 TO	46.781 TO	46.781 TO	1	1	119	11.0				1
X		4085+00 TO	4088+00 TO	46.781 TO	46.838 TO	46.838 TO	1	1	300	9.0		1		
	X	4085+00 TO	4088+00 TO	46.781 TO	46.838 TO	46.838 TO	1	1	300	11.0				1
X		4088+00 TO	4091+00 TO	46.838 TO	46.894 TO	46.894 TO	1	1	300	10.0			1	
	X	4088+00 TO	4091+00 TO	46.838 TO	46.894 TO	46.894 TO	1	1	300	11.0				1
X		4091+00 TO	4094+00 TO	46.894 TO	46.951 TO	46.951 TO	1	1	300	10.0			1	
	X	4091+00 TO	4094+00 TO	46.894 TO	46.951 TO	46.951 TO	1	1	300	11.0				1
X		4094+00 TO	4097+00 TO	46.951 TO	47.008 TO	47.008 TO	1	1	300	11.0				1
	X	4094+00 TO	4097+00 TO	46.951 TO	47.008 TO	47.008 TO	1	1	300	11.0				1

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP											
LEFT	RIGHT	STATION		MILEPOINT		NOTES							
						TON	LIN. FT.	LIN. FT.	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	
						CRUSHED AGGREGATE NO. 2 00078	PERFORATED PIPE EDGE DRAIN - 6 IN. 01006	NON-PERFORATED PIPE - 6 IN 01011	TYPE 4-6 IN (6:1) 01021	TYPE 4-6 IN (6:1) 01025	TYPE 4-6 IN (6:1) 01029	TYPE 4-6 IN (6:1) 01033	
X		4097+00	TO	4100+00	47.008	TO	47.065	1	1	300	11.0		1
	X	4097+00	TO	4100+00	47.008	TO	47.065	1	1	300	11.0		1
X		4100+00	TO	4103+00	47.065	TO	47.122	1	1	300	10.0		1
	X	4100+00	TO	4103+00	47.065	TO	47.122	1	1	300	11.0		1
X		4103+00	TO	4106+00	47.122	TO	47.179	1	1	300	9.0	1	
	X	4103+00	TO	4106+00	47.122	TO	47.179	1	1	300	11.0		1
X		4106+00	TO	4109+00	47.179	TO	47.235	1	1	300	8.5	1	
	X	4106+00	TO	4108+23	47.179	TO	47.221	1	1	223	11.0		1
X		4109+00	TO	4112+00	47.235	TO	47.292	1	1	300	8.5	1	
X		4112+00	TO	4115+15	47.292	TO	47.352	1	0	315	0.0		
X		4115+15	TO	4118+00	47.352	TO	47.406	1	1	285	11.0		1
X		4118+00	TO	4121+00	47.406	TO	47.463	1	1	300	11.0		1
X		4121+00	TO	4124+00	47.463	TO	47.519	1	1	300	11.0		1
X		4124+00	TO	4127+00	47.519	TO	47.576	1	1	300	11.0		1
	X	4125+87	TO	4127+00	47.555	TO	47.576	1	1	113	11.0		1
X		4127+00	TO	4130+00	47.576	TO	47.633	1	1	300	11.0		1
	X	4127+00	TO	4130+00	47.576	TO	47.633	1	1	300	11.0		1
X		4130+00	TO	4133+00	47.633	TO	47.690	1	1	300	9.0	1	
	X	4130+00	TO	4133+00	47.633	TO	47.690	1	1	300	11.0		1
X		4133+00	TO	4136+26	47.690	TO	47.752	1	1	326	8.5	1	
	X	4133+00	TO	4136+26	47.690	TO	47.752	1	1	326	11.0		1

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION	MP TO MP	STATION	MILEPOINT	NOTES							
				TON	LIN. FT.	LIN. FT.	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	
LEFT	RIGHT	4136+26		CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON-PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	
				00078	01006	01011	01021	01025	01029	01033	
				0	38	0.0					
X		4136+26 TO 4139+00	47.752 TO 47.804	1	274	8.5	1				
	X	4136+26 TO 4139+00	47.752 TO 47.804	1	274	11.0				1	
X		4139+00 TO 4142+00	47.804 TO 47.860	1	300	8.5	1				
	X	4139+00 TO 4142+00	47.804 TO 47.860	1	300	11.0				1	
X		4142+00 TO 4145+00	47.860 TO 47.917	1	300	9.0		1			
	X	4142+00 TO 4145+00	47.860 TO 47.917	1	300	11.0				1	
X		4145+00 TO 4148+00	47.917 TO 47.974	1	300	10.0			1		
	X	4145+00 TO 4148+00	47.917 TO 47.974	1	300	11.0				1	
X		4148+00 TO 4151+00	47.974 TO 48.031	1	300	11.0				1	
	X	4148+00 TO 4151+00	47.974 TO 48.031	1	300	11.0				1	
X		4151+00 TO 4154+00	48.031 TO 48.088	1	300	11.0				1	
	X	4151+00 TO 4154+00	48.031 TO 48.088	1	300	11.0				1	
X		4154+00 TO 4157+00	48.088 TO 48.144	1	300	11.0				1	
	X	4154+00 TO 4157+00	48.088 TO 48.144	1	300	11.0				1	
X		4157+00 TO 4160+00	48.144 TO 48.201	1	300	11.0				1	
	X	4157+00 TO 4160+00	48.144 TO 48.201	1	300	11.0				1	
X		4160+00 TO 4163+00	48.201 TO 48.258	1	300	11.0				1	
	X	4160+00 TO 4163+00	48.201 TO 48.258	1	300	11.0				1	
X		4163+00 TO 4166+00	48.258 TO 48.315	1	300	11.0				1	
	X	4163+00 TO 4166+00	48.258 TO 48.315	1	300	11.0				1	

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN													
I-24 - LYON / CALDWELL COUNTY													
DIRECTION		MP TO MP											
LEFT	RIGHT	STATION		MILEPOINT		NOTES							
						TON	LIN. FT.	LIN. FT.	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	
						CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON-PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	
						00078	01006	01011	01021	01025	01029	01033	
X		4166+00	TO	4169+00	48.315	TO	48.372	1	1	300	11.0		1
	X	4166+00	TO	4169+00	48.315	TO	48.372	1	1	300	11.0		1
X		4169+00	TO	4172+00	48.372	TO	48.429	1	1	300	11.0		1
	X	4169+00	TO	4172+00	48.372	TO	48.429	1	1	300	11.0		1
X		4172+00	TO	4175+00	48.429	TO	48.485	1	1	300	11.0		1
	X	4172+00	TO	4175+00	48.429	TO	48.485	1	1	300	11.0		1
X		4175+00	TO	4178+00	48.485	TO	48.542	1	1	300	11.0		1
	X	4175+00	TO	4178+00	48.485	TO	48.542	1	1	300	11.0		1
X		4178+00	TO	4181+00	48.542	TO	48.599	1	1	300	11.0		1
	X	4178+00	TO	4181+00	48.542	TO	48.599	1	1	300	11.0		1
X		4181+00	TO	4184+00	48.599	TO	48.656	1	1	300	11.0		1
	X	4181+00	TO	4184+00	48.599	TO	48.656	1	1	300	11.0		1
X		4184+00	TO	4187+00	48.656	TO	48.713	1	1	300	11.0		1
	X	4184+00	TO	4187+00	48.656	TO	48.713	1	1	300	11.0		1
X		4187+00	TO	4190+00	48.713	TO	48.769	1	1	300	11.0		1
	X	4187+00	TO	4190+00	48.713	TO	48.769	1	1	300	11.0		1
X		4190+00	TO	4190+86	48.769	TO	48.786	1	0	86	0.0		
	X	4190+00	TO	4190+86	48.769	TO	48.786	1	0	86	0.0		
X		4190+86	TO	4194+00	48.786	TO	48.845	1	1	314	11.0		1
	X	4190+86	TO	4194+00	48.786	TO	48.845	1	1	314	11.0		1
X		4194+00	TO	4197+00	48.845	TO	48.902	1	1	300	11.0		1

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN													
I-24 - LYON / CALDWELL COUNTY													
DIRECTION		MP TO MP											
LEFT	RIGHT	STATION		MILEPOINT		NOTES							
						TON	LIN. FT.	LIN. FT.	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	
						CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON-PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	
						00078	01006	01011	01021	01025	01029	01033	
	X	4194+00	TO	4197+00	48.845	TO	48.902	1	1	300	11.0		1
X		4197+00	TO	4200+00	48.902	TO	48.959	1	1	300	11.0		1
	X	4197+00	TO	4200+00	48.902	TO	48.959	1	1	300	11.0		1
X		4200+00	TO	4203+00	48.959	TO	49.016	1	1	300	10.0		1
	X	4200+00	TO	4203+00	48.959	TO	49.016	1	1	300	11.0		1
X		4203+00	TO	4206+33	49.016	TO	49.079	1	1	333	8.5	1	
	X	4203+00	TO	4206+33	49.016	TO	49.079	1	1	333	11.0		1
4206+33								0		38	0.0		
X		4206+33	TO	4209+00	49.079	TO	49.129	1	1	267	8.5	1	
	X	4206+33	TO	4209+00	49.079	TO	49.129	1	1	267	11.0		1
X		4209+00	TO	4212+00	49.129	TO	49.186	1	1	300	10.0		1
	X	4209+00	TO	4212+00	49.129	TO	49.186	1	1	300	11.0		1
X		4212+00	TO	4215+00	49.186	TO	49.243	1	1	300	10.0	1	
	X	4212+00	TO	4215+00	49.186	TO	49.243	1	1	300	11.0		1
X		4215+00	TO	4218+00	49.243	TO	49.300	1	1	300	8.5	1	
	X	4215+00	TO	4218+00	49.243	TO	49.300	1	1	300	11.0		1
X		4218+00	TO	4221+16	49.300	TO	49.360	1	0	316	0.0		
	X	4218+00	TO	4221+16	49.300	TO	49.360	1	0	316	0.0		
X		4221+16	TO	4224+00	49.360	TO	49.413	1	1	284	8.5	1	
	X	4221+16	TO	4224+00	49.360	TO	49.413	1	1	284	11.0		1
X		4224+00	TO	4227+00	49.413	TO	49.470	1	1	300	11.0		1

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP											
LEFT	RIGHT	STATION		MILEPOINT		NOTES							
						TON	LIN. FT.	LIN. FT.	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	
						CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON-PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	
						00078	01006	01011	01021	01025	01029	01033	
	X	4224+00	TO	4227+00	49.413	TO	49.470	1	1	300	11.0		1
X		4227+00	TO	4230+00	49.470	TO	49.527	1	1	300	11.0		1
	X	4227+00	TO	4230+00	49.470	TO	49.527	1	1	300	11.0		1
X		4230+00	TO	4233+00	49.527	TO	49.584	1	1	300	11.0		1
	X	4230+00	TO	4233+00	49.527	TO	49.584	1	1	300	11.0		1
X		4233+00	TO	4236+00	49.584	TO	49.641	1	1	300	11.0		1
	X	4233+00	TO	4236+00	49.584	TO	49.641	1	1	300	11.0		1
X		4236+00	TO	4239+00	49.641	TO	49.698	1	1	300	11.0		1
	X	4236+00	TO	4239+00	49.641	TO	49.698	1	1	300	11.0		1
X		4239+00	TO	4242+00	49.698	TO	49.754	1	1	300	11.0		1
	X	4239+00	TO	4242+00	49.698	TO	49.754	1	1	300	11.0		1
X		4242+00	TO	4245+00	49.754	TO	49.811	1	1	300	11.0		1
	X	4242+00	TO	4245+00	49.754	TO	49.811	1	1	300	11.0		1
X		4245+00	TO	4248+00	49.811	TO	49.868	1	1	300	11.0		1
	X	4245+00	TO	4248+00	49.811	TO	49.868	1	1	300	11.0		1
X		4248+00	TO	4251+00	49.868	TO	49.925	1	1	300	11.0		1
	X	4248+00	TO	4251+00	49.868	TO	49.925	1	1	300	11.0		1
X		4251+00	TO	4253+10	49.925	TO	49.965	1	1	210	11.0		1
	X	4251+00	TO	4253+10	49.925	TO	49.965	1	1	210	11.0		1
		4253+10						0			0.0		
X		4253+10	TO	4256+00	49.965	TO	50.019	1	1	290	11.0		1

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN												
I-24 - LYON / CALDWELL COUNTY												
DIRECTION	MP TO MP	STATION	MILEPOINT	TON		LIN. FT.	LIN. FT.	PERFOR	PERFOR	PERFOR	PERFOR	
				CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON- PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	ATED PIPE OUTLET	ATED PIPE OUTLET
LEFT	RIGHT			00078	01006	01011	01021	01025	01029	01033		
	X	4253+10 TO	4256+00	49.965 TO	50.019	1	1	290	11.0			1
X		4256+00 TO	4259+00	50.019 TO	50.076	1	1	300	11.0			1
	X	4256+00 TO	4259+00	50.019 TO	50.076	1	1	300	11.0			1
X		4259+00 TO	4262+00	50.076 TO	50.133	1	1	300	11.0			1
	X	4259+00 TO	4262+00	50.076 TO	50.133	1	1	300	11.0			1
X		4262+00 TO	4265+00	50.133 TO	50.190	1	1	300	11.0			1
	X	4262+00 TO	4265+00	50.133 TO	50.190	1	1	300	11.0			1
X		4265+00 TO	4268+00	50.190 TO	50.247	1	1	300	11.0			1
	X	4265+00 TO	4268+00	50.190 TO	50.247	1	1	300	11.0			1
X		4268+00 TO	4271+00	50.247 TO	50.304	1	1	300	11.0			1
	X	4268+00 TO	4271+00	50.247 TO	50.304	1	1	300	11.0			1
X		4271+00 TO	4274+00	50.304 TO	50.360	1	1	300	11.0			1
	X	4271+00 TO	4274+00	50.304 TO	50.360	1	1	300	11.0			1
X		4274+00 TO	4277+00	50.360 TO	50.417	1	1	300	11.0			1
	X	4274+00 TO	4277+00	50.360 TO	50.417	1	1	300	11.0			1
X		4277+00 TO	4280+00	50.417 TO	50.474	1	1	300	11.0			1
	X	4277+00 TO	4280+00	50.417 TO	50.474	1	1	300	11.0			1
X		4280+00 TO	4283+00	50.474 TO	50.531	1	1	300	11.0			1
	X	4280+00 TO	4283+00	50.474 TO	50.531	1	1	300	11.0			1
X		4283+00 TO	4286+00	50.531 TO	50.588	1	1	300	11.0			1
	X	4283+00 TO	4286+00	50.531 TO	50.588	1	1	300	11.0			1

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP		NOTES								
				TON	LIN. FT.	LIN. FT.	PERFOR ATED PIPE OUTLET EACH	PERFOR ATED PIPE OUTLET EACH	PERFOR ATED PIPE OUTLET EACH	PERFOR ATED PIPE OUTLET EACH		
LEFT	RIGHT	STATION		MILEPOINT		CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON- PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)
X		4286+00	TO 4289+00	50.588	TO 50.644	1	300	11.0	01021	01025	01029	01033
	X	4286+00	TO 4289+00	50.588	TO 50.644	1	300	11.0				1
X		4289+00	TO 4292+00	50.644	TO 50.701	1	300	11.0				1
	X	4289+00	TO 4292+00	50.644	TO 50.701	1	300	11.0				1
X		4292+00	TO 4295+00	50.701	TO 50.758	1	300	11.0				1
	X	4292+00	TO 4295+00	50.701	TO 50.758	1	300	11.0				1
X		4295+00	TO 4298+00	50.758	TO 50.815	1	300	11.0				1
	X	4295+00	TO 4298+00	50.758	TO 50.815	1	300	11.0				1
X		4298+00	TO 4301+00	50.815	TO 50.872	1	300	11.0				1
	X	4298+00	TO 4301+00	50.815	TO 50.872	1	300	11.0				1
X		4301+00	TO 4304+00	50.872	TO 50.929	1	300	11.0				1
	X	4301+00	TO 4304+00	50.872	TO 50.929	1	300	11.0				1
X		4304+00	TO 4307+00	50.929	TO 50.985	1	300	11.0				1
	X	4304+00	TO 4307+00	50.929	TO 50.985	1	300	11.0				1
X		4307+00	TO 4310+00	50.985	TO 51.042	1	300	11.0				1
	X	4307+00	TO 4310+00	50.985	TO 51.042	1	300	11.0				1
X		4310+00	TO 4313+00	51.042	TO 51.099	1	300	11.0				1
	X	4310+00	TO 4313+00	51.042	TO 51.099	1	300	11.0				1
X		4313+00	TO 4316+00	51.099	TO 51.156	1	300	11.0				1
	X	4313+00	TO 4316+00	51.099	TO 51.156	1	300	11.0				1
X		4316+00	TO 4319+00	51.156	TO 51.213	1	300	11.0				1
	X	4316+00	TO 4319+00	51.156	TO 51.213	1	300	11.0				1

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP											
LEFT	RIGHT	STATION		MILEPOINT		NOTES							
						TON	LIN. FT.	LIN. FT.	PERFORATED ATED PIPE OUTLET EACH	PERFORATED ATED PIPE OUTLET EACH	PERFORATED ATED PIPE OUTLET EACH	PERFORATED ATED PIPE OUTLET EACH	
						CRUSHED AGGREGATE NO. 2 00078	PERFORATED PIPE EDGE DRAIN - 6 IN. 01006	NON- PERFORATED PIPE - 6 IN 01011	TYPE 4-6 IN (6:1) 01021	TYPE 4-6 IN (6:1) 01025	TYPE 4-6 IN (6:1) 01029	TYPE 4-6 IN (6:1) 01033	
	X	4316+00	TO	4319+00	51.156	TO	51.213	1	1	300	11.0		1
X		4319+00	TO	4321+80	51.213	TO	51.266	1	0	280	0.0		
	X	4319+00	TO	4321+80	51.213	TO	51.266	1	0	280	0.0		
X		4321+80	TO	4325+00	51.266	TO	51.326	1	1	320	11.0		1
	X	4321+80	TO	4325+00	51.266	TO	51.326	1	1	320	11.0		1
X		4325+00	TO	4328+00	51.326	TO	51.383	1	1	300	11.0		1
	X	4325+00	TO	4328+00	51.326	TO	51.383	1	1	300	11.0		1
X		4328+00	TO	4331+00	51.383	TO	51.440	1	1	300	11.0		1
	X	4328+00	TO	4331+00	51.383	TO	51.440	1	1	300	11.0		1
X		4331+00	TO	4334+00	51.440	TO	51.497	1	1	300	11.0		1
	X	4331+00	TO	4334+00	51.440	TO	51.497	1	1	300	11.0		1
X		4334+00	TO	4337+00	51.497	TO	51.554	1	1	300	11.0		1
	X	4334+00	TO	4337+00	51.497	TO	51.554	1	1	300	11.0		1
X		4337+00	TO	4340+00	51.554	TO	51.610	1	1	300	11.0		1
	X	4337+00	TO	4340+00	51.554	TO	51.610	1	1	300	11.0		1
X		4340+00	TO	4343+00	51.610	TO	51.667	1	1	300	11.0		1
	X	4340+00	TO	4343+00	51.610	TO	51.667	1	1	300	11.0		1
X		4343+00	TO	4344+81	51.667	TO	51.701	1	1	181	11.0		1
	X	4343+00	TO	4344+81	51.667	TO	51.701	1	1	181	11.0		1
		4344+81						0	38	0.0			
X		4344+81	TO	4347+00	51.701	TO	51.743	1	1	219	11.0		1

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP													
		LEFT	RIGHT	STATION	MILEPOINT		NOTES								
					TON	LIN. FT.	LIN. FT.	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH				
					CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON-PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)				
					00078	01006	01011	01021	01025	01029	01033				
	X	4344+81	TO	4347+00	51.701	TO	51.743	1	1	219	11.0				1
X		4347+00	TO	4350+00	51.743	TO	51.800	1	1	300	11.0				1
	X	4347+00	TO	4350+00	51.743	TO	51.800	1	1	300	11.0				1
X		4350+00	TO	4353+00	51.800	TO	51.857	1	1	300	11.0				1
	X	4350+00	TO	4353+00	51.800	TO	51.857	1	1	300	11.0				1
X		4353+00	TO	4356+00	51.857	TO	51.913	1	1	300	11.0				1
	X	4353+00	TO	4356+00	51.857	TO	51.913	1	1	300	11.0				1
X		4356+00	TO	4359+00	51.913	TO	51.970	1	1	300	11.0				1
	X	4356+00	TO	4359+00	51.913	TO	51.970	1	1	300	11.0				1
X		4359+00	TO	4362+00	51.970	TO	52.027	1	1	300	11.0				1
	X	4359+00	TO	4362+00	51.970	TO	52.027	1	1	300	11.0				1
X		4362+00	TO	4365+00	52.027	TO	52.084	1	1	300	11.0				1
	X	4362+00	TO	4365+00	52.027	TO	52.084	1	1	300	11.0				1
X		4365+00	TO	4368+00	52.084	TO	52.141	1	1	300	11.0				1
	X	4365+00	TO	4368+00	52.084	TO	52.141	1	1	300	11.0				1
X		4368+00	TO	4371+00	52.141	TO	52.198	1	1	300	11.0				1
	X	4368+00	TO	4371+00	52.141	TO	52.198	1	1	300	11.0				1
X		4371+00	TO	4374+00	52.198	TO	52.254	1	1	300	11.0				1
	X	4371+00	TO	4374+00	52.198	TO	52.254	1	1	300	11.0				1
X		4374+00	TO	4377+00	52.254	TO	52.311	1	1	300	11.0				1
	X	4374+00	TO	4377+00	52.254	TO	52.311	1	1	300	11.0				1

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP	NOTES								
			TON	LIN. FT.	LIN. FT.	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH		
LEFT	RIGHT	STATION	MILEPOINT	CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON-PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	
X		4377+00 TO	4380+00 TO	52.311 TO 52.368	1 TO 1	300	11.0	01021	01025	01029	01033
	X	4377+00 TO	4380+00 TO	52.311 TO 52.368	1 TO 1	300	11.0				1
X		4380+00 TO	4383+00 TO	52.368 TO 52.425	1 TO 1	300	11.0				1
	X	4380+00 TO	4383+00 TO	52.368 TO 52.425	1 TO 1	300	11.0				1
X		4383+00 TO	4386+00 TO	52.425 TO 52.482	1 TO 1	300	11.0				1
	X	4383+00 TO	4386+00 TO	52.425 TO 52.482	1 TO 1	300	11.0				1
X		4386+00 TO	4389+07 TO	52.482 TO 52.540	1 TO 0	307	0.0				
	X	4386+00 TO	4389+07 TO	52.482 TO 52.540	1 TO 0	307	0.0				
X		4389+07 TO	4392+00 TO	52.540 TO 52.595	1 TO 0	293	0.0				
	X	4389+07 TO	4392+00 TO	52.540 TO 52.595	1 TO 0	293	0.0				
X		4392+00 TO	4395+00 TO	52.595 TO 52.652	1 TO 1	300	11.0				1
	X	4392+00 TO	4395+00 TO	52.595 TO 52.652	1 TO 1	300	11.0				1
X		4395+00 TO	4398+00 TO	52.652 TO 52.709	1 TO 1	300	11.0				1
	X	4395+00 TO	4398+00 TO	52.652 TO 52.709	1 TO 1	300	11.0				1
X		4398+00 TO	4401+00 TO	52.709 TO 52.766	1 TO 1	300	11.0				1
	X	4398+00 TO	4401+00 TO	52.709 TO 52.766	1 TO 1	300	11.0				1
X		4401+00 TO	4404+00 TO	52.766 TO 52.823	1 TO 1	300	11.0				1
	X	4401+00 TO	4404+00 TO	52.766 TO 52.823	1 TO 1	300	11.0				1
X		4404+00 TO	4407+00 TO	52.823 TO 52.879	1 TO 1	300	11.0				1
	X	4404+00 TO	4407+00 TO	52.823 TO 52.879	1 TO 1	300	11.0				1
X		4407+00 TO	4410+00 TO	52.879 TO 52.936	1 TO 1	300	11.0				1

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP	NOTES									
			TON	LIN. FT.	LIN. FT.	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH			
LEFT	RIGHT	STATION	MILEPOINT	CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON-PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)		
	X	4407+00 TO	52.879 TO	52.936 TO	1	300	11.0				1	
X		4410+00 TO	52.936 TO	52.993 TO	1	300	11.0				1	
	X	4410+00 TO	52.936 TO	52.993 TO	1	300	11.0				1	
X		4413+00 TO	52.993 TO	53.050 TO	1	300	11.0				1	
	X	4413+00 TO	52.993 TO	53.050 TO	1	300	11.0				1	
X		4416+00 TO	52.993 TO	53.050 TO	1	300	11.0				1	
	X	4416+00 TO	53.050 TO	53.107 TO	1	300	11.0				1	
X		4419+00 TO	53.050 TO	53.107 TO	1	300	11.0				1	
	X	4419+00 TO	53.107 TO	53.163 TO	1	300	11.0				1	
	X	4419+00 TO	53.107 TO	53.163 TO	1	300	11.0				1	
X		4422+00 TO	53.163 TO	53.220 TO	1	300	11.0				1	
	X	4422+00 TO	53.163 TO	53.220 TO	1	300	11.0				1	
X		4425+00 TO	53.163 TO	53.220 TO	1	300	11.0				1	
	X	4425+00 TO	53.220 TO	53.277 TO	1	300	11.0				1	
X		4428+00 TO	53.220 TO	53.277 TO	1	300	11.0				1	
	X	4428+00 TO	53.277 TO	53.334 TO	1	300	11.0				1	
X		4431+00 TO	53.277 TO	53.334 TO	1	300	11.0				1	
	X	4431+00 TO	53.334 TO	53.391 TO	1	300	11.0				1	
X		4434+00 TO	53.334 TO	53.391 TO	1	300	11.0				1	
	X	4434+00 TO	53.391 TO	53.448 TO	1	300	11.0				1	
X		4437+00 TO	53.391 TO	53.448 TO	1	300	11.0				1	
	X	4437+00 TO	53.448 TO	53.504 TO	1	300	11.0				1	
X		4437+00 TO	53.448 TO	53.504 TO	1	300	11.0				1	
	X	4440+00 TO	53.504 TO	53.504 TO	1	300	11.0				1	

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP	NOTES									
			TON	LIN. FT.	LIN. FT.	PERFORATED PIPE				PERFORATED PIPE		
						CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON-PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)
LEFT	RIGHT	STATION	MILEPOINT	00078	01006	01011	01021	01025	01029	01033		
X		4440+00 TO	4443+00 TO	53.504 TO	53.561 TO	53.561 TO	53.561 TO	53.561 TO	53.561 TO	53.561 TO		
	X	4440+00 TO	4443+00 TO	53.504 TO	53.561 TO	53.561 TO	53.561 TO	53.561 TO	53.561 TO	53.561 TO		
X		4443+00 TO	4446+00 TO	53.561 TO	53.618 TO	53.618 TO	53.618 TO	53.618 TO	53.618 TO	53.618 TO		
	X	4443+00 TO	4446+00 TO	53.561 TO	53.618 TO	53.618 TO	53.618 TO	53.618 TO	53.618 TO	53.618 TO		
X		4446+00 TO	4449+00 TO	53.618 TO	53.675 TO	53.675 TO	53.675 TO	53.675 TO	53.675 TO	53.675 TO		
	X	4446+00 TO	4449+00 TO	53.618 TO	53.675 TO	53.675 TO	53.675 TO	53.675 TO	53.675 TO	53.675 TO		
X		4449+00 TO	4452+00 TO	53.675 TO	53.732 TO	53.732 TO	53.732 TO	53.732 TO	53.732 TO	53.732 TO		
	X	4449+00 TO	4452+00 TO	53.675 TO	53.732 TO	53.732 TO	53.732 TO	53.732 TO	53.732 TO	53.732 TO		
X		4452+00 TO	4455+00 TO	53.732 TO	53.788 TO	53.788 TO	53.788 TO	53.788 TO	53.788 TO	53.788 TO		
	X	4452+00 TO	4455+00 TO	53.732 TO	53.788 TO	53.788 TO	53.788 TO	53.788 TO	53.788 TO	53.788 TO		
X		4455+00 TO	4458+00 TO	53.788 TO	53.845 TO	53.845 TO	53.845 TO	53.845 TO	53.845 TO	53.845 TO		
	X	4455+00 TO	4458+00 TO	53.788 TO	53.845 TO	53.845 TO	53.845 TO	53.845 TO	53.845 TO	53.845 TO		
X		4458+00 TO	4461+00 TO	53.845 TO	53.902 TO	53.902 TO	53.902 TO	53.902 TO	53.902 TO	53.902 TO		
	X	4458+00 TO	4461+00 TO	53.845 TO	53.902 TO	53.902 TO	53.902 TO	53.902 TO	53.902 TO	53.902 TO		
X		4461+00 TO	4464+00 TO	53.902 TO	53.959 TO	53.959 TO	53.959 TO	53.959 TO	53.959 TO	53.959 TO		
	X	4461+00 TO	4464+00 TO	53.902 TO	53.959 TO	53.959 TO	53.959 TO	53.959 TO	53.959 TO	53.959 TO		
X		4464+00 TO	4467+00 TO	53.959 TO	54.016 TO	54.016 TO	54.016 TO	54.016 TO	54.016 TO	54.016 TO		
	X	4464+00 TO	4467+00 TO	53.959 TO	54.016 TO	54.016 TO	54.016 TO	54.016 TO	54.016 TO	54.016 TO		
X		4467+00 TO	4470+00 TO	54.016 TO	54.073 TO	54.073 TO	54.073 TO	54.073 TO	54.073 TO	54.073 TO		
	X	4467+00 TO	4470+00 TO	54.016 TO	54.073 TO	54.073 TO	54.073 TO	54.073 TO	54.073 TO	54.073 TO		
X		4470+00 TO	4473+00 TO	54.073 TO	54.129 TO	54.129 TO	54.129 TO	54.129 TO	54.129 TO	54.129 TO		
	X	4470+00 TO	4473+00 TO	54.073 TO	54.129 TO	54.129 TO	54.129 TO	54.129 TO	54.129 TO	54.129 TO		

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP	NOTES									
			TON	LIN. FT.	LIN. FT.	PERFORATED PIPE OUTLET				PERFORATED PIPE OUTLET		
						CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON-PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)
LEFT	RIGHT	STATION	MILEPOINT	00078	01006	01011	01021	01025	01029	01033		
	X	4470+00 TO	4473+00 TO	54.073 TO	54.129 TO	54.129 TO	54.129 TO	54.129 TO	54.129 TO	54.129 TO		
X		4473+00 TO	4476+00 TO	54.129 TO	54.186 TO	54.186 TO	54.186 TO	54.186 TO	54.186 TO	54.186 TO		
	X	4473+00 TO	4476+00 TO	54.129 TO	54.186 TO	54.186 TO	54.186 TO	54.186 TO	54.186 TO	54.186 TO		
X		4476+00 TO	4479+00 TO	54.186 TO	54.243 TO	54.243 TO	54.243 TO	54.243 TO	54.243 TO	54.243 TO		
	X	4476+00 TO	4479+00 TO	54.186 TO	54.243 TO	54.243 TO	54.243 TO	54.243 TO	54.243 TO	54.243 TO		
X		4479+00 TO	4482+00 TO	54.243 TO	54.300 TO	54.300 TO	54.300 TO	54.300 TO	54.300 TO	54.300 TO		
	X	4479+00 TO	4482+00 TO	54.243 TO	54.300 TO	54.300 TO	54.300 TO	54.300 TO	54.300 TO	54.300 TO		
X		4482+00 TO	4485+00 TO	54.300 TO	54.357 TO	54.357 TO	54.357 TO	54.357 TO	54.357 TO	54.357 TO		
	X	4482+00 TO	4485+00 TO	54.300 TO	54.357 TO	54.357 TO	54.357 TO	54.357 TO	54.357 TO	54.357 TO		
X		4485+00 TO	4486+10 TO	54.357 TO	54.377 TO	54.377 TO	54.377 TO	54.377 TO	54.377 TO	54.377 TO		
	X	4485+00 TO	4486+10 TO	54.357 TO	54.377 TO	54.377 TO	54.377 TO	54.377 TO	54.377 TO	54.377 TO		
X		4486+10 TO	4489+00 TO	54.377 TO	54.432 TO	54.432 TO	54.432 TO	54.432 TO	54.432 TO	54.432 TO		
	X	4486+10 TO	4489+00 TO	54.377 TO	54.432 TO	54.432 TO	54.432 TO	54.432 TO	54.432 TO	54.432 TO		
X		4489+00 TO	4492+00 TO	54.432 TO	54.489 TO	54.489 TO	54.489 TO	54.489 TO	54.489 TO	54.489 TO		
	X	4489+00 TO	4492+00 TO	54.432 TO	54.489 TO	54.489 TO	54.489 TO	54.489 TO	54.489 TO	54.489 TO		
X		4492+00 TO	4495+00 TO	54.489 TO	54.546 TO	54.546 TO	54.546 TO	54.546 TO	54.546 TO	54.546 TO		
	X	4492+00 TO	4495+00 TO	54.489 TO	54.546 TO	54.546 TO	54.546 TO	54.546 TO	54.546 TO	54.546 TO		
X		4495+00 TO	4498+00 TO	54.546 TO	54.603 TO	54.603 TO	54.603 TO	54.603 TO	54.603 TO	54.603 TO		
	X	4495+00 TO	4498+00 TO	54.546 TO	54.603 TO	54.603 TO	54.603 TO	54.603 TO	54.603 TO	54.603 TO		
X		4498+00 TO	4500+16 TO	54.603 TO	54.644 TO	54.644 TO	54.644 TO	54.644 TO	54.644 TO	54.644 TO		
	X	4498+00 TO	4500+16 TO	54.603 TO	54.644 TO	54.644 TO	54.644 TO	54.644 TO	54.644 TO	54.644 TO		
X		4498+00 TO	4500+16 TO	54.603 TO	54.644 TO	54.644 TO	54.644 TO	54.644 TO	54.644 TO	54.644 TO		

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN

I-24 - LYON / CALDWELL COUNTY

DIRECTION	MP TO MP	STATION	MILEPOINT	NOTES							
				TON	LIN. FT.	LIN. FT.	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	PERFORATED PIPE OUTLET EACH	
LEFT	RIGHT			CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.	NON-PERFORATED PIPE - 6 IN	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	TYPE 4-6 IN (6:1)	
		4500+16		00078	01006	01011	01021	01025	01029	01033	
				0		0.0					
X		4500+16 TO 4503+00	54.644 TO 54.698	1	284	11.0				1	
	X	4500+16 TO 4503+00	54.644 TO 54.698	1	284	11.0				1	
X		4503+00 TO 4506+00	54.698 TO 54.754	1	300	11.0				1	
	X	4503+00 TO 4506+00	54.698 TO 54.754	1	300	11.0				1	
X		4506+00 TO 4509+00	54.754 TO 54.811	1	300	11.0				1	
	X	4506+00 TO 4509+00	54.754 TO 54.811	1	300	11.0				1	
X		4509+00 TO 4512+00	54.811 TO 54.868	1	300	11.0				1	
	X	4509+00 TO 4512+00	54.811 TO 54.868	1	300	11.0				1	
X		4512+00 TO 4515+00	54.868 TO 54.925	1	300	11.0				1	
	X	4512+00 TO 4515+00	54.868 TO 54.925	1	300	11.0				1	
X		4515+00 TO 4518+00	54.925 TO 54.982	1	300	11.0				1	
	X	4515+00 TO 4518+00	54.925 TO 54.982	1	300	11.0				1	
X		4518+00 TO 4521+00	54.982 TO 55.038	1	300	11.0				1	
	X	4518+00 TO 4521+00	54.982 TO 55.038	1	300	11.0				1	
X		4521+00 TO 4524+00	55.038 TO 55.095	1	300	11.0				1	
	X	4521+00 TO 4524+00	55.038 TO 55.095	1	300	11.0				1	
X		4524+00 TO 4527+00	55.095 TO 55.152	1	300	11.0				1	
	X	4524+00 TO 4527+00	55.095 TO 55.152	1	300	11.0				1	
X		4527+00 TO 4530+00	55.152 TO 55.209	1	300	11.0				1	
	X	4527+00 TO 4530+00	55.152 TO 55.209	1	300	11.0				1	

SCHEDULE AND SUMMARY OF PAVEMENT UNDERDRAIN
I-24 - LYON / CALDWELL COUNTY

DIRECTION		MP TO MP	STATION	MILEPOINT	NOTES		TON	LIN. FT.	LIN. FT.	PERFOR	PERFOR	PERFOR	PERFOR
					CRUSHED AGGREGATE NO. 2	PERFORATED PIPE EDGE DRAIN - 6 IN.				NON- PERFORATED PIPE - 6 IN	ATED PIPE OUTLET	ATED PIPE OUTLET	ATED PIPE OUTLET
LEFT	RIGHT												
X		4530+00	TO	4533+00	55.209	TO	55.266	1	300	11.0			1
	X	4530+00	TO	4533+00	55.209	TO	55.266	1	300	11.0			1
X		4533+00	TO	4536+00	55.266	TO	55.323	1	300	11.0			1
	X	4533+00	TO	4536+00	55.266	TO	55.323	1	300	11.0			1
X		4536+00	TO	4539+00	55.323	TO	55.379	1	300	11.0			1
	X	4536+00	TO	4539+00	55.323	TO	55.379	1	300	11.0			1
X		4539+00	TO	4542+00	55.379	TO	55.436	1	300	11.0			1
	X	4539+00	TO	4542+00	55.379	TO	55.436	1	300	11.0			1
X		4542+00	TO	4545+00	55.436	TO	55.493	1	300	11.0			1
	X	4542+00	TO	4545+00	55.436	TO	55.493	1	300	11.0			1
X		4545+00	TO	4545+66	55.493	TO	55.505	1	66	11.0			1
	X	4545+00	TO	4545+66	55.493	TO	55.505	1	66	11.0			1
LYON TOTALS:							326	98,421	3,524	16	6	10	294
CALDWELL TOTALS:							24	6,732	264	0	0	0	24
PROJECT TOTALS:							350	105,153	3,788	16	6	10	318

NOTES:

1. Pavement underdrain to be installed only on inside shoulder when pavement superelevation does not slope to outside shoulder.

I-24 - LYON AND CALDWELL COUNTIES GEOMETRIC CONTROL						
I-24 CENTERLINE						
POINT	STATION	NORTHING	EASTING	RADIUS	LENGTH	TANGENT
START	3948+76.24	3554222.557	4252858.903			
HPI	3975+86.22	3552426.18	4254887.95			
HPI	3975+86.22	3552426.18	4254887.95			
PC	4046+57.01	3547739.138	4260182.066			
PC	4046+57.01	3547739.138	4260182.066			
HPI	4052+95.51	3547315.894	4260660.13	5729.58	1271.75	638.499
PT	4059+28.76	3546797.79	4261033.29			
PT	4059+28.76	3546797.79	4261033.29			
PC	4108+23.31	3542826.155	4263893.832			
PC	4108+23.31	3542826.155	4263893.832			
HPI	4117+12.42	3542104.688	4264413.464	-5729.58	1764.167	889.119
PT	4125+87.47	3541574.631	4265127.308			
PT	4125+87.47	3541574.631	4265127.308			
PC	4148+95.26	3540198.822	4266980.157			
PC	4148+95.26	3540198.822	4266980.157			
HPI	4162+26.34	3539405.288	4268048.835	11459.16	2650.279	1331.078
PT	4175+45.54	3538387.916	4268907.161			
PT	4175+45.54	3538387.916	4268907.161			
HPI	4220+42.61	3534950.713	4271807.028			
HPI	4220+42.61	3534950.713	4271807.028			
HPI	4221+09.85	3534899.32	4271850.386			
HPI	4221+09.85	3534926.11	4271882.141			
PC	4223+78.8	3534720.547	4272055.569			
PC	4223+78.8	3534720.547	4272055.569			
HPI	4239+54.45	3533516.241	4273071.606	-11459.2	3131.668	1575.653
PT	4255+10.46	3532630.858	4274374.978			
PT	4255+10.46	3532630.858	4274374.978			
PC	4317+15.63	3529144.082	4279507.861			
PC	4317+15.63	3529144.082	4279507.861			
HPI	4324+99.91	3528703.385	4280156.611	-11459.2	1566.112	784.277

I-24 - LYON AND CALDWELL COUNTIES GEOMETRIC CONTROL						
I-24 CENTERLINE						
POINT	STATION	NORTHING	EASTING	RADIUS	LENGTH	TANGENT
PT	4332+81.74	3528355.186	4280859.354			
PT	4332+81.74	3528355.186	4280859.354			
HPI	4338+90.55	3528084.889	4281404.871			
HPI	4338+90.55	3528047.191	4281386.193			
END	4602+43.71	3516347.048	4304999.656			

**TRAFFIC CONTROL PLAN
I-24 – LYON / CALDWELL COUNTIES
PAGE 1 OF 4**

TRAFFIC CONTROL GENERAL

Except as provided herein, maintain and control traffic in accordance with the Standard Specifications and the Standard Drawings, current editions. Except for the roadway and traffic control bid items listed, all other items of work, described herein, necessary to maintain and control traffic, will be paid for with the lump sum bid price to "Maintain and Control Traffic". All lane closures used on the project shall be in compliance with the appropriate Standard Drawings and MUTCD.

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. Traffic Control Devices will conform to current MUTCD.

Reduce the speed limit in work areas of the I-24 to 55 miles per hour and establish higher fines for work zone speeding violations. The extent of these areas within the project limits will be restricted to the proximity of actual work areas as determined by the Engineer. Notify the Engineer a minimum of 12 hours prior to using the higher fine signs. At the beginning of the work zone, the "BEGIN HIGHER FINES ZONE" signs will be dual mounted. At the end of the work zone, the "END HIGHER FINES ZONE" signs will be dual mounted as well. Remove or cover the signs when the highway work zone does not have workers present for more than a two-hour period of time. Payment for the signs will be at the unit bid price for signs erected. Any relocation or covering of signs will be incidental to "Maintain and Control Traffic."

PROJECT PHASING AND CONSTRUCTION PROCEDURES

The Contractor shall maintain a minimum of one 11-foot lane in each direction.

Use a lane closure at all times when work is performed in the lane or adjacent shoulder. Traffic shall not be allowed to travel on milled surface unless directed by the Engineer. When shoulders are utilized, they may need maintenance as deemed necessary by the Engineer to maintain traffic, and this work shall be considered paid for with Asphalt Leveling and Wedging PG64-22. All removal of existing striping shall be by water blasting, unless otherwise directed by the Engineer. Remove edge lines as necessary and approved by the Engineer throughout the project. Provide temporary edge lines through the lane closure area, except as noted in this proposal.

Note that lane shifts are required throughout the project. Stripe according to the Standard Drawings and MUTCD.

The Contractor must notify the Engineer at least fourteen (14) days prior to beginning construction in either direction.

CONSTRUCTION PHASES

PHASE 1

Close the eastbound outside lane and shoulder. Mill and fill the outside rumble strip with CL3 ASPH SURF 0.50D PG64-22 in areas with asphalt shoulders, STA. 4000+00 to approximately STA. 4354+87. Rumble strips in concrete pavement shall not be milled and overlaid, approximately STA. 4354+87 to STA. 4533+00. Install bull nose terminals. Construct Crossovers.

PHASE 2

Using Crossover #1 and Crossover #4 Shift westbound traffic to the eastbound lanes and shoulder as shown on the typical sections and/or as directed by the Engineer. Construct westbound I-24 from STA. 4000+00 to STA. 4222+00.

**TRAFFIC CONTROL PLAN
I-24 – LYON / CALDWELL COUNTIES
PAGE 2 OF 4**

PHASE 2A

Using Crossover #2 and Crossover #3 Shift westbound traffic to the eastbound lanes and shoulder as shown on the typical sections and/or as directed by the Engineer. Construct westbound I-24 from STA. 4222+00 to STA. 4533+00. Web walls shall be constructed during this phase.

PHASE 3

STA. 4533+00 to STA. 4545+66.28, Shift traffic to the outside lane and shoulder as shown on the typical sections and/or as directed by the Engineer. Construct inside lane and shoulder.

PHASE 4

STA. 4533+00 to STA. 4545+66.28, Shift traffic to the inside lane and shoulder as shown on the typical sections and/or as directed by the Engineer. Construct inside lane and shoulder.

PHASE 5

Repair any and all damages to eastbound I-24 as directed by the Engineer. Reinstall permanent striping and rumble strips on eastbound I-24.

LANE AND SHOULDER CLOSURES

Limit lane closures to allow a minimum of one lane open per direction at any given time.

Lane closures shall not remain in place during winter shutdown.

Contrary to Section 112, lane and shoulder closures will NOT be measured for payment but are considered incidental to "Maintain and Control Traffic."

SIGNS

Additional traffic control signs in addition to normal lane closure signing detailed on the Standard Drawings may be required by the Engineer. Additional signs needed for lane closures may include, but are not limited to, dual mounted LEFT/RIGHT LANE CLOSED 1 MILE, LEFT/RIGHT LANE CLOSED 2 MILES, LEFT/RIGHT LANE CLOSED 3 MILES, SLOWED/STOPPED TRAFFIC AHEAD. Signage for reduced speed limits and higher fine work zones will be furnished, relocated, and maintained by the Contractor.

Contrary to Section 112, individual signs will be measured only once for payment, regardless of how many times they are set, reset, removed, and relocated during the duration of the project. Replacements for damaged signs or signs directed to be replaced by the Engineer due to poor legibility or reflectivity will not be measured for payment.

A quantity of signs has been included for lane shifts, "Roadwork Ahead" signs on entrance ramps, and extra Higher Fine signs and Speed Limit signs between interchanges to be paid for only once no matter how many times they are moved or relocated.

Traffic control signs in addition to normal lane closure signing detailed in the Standard Drawings may be required by the Engineer.

CONNECTED ARROWS

Connected arrows will be paid for once, no matter how many times they are moved or relocated. The Department WILL NOT take possession of the connected arrows upon completion of the work.

PORTABLE CHANGEABLE MESSAGE SIGNS

The Portable Changeable Message Signs are being bid independently of the Queue Warning System and shall be used as directed by the Engineer. The PCMS will be in operation at all times. In the event of damage or mechanical/electrical failure, the contractor will repair or replace the PCMS immediately. PCMS will be paid for once, no matter how many times they are removed or relocated. The department **WILL NOT** take possession of the PCMS upon completion of the work.

**TRAFFIC CONTROL PLAN
I-24 – LYON / CALDWELL COUNTIES
PAGE 3 OF 4**

BARRELS

Barrels may be used for channelization or delineation, as directed by the Engineer, and will be incidental to "Maintain and Control Traffic" according to Section 112.04.01. Replacement of damaged barrels or cones due to poor condition or reflectivity, as directed by the Engineer, will not be measured for payment.

TRUCK MOUNTED ATTENUATORS

Furnish and install MUTCD approved Truck Mounted Attenuators (TMAs) in advance of work areas when workers are present less than 12 feet from traffic. If there is less than 500 feet between work sites, only a single TMA will be required at a location directed by the Engineer. Locate the TMAs at the individual work sites and move them as the work zone moves within the project limits. All details of the TMA installations shall be approved by the Engineer. The Department WILL NOT take possession of the TMAs upon completion of the work.

PAVEMENT MARKINGS

If lane closures are in place during nighttime hours, remove or cover the lenses of raised pavement markers that do not conform to the traffic control scheme in use, or as directed by the Engineer. Replace or uncover lenses before a closed lane is reopened to traffic. No direct payment will be made for removing and replacing or covering and uncovering the lenses but will be incidental to "Maintain and Control Traffic".

Place temporary and permanent striping in accordance with Section 112 and Section 714, except that:

1. Temporary and permanent striping will be 6" or 12" in width and as shown in standard drawings for interchanges;
2. If the Contractor's operations or phasing requires temporary markings which must be subsequently removed from the ultimate pavement, an approved removable lane tape will be used;
3. Edge lines will be required for temporary striping;
4. Existing, temporary, or permanent striping will be in place before a lane is opened to traffic; and
5. Permanent striping will be Extruded Thermoplastic Marking or Durable Tape Type 1.

The Contractor is to restripe the roadway back to its original configuration, except as noted elsewhere in this proposal.

BARRICADES

As directed by the Engineer replacements for damaged barricades to be replaced due to poor condition or reflectivity will not be bid for payment.

TEMPORARY BARRIER WALL

Concrete Barrier Wall Type 9T shall be installed between lanes of opposing traffic. There shall be a minimum of one (1) delineator per section of wall. The delineators shall be bi-directional and placed on top of the wall.

ADJACENT LANE DROP-OFFS

No vertical drop-off, two inches or greater, should occur between adjacent lanes where traffic is expected to cross in a lane-change maneuver.

- Less than two inches—no protection required

TRAFFIC CONTROL PLAN I-24 – LYON / CALDWELL COUNTIES

PAGE 4 OF 4

Note: Warning signs (MUTCD - Uneven Lane, W8-11) should be placed in advance of and at 1500 feet intervals, or as directed by the Engineer, throughout the drop-off area. Dual posting on both sides of the traveled way shall be required. (MUTCD - Uneven Lane, W8-11)

- Two to four inches—plastic drums or vertical panels should be used in accordance with MUTCD and Kentucky Standard Drawings. Place Type III Barricades at the beginning of the lane or shoulder closures, and place additional Type III Barricades spaced at 2,500 feet, or as directed by the Engineer, during the time the lane closure is in place.
- Greater than four inches - Channelizing devices should be used in accordance with MUTCD, Kentucky Standard Drawings and these notes. A 5 foot buffer between the edge of the travel lane and the drop-off should be provided with channelization devices. A positive separation is needed when the buffer cannot be achieved. In lieu of positive separation, a pavement wedge may be constructed with compacted cuttings from milling, DGA, or asphalt mixtures with a 3:1 or flatter slope when workers are not present. When the drop-off is greater than 4 inches and within 10 feet of the traveled lane, positive separation should be considered. Place Type III Barricades at the beginning of the lane or shoulder closures, and place additional Type III Barricades spaced at 2,500 feet, or as directed by the Engineer, during the time the lane closure is in place, except when positive separation is in use. When concrete barriers are used, special reflective devices or steady-burn lights should be used for overnight installations.

TRAFFIC COORDINATOR

This project is designated as a Significant Project in accordance with Section 112.03.12 of the Kentucky Standard Specifications.

COORDINATION OF WORK

The Contractor is advised that other projects may be in progress within or in the near vicinity of this project. The traffic control of those projects may affect this project and the traffic control of this project may affect those projects. The Contractor will coordinate the work on this project with the work of the other Contractors. In case of conflict, the Engineer will determine the relative priority to give to work phasing on the various projects.

CONTRACTOR'S AND CONTRACTOR'S EMPLOYEES' VEHICLES

Do not use or allow employees to use median U-turns at any time, change vehicular direction of travel only at interchanges.

INCIDENTAL TO MAINTENANCE OF TRAFFIC

As noted in above paragraphs the following items will not be measured but are considered incidental to "Maintain and Control Traffic."

- Lane and Shoulder Closures
- Barrels and Replacement of Damaged Barrels
- Relocations of Portable Changeable Message Signs
- Relocations of Flashing Arrows
- Relocation or Covering of Signs
- Replacement of Damage Signs
- Removing and Replacing or Covering and Uncovering of Pavement Marker Lenses

Bullnose Post Layout - Back Bullnose at 4226+85			
Project:	I-24 Rehabilitation	Location:	I-24 at Friendship Road
Begin Sta. to Shield:	4226+85	End Sta. to Shield:	4227+35
	Length to Shield:	50	
To shield obstacle represented by the above stations, place 112.5 feet of Guardrail Thrie Beam (even amount of beam guardrail (12.5ft)).			
Sta. of Thrie Beam (to even out sticks of beam):	4226+85	Sta. of Thrie Beam:	4227+35
Bullnose must be 50ft minimum from post 5 to the obstlacle. Post 5 to post 14 is 50ft. Distance from Post 14L to Post 14R is 11'-10 7/8"; Post 14 distance from centerline is 5' - 11 7/16" (5.95' or 71.4375"). Thrie Beam Posts: W6 X 9, so nominal depth of beam is approx. 6". Half the post "I" depth is approx. 3" or .25ft. Add these together 5.95 + .25 = 6.20'			
Post No.			
14L		4226+85	6.20' LT
14R		4226+85	6.20' RT
Post No.	Approx. Station of the Center of the Post (feet)	Approx. Offset from Centerline to Center of the Post (feet)	Face of Post Flange Angle Relative to Roadway Centerline (deg.)
14R	4226+85.	6.200	0
13R	4226+78.75	6.200	0
12R	4226+72.5	6.200	0
11R	4226+66.25	6.200	0
10R	4226+60.	6.200	0
9R	4226+53.75	6.200	0
8R	4226+47.5	5.533	0
7R	4226+41.25	5.533	0
6R	4226+38.13	5.533	0
5R	4226+35.	5.533	0
4R	4226+31.98	5.367	5
3R	4226+29.03	4.929	10
2R	4226+25.98	4.773	16
1R	4226+22.88	4.429	21
1L	4226+22.88	-4.415	21
2L	4226+25.98	-4.769	16
3L	4226+29.03	-4.915	10
4L	4226+31.98	-5.352	5
5L	4226+35.	-5.519	0
6L	4226+38.13	-5.519	0
7L	4226+41.25	-5.519	0
8L	4226+47.5	-5.519	0
9L	4226+53.75	-6.185	0
10L	4226+60.	-6.185	0
11L	4226+66.25	-6.185	0
12L	4226+72.5	-6.185	0
13L	4226+78.75	-6.185	0
14L	4226+85.	-6.200	0

Bullnose Post Layout - Front Bullnose at 4227+35			
Project:	I-24 Rehabilitation	Location:	I-24 at Friendship Road
Begin Sta. to Shield:	4226+85	End Sta. to Shield:	4227+35
	Length to Shield:	50	
To shield obstacle represented by the above stations, place 112.5 feet of Guardrail Thrie Beam (even amount of beam guardrail (12.5ft)).			
Sta. of Thrie Beam (to even out sticks of beam):	4226+85	Sta. of Thrie Beam:	4227+35
Bullnose must be 50ft minimum from post 5 to the obstacle. Post 5 to post 14 is 50ft. Distance from Post 14L to Post 14R is 11'-10 7/8"; Post 14 distance from centerline is 5' - 11 7/16" (5.95' or 71.4375"). Thrie Beam Posts: W6 X 9, so nominal depth of beam is approx. 6". Half the post "I" depth is approx. 3" or .25ft. Add these together 5.95 + .25 = 6.20'			
Post No.			
14L		4227+35	6.20' LT
14R		4227+35	6.20' RT
Post No.	Approx. Station of the Center of the Post (feet)	Approx. Offset from Centerline to Center of the Post (feet)	Face of Post Flange Angle Relative to Roadway Centerline (deg.)
14R	4227+35.	6.200	0
13R	4227+41.25	6.200	0
12R	4227+47.5	6.200	0
11R	4227+53.75	6.200	0
10R	4227+60.	6.200	0
9R	4227+66.25	6.200	0
8R	4227+72.5	5.533	0
7R	4227+78.75	5.533	0
6R	4227+81.88	5.533	0
5R	4227+85.	5.533	0
4R	4227+88.02	5.367	5
3R	4227+90.97	4.929	10
2R	4227+94.02	4.773	16
1R	4227+97.13	4.429	21
1L	4227+97.13	-4.415	21
2L	4227+94.02	-4.769	16
3L	4227+90.97	-4.915	10
4L	4227+88.02	-5.352	5
5L	4227+85.	-5.519	0
6L	4227+81.88	-5.519	0
7L	4227+78.75	-5.519	0
8L	4227+72.5	-5.519	0
9L	4227+66.25	-6.185	0
10L	4227+60.	-6.185	0
11L	4227+53.75	-6.185	0
12L	4227+47.5	-6.185	0
13L	4227+41.25	-6.185	0
14L	4227+35.	-6.200	0

Bullnose Post Layout - Front Bullnose at 4345+49			
Project:	I-24 Rehabilitation	Location:	I-24 at KY 907
Begin Sta. to Shield:	4344+99	End Sta. to Shield:	4345+49
	Length to Shield:	50	
To shield obstacle represented by the above stations, place 112.5 feet of Guardrail Thrie Beam (even amount of beam guardrail (12.5ft)).			
Sta. of Thrie Beam (to even out sticks of beam):	4344+99	Sta. of Thrie Beam:	4345+49
Bullnose must be 50ft minimum from post 5 to the obstacle. Post 5 to post 14 is 50ft. Distance from Post 14L to Post 14R is 11'-10 7/8"; Post 14 distance from centerline is 5' - 11 7/16" (5.95' or 71.4375"). Thrie Beam Posts: W6 X 9, so nominal depth of beam is approx. 6". Half the post "I" depth is approx. 3" or .25ft. Add these together 5.95 + .25 = 6.20'			
Post No.			
14L		4345+49	6.20' LT
14R		4345+49	6.20' RT
Post No.	Approx. Station of the Center of the Post (feet)	Approx. Offset from Centerline to Center of the Post (feet)	Face of Post Flange Angle Relative to Roadway Centerline (deg.)
14R	4345+49.	6.200	0
13R	4345+55.25	6.200	0
12R	4345+61.5	6.200	0
11R	4345+67.75	6.200	0
10R	4345+74.	6.200	0
9R	4345+80.25	6.200	0
8R	4345+86.5	5.533	0
7R	4345+92.75	5.533	0
6R	4345+95.88	5.533	0
5R	4345+99.	5.533	0
4R	4346+02.02	5.367	5
3R	4346+04.97	4.929	10
2R	4346+08.02	4.773	16
1R	4346+11.13	4.429	21
1L	4346+11.13	-4.415	21
2L	4346+08.02	-4.769	16
3L	4346+04.97	-4.915	10
4L	4346+02.02	-5.352	5
5L	4345+99.	-5.519	0
6L	4345+95.88	-5.519	0
7L	4345+92.75	-5.519	0
8L	4345+86.5	-5.519	0
9L	4345+80.25	-6.185	0
10L	4345+74.	-6.185	0
11L	4345+67.75	-6.185	0
12L	4345+61.5	-6.185	0
13L	4345+55.25	-6.185	0
14L	4345+49.	-6.200	0

Bullnose Post Layout - Back Bullnose at 4344+99			
Project:	I-24 Rehabilitation	Location:	I-24 at KY 907
Begin Sta. to Shield:	4344+99	End Sta. to Shield:	4345+49
	Length to Shield:	50	
To shield obstacle represented by the above stations, place 112.5 feet of Guardrail Thrie Beam (even amount of beam guardrail (12.5ft)).			
Sta. of Thrie Beam (to even out sticks of beam):	4344+99	Sta. of Thrie Beam:	4345+49
Bullnose must be 50ft minimum from post 5 to the obstlacle. Post 5 to post 14 is 50ft. Distance from Post 14L to Post 14R is 11'-10 7/8"; Post 14 distance from centerline is 5' - 11 7/16" (5.95' or 71.4375"). Thrie Beam Posts: W6 X 9, so nominal depth of beam is approx. 6". Half the post "I" depth is approx. 3" or .25ft. Add these together 5.95 + .25 = 6.20'			
Post No.			
14L		4344+99	6.20' LT
14R		4344+99	6.20' RT
Post No.	Approx. Station of the Center of the Post (feet)	Approx. Offset from Centerline to Center of the Post (feet)	Face of Post Flange Angle Relative to Roadway Centerline (deg.)
14R	4344+99.	6.200	0
13R	4344+92.75	6.200	0
12R	4344+86.5	6.200	0
11R	4344+80.25	6.200	0
10R	4344+74.	6.200	0
9R	4344+67.75	6.200	0
8R	4344+61.5	5.533	0
7R	4344+55.25	5.533	0
6R	4344+52.13	5.533	0
5R	4344+49.	5.533	0
4R	4344+45.98	5.367	5
3R	4344+43.03	4.929	10
2R	4344+39.98	4.773	16
1R	4344+36.88	4.429	21
1L	4344+36.88	-4.415	21
2L	4344+39.98	-4.769	16
3L	4344+43.03	-4.915	10
4L	4344+45.98	-5.352	5
5L	4344+49.	-5.519	0
6L	4344+52.13	-5.519	0
7L	4344+55.25	-5.519	0
8L	4344+61.5	-5.519	0
9L	4344+67.75	-6.185	0
10L	4344+74.	-6.185	0
11L	4344+80.25	-6.185	0
12L	4344+86.5	-6.185	0
13L	4344+92.75	-6.185	0
14L	4344+99.	-6.200	0

Asymmetrical Bullnose Post Layout			
Project:	I-24	ALL STATIONS OF FROM SYMMETRY LINE	
Post No.	Approx. Symmetry line Station of the Center of the Post (feet)	Approx. Offset from Symmetry line to Center of the Post (feet)	Face of Post Flange Angle Relative to Symmetry (deg.)
13R	0+58.00	9.090	3.8
12R	0+51.76	8.673	3.8
11R	0+45.52	8.256	3.8
10R	0+39.29	7.840	3.8
9R	0+33.05	7.423	3.8
8R	0+26.86	6.340	3.8
7R	0+20.63	5.933	3.8
6R	0+17.51	5.725	3.8
5R	0+14.29	5.506	0.0
4R	0+11.31	5.371	5.0
3R	0+08.31	4.965	10.0
2R	0+05.27	4.871	16.0
1R	0+02.16	4.517	21.0
1L	0+02.16	-4.517	21.0
2L	0+05.28	-4.423	10.9
3L	0+08.50	-4.454	10.9
4L	0+11.57	-5.038	10.9
5L	0+14.64	-5.631	10.9
6L	0+17.71	-6.225	10.9
7L	0+20.77	-6.819	10.9
8L	0+26.92	-7.996	10.9
9L	0+32.93	-9.829	10.9
10L	0+39.06	-11.017	10.9
11L	0+45.20	6.056	10.9
12L	0+51.35	-13.371	10.9
13L	0+57.50	-14.558	10.9

GENERAL NOTES

The following abbreviations may have been used in the preparation of these plans:

bet.	Between
BF	Back Face
BOF	Bottom of Footing
bot.	Bottom
Brg.	Bearing
C to C	Center to Center
c.e.	Current Edition
C.Y.	Cubic Yard
Chd.	Chord
CL	Center Line
Clr.	Clear
Conc.	Concrete
Const.	Construction
Cu.	Cubic
Dwg.	Drawing
EF	Each Face
Elev.	Elevation
Eq.	Equal
Est.	Estimate
Ext.	Exterior
F to F	Face to Face
FF	Front Face
FS	Far Side
Fr.	Front
Ft.	Feet
I.D.	Inside Diameter
In.	Inch
Int.	Interior
L	Left
Lbs	Low Bridge Seat
Lbs.	Pounds
M	Meter
MPH	Miles per Hour
NS	Near Side
O.D.	Outside Diameter
Opp.	Opposite
PC	Point of Curve
Perp.	Perpendicular
PI	Point of Intersection
PPC	Precast Prestressed Concrete
PPCDU	Precast Prestressed Concrete Deck Unit
PSI	Pounds per Square Inch
PT	Point of Tangent
R	Radius
R	Right
RCBS	Reinforced Concrete Box Culvert
RCDG	Reinforced Concrete Deck Girder
Req'd.	Required
RR	Railroad
Shld.	Shoulder
Spa.	Spaces
Sta.	Station
Std.	Standard
Str.	Straight
Tan	Tangent
Thru	Through
TOF	Top of Footing
Tot.	Total
Typ.	Typical
Vert.	Vertical
W.P.	Working Point
Yd.	Yard

SPECIFICATIONS: References to the Specifications are to the current Edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction including any current supplemental Specifications. All references to the AASHTO Specifications are to the current edition of the AASHTO LRFD Bridge Design Specifications, with interims.

MATERIALS DESIGN SPECIFICATIONS:
For Class "A" Reinforced Concrete: f'c = 3500 psi
For Class "AA" Reinforced Concrete f'c = 4000 psi
For Steel Reinforcement fy = 60000 psi

CONCRETE: Class "AA" Concrete is to be used throughout the superstructure and in the portions of the substructure above the tops of caps. Class "A" concrete is to be used in the substructure below the caps. Prestressed beam concrete shall be in accordance with the plans and specifications.

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Clear distance to face of concrete is 2" unless otherwise noted. Spacing of bars is from center to center of bars. Any reinforcing bars designated by suffix "e" in the plans shall be epoxy coated in accordance with section 811.10 of the Standard Specifications. Any reinforcing bars designated by suffix "s" in a Bill of Reinforcement shall be considered a stirrup for purposes of bend diameters.

BEVELED EDGES: All exposed edges shall be beveled 3/4", unless otherwise shown.

COMPLETION OF THE STRUCTURE: The Contractor is required to complete the structure in accordance with the plans and specifications. Material, labor, or construction operations not otherwise specified, are to be included in the bid item most appropriate to the work involved and otherwise considered incidental to the Contract. This may include cofferdams, shoring, excavations, backfilling, removal of all or parts of existing structures, phase construction, incidental materials, labor, or anything else required to complete the structure.

UTILITIES: Before beginning work, locate all existing utilities. Consider location of utilities shown on the drawings to be approximate and for informational purposes only. The Department does not warrant the locations and assumes no responsibility for the accuracy or completeness. The Contractor must make his own determination. Except as shown on the Plans, work around and do not disturb existing utilities.

VERIFYING FIELD CONDITIONS: The contractor shall field verify all dimensions before ordering material. New material that is unsuitable because of variations in the existing structure shall be replaced at the contractor's expense.

DIMENSIONS: Dimensions are for a normal temperature of 60 degrees Fahrenheit. Layout dimensions are horizontal dimensions.

FOUNDATION PREPARATION: Foundation Preparation shall be in accordance with the Special Note for Foundation Preparation.

Foundation excavations should be properly braced/shored to provide adequate safety to persons working in or around excavations. Bracing should be performed in accordance with applicable federal, state and local guidelines.

Temporary shoring, sheeting, cofferdams, and/or dewatering methods may be required to facilitate foundation construction. It should be anticipated that groundwater will be encountered at foundation locations within the flood plain.

Temporary shoring, bracing, sheeting, cofferdams and dewatering shall be included in the Lump Sum Bid for Foundation Preparation.



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS



DRAWING TITLE: GENERAL NOTES
FRIENDSHIP ROAD OVER I-24 & KY 903 OVER I-24

ITEM NO.
05-22031.00
SHEET NO.
PLAN SHEET X OF X

COUNTY OF
LYON

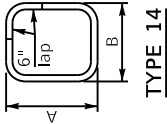


SECTION A-A



- Notes :
1. Bottom of webwall elevation a min of 2' below ground line or rest on top of footing.
 2. The existing barrier between the pier columns will be excavated and removed prior to the webwall construction.
 3. The dowels embedded in existing concrete should develop a minimum tensile bond strength of 23.2 kip. Drilled hole diameter and depth to be determined by the manufacturer specifications for the bar size indicated.
 4. Concrete shall be Class "A".
 5. Remove clear cover on pier columns prior to drilling holes to anchor reinforcing. Do not hit vertical reinforcing bars in the pier columns. Verify location of existing reinforcing and adjust drilled hole locations if needed.
 6. Concrete Seal all existing and new surfaces of concrete pier.

BILL OF REINFORCEMENT						
MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	
B1	STR	88	#5	3'-3"	WEBWALL DOWELS	
B2	STR	44	#5	11'-10"	TEMPERATURE REINFORCEMENT	
B3	14s	26	#5	25'-8"	TEMPERATURE STIRRUPS	9'-8"



GENERAL NOTES

The following abbreviations may have been used in the preparation of these plans:

bet.	Between
BF	Back Face
BOF	Bottom of Footing
bot.	Bottom
Brig.	Bearing
C to C	Center to Center
c.e.	Current Edition
C.Y.	Cubic Yard
Chd.	Chord
CL	Center Line
Clr.	Clear
Conc.	Concrete
Const.	Construction
Cu.	Cubic
Dwg.	Drawing
EF	Each Face
Elev.	Elevation
Eq.	Equal
Est.	Estimate
Ext.	Exterior
F to F	Face to Face
FF	Front Face
FS	Far Side
Fr.	Front
Ft.	Feet
I.D.	Inside Diameter
In.	Inch
Int.	Interior
L	Left
Lbs	Low Bridge Seat
Lbs.	Pounds
M	Meter
MPH	Miles per Hour
NS	Near Side
O.D.	Outside Diameter
Opp.	Opposite
PC	Point of Curve
Perp.	Perpendicular
PI	Point of Intersection
PPC	Precast Prestressed Concrete
PPCDU	Precast Prestressed Concrete Deck Unit
PSI	Pounds per Square Inch
PT	Point of Tangent
R	Radius
R	Right
RCBS	Reinforced Concrete Box Culvert
RCDG	Reinforced Concrete Deck Girder
Req'd.	Required
RR	Railroad
Shld.	Shoulder
Spa.	Spaces
Sta.	Station
Std.	Standard
Str.	Straight
Tan	Tangent
Thru	Through
TOF	Top of Footing
Tot.	Total
Typ.	Typical
Vert.	Vertical
W.P.	Working Point
Yd.	Yard

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MATERIALS DESIGN SPECIFICATIONS:
For Class "A" Reinforced Concrete: f'c = 3500 psi
For Class "AA" Reinforced Concrete f'c = 4000 psi
For Steel Reinforcement fy = 60000 psi

CONCRETE: Class "AA" Concrete is to be used throughout the superstructure and in the portions of the substructure above the tops of caps. Class "A" concrete is to be used in the substructure below the caps. Prestressed beam concrete shall be in accordance with the plans and specifications.

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Clear distance to face of concrete is 2" unless otherwise noted. Spacing of bars is from center to center of bars. Any reinforcing bars designated by suffix "e" in the plans shall be epoxy coated in accordance with section 811.10 of the Standard Specifications. Any reinforcing bars designated by suffix "s" in a Bill of Reinforcement shall be considered a stirrup for purposes of bend diameters.

BEVELED EDGES: All exposed edges shall be beveled 3/4", unless otherwise shown.

COMPLETION OF THE STRUCTURE: The Contractor is required to complete the structure in accordance with the plans and specifications. Material, labor, or construction operations not otherwise specified, are to be included in the bid item most appropriate to the work involved and otherwise considered incidental to the Contract. This may include cofferdams, shoring, excavations, backfilling, removal of all or parts of existing structures, phase construction, incidental materials, labor, or anything else required to complete the structure.

UTILITIES: Before beginning work, locate all existing utilities. Consider location of utilities shown on the drawings to be approximate and for informational purposes only. The Department does not warrant the locations and assumes no responsibility for the accuracy or completeness. The Contractor must make his own determination. Except as shown on the Plans, work around and do not disturb existing utilities.

VERIFYING FIELD CONDITIONS: The contractor shall field verify all dimensions before ordering material. New material that is unsuitable because of variations in the existing structure shall be replaced at the contractor's expense.

DIMENSIONS: Dimensions are for a normal temperature of 60 degrees Fahrenheit. Layout dimensions are horizontal dimensions.

FOUNDATION PREPARATION: Foundation Preparation shall be in accordance with the Special Note for Foundation Preparation.

Foundation excavations should be properly braced/shored to provide adequate safety to persons working in or around excavations. Bracing should be performed in accordance with applicable federal, state and local guidelines.

Temporary shoring, sheeting, cofferdams, and/or dewatering methods may be required to facilitate foundation construction. It should be anticipated that groundwater will be encountered at foundation locations within the flood plain.

Temporary shoring, bracing, sheeting, cofferdams and dewatering shall be included in the Lump Sum Bid for Foundation Preparation.



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS



DRAWING TITLE: GENERAL NOTES
FRIENDSHIP ROAD OVER I-24 & KY 903 OVER I-24

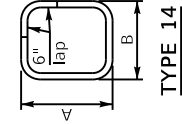
ITEM NO.	COUNTY OF
05-22031.00	LYON
SHEET NO.	PLAN SHEET X OF X



Figure 10 is a cross-sectional detail of a column. The column has a total width of 3'-0". Reinforcement bars are labeled A1, A2, and A3. A hatched area at the top indicates a 12" minimum embedment length. A dashed line indicates a 5" minimum limit of removal. A break symbol is shown on the left side of the column.

SECTION B-B

1. Bottom of webrwall elevation a min of 2' below ground line or rest on top of footing.
2. The existing barrier between the pier columns will be excavated and removed prior to webrwall construction.
3. The dowels embedded in existing concrete should develop a minimum tensile bond strength of 23.2 kip. Drilled hole diameter and depth to be determined by the manufacturer specifications for the bar size indicated.
4. Concrete shall be Class "A".
5. Remove chllr cover on pier columns prior to drilling holes to anchor reinforcing. Do not hit vertical reinforcing bars in the pier columns. Verify location of existing reinforcing and adjust drilled hole locations if needed.
6. Concrete Seal all existing and new surfaces of concrete pier.



TYPE 14

BILL OF REINFORCEMENT									
MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION		A	B	C D
B1	STR	88	#5	3'-3"	WEBWALL DOWELS				
B2	STR	44	#5	11'-10"	TEMPERATURE REINFORCEMENT				
B3	14s	78	#5	25'-8"	TEMPERATURE STIRRUPS	9'-8"	2'-8"		

Special Note for Fixed Completion Date and Liquidated Damages
I-24 LYON / CALDWELL COUNTIES
Item Nos. 1-20010.00/2-20062.00

This project has an Intermediate Completion Date and a Fixed Completion Date.

Liquidated damages of \$10,000 / day will be assessed for each day traffic is not returned to the existing configuration (2 lanes per direction) past the Intermediate Completion Date. Liquidated damages per the Standard Specifications will be assessed for each day work remains uncompleted beyond the Specified Completion Date for the proposed construction including all pavement work on I-24 Westbound Sta. 4000+00 to Sta. 4222+00. The Intermediate Completion Date for this work is **November 15, 2026**. Liquidated Damages will be assessed for each day that this segment is not complete on the westbound lanes of I-24, within the project limits, after this date, **NO EXCEPTIONS**.

Liquidated damages of \$10,000 / day will be assessed for each day traffic is not returned to the existing configuration (2 lanes per direction) past the Substantial Completion Date. Liquidated damages per the Standard Specifications will be assessed for each day work remains uncompleted beyond the Specified Completion Date for the proposed construction including all pavement work on I-24 Westbound. This project has a Fixed Project Completion Date of **November 15, 2027**.

Special Note for Connected Arrow Panels

1. DESCRIPTION

Furnish, install, operate, and maintain connected arrow panels at the locations shown on the plans or designated by the Engineer. Remove and retain possession of arrow panels when they are no longer needed on the project. The connected arrows panels shall be capable of reporting real-time lane closure and location information to the Kentucky Transportation Operations Center as well as for third party GPS vendors (Mapping, Navigation, Connected Vehicles, etc).

2. MATERIALS & EQUIPMENT

2.1. General

Conform to the current requirements of the Standard Drawings and the MUTCD. Mount on traffic-worthy carriages that meet all applicable safety standards. Devices shall be compliant with current MASH standards. Use either diesel powered, electric, or solar powered. A portable dynamic message sign may be used to simulate an arrow panel if it meets the requirements in this section. The use of retrofit kits to modify older arrow panel equipment to become “connected” will be allowed as long as they are in compliance with this special note, meet the manufacturer's specifications and recommendations, and are approved by the Engineer.

Materials installed on the project shall be provided by the Contractor in new or like-new condition, shall be corrosion resistant, and in strict accordance with all the details shown within Contractor's Plans approved by KYTC. The Contractor shall maintain an adequate inventory of parts and replacement units to support maintenance and repair of the arrow panels. Pre-deployment is a condition of the system's acceptance and is based on the successful performance demonstration for a (5) day continuous period in accordance with this specification and as set forth in the plans.

2.2. Capabilities and Performance Requirements

2.2.1. Power System: The arrow panels power source shall be capable of maintaining power as well as ability to broadcast location and operations data for year-round deployment in a stand-alone state and without intervention.

2.2.2. Display: Type C Arrow panels as defined in Part 6 of the MUTCD are required for all applications. The following display requirement shall apply to Connected Arrow Panels:

- Minimum display size shall be 96 inches wide by 48 inches tall.
- Minimum legibility distance is 1 mile.
- Minimum number of elements (or pixels) is 15.
- Elements shall be capable of at least 50% dimming from full brightness. Use dimmed mode for nighttime operation.
- Color presented by elements shall be yellow.

2.2.3. Operating Modes: Connected Arrow Panel shall be switched between the following modes in accordance with the contract or as directed by the Engineer:

- Blank – The unit is turned ON, but the display shall be blank and the connected arrow panel shall make transmissions to the data feed.
- Flashing Left/Right Arrow
- Flashing Double Arrow
- Alternating Diamond/Flashing Caution

2.2.4. GPS and Remote Communications: The connected arrow panels shall be connected to the cloud and provide a data feed compliant with latest specification of the U.S Department of Transportation Work Zone Data Exchange (WZDx) Device Feed. Furthermore, the real time data program shall be in compliance with “Title 23 of the Code of Federal Regulations (CFR) Chapter 1 Subchapter F Part 511.305-315 (<https://www.ecfr.gov/current/title-23/part-511/subpart-C>).” Arrow panels shall have the ability to receive and transmit the GPS coordinates (latitude and longitude) within a 30-foot diameter of its true location. Arrow panels shall transmit status and location as follows: a). Mode change within 2 minutes. b). Location (if moved more than 500 feet) within 2 minutes. c). Health check every 30 minutes.

Data shall be accessible through a website and the Contractor shall provide a username and password for protection. The website shall be accessible seven (7) days a week and twenty - four (24) hours a day. The website shall provide historical & real-time data in graphical and numerical formats and shall have the capability of being integrated within the Department's Traffic Operations Center (if requested). The website should be compatible to most handheld devices. Data shall be saved on the manufacturer's network for up to (5) years from the deployment date of system and shall be provided at the request of the Department at any time within the (5) year window. The use of the website shall be included within the price of connected arrow panels.

3. CONSTRUCTION

The Contractor will be required to perform a trial run with the arrow panels to be utilized for a project at least 1 week prior to being deployed in the presence of the Engineer. The trial run shall go through a series of steps and meet all the following requirements to the satisfaction of the Engineer to ensure the devices are communicating and responding in the provided WZDx Device Feed:

- Make sure device is turned on, with a blank display, and at the start location – Make sure it is blank and the data feed accurately represents this.
- Right Arrow – Turn the arrow panel to right and wait at least 5 minutes, so the data is archived.
- Left Arrow – Turn the arrow panel to left and wait at least 5 minutes, so the data is archived.
- Move 500’ – Blank the display. Move the arrow panel at least 500’ (try to minimize as much as possible).

- Wait 5 minutes after 1st move – Turn on Right Arrow Display. Wait 5 minutes to see if the location is refined.
- Move 500’ again – Blank the display. Move the arrow panel again at least 500’ (try to minimize as much as possible).
- Wait 5 minutes after 2nd move – Turn on Left Arrow Display. Wait 5 minutes to see if the location is refined.
- Right Arrow again – Change to right arrow to make sure the device location and information is updated.
- Wait 1 hour (if on roadway wait as long as possible) – Wait 1 hour to see how much the check-in occurs.
- Turn Device Off – Turn the device off and record information.

Once the arrow panels are approved by the Engineer, install them at the beginning of the lane closure taper per plan or as the Engineer directs and ensure the panels operate continuously when deployed on the project. The Contractor shall have available one portable flashing arrow that has been approved in reserve. Place the reserve arrow panel in operation if one is damaged or if there is mechanical or electrical failure. A qualified technician will be responsible to correct any deficiencies in accordance with Section 112.03.15 deemed necessary by the Engineer.

When the connected arrow panel is not displaying the flashing left or right arrow, the display shall be blank and the connected arrow panel shall make transmissions to the data feed. When a connected arrow panel is switched to Flashing Left Arrow mode or Flashing Right Arrow mode, the display shall flash accordingly, and the connected arrow panel shall transmit its location and its current operating mode to the data feed. The Connected Arrow Panels central server shall provide real-time status change alerts to a list of designated personnel via text and/or email. An alert shall be sent each time a device is switched between operating modes (i.e., switched between ON mode and OFF mode; each time a connected arrow panel is switched between blank, flashing left arrow mode, flashing right arrow mode, flashing caution mode), each alert shall include the current operating mode, the previous operating mode, the date and time of the mode switch, and the location (latitude and longitude) of the device at the time of the mode switch.

4. MEASUREMENT

The Department will measure each item below in Months. For partial months the Department will pay in 0.25 increments based on the number of calendar days in the below table.

Partial Month Payment Schedule	
<u>Days</u>	<u>Increment</u>
0-7 days	0.25
8-14 days	0.50
15-21 days	0.75
22-31 days	1.00

The Department will not measure any costs associated with the required cellular communications (SAT communications will be required, if cellular is not available), all supporting field equipment, website access, and unlimited data reports accessible by the Engineer, but will consider them incidental to this item of work. The Department will not measure the reserved flashing arrows for payment and will consider them incidental to this item of work. The Department will not measure installation, maintenance, or removal for payment and will consider them incidental to this item of work. Always maintain system components in good working condition. Repair or replace damaged or malfunctioning components, at no cost to the Department, as soon as possible and within (12) hours of notification by the Engineer. The quantity to be paid for arrow panels will be the maximum number of arrow panels in use at any one time on the project.

5. PAYMENT

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
26237EC	Connected Arrow Panels	MONTH

Caldwell County
Item Number: 2-20062

SPECIAL NOTE
ALTERNATE PAVEMENT BID ADJUSTMENT

This project includes alternate bidding for asphalt or concrete pavement. There are specific items listed for each pavement type to be bid with the alternate selected by the Contractor. There is also a line item in the alternate categories for each alternate to adjust for the projected out-year life-cycle costs to the Cabinet. These line item adjustments are as follows:

Asphalt Pavement Adjustment = **\$242,703**

Concrete Pavement Adjustment = **\$224,502**

The amount reflective of the pavement type selected by each contractor will be added to their respective bid for comparison of the low bid. The adjustment ***shall be used only for determination of the lowest bidder and shall not be used to determine the final payment*** to the contractor when the project is completed.

Please note that these adjustments should not be used for the calculation of the maximum Mobilization amount and are not required to be included in the minimum Demobilization amount.

Proposal Guaranty

As a supplement to Section 102 of the Standard Specifications, it will not be necessary for the Proposal Guaranty to include an amount necessary to cover the amount of the bid adjustment.

Lyon County
Item Number: 1-20010

SPECIAL NOTE
ALTERNATE PAVEMENT BID ADJUSTMENT

This project includes alternate bidding for asphalt or concrete pavement. There are specific items listed for each pavement type to be bid with the alternate selected by the Contractor. There is also a line item in the alternate categories for each alternate to adjust for the projected out-year life-cycle costs to the Cabinet. These line item adjustments are as follows:

Asphalt Pavement Adjustment = **\$3,434,609**

Concrete Pavement Adjustment = **\$3,177,042**

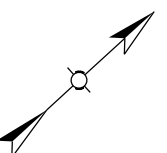
The amount reflective of the pavement type selected by each contractor will be added to their respective bid for comparison of the low bid. The adjustment ***shall be used only for determination of the lowest bidder and shall not be used to determine the final payment*** to the contractor when the project is completed.

Please note that these adjustments should not be used for the calculation of the maximum Mobilization amount and are not required to be included in the minimum Demobilization amount.

Proposal Guaranty

As a supplement to Section 102 of the Standard Specifications, it will not be necessary for the Proposal Guaranty to include an amount necessary to cover the amount of the bid adjustment.

LYON CO. I-24 ~m.p. 49.26
~LAT/LONG N 37.01062, W 87.97490
STATION 054 WB ONLY



SITE LOCATION IS APPROXIMATE AND WILL BE DETERMINED IN THE FIELD AND APPROVED BY DIVISION OF PLANNING PERSONNEL PRIOR TO ANY CONSTRUCTION.

ALL LOOPS SHALL BE 6'X6' SQUARE AND SHALL BE INSTALLED 16' FROM LEADING EDGE TO LEADING EDGE AS SHOWN. LOOPS SHALL BE INSTALLED SPLICE-FREE TO THE CABINET AND A MINIMUM OF 2' OF WIRE FOR EACH SENSOR SHALL BE COILED INSIDE EACH JUNCTION BOX AND CABINET. ALL LOOPS SHALL BE LABELED IN THE JUNCTION BOXES AND CABINET. DIVISION OF PLANNING PERSONNEL WILL CONNECT THE LOOPS INSIDE THE CABINET.

INSTALL ONE (1) 1 1/4" CONDUIT FROM EACH SAW SLOT TO NEAREST JUNCTION BOX.

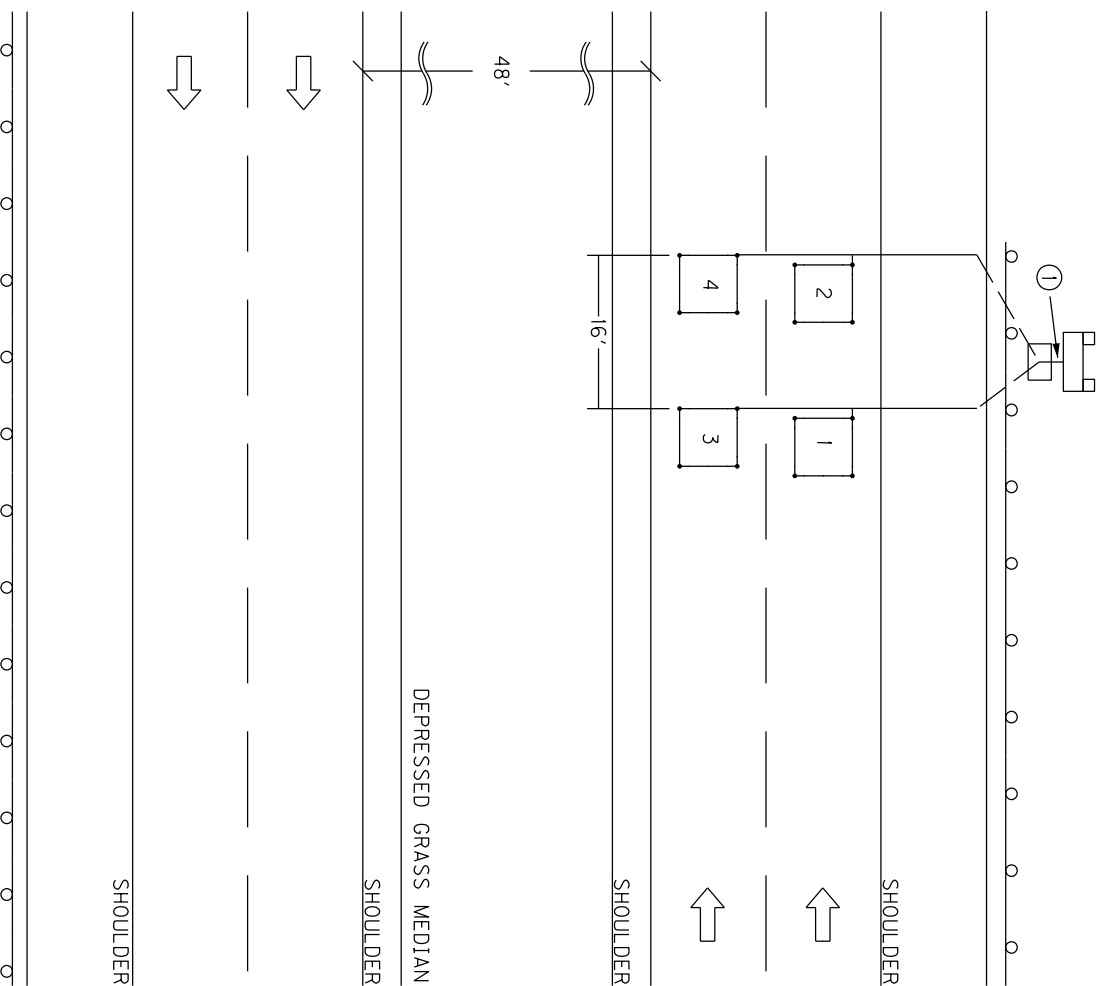
INSTALL ONE (1) TYPE A JUNCTION BOX (JB A1).

INSTALL ONE (1) 20"X20"X8" CABINET MOUNTED TO TWO (2) WOOD POSTS.

REMOVE OLD CABINET, POSTS, JUNCTION BOX, WIRES AND CONDUIT AND DISPOSE OF OFF THE JOBSITE.

CODED NOTE:

① INSTALL ONE (1) 2" CONDUIT.



Permanent Traffic Data Acquisition Station
Estimate Of Quantities

Revised January 2023

PERMANENT TRAFFIC DATA ACQUISITION STATIONS
ESTIMATE OF QUANTITIES

Bid Item Code	Description	Unit	Quantity
4793	CONDUIT 1 ¼ INCH	LIN FT	30
4795	CONDUIT 2 INCH	LIN FT	10
4811	ELECTRICAL JUNCTION BOX TYPE B	EACH	
4820	TRENCHING AND BACKFILLING	LIN FT	35
4821	OPEN CUT ROADWAY	LIN FT	
4829	PIEZOELECTRIC SENSOR	EACH	
4830	LOOP WIRE	LIN FT	800
4833	WIRE – NO. 8	LIN FT	
4834	WIRE – NO. 6	LIN FT	
4850	CABLE NO. 14/1 PAIR	LIN FT	
4871	POLE – 35’ WOODEN	EACH	
4895	LOOP SAW SLOT AND FILL	LIN FT	150
4899	ELECTRICAL SERVICE	EACH	
4960	REMOVE AND REPLACE SIDEWALK	SQYD	
20213EC	INSTALL PAD MOUNT ENCLOSURE	EACH	
20359NN	GALVANIZED STEEL CABINET	EACH	1
20360ES818	WOOD POST	EACH	2
20391NS835	ELECTRICAL JUNCTION BOX TYPE A	EACH	1
20392NS835	ELECTRICAL JUNCTION BOX TYPE C	EACH	
20468EC	ELECTRICAL JUNCTION BOX 10x8x4	EACH	
21543EN	BORE AND JACK CONDUIT – 2 INCH	LIN FT	
23206EC	INSTALL CONTROLLER CABINET	EACH	
24963ED	LOOP TEST	EACH	

MATERIAL, INSTALLATION, AND BID ITEM NOTES FOR PERMANENT TRAFFIC DATA ACQUISITION STATIONS

1. DESCRIPTION

Except as specified in these notes, all work shall consist of furnishing and installing all materials necessary for permanent data acquisition station equipment installation(s) and shall be performed in accordance with the current editions of:

- The Contract
- Division of Planning Standard Detail Sheets
- Kentucky Transportation Cabinet, Department of Highways, *Standard Specifications for Road and Bridge Construction*
- Kentucky Transportation Cabinet, Department of Highways, Standard Drawings
- National Fire Protection Association (NFPA) 70: *National Electrical Code*
- Institute of Electrical and Electronic Engineers (IEEE), *National Electrical Safety Code*
- Federal Highway Administration, *Manual on Uniform Traffic Control Devices*
- American Association of State Highway and Transportation Officials (AASHTO), *Roadside Design Guide*.
- Standards of the utility company serving the installation, if applicable

The permanent traffic data acquisition station layout(s) indicate the extent and general arrangement of the proposed installation and are for general guidance. Any omission or commission shown or implied shall not be cause for deviation from the intent of the plans and specifications. Information shown on the plans and in this proposal and the types and quantities of work listed are not to be taken as an accurate or complete evaluation of the material and conditions to be encountered during construction. The bidder must draw his own conclusion as to the conditions encountered. The Department of Highways (Department) does not give any guarantee as to the accuracy of the data and no claim will be considered for additional compensation if the conditions encountered are not in accordance with the information shown. If any modifications of the plans or specifications are considered necessary by the Contractor, details of such modifications and the reasons, therefore, shall be submitted in writing to the Engineer for written approval prior to beginning such modified work.

The Contractor shall contact all utility companies and the district utility agent prior to beginning construction to insure proper clearance and shielding from existing and proposed utilities. The Contractor shall use all possible care in excavating on this project so as not to disturb any existing utilities whether shown on the plans or not shown on the plans. Any utilities disturbed or damaged by the Contractor during construction shall be replaced or repaired to original condition by the Contractor at no cost to the department. If necessary, to avoid existing utilities, the Contractor shall hand dig areas where poles or conduit cross utilities.

Material, Installation, and Bid Item Notes for
Permanent Traffic Data Acquisition Stations

Revised January 2023

The Contractor shall be responsible for all damage to public and/or private property resulting from his work.

The Contractor shall inspect the project site prior to submitting a bid and shall be thoroughly familiarized with existing conditions. Submission of a bid will be considered an affirmation of this inspection having been completed. The Department will not honor any claims resulting from site conditions.

2. MATERIALS

All proposed materials shall be approved prior to being utilized. The Contractor shall submit for material approval an electronic file of descriptive literature, drawings and any requested design data for the proposed materials. After approval, no substitutions of any approved materials may be made without the written approval of the Engineer.

Materials requiring sampling shall be made available a sufficient time in advance of their use to allow for necessary testing.

2.1. Anchoring

2.1.1. Anchor and Anchor Rod

Anchor, except rock anchor, shall be expanding type, with a minimum area of 135 square inches.

Anchor rod shall be galvanized steel, double-eye, have a minimum diameter of 5/8 inches, and a minimum length of 84 inches. Minimum holding capacity shall be 15,400 lbs.

Rock anchor shall be galvanized steel, triple-eye, expanding type, with a minimum diameter of 3/4 inch, a minimum 53 inches long, and a minimum tensile strength of 23,000 lb.

2.1.2. Guy Wire and Guy Guard

Guy wire shall be Class A, Zinc-coated, 3/8 inch diameter, high strength grade steel (minimum 10,800 lb.) and galvanized per ASTM A475. Guy guard shall be 8' long, fully-rounded, yellow, and able to be securely attached to the guy wire.

2.1.3. Strandwise for Guy Wire

Strandwise for guy wire shall be 3/8 inch and rated to hold a minimum of 90% of the rated breaking strength (RBS) of the strand used.

2.2. Asphalt

Asphalt shall be a minimum CL2 Asph Surf 0.38B PG64-22 and conform to the *Standard Specifications for Road and Bridge Construction*.

2.3. Backer Rod

Backer rod shall be 1/2 inch diameter, closed cell polyethylene foam and shall meet or exceed the following physical properties:

- Density (average): 2.0 lbs/cu.ft. (minimum): ASTM D 1622 test method
- Tensile Strength: 50 PSI (minimum): ASTM D 1623 test method
- Compression Recovery: 90% (minimum): ASTM D 5249 test method
- Water Absorption: 0.03 gm/cc (maximum): ASTM C 1016 test method

2.4. Cabinets

2.4.1. Galvanized Steel Cabinet

Galvanized Steel Cabinet shall be constructed of 16 or 14 gauge galvanized steel and shall meet or exceed the industry standards set forth by UL 50 and NEMA 3R. The finish shall be an ANSI 61 gray polyester powder finish inside and out over the galvanized steel. Cabinet shall have minimum inside dimensions of 20 inches high by 20 inches wide by 8 inches deep.

The cabinet shall be equipped with the following:

- Drip shield top
- Seam-free sides, front, and back, to provide protection in outdoor installations against rain, sleet, and snow
- Hinged cover with 16 gauge galvanized steel continuous stainless steel pin.
- Cover fastened with captive plated steel screws, knob or latch
- Hasp and staple for padlocking
- No gaskets or knockouts
- Back panel for terminal block installation
- Post mounting hardware
- Terminal Blocks

2.4.2. Anchor Bolt for Pad Mounted Cabinet

Anchor bolt for pad mounted cabinet shall be galvanized steel with minimum dimensions of 3/8 inch by 6 inches.

2.5. Concrete

Concrete shall be Class A and conform to the *Standard Specifications for Road and Bridge Construction*.

2.6. Conduit and Conduit Fittings

Conduit and conduit fittings shall be rigid steel unless otherwise specified.

Conduit shall be zinc galvanized inside and out and conform to the NEC, UL Standard 6, and ANSI C-80.1.

Rigid Steel Conduit Fittings shall be galvanized inside and out and conform to the NEC, UL Standard 514B, and ANSI C-80.4. Intermediate Metal Conduit (IMC) will not be approved as an acceptable alternative to rigid steel conduit.

2.7. Conduit sealant

Conduit sealant shall be weather-, mold-, and mildew-resistant and chemically resistant to gasoline, oil, dilute acids and bases. Conduit sealant shall be closed cell type and shall meet or exceed the following properties:

- | | |
|------------------------------------|--------------------------|
| • Cure Time | 20 minutes max. |
| • Density | 64.4 kg/m3; 6 lbs/ft3 |
| • Compressive Strength (ASTM 1691) | 13.8 MPa; 330 or 300 psi |

- Tensile Strength (ASTM 1623) 15.9 MPa; 270 or 250 psi
- Flexural Strength (ASTM D790) 14.5 MPa; 460 or 450 psi
- Service Temperature -20 to 200 F

2.8. Electrical Service Meter Base

Electrical service meter base shall meet or exceed all requirements of the National Electrical Code and the local utility providing the electrical service.

2.9. Electrical Service Disconnect

Electrical service disconnect shall meet or exceed all requirements of the National Electrical Code and the local utility providing the electrical service.

2.10. Flashing Arrow

Flashing Arrow shall conform to the *Standard Specifications for Road and Bridge Construction*.

2.11. Ground Fault Circuit Interrupter (GFCI) Receptacle

Ground Fault Circuit Interrupter Receptacle shall be 2-pole, 3-wire, 20 Amp, 125 Volt, 60 Hz, NEMA 5-20R configuration and meet or exceed the following standards and certifications:

- NEMA WD-1 and WD-6
- UL 498 and 943
- NOM 057
- ANSI C-73

This item shall include a UL listed, 4 inch x4 inch x 2¹/₈ inch box with ³/₄ inch side and end knockouts and a 1½ inches deep, single-receptacle cover to house the GFCI receptacle. Box and cover shall be hot rolled, galvanized steel with a minimum thickness of 0.62 inches.

2.12. Grounding

2.12.1. Ground Rod

Ground Rod shall be composite shaft consisting of a pure copper exterior (5 mil minimum) that has been inseparably molten welded to a steel core. Ground Rod shall have a minimum diameter of 5/8 inch, a minimum length of 8 feet and shall be manufactured for the sole purpose of providing electrical grounding.

2.12.2. Ground Rod Clamp

Ground rod shall be equipped with a one piece cast copper or bronze body with a non-ferrous hexagonal head set screw and designed to accommodate a 10 AWG solid through 2 AWG stranded grounding conductor.

2.13. Grout

2.13.1. Grout for Inductive Loop Installation

Grout for inductive loop installation shall be non-shrink, shall meet the requirements of the *Standard Specifications for Road and Bridge Construction*,

and shall be included on the KYTC Division of Materials, *List of Approved Materials*.

2.13.2. Grout for Piezoelectric Sensor Installation

Grout for piezoelectric sensor installation shall be per the piezoelectric sensor manufacturer's recommendation. Grout shall be suitable for installation in both asphalt and Portland cement pavements. Grout shall have a short curing time (tack free in ten minutes; open to traffic in forty minutes; and fully cured within sixty minutes) to prevent unnecessary lane closure time and should be of sufficient consistency to prevent running when applied on road surfaces with a drainage cross slope. Particulate matter within the grout shall not separate or settle and the grout shall not shrink during the curing process.

2.14. Hardware

Except where specified otherwise, all hardware such as nuts, bolts, washers, threaded ends of fastening devices, etc. with a diameter less than 5/8 inch shall be passivated stainless steel, alloy type 316 or type 304. Stainless steel hardware shall meet ASTM F593 and F594 for corrosion resistance. All other nuts and bolts shall meet ASTM A307 and shall be galvanized.

2.14.1. Conduit Strap

Conduit strap shall be double-hole, stainless steel, and sized to support specified conduit. Conduit strap shall attach to wood pole or post with two 2 1/4 inch wood screws.

2.14.2. Mounting Strap for Pole Mount Cabinet

Mounting strap for pole mount cabinet shall be 3/4 inch x 0.03 inch stainless steel; equipped with clips or buckles to securely hold strap.

2.14.3. Metal Framing Channel and Fittings

Metal framing channel shall be 1 5/8 inches wide galvanized steel that conforms to ASTM A1011 and ASTM A653. One side of the channel shall have a continuous slot with in-turned edges to accommodate toothed fittings.

Fittings shall be punch pressed from steel plates and conform to ASTM A575 and the physical requirements of ASTM A1011.

2.15. Junction Box

2.15.1. Junction Box Type A, B, or C

Junction Box Type A, B, or C shall meet or exceed ANSI/SCTE 77-2007, Tier 15. Box shall have an open bottom. A removable, non-slip cover marked "PLANNING" shall be equipped with a lifting slot and attached with a minimum of two 3/8 inch stainless steel hex bolts and washers. Type A Box shall have nominal inside dimensions of 13 inches wide by 24 inches long by 18 inches deep. Type B Box shall have nominal inside dimensions of 11 inches wide by 18 inches long by 12

inches deep. Type C Box shall have nominal inside dimensions of 24 inches wide by 36 inches long by 30 inches deep.

2.15.2. Aggregate for Junction Box Type A, B, or C

Aggregate for junction box type A, B, or C shall be gradation size no. 57 and conform to the *Standard Specifications for Road and Bridge Construction*.

2.15.3. Junction Box 10x8x4

Junction Box Type 10x8x4 shall be constructed of a UV-stabilized, nonmetallic material or non-rusting metal and be weatherproof in accordance with NEMA 4X. Box shall be equipped with an overhanging door with a continuous durable weatherproof gasket between the body and door. Door shall be hinged with screws, hinge(s) and pin(s) and shall be equipped with a padlockable latch on the side opposite the hinge(s). Junction Box 10x8x4 shall have minimum inside dimensions of 10 inches high by 8 inches wide by 4 inches deep.

2.16. Maintain and Control Traffic

Materials for the bid item Maintain and Control Traffic shall conform to the *Standard Specifications for Road and Bridge Construction*, and the KYTC Department of Highways *Standard Drawings*.

2.17. Piezoelectric Sensor

Piezoelectric sensor (piezo) shall provide a consistent level voltage output signal when a vehicle axle passes over it, shall have a shielded transmission cable attached, and shall meet the following requirements:

- Dimensions: such that sensor will fit in a $\frac{3}{4}$ inch wide by 1 inch deep saw cut. Total length shall be 6 feet unless specified otherwise.
- Output uniformity: $\pm 7\%$ (maximum)
- Typical output level range: 250mV (minimum) from a wheel load of 400 lbs.
- Working temperature range: -40° to 160° F.
- Sensor life: 30 million Equivalent Single Axle Loadings (minimum)

Shielded transmission cable shall be coaxial and shall meet the following requirements:

- RG 58C/U with a high density polyethylene outer jacket rated for direct burial
- Length shall be a minimum of 100 feet. Installations may exceed 100 feet so the piezo shall be supplied with a lead-in of appropriate length so that the cable can be installed splice-free from the piezo to the cabinet.
- Soldered, water resistant connection to the sensor.

One installation bracket for every 6 inches of sensor length shall also be supplied. Piezo shall be a RoadTrax BL Class I or approved equal.

2.18. Saw Slot Sealant

Saw Slot Sealant shall be non-shrink, non-stringing, moisture cure, polyurethane

encapsulant suitable for use in both asphalt and concrete pavements. It shall provide a void-free encapsulation for detector loop cables and adequate compressive yield strength and flexibility to withstand heavy vehicular traffic and normal pavement movement.

The cured encapsulant shall meet or exceed the following:

- Hardness (Indentation): 35-65 Shore A, ASTM D2240
- Tensile Strength: 150 psi minimum, ASTM D412
- Elongation: 125% minimum 2 inch/minute pull, ASTM D412
- Tack-free Drying Time: 24 hours maximum, ASTM C679
- Complete Drying Time: 30 hours maximum, KM 64-447
- Chemical Interactions (seven day cure at room temperature, 24-hour immersion, KM 64-446):
 - Motor Oil: No effect
 - Deicing Chemicals: No effect
 - Gasoline: Slight swell
 - Hydraulic Brake Fluid: No effect
 - Calcium Chloride (5%): No effect

2.19. Seeding and Protection

Material for Seeding and Protection shall be Seed Mixture Type I and conform to the *Standard Specifications for Road and Bridge Construction*.

2.20. Signs

Materials for signs shall conform to the *Standard Specifications for Road and Bridge Construction*.

2.21. Splicing Materials

2.21.1. Electrical Tape

Electrical tape shall be a premium grade, UL-listed, all-weather, vinyl-insulating tape with a minimum thickness of 7 mil. Tape shall be flame retardant and resistant to abrasion, moisture, alkalis, acids, corrosion, and weather (including ultraviolet exposure).

2.21.2. Splice Kit

Splice kit shall be inline resin-type and rated for a minimum of 600V. Resin shall be electrical insulating-type and shall provide complete moisture and insulation resistance.

2.22. Steel Reinforcing Bar

Steel reinforcing bar shall be #5 and shall conform to the *Standard Specifications for Road and Bridge Construction*.

2.23. Terminal Block

Terminal block shall be rated for a minimum of 300 V and have a minimum of six

terminal pairs with 9/16-inch nominal spacing (center to center) for connecting loop and piezoelectric sensor wires to cable assemblies. Terminal block shall have screw type terminal strips to accommodate wire with spade-tongue ends.

2.24. Warning Tape

Warning tape shall be acid and alkali resistant formulated for direct burial. Tape shall be a minimum of 3 inches wide by 4.0 mils (nominal) thick, and shall be permanently imprinted with a minimum 1 inch black legend on a red background warning of an electric line. Tape shall meet or exceed the following industry specifications:

- American Gas Association (AGA) 72-D-56
- American Petroleum Institute (API) RP 1109
- American Public Works Association (APWA) Uniform Color Code
- Department of Transportation (DOT) Office of Pipeline Safety USAS B31.8
- Federal Gas Safety Regulations S 192-321 (e)
- General Services Administration (GSA) Public Buildings Service Guide: PBS 4-1501, Amendment 2
- National Transportation Safety Board (NTSB) PSS 73-1
- Occupational Safety and Health Administration (OSHA) 1926.956 (c) (1)

2.25. Wire and Cable

All cable and wire shall be plainly marked in accordance with the National Electrical Code (NEC).

2.25.1. Loop Wire

Loop wire shall be 14 AWG, stranded, copper, single conductor, and shall conform to the International Municipal Signal Association (IMSA) Specification No. 51-7.

2.25.2. Cable No. 14/1 Pair

Cable No. 14/1 pair loop lead-in cable shall be 14 AWG, stranded, copper paired, electrically shielded conductors, and shall conform to IMSA 19-2.

2.25.3. Grounding conductor

Grounding conductor and bonding jumper shall be solid or stranded, 4 AWG bare copper.

2.25.4. Service Entrance Conductor

Service entrance conductor shall be stranded, copper, Type USE-2, sized as required to comply with the NEC.

2.25.5. Terminal for electrical wire or cable

Terminal for electrical wires or cables shall be insulated, solderless, spade tongue terminals of correct wire and stud size. Terminal for electrical wires or cables shall be incidental to the wire or cable (including piezoelectric sensor transmission cable) to be connected to terminal strips.

Material, Installation, and Bid Item Notes for
Permanent Traffic Data Acquisition Stations

Revised January 2023

2.26. Wood Post

Wood post shall be Southern Pine pretreated to conform to the American Wood Preservers' Association (AWPA) C-14 or UC4B and shall have minimum dimensions of 4 inches by 4 inches by 8 feet long (for Galvanized Steel Cabinet) or 4 feet long (for Junction Box 10x8x4), sawed on all four sides with both ends square.

2.27. Wooden Pole

Wooden pole shall be a Class IV wood pole of the length specified and shall conform to the *Standard Specifications for Road and Bridge Construction* except the pole shall be treated in accordance with AWPA P9 Type A.

3. CONSTRUCTION METHODS

The plans indicate the extent and general arrangement of the installation and are for guidance. When the Contractor deems any modifications to the plans or specifications necessary, details of such changes and the reasons shall be submitted in writing to the engineer for written approval prior to beginning the modified work.

After the project has been let and awarded, the Division of Construction shall notify the Division of Planning of the scheduled date for a Pre-Construction meeting so that prior arrangements can be made to attend. This will allow the Division of Planning an opportunity to address any concerns and answer any questions that the Contractor may have before beginning the work.

The Division of Planning Equipment Management Team (502-564-7183) shall be notified a minimum of seven days before any work pertaining to these specifications begins to allow their personnel the option to be present during installation.

Unless otherwise specified, installed materials shall be new.

Construction involving the installation of loops or piezoelectric sensors shall not be performed when the temperature of the pavement is less than 38°F.

A final inspection will be performed by a member of the Central Office Division of Planning equipment staff after the installation is complete to verify that the installation is in compliance with the plans and specifications.

Any required corrective work shall be performed per the *Standard Specifications for Road and Bridge Construction*.

3.1. Anchoring

Furnish: Anchor, anchor rod, guy wire, strand vise, guy guard.

Anchor shall be installed in relatively dry and solid soil. Rock anchor shall be installed in solid rock. Excavate the hole at a 45° to 60° angle in line with the guy (hole size shall be slightly larger than the expanded anchor – see manufacturer's recommendation). Attach rod to anchor, install assembly into hole, and expand anchor. Backfill and tamp entire disturbed area. The effectiveness of the anchor is dependent upon the thoroughness of backfill tamping. Attach guy to strand vise on pole and anchor rod and tighten to required tension. Install guy guard on guy.

3.2. Bore and Jack Pipe – 2"

Furnish: Steel Encasement Pipe, 2"

Bore and jack pipe – 2" shall conform to the Section 706 of the *Standard Specifications for Road and Bridge Construction*.

3.3. Cleanup and Restoration

Furnish: Seed Mix Type 1 (as required); fertilizer (as required); agricultural limestone (as required); mulch or hydromulch (as required); tackifier (as required).

The Contractor shall be responsible for repairing any damage to public and/or private property resulting from his work. Upon completion of the work, restore all disturbed highway features in like kind design and materials. This shall include filling any ruts and leveling ground appropriately. Contractor shall dispose of all waste and debris off the project. Sow all disturbed earthen areas with Seed Mix Type 1 per Section 212 of the *Standard Specifications for Road and Bridge Construction*. All materials and labor necessary for cleanup and restoration shall be considered incidental to other bid items.

3.4. Conduit

Furnish: Conduit; conduit fittings; bushings (grounding where required); LB condulets (as required); weatherheads (as required); conduit straps; hardware; conduit sealant.

Conduit that may be subject to regular pressure from traffic shall be laid to a minimum depth of 24 inches below grade. Conduit that will not be subject to regular pressure from traffic shall be laid to a minimum depth of 18 inches below grade.

Conduit ends shall be reamed to remove burrs and sharp edges. Cuts shall be square and true so that the ends will butt together for the full circumference of the conduit. Tighten couplings until the ends of the conduit are brought together. Do not leave exposed threads. Damaged portions of the galvanized surfaces and untreated threads resulting from field cuts shall be painted with an Engineer-approved, rust inhibitive paint. Conduit bends shall have a radius of no less than 12 times the nominal diameter of the conduit, unless otherwise shown on the plans.

Contractor shall install a bushing (grounding bushing where required) on both ends of all conduits. Cap spare conduits on both ends with caps or conduit sealant.

Conduit openings in junction boxes and cabinets shall be waterproofed with a flexible, removable conduit sealant, working it around the wires, and extending it a minimum 1 inch into the end of the conduit.

After the conduit has been installed and prior to backfilling, the conduit installation shall be inspected and approved by the Engineer.

3.5. Electrical Service

Furnish: Meter base, service disconnect, wire, GFCI AC duplex receptacle with box and cover; conduit, conduit fittings, bushings (grounding where required); LB condulets (as required); weatherhead; conduit straps; hardware; conduit sealant; ground rod with clamp; grounding conductor.

Prior to any construction, the Contractor shall initiate a work order with the local power

company for the installation of electrical service to the site. A representative from the Division of Planning and the local power company shall be consulted prior to choosing an exact location for the pole. The Contractor shall clear the right-of-way for the electrical service drop.

Contractor shall obtain electrical inspections, memberships, meter base, service disconnect and any other requirements by the utility serving the installation and pay all fees as required.

Install meter-base and disconnect panel with a 30-ampere, fused, circuit breaker inside. Install a manufactured weatherproof hub connector to connect the conduit to the top of the meter base and service disconnect.

Install a rigid $\frac{3}{4}$ inch conduit with three 8 AWG service conductors from the cabinet, through the service disconnect to the meter base and a $1\frac{1}{4}$ " conduit with three 8 AWG service conductors from the meter base to a weatherhead two feet from the top of the electrical service pole. Install conduit straps 30 inches on center and provide a drip loop where the wire enters the weatherhead. Splice electric drop with service entrance conductors at the top of the pole.

The limit of conduit incidental to "Install Electrical Service" for a pad mounted cabinet is 24 inches beyond face of service pole.

Install a 120-volt, 20-amp GFCI AC duplex receptacle with box and cover in the automatic data recorder (ADR) cabinet.

Install a ground rod with clamp. Install a grounding conductor wire from the meter base, through the disconnect panel, to the ground rod clamp. Install grounding conductor in $1\frac{3}{4}$ " conduit from service disconnect to ground rod.

After completing the installation and before the electrical service is connected, obtain a certificate of compliance from the Kentucky Department of Housing, Buildings and Construction, Electrical Inspection Division.

3.6. Flashing Arrow

Furnish: Arrow Panel

Construction of Flashing Arrow shall conform to the *Standard Specifications for Road and Bridge Construction*.

3.7. Galvanized Steel Cabinet

Furnish: Cabinet; wood posts; concrete; conduit fittings; metal framing channel; pipe clamp; terminal block(s); spade tongue wire terminals; wire labels; hardware.

Where right-of-way allows, locate the cabinet such that it is outside the clear zone in accordance with the *Roadside Design Guide*. Install Cabinet such that the door of the

cabinet faces the roadway.

Excavate as required and install wood posts to a depth of 36 inches and place concrete around posts as shown on the standard detail sheets. Install metal framing channel with pipe clamp between posts.

Install Cabinet on wood posts 38 inches above the finished grade as shown on the standard detail sheets. Install a unistrut between posts when two posts are specified.

Install the required number of terminal blocks on the cabinet back plate. Install a spade tongue terminal on each loop and piezo sensor wire entering the cabinet and connect wires to terminal block(s). Wiring shall be neat and orderly. Label all wires and cables inside cabinet.

Install conduit from ground to cabinet and attach to pipe clamp. Install locknuts to attach conduit to cabinet and install a conduit bushing as shown on the standard detail sheets.

3.8. Grounding

Furnish: Ground rod with clamp; grounding conductor.

At sites with electrical or solar service, all conduits, poles, and cabinets shall be bonded to ground rods and the electrical system ground to form a complete grounded system.

Install such that top of ground rod is a minimum of 3 inches below finished grade.

Grounding systems shall have a maximum 25 ohms resistance to ground. If the resistance to ground is greater than 25 ohms, two or more ground rods connected in parallel shall be installed. Adjacent ground rods shall be separated by a minimum of 6 feet.

3.9. Install Pad Mount Enclosure

Furnish: Concrete; anchor bolts with washers and nuts; conduit; conduit fittings; conduit grounding bushings; ground rod with clamp; grounding conductor; conduit sealant; wooden stakes (where required); wire labels; hardware.

The Contractor shall be responsible for securing the enclosure from the Central Office Division of Planning Warehouse in Frankfort and transporting it to the installation site.

Where right-of-way allows, locate the enclosure such that it is outside the clear zone in accordance with the *Roadside Design Guide*.

Excavate as required, and place concrete to construct the enclosure foundation as specified on the standard detail sheets. Install enclosure on the concrete base such that the door(s) of the enclosure opens away from traffic (hinges away from traffic). Install anchor bolts, washers, and nuts to secure the enclosure to the foundation.

Install ground rod with clamp and install one $\frac{3}{4}$ inch rigid conduit from enclosure base to

ground rod. Install a grounding conductor from ground rod to enclosure base and bond to each conduit bushing in the base.

Install one $\frac{3}{4}$ inch rigid steel conduit for electrical service from the base of the enclosure to 24 inches beyond the concrete base. Make all field wiring connections to the electrical service, as applicable.

If electrical service is not provided as a bid item in the contract, plug conduit on both ends with a cap, conduit sealant, or electrical tape. Mark the location of the buried conduit end with a wooden stake labeled "3/4 in. conduit."

Install specified rigid steel conduit(s) into the base of the enclosure for sensor wire entry. Install one spare 2-inch conduit from the enclosure base to 2 feet beyond the concrete base. Plug spare conduit on both ends with a cap, conduit sealant or electrical tape.

The limit of all conduits incidental to "Install Pad Mount Enclosure" is 24 inches beyond the edge of the concrete base.

Wiring in enclosure shall be neat and orderly. Label all wires and cables inside enclosure. KYTC personnel will furnish and install terminal blocks and connect sensors to terminal blocks.

3.10. Install Controller Cabinet

Furnish: Mounting brackets; mounting straps; conduit; LB condulets; conduit fittings; conduit grounding bushings; ground rod with clamp; grounding conductor; cable staples; conduit sealant; wooden stakes (where required); wire labels; hardware.

The Contractor shall be responsible for securing the cabinet from the Central Office Division of Planning Warehouse in Frankfort and transporting it to the installation site. Any existing holes in the cabinet not to be reused shall be covered or plugged to meet NEC requirements.

Install mounting brackets and secure cabinet to pole with mounting straps.

Install a ground rod with clamp. Install grounding conductor in 1- $\frac{3}{4}$ " conduit from cabinet to ground rod.

Install one $\frac{3}{4}$ inch rigid steel conduit with two lb. condulets from cabinet to electrical service disconnect box. Make all field wiring connections to the electrical service, as applicable.

If electrical service is not provided as a bid item in the contract, plug conduit on both ends with cap, plumbers putty, conduit sealant, or electrical tape. Mark the location of the buried conduit end with a wooden stake labeled "3/4 in. conduit".

Install specified rigid steel conduit(s) and type LB conduit(s) into the bottom of the

cabinet for sensor wire entry. The limit of conduits incidental to “Install Controller Cabinet” is 24 inches beyond the face of the pole.

Wiring in cabinet shall be neat and orderly. Label all wires and cables inside cabinet. KYTC personnel will furnish and install terminal blocks and connect sensors to terminal blocks.

3.11. Junction Box Type 10x8x4

Furnish: Junction box; wood post; conduit fittings; wire labels; hardware.

Where right-of-way allows, locate the junction box such that it is outside the clear zone in accordance with the Roadside Design Guide.

Excavate as required and install wood post(s) to a depth of 18 inches. Install junction box on wood post such that the bottom of the box is 18 inches above the finished grade as shown on the standard detail sheets. Box shall be installed with four (4) 2½ inch wood screws and washers.

Install locknuts to attach conduit to junction box and install a conduit bushing as shown on the standard detail sheets.

Wiring inside box shall be neat and orderly. Label all wires and cables inside box.

3.12. Junction Box Type A, B, or C

Furnish: Junction box, No. 57 aggregate; grounding conductor

Excavate as required and place approximately 12 inches of No. 57 aggregate beneath the proposed junction box to allow for drainage. Install specified junction box type A, B, or C near the edge of pavement, flush with finished grade per the detail sheets. Where required, orient the box so that the dimensions comply with the National Electrical Code. Stub conduits with grounding bushings into junction box at its base to accommodate wires and connect grounding conductor to all grounding bushings. Backfill to existing grade, and restore disturbed area to the satisfaction of the Engineer.

Wiring inside box shall be neat and orderly. Label all wires and cables inside box.

3.13. Loops - Proposed

Furnish: Wire; saw slot sealant; backer rod; grout; conduit sealant.

The plans and notes specify the approximate location for loop installations. Prior to sawing slots or drilling cores, the Contractor shall meet with a representative of the Division of Planning to verify the precise layout locations on site. Avoid expansion joints and pavement sections where potholes, cracks, or other roadway flaws exist.

Upon completion of this meeting, the Contractor shall measure out and mark the proposed loop locations with spray paint or chalk such that the saw slots will be parallel

and perpendicular to the direction of traffic. Marked lines shall be straight and exact to the locations determined and sized as shown on the plans. Unless indicated otherwise, loops shall be 6 feet by 6 feet square and loops in the same lane shall be spaced 16 feet from leading edge to leading edge.

On resurfacing, rehabilitation, and new construction projects that include new asphalt pavement, the Contractor shall install loops prior to laying the final surface course. On projects with milling and texturing, the Contractor may install the loops prior to or after the milling operation; however, if installed prior to milling, the Contractor shall be responsible for ensuring that the loops are installed at a depth such that the milling operation will not disturb the newly installed loops. The Contractor shall correct damage caused by the milling operations to newly installed loops prior to placement of the final surface course at no additional cost to the Cabinet.

For projects that include the installation of new asphalt and piezoelectric sensors, the Contractor shall mark or otherwise reference all loops installed prior to the final surface course such that the loops can be accurately located when the piezoelectric sensors are installed after placement of the final surface course.

For projects that do not have asphalt surfacing, the Contractor shall install the loops in the surface of the pavement.

The Prime Contractor shall coordinate the installation of loops with the electrical sub-Contractor and the Engineer to ensure correct operation of the completed installation.

The following is a typical step by step procedure for the installation of a loop.

- Carefully mark the slot to be cut, perpendicular to the flow of traffic and centered in the lane.
- Make each saw-cut 3/8-inch wide and at a depth such that the top of the backer rod is a minimum of 2 inches below the surface of rigid (PCC/Concrete) pavement or 4 inches below the surface of asphalt pavement.
- Drill a 1½ inch core hole at each corner and use a chisel to smooth corners to prevent sharp bends in the wire.
- Clean ALL foreign and loose matter out of the slots and drilled cores and within 1 foot on all sides of the slots using a high-pressure washer.
- Completely dry the slots and drilled cores and within 1 foot on all sides of the slots using oil-free forced air, torpedo heaters, electric heaters, or natural evaporation, depending on weather conditions. Be very careful not to burn the asphalt if heat is used.
- Measure 9-12 inches from the edge of the paved surface (shoulder break or face of curb) and drill a 1½ inch hole on a 45° angle to the conduit adjacent to the roadway.
- Closely inspect all cuts, cores, and slots for jagged edges or protrusions prior to the placement of the wire. All jagged edges and protrusions shall be ground or re-cut and cleaned again.

- Place the loop wire splice-free from the termination point (cabinet or junction box) to the loop, continue around the loop for four turns, and return to the termination point.
- Push the wire into the saw slot with a blunt object such as a wooden stick. Make sure that the loop wire is pushed fully to the bottom of the saw slot.
- Install conduit sealant to a minimum of 1" deep into the cored 1½ inch hole.
- Apply loop sealant from the bottom up and fully encapsulate the loop wires in the saw slot. The wire should not be able to move when the sealant has set.
- Cover the encapsulated loop wire with a continuous layer of backer rod along the entire loop and home run saw slots such that no voids are present between the loop sealant and backer rod.
- Finish filling the saw cut with non-shrinkable grout per manufacturer's instructions. Alleviate all air pockets and refill low spaces. There shall be no concave portion to the grout in the saw slot. Any excess grout shall be cleaned from the roadway to alleviate tracking.
- Clean up the site and dispose of all waste off the project.
- Ensure that the grout has completely cured prior to subjecting the loop to traffic. Curing time varies with temperature and humidity.

Exceptions to installing loop wire splice-free to the junction box or cabinet may be considered on a case-by-case basis and must be pre-approved by the Engineer. If splices are allowed, they shall be located in a junction box and shall conform to the construction note for Splicing.

If loop lead-in cable (Cable No. 14/1 Pair) is specified, cable shall be installed splice free to the cabinet ensuring that extra cable is left in each junction box or cabinet. All wires and cables shall be labeled in each junction box and cabinet.

Loop inductance readings shall be between 100 and 300 microhenries. The difference of the loop inductance between two loops in the same lane shall be ± 20 microhenries. Inductance loop conductors shall test free of shorts and grounds. Upon completion of the project, all loops must pass an insulation resistance test of a minimum of 100 million ohms to ground when tested with a 500 Volt direct current potential in a reasonably dry atmosphere between conductors and ground.

3.14. Loop Test

When noted on a data collection station layout sheet that there are existing inductive loops within the limits of the project, notify the Engineer in writing, a minimum of 14 calendar days prior to beginning milling operations. After milling and prior to placing asphalt inlay, conduct an operating test on the existing inductance loops at the control cabinet in the presence of the Engineer to determine if the inductance loop conductors have an insulating resistance of a minimum of 100 megohms when tested with a 500-volt direct current potential in a reasonably dry atmosphere between conductors and ground. The Department may also conduct its own tests with its own equipment.

If the tests indicate the loop resistances are above the specified limit and the Engineer determines the system is operable, proceed with the asphalt inlay. If the test indicates the loop resistance is not within the specified limits or if the Engineer determines the system is otherwise not operable, prior to placing the asphalt inlay install and test new loop detectors according to the station layout, notes, and Detail Drawings.

The Engineer will contact and maintain liaison with the District Planning Engineer and the Division of Planning in order to coordinate any necessary work.

3.15. Maintain and Control Traffic

Furnish (all as required): Drums, traffic cones, barricades used for channelization purposes, delineators, and object markers.

Maintain and Control Traffic shall conform to the plans, the Standard Specifications for Road and Bridge Construction, and the KYTC Department of Highways Standard Drawings.

3.16. Open Cut Roadway

Furnish: Concrete, reinforcing bars.

Excavate trench by sawing and chipping away roadway to dimensions as indicated on the detail sheets. After placing conduit, install concrete and steel reinforcing bars per the *Standard Specifications for Road and Bridge Construction*. Restore any disturbed sidewalk to its original condition.

3.17. Piezoelectric Sensor

Furnish: Piezoelectric sensor and cable; sensor support brackets; saw slot sealant; backer rod; grout; conduit sealant.

The plans and notes specify the approximate location for piezoelectric sensor (piezo) installations. Prior to sawing slots or drilling cores, the Contractor shall meet with a representative of the Division of Planning to verify the final layout on site. Avoid expansion joints and pavement sections where potholes, cracks, or other roadway flaws exist. Roadway ruts at the proposed piezo location shall not be in excess of ½ inch under a 4-foot straight edge.

Install the piezo perpendicular to traffic in the final surface course of the pavement. Locate the sensor in the lane as shown on the site layout drawing. Eleven-foot length sensors shall be centered in the lane.

The following is a typical step by step procedure for the installation of a piezo. Refer specifically to the manufacturer's instructions provided with the sensor prior to installation.

- Carefully mark the slot to be cut, perpendicular to the flow of traffic and properly positioned in the lane.

Material, Installation, and Bid Item Notes for
Permanent Traffic Data Acquisition Stations

Revised January 2023

- It is strongly recommended that a $\frac{3}{4}$ inch wide diamond blade be used for cutting the slot, or that blades be ganged together to provide a single $\frac{3}{4}$ inch wide cut. The slot shall be wet cut to minimize damage to the pavement.
- Cut a slot $\frac{3}{4}$ inch wide ($\pm 1/16$ inch) by 1 inch minimum deep. The slot should be a minimum of 2 inches longer than the sensor (including the lead attachment). Drop the saw blade an extra $\frac{1}{2}$ inch down on both ends of the sensor. The lead out of the passive cable should be centered on the slot.
- Cut the slot for the passive cable $\frac{1}{4}$ inch wide and at a depth so that the top of the backer rod is a minimum of 2 inches below the road surface.
- Clean ALL foreign and loose matter out of the slot and within 1 foot on all sides of the slot using a high-pressure washer.
- Completely dry the slot and within 1 foot on all sides of the slot using oil-free forced air, torpedo heaters, electric heaters, or natural evaporation, depending on weather conditions. Be very careful not to burn the asphalt if heat is used.
- Measure 9-12 inches from the edge of the paved surface (shoulder break or face of curb) and drill a $1\frac{1}{2}$ inch hole on a 45° angle to the conduit adjacent to the roadway.
- Place strips of 2-4-inch-wide tape strips on the pavement along the lengths of both sides of the sensor slot, $1/8$ inch away from the slot.
- Wear clean, protective latex (or equivalent) gloves at all times when handling sensors. Visually inspect sensor to ensure it is straight. Check lead attachment and passive cable for cuts, gaps, cracks and/or bare wire. Verify that the correct sensor type and length is being installed by checking the data sheet. Verify there is sufficient cable to reach the cabinet. Piezo lead-in cable shall not be spliced.
- Test the sensor for capacitance, dissipation factor and resistance, according to the directions enclosed with the sensor. Capacitance and dissipation should be within $\pm 20\%$ of the piezo data sheet. Resistance (using the 20M setting) should be infinite. Record the sensor serial number and the test results and label "pre-installation." This information should be stored in the counter cabinet and/or returned to Department Planning personnel.
- Lay the sensor next to the slot and ensure that it is straight and flat.
- Clean the sensor with steel wool or an emery pad and wipe with alcohol and a clean, lint-free cloth.
- Place the installation bracket clips every 6 inches along the length of the sensor.
- Bend the tip of the sensor downward at a 30° angle. Bend the lead attachment end down at a 15° angle and then 15° back up until level (forming a lazy Z).
- Place the sensor in the slot, with the brass element $3/8$ inch below the road surface along the entire length. The tip of the sensor should be a minimum of 2 inches from the end of the slot and should not touch the bottom of the slot. The top of the plastic installation bracket clips should be $1/8$ inch below the surface of the road. The lead attachment should not touch the bottom or sides of the slot. Ensure the sensor ends are pushed down per the manufacturer's instructions.
- Visually inspect the length of the sensor to ensure it is at uniform depth along its length and it is level (not twisted, canted or bent).

- On the passive cable end, block the end of the slot approximately 3-5 inches beyond the end of the lead attachment area creating an adequate “dam” so that the sensor grout does not flow out.
- Use one bucket of sensor grout per piezo installation. Overfill the slot with sensor grout and allow to cure for a minimum of 10 minutes before continuing with the installation. Ensure that sensor grout fills around and beneath the sensor completely and that there is not a trough on top.
- Remove the tape along the sides of the saw slot when the adhesive starts to cure.
- Carefully remove the dam from the end of the sensor.
- Route the lead-in cable through the saw slot
- Install conduit sealant to a minimum of 1” deep into the cored 1½ inch hole.
- Cover the lead-in cable with encapsulant, backer rod, and grout.
- If necessary, after the grout has hardened, grind with an angle grinder until the profile is a 1/16-inch mound. There shall be no concave portion to the mound.
- Clean up the site and dispose of all waste off the project.
- Ensure that the sensor grout has completely cured prior to subjecting the sensor to traffic. Curing time will vary with temperature and humidity.

Upon installation, test the sensor for capacitance, dissipation factor and resistance, according to the directions enclosed with the sensor. Capacitance and dissipation should be within $\pm 20\%$ of the piezo data sheet. Resistance (using the 20M setting) should be infinite. Perform a functional test of the piezo with an oscilloscope to ensure that the sensor is generating a proper response to the passage of vehicles.

Record the sensor serial number and the test results and label “post-installation.” This information should be stored in the counter cabinet and/or returned to Department Planning personnel.

3.18. Pole – Wooden

Furnish: Pole; anchoring equipment (as required); hardware (as required).

Excavate and install wood pole to a minimum depth of one-sixth the total pole height. Place backfill material in hole and compact until flush with existing grade. Install guy wire, guy guard, anchor, anchor rod, and strand vise, if necessary. Anchor shall be a minimum of one-third the pole height from the face of the pole. Provide temporary erosion control, seeding, protection and restoration of disturbed areas to the satisfaction of the Engineer.

3.19. Removal of Existing Equipment

The Contractor shall remove existing materials (including but not limited to: poles, anchors, cabinets, junction boxes, conduit and wire) not to be reused. Contractor shall dispose of all removed materials off the project. All materials and labor necessary for the removal of existing equipment shall be considered incidental to other bid items.

3.20. Signs

Furnish: Signs; sign standards; hardware.

Construction of signs shall conform to the *Standard Specifications for Road and Bridge Construction*.

3.21. Splicing

Furnish: Splice kit; solder.

These notes describe the splicing process (if permitted) and are not intended to grant permission to splice. Permission to splice shall be determined by the Division of Planning and the locations shall be shown on the layout sheet. If splicing is needed but not shown on the layout sheet, the Contractor shall receive prior written approval from the Division of Planning.

All splices shall conform to the provisions of the NEC.

Splices for loop and loop lead-in wire shall be twisted and soldered. Abrade the outer jacket of both wires to promote good adhesion and prevent capillary leak paths. Seal the splice with an electrical sealing resin. Spliced loop conductors shall test free of shorts and unauthorized grounds and shall have an insulating resistance of at least 100 megohms when tested with a 500-volt direct current potential in a reasonably dry atmosphere between conductors and ground.

For piezos, the same type coax cable, supplied by the manufacturer, shall be used to splice to the sensor's lead-in cable. Cables shall be soldered. Abrade the outer jacket of both cables to promote good adhesion and prevent capillary leak paths. Seal the splice with an electrical sealing resin. Spliced piezo cables shall be tested and have a minimum resistance of 20 megohms, a maximum dissipation factor of 0.03, a capacitance within the manufacturer's recommended range based upon the length of additional cable. A functional test of the piezo shall be performed to ensure that the sensor is generating a proper response to the passage of vehicles.

3.22. Trenching and Backfilling

Furnish: Warning tape; seed mix type I; cereal rye or German foxtail-millet; mulch; concrete (as required); asphalt (as required).

Excavate trench and provide required cover as shown on the standard detail sheets. After placing conduit, backfill material shall be placed and compacted in lifts of 9 inches or less. Install warning tape as shown on the detail sheet. Provide temporary erosion control, seeding, protection and restoration of disturbed areas to the satisfaction of the Engineer.

3.23. Wiring

Furnish: Wire; wire labels; spade tongue wire terminals (as required).

Installation of all wiring shall conform to the NEC. Permanent identification numbers

shall be affixed to all wires in all junction boxes and cabinets (see Layout(s) for loop and piezo numbers).

Additional lengths of each loop and piezo sensor wire shall be neatly coiled in all cabinets and junction boxes as follows:

Enclosure Type	Additional length of each wire
Galvanized Steel Cabinet	2' – 3'
Pad Mount Cabinet (332)	6' - 8'
Pole Mount Cabinet (336)	3' - 4'
Junction Box Type 10x8x4	2' – 3'
Junction Box Type A, B, or C	2' – 3'

3.24. Wood Post

Furnish: Wood post; concrete (as required); seed mix type I; cereal rye or German foxtail-millet; mulch.

Excavate hole to specified depth and place concrete, if required. Install post, backfill to existing grade, and tamp backfill. Provide temporary erosion control, seeding, protection and restoration of disturbed areas to the satisfaction of the Engineer.

3.25. Remove and Replace Sidewalk

Furnish: Lumber, stakes, nails or screws, and concrete.

Remove existing sidewalk to install rigid conduit from edge of roadway to nearest junction box or cabinet. Form, pour and finish concrete in place of old existing sidewalk making sure to replace the expansion joints in their respective locations. Concrete shall conform to the *Kentucky Standard Specifications for Road and Bridge Construction* for sidewalks.

4. BID ITEM NOTES AND METHOD OF MEASUREMENT FOR PAYMENT

Only the bid items listed will be measured for payment. All other items required to complete the vehicle detection installation shall be incidental to other items of work. Payment at the contract unit price shall be full compensation for all materials, labor, equipment and incidentals to furnish and install these items.

4.1. Bore and Jack Pipe – 2”

Bore and jack pipe – 2” shall be furnished, installed, and measured for payment per the *Standard Specifications for Road and Bridge Construction*.

4.2. Conduit

Conduit shall include furnishing and installing specified conduit in accordance with the specifications. This item shall include conduit fittings, bodies, boxes, weatherheads, expansion joints, couplings, caps, conduit sealant, electrical tape, clamps, bonding straps and any other necessary hardware. Conduit will be measured in linear feet.

4.3. Electrical Service

Electrical Service shall include furnishing and installing all necessary materials and payment of all fees toward the complete installation of an electrical service which has passed all required inspections. Incidental to this item shall be furnishing and installing:

- Meter-base per utility company’s specifications
- Service disconnect panel per utility company’s specifications
- Meter base and service disconnect entrance hubs, waterproof
- Service entrance conductors
- Rigid steel conduit
- Rigid steel conduit fittings
- Conduit straps
- Weatherhead
- Duplex GFCI receptacle, 120-volt, 20-amp
- Ground rod with clamp
- Grounding conductor

Also incidental to this item shall be any necessary clearing of right of way for the electrical service drop.

Electrical service will be measured in individual units each.

4.4. Flashing Arrow

Flashing Arrow shall be furnished, installed, and measured for payment per the *Standard Specifications for Road and Bridge Construction*.

4.5. Galvanized Steel Cabinet

Galvanized Steel Cabinet shall include furnishing and installing galvanized steel cabinet on post as specified. Incidental to this item shall be furnishing and installing grounding hardware, and any necessary post/pole mounting hardware. Also incidental to this item shall be furnishing and installing the required number of terminal blocks and connection of all

sensors to the terminal blocks. Galvanized Steel Cabinet will be measured in individual units each.

4.6. Install Pad Mount Enclosure

Install Pad Mount Enclosure shall include installing a Department-furnished enclosure as specified on the detail sheets.

This item shall include obtaining the enclosure from KYTC and transporting it to the installation site and furnishing and installing the following:

- Concrete foundation (including any excavation necessary)
- Anchor bolts, lock washers, and nuts
- Conduit
- Conduit fittings (including grounding bushings)
- Weatherhead
- Terminal Strip(s)
- Ground rod with clamp
- Grounding conductor

Install Pad Mount Enclosure will be measured in individual units each.

4.7. Install Controller Cabinet

Install Controller Cabinet shall include installing a Department-furnished cabinet as specified on the detail sheets.

This item shall include obtaining the cabinet from KYTC and transporting it to the installation site and furnishing and installing the following:

- Conduit
- Conduit Fittings
- Terminal Strip(s)
- Ground rod with clamp
- Grounding conductor

Install Controller Cabinet will be measured in individual units each.

4.8. Junction Box Type 10" x 8" x 4"

Junction Box Type 10"x8"x4" shall include furnishing and installing specified junction box in accordance with the specifications. This item shall include connectors, splice sleeves, conduit fittings, mounting materials and any other items required to complete the installation. Incidental to this item shall be furnishing and installing specified post (wood, channel, metal, etc.) as required for the installation. Junction Box Type 10"x8"x4" will be measured in individual units each.

4.9. Junction Box Type A, B, or C

Junction Box Type A, B, or C shall include furnishing and installing specified junction box in accordance with the specifications. This item shall include excavation, furnishing and installing #57 aggregate, backfilling around the box, and restoration of disturbed areas to the satisfaction of the Engineer. Incidental to this item shall be furnishing and installing a

grounding conductor bonding all conduit grounding bushings in the box. Junction Box Type A, B, or C will be measured in individual units each.

4.10. Loop Saw Slot and Fill

Loop Saw Slot and Fill shall include sawing and cleaning saw slots and furnishing and installing conduit sealant, loop sealant, backer rod, grout, or other specified material. Loop Saw Slot and Fill will be measured in linear feet of sawed slot.

4.11. Maintain and Control Traffic

Maintain and Control Traffic shall be measured for payment per the *Standard Specifications for Road and Bridge Construction*.

4.12. Open Cut Roadway

Open Cut Roadway shall include excavating trench (sawing and chipping roadway) to dimensions as indicated on the detail sheets and furnishing and placing concrete, steel reinforcing bars, and asphalt. This item also includes restoring any disturbed sidewalk to its original condition. Open Cut Roadway will be measured in linear feet.

4.13. Piezoelectric Sensor

Piezoelectric sensor (piezo) shall include sawing and cleaning saw slots and furnishing and installing piezo in accordance with the specifications. This item shall include furnishing and installing lead-in wire, conduit sealant, encapsulation material, backer rod, grout, testing, and accessories. Piezo will be measured in individual units each.

4.14. Pole – 35' Wooden

Pole – 35' Wooden shall include excavation, furnishing and installing specified wood pole, backfilling and restoring disturbed areas to the satisfaction of the Engineer. Incidental to this item shall be furnishing and installing guy wire, anchor and anchor rod, strand vise, and guy guard, if specified.

Pole – 35' Wooden will be measured in individual units each.

4.15. Signs

Signs shall be furnished, installed, and measured for payment per the *Standard Specifications for Road and Bridge Construction*.

4.16. Trenching and Backfilling

Trenching and Backfilling shall include excavation, warning tape, backfilling, temporary erosion control, seeding, protection and restoration of disturbed areas to original condition. This item shall include concrete, asphalt or approved replacement material for sidewalks, curbs, roadways, etc. (if required). Trenching and backfilling will be measured in linear feet.

4.17. Wire or Cable

Wire or cable shall include furnishing and installing specified wire or cable within saw slot, conduit, junction box, cabinet, or overhead as indicated on the detail sheets. Incidental to this item shall be the labeling of all wires and cables in each junction box, cabinet and splice

box, and furnishing and installing other hardware required for installing cable. Wire or Cable will be measured in linear feet.

4.18. Wood Post

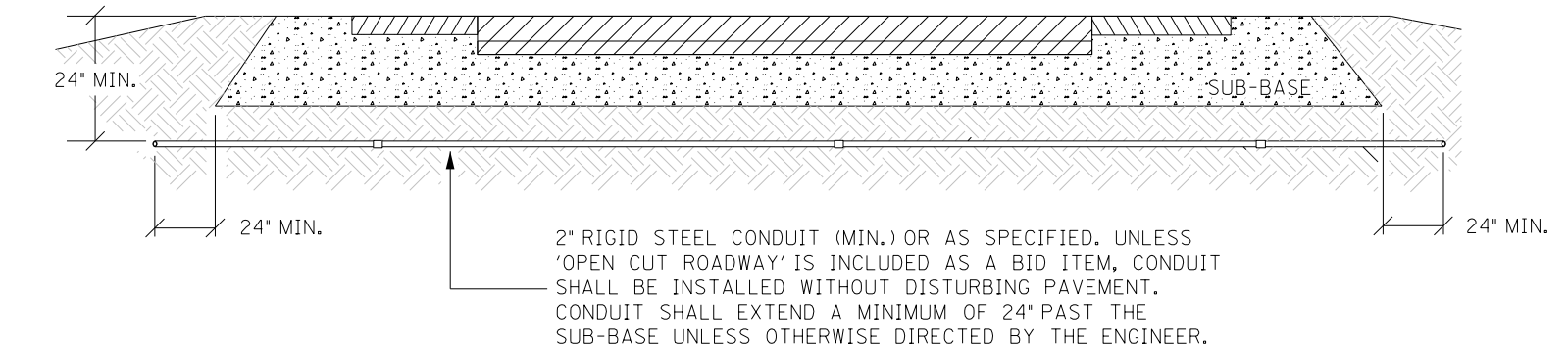
Wood Post shall include furnishing and installing wood post as specified. This item shall include excavation, furnishing and placing concrete (if required), backfilling around the post, and restoration of disturbed areas to the satisfaction of the engineer. Wood Post will be measured in individual units each.

4.19. Remove and Replace Sidewalk

Remove and Replace Sidewalk shall include removing existing sidewalk to install conduit and/or junction box (if required) and replacing old existing sidewalk with new sidewalk after installation of required items. This item includes removing old sidewalk and disposing of off the project and forming, pouring and finishing the new sidewalk after installation of required items.

4.20. Loop Test

Loop Test includes conducting an operating test on the existing inductance loops at the control cabinet in the presence of the Engineer to determine if the inductance loop conductors have an insulating resistance of a minimum of 100 megohms when tested with a 500-volt direct current potential in a reasonably dry atmosphere between conductors and ground.

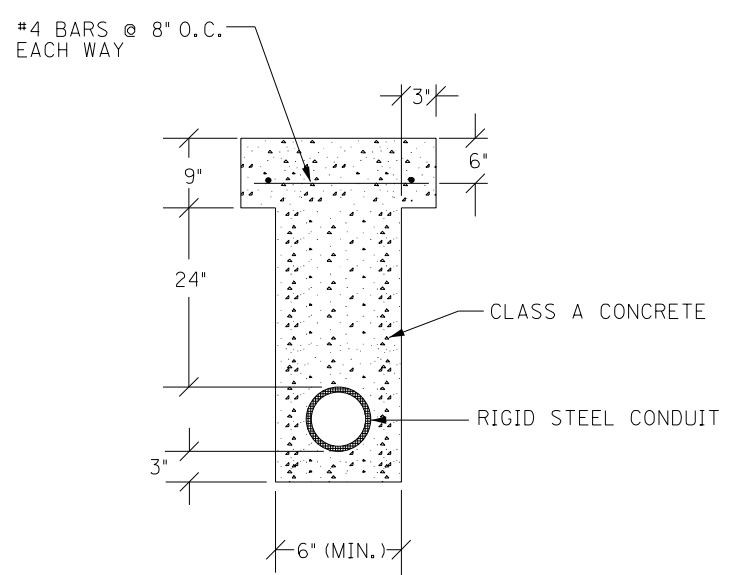
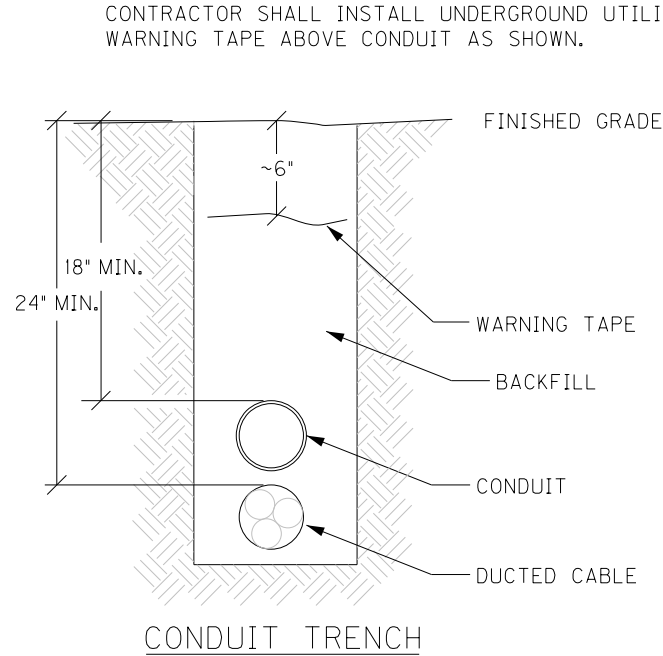


CONDUIT UNDER PAVEMENT

TOTAL TRENCH WIDTH SHALL BE 3" (NOM.) WIDER THAN THE SUM OF THE OUTSIDE DIAMETER(S) OF THE CONDUIT(S) INSTALLED. CONDUIT(S) SHALL BE CENTERED IN TRENCH.

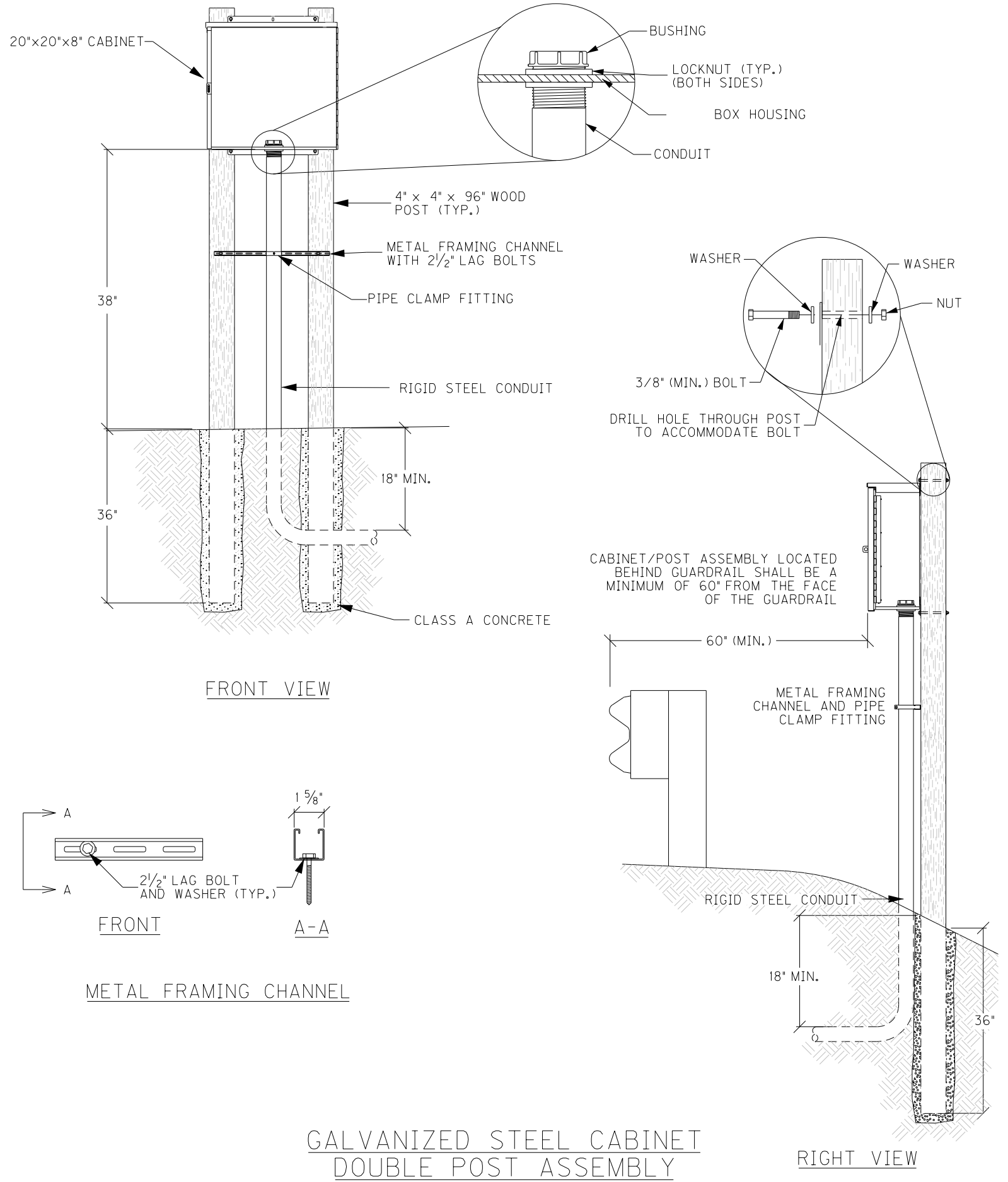
CONTRACTOR SHALL PLACE BACKFILL IN LIFTS (9" MAX.) COMPACT BACKFILL, AND RESTORE DISTURBED AREA TO THE SATISFACTION OF THE ENGINEER

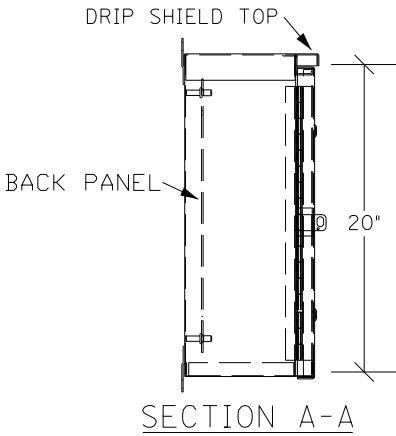
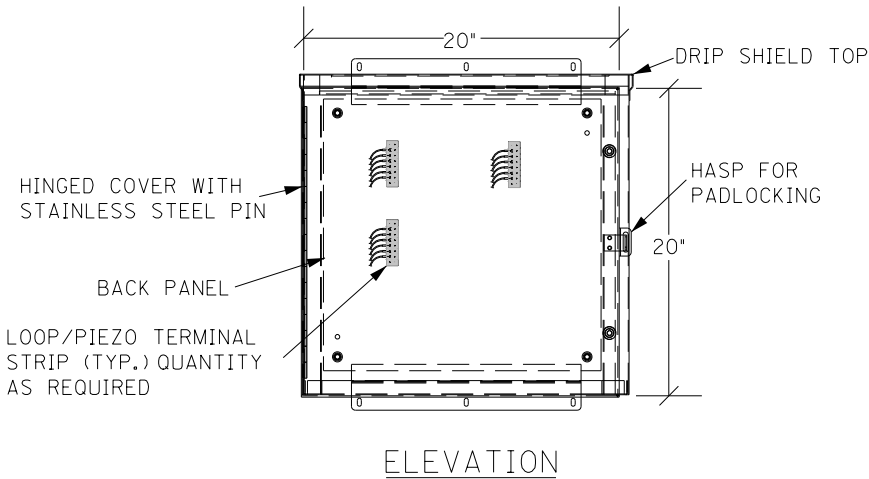
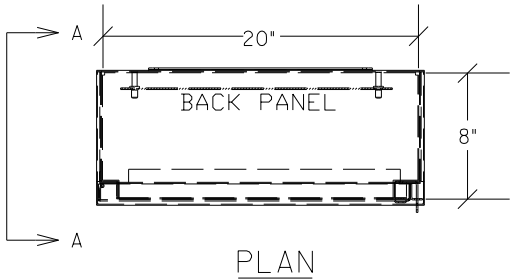
CONTRACTOR SHALL INSTALL UNDERGROUND UTILITY WARNING TAPE ABOVE CONDUIT AS SHOWN.



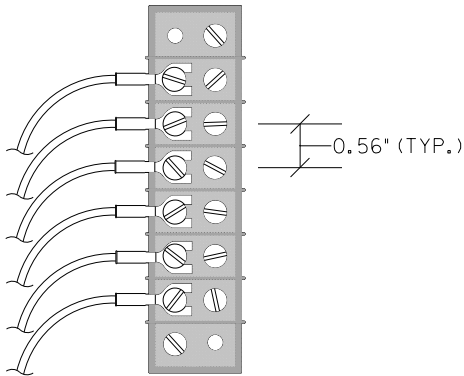
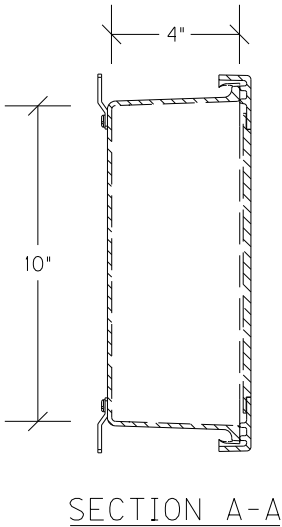
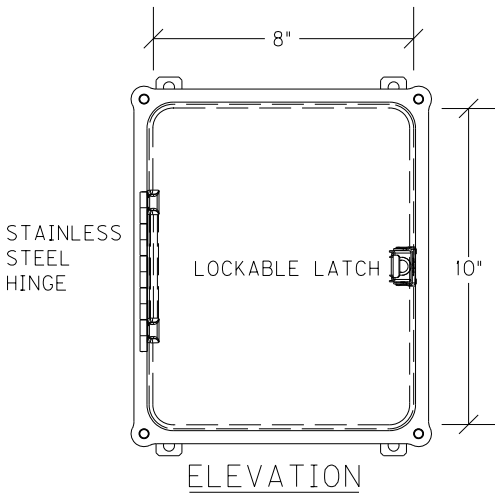
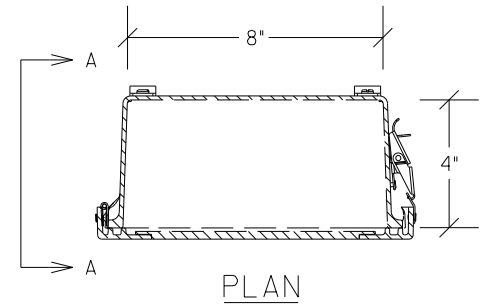
OPEN CUT PAVEMENT DETAIL

CONDUIT INSTALLATION

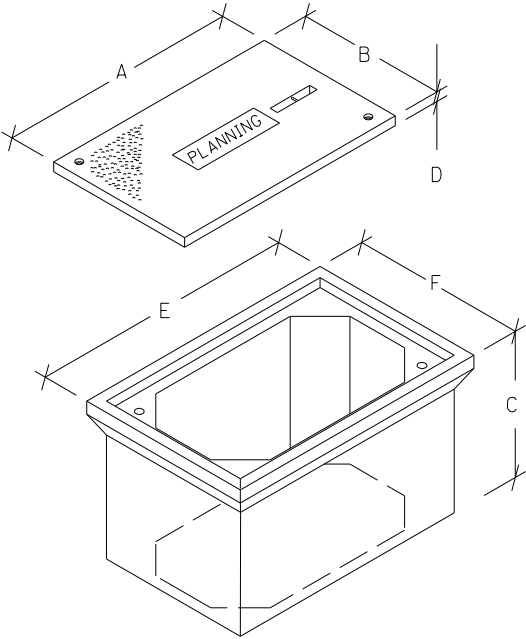




GALVANIZED STEEL CABINET

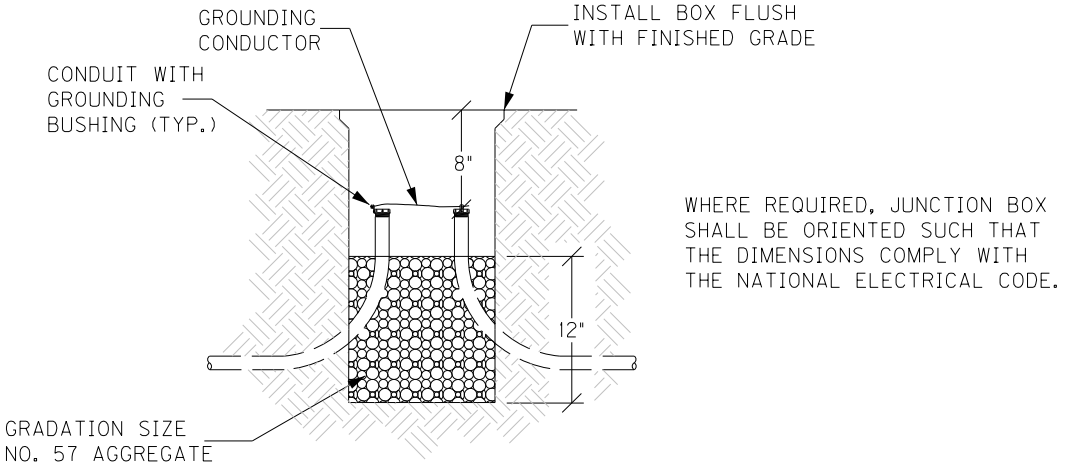


JUNCTION BOX 10"X8"X4"



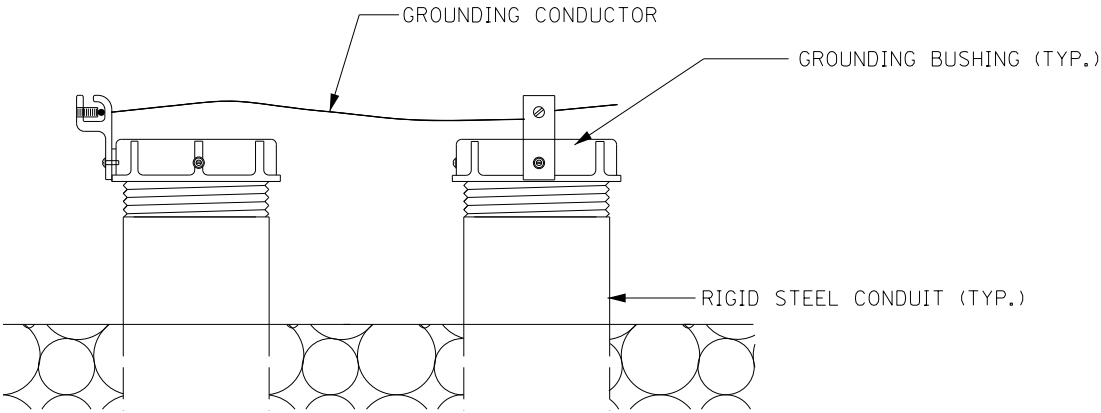
JUNCTION BOX DIMENSIONS (NOMINAL)						
	A	B	C	D*	E	F
TYPE A	23"	14"	18"	2"	25"	16"
TYPE B	18"	11"	12"	1¾"	20"	13"
TYPE C	36"	24"	30"	3"	38"	26"

* MINIMUM
STACKABLE BOXES ARE PERMITTED



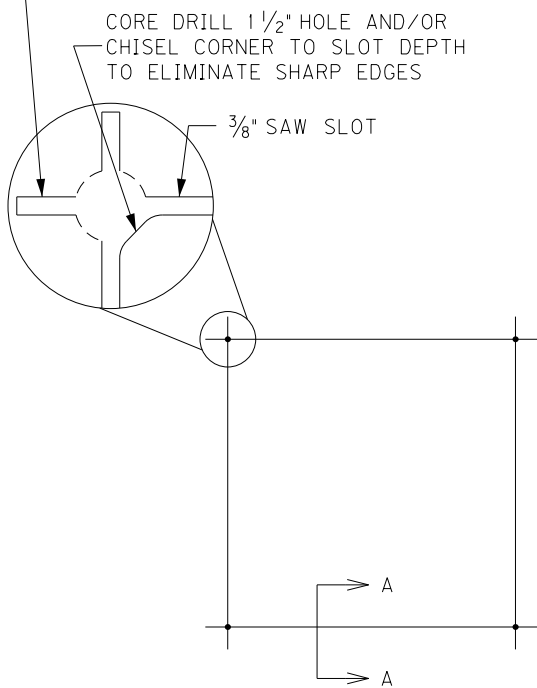
WHERE REQUIRED, JUNCTION BOX SHALL BE ORIENTED SUCH THAT THE DIMENSIONS COMPLY WITH THE NATIONAL ELECTRICAL CODE.

ELEVATION



GROUNDING DETAIL

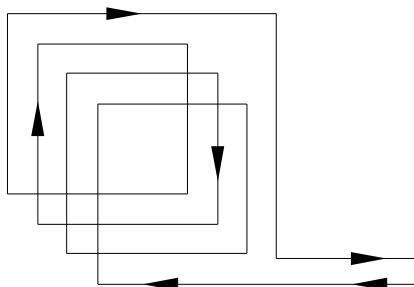
JUNCTION BOX - TYPE A, TYPE B, TYPE C



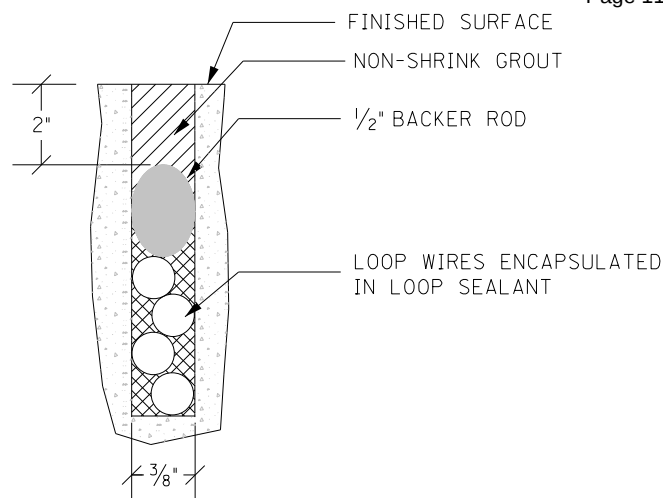
SAW CUT PLAN

UNLESS SPECIFIED OTHERWISE, ALL LOOPS SHALL BE 6' x 6' SQUARE, CENTERED IN EACH LANE, WITH FOUR TURNS OF 14 AWG LOOP WIRE.

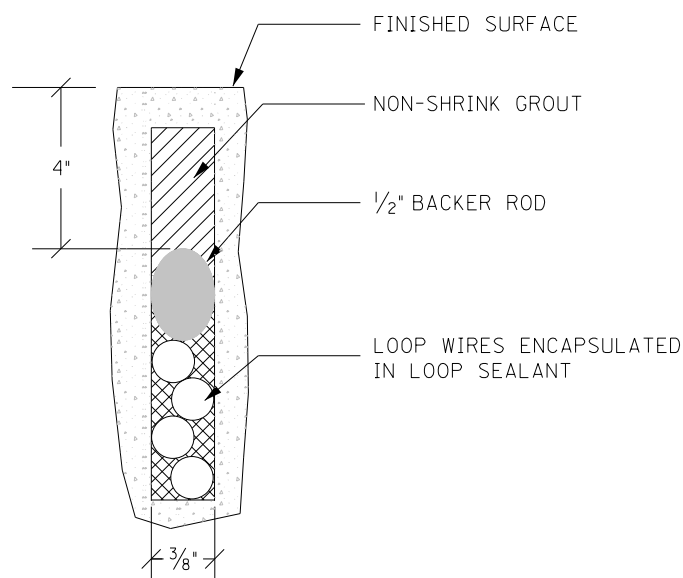
ADJACENT SAW SLOTS SHALL BE A MINIMUM OF 12" APART.



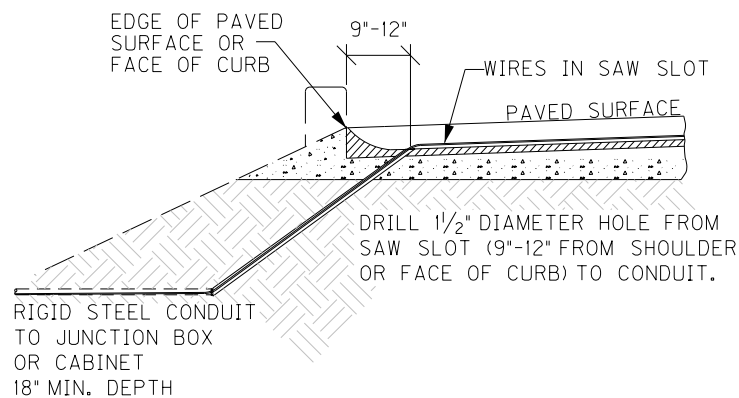
WIRING PLAN



SECTION A-A (CONCRETE)



SECTION A-A (ASPHALT)



SAW SLOT EDGE OF PAVEMENT TRANSITION

INDUCTIVE LOOP DETECTOR

NOT TO SCALE

Rev 8/2021

Special Note for Portable Queue Warning Alert System

1.0 Description

This item shall consist of furnishing, installing, relocating, operating, servicing, and removing various components of a portable, quickly deployable, real-time automated ITS queue warning alert system (PQWAS), in accordance with the standard specifications and this special provision. The Contractor shall also provide the maintenance of the complete system for the duration of the project or as directed by the Project Engineer. The Department is willing to look at different technologies (i.e. allow the use of crowd sourcing data to be used in lieu of the portable radar sensors). Any changes to the below requirements must be submitted and approved by the Engineer.

2.0 Materials

Materials shall be in accordance as follows:

All materials used shall meet the manufacturer's specifications and recommendations.

All PQWAS materials installed on the project shall be provided by the Contractor in excellent quality condition, shall be corrosion resistant and in strict accordance with all of the details shown within Contractor's Plans approved by KYTC. The Contractor shall maintain an adequate inventory of parts and replacement units to support maintenance and repair of the PQWAS. Pre-deployment is a condition of the system's acceptance and is based on the successful performance demonstration for a (5) day continuous period in accordance to this specification and as set forth in the plans. Ensure compliance to all FCC and Department specifications.

The Contractor shall maintain this system and shall be locally available to service and maintain system components, move portable devices as necessary and respond to emergency situations. The Contractor has oversight responsibility for directing placement of devices in the project area. The Contractor is to be accessible seven (7) days a week and twenty-four (24) hours a day while the system is deployed. The Contractor shall provide contact information for the system's coordinator and others responsible for maintenance of the system prior to installation of the system. Furnish a System Coordinator for monitoring the PQWAS throughout all periods of deployment.

A. General Capabilities and Performance Requirements

1. Overall PQWAS capabilities and performance requirements include the following:
 - a. Furnish a system capable of providing advance traffic information to motorists when there is a queueing of traffic due to congestion resulting from lane reductions, emergency events or other conditions. The condition-responsive notification to the motorist occurs with the use of Portable Changeable Message Signs (PCMS) in accordance to the below capabilities and performance requirements, activated through real-time traffic data collected downstream of the PCMS locations. This equipment must

be a packaged system, pre-programmed and operates as a stand-alone PQWAS meeting this specification. Conditions might exist that require relocation of the portable sensors at any given time, the sensors shall be portable and shall not require re-calibration in the field for fast deployments. Due to the potential need to replace damaged sensors or to change the position of one or more sensors at any given time, sensors must be interchangeable and relocatable by an unskilled laborer. The system must continue to function if as many as half the sensors fail to function.

- b. Provide a PQWAS that consists of the following field equipment: portable radar sensors and portable changeable message signs (PCMS). Provide a system capable of withstanding inclement weather conditions while continuing to provide adequate battery power. The portable radar sensor battery, in a stand-alone state and without a solar panel for recharging, shall be capable of keeping power and capable of sending data for (10) consecutive days or longer. The system shall notify drivers of real-time queue events via specifically placed PCMS units up stream of the work zone. All predetermined/preprogrammed messages are to be approved by KYTC. The number and location of portable radar sensors and PCMS units shall be as directed by the Project Engineer. The decision to deploy or relocate field equipment is made by the Project Engineer and instrumented through the System Coordinator. The decision for equipment removal is made by the Project Engineer after work is complete. The sensors and PCMS units shall be identifiable via global positioning system (GPS) and shall contain an accelerometer to detect and alert of unauthorized movement.
- c. The portable radar sensor shall be capable of collecting traffic speed data. The processed data is used to remotely control PCMS units to display user definable, Engineer approved and locally stored messages. The message trigger state thresholds for slow and stopped speeds shall be user configurable and revisable in less than {1} hour from the Project Engineer's request. Weekly Traffic Data Reports shall be presented to the Project Engineer and shall include speed data per sensor location, travel times, and queue lengths in graphical and numerical formats. In the event the Project Engineer requires a report, other than a weekly report, for any reason; then the Contractor shall provide report within (48) hours of request. Unlimited data reports shall be included within price of system. Sensors shall require no calibration adjustments in the field. Sensor should begin transmitting data within (30) seconds of being turned on. Satellite (SAT) communications will be required when cellular service does not provide continuous communications. Contractor shall identify the most trustworthy cellular provider within the project area.
- d. Data shall be accessible through a website and the Contractor shall provide a username and password for protection. The website shall be accessible seven (7) days a week and twenty - four (24) hours a day. The website shall provide historical & real-time data in graphical and numerical formats and shall have the capability of being integrated within the Department's Traffic Management Center (if requested). The website should be compatible to most hand held devices. Data shall be saved on the manufacturer's network for up to (5) years from the deployment date of system and shall be provided at the request

of the Department at any time within the (5) year window. The use of the website shall be included within the price of system.

- e. Warning Alerts: queue events, low battery voltage warnings, sensor movement alerts, high and low speed alerts shall be provided via cellular text messaging and/or via email messaging at the request of select Contractor personnel and KYTC officials.
- f. The PQWAS system shall have the capabilities to provide alternate route messaging on specifically placed portable changeable message units and/or fixed Variable Message Systems (VMS). The intent of this service is to provide alternate route messaging to motorists before entering the project limits from all directions and giving them appropriate time to adjust their routes. Alternative routes shall be predefined and approved by KYTC. Additional PCMS units may be required for alternate route messaging and will be as per Section 5.0 of this note. KYTC's Traffic Management Center will provide detour messages via fixed VMS units during the term of the project.

B. Portable Radar Sensor Capabilities and Performance Requirements

The PQWAS shall include portable radar sensors (PRD) to monitor and detect queue events.

1. The Radar Sensor shall be FHWA accepted to meet NCHRP 350 test requirements
2. The Radar Sensor shall be locatable at all times via an internal Global Positioning System (GPS) and shall be capable of Cellular or SAT Communications.
3. The Radar Sensor shall have a dry-cell battery capable of powering the system for (10) consecutive days or longer
4. The Radar sensor shall be K-Band technology and have a line of sight up to 200 linear feet without obstruction
5. The Radar sensor shall have the ability to be charged in the field through adaptable solar recharging technology in the case the sensor is utilized for more than 10 consecutive days

C. PCMS Capabilities and Performance Requirements

The PQWAS shall include portable changeable message signs (PCMS) designated to relay automated messaging of queue events, alternate route messages, and caution for the work area defined by the project limits. PCMS placements shall meet the requirements set forth by the Cabinet in each direction of the National Highway System (NHS).

1. The PCMS unit shall be a Full Matrix 24 rows x 50 columns and shall be capable of 1 line, 2 line or 3 line messages
2. The PCMS unit shall be legible from a distance over twelve hundred feet (1200')
3. The height and size of characters shall be 18" to 58"
4. The PCMS shall be capable of storing up to 199 pre-programmed messages and up to 199 user-defined messages
5. The PCMS shall have a weather tight control cabinet with back lit LCD handheld controller.
6. The PCMS shall utilize a hydraulic lift to raise the unit to display height
7. The PCMS unit shall include solar recharging ports to allow for recharging of the portable radar sensors when they are not deployed.
8. The PCMS shall be NTCIP compliant and shall have an active Modem with active cellular service.

9. The user shall have the ability to communicate and override the PCMS remotely in the event of an emergency, Amber Alert, etc.
10. The PCMS unit shall have a docking station to include safety rails that allow a commercial safety strap to tie down the portable radar sensors while in transport. The docking station shall hold-up to (4) sensors safely and securely at all times

3.0 Construction Requirements

All communication costs include cellular telephone services, FCC licensing, wireless data networks, satellite and internet subscription charges, and battery charging and maintenance. Additional to these requirements, the Contractor shall assume all responsibility for any and all damaged equipment due to crashes, vandalism, and adverse weather that may occur during the contract period.

The PQWAS shall operate continuously (24 hours/ 7 Days) when deployed on the project. The system is in a constant "data collection" mode when deployed. The Contractor shall provide technical support for the PQWAS for all periods of operation.

In the event communication is lost with any component of the PQWAS, provide a means and staff to manually program a PCMS message. If communication is lost for more the 10 consecutive minutes, the system shall revert to a fail-safe ROADWORK/# MILES/AHEAD message displayed on the PCMS units until communication is restored.

System Operator, local control function and remote management operation must be password protected.

The PQWAS shall be capable of acquiring traffic information and selecting messages automatically without operator intervention after system utilization. The lag time between changes in threshold ranges and the posting of the appropriate PCMS message(s) shall be no greater than (60) seconds. The system operation and accuracy must not be appreciably degraded by inclement weather or degraded visibility conditions including precipitation, fog, darkness, excessive dust, and road debris.

The system shall be capable of storing ad-hoc messages created by the System Coordinator and logging this action when overriding any default or automatic advisory message.

The PQWAS communication system shall incorporate an error detection/correction mechanism to insure the integrity of all traffic conditions data and motorists information messages. Any required configuration of the PQWAS communication system shall be performed automatically during system initialization.

The system's acceptance is based on the successful performance demonstration of PQWAS for a (5) day continuous period in accordance to this specification and as set forth in the plans. Ensure compliance to all FCC and Department specifications.

4.0 Equipment Maintenance.

Maintain system components in good working condition at all times. Repair or replace damaged or malfunctioning components, at no cost to the Department, as soon as possible and within (12) hours of notification by the Engineer. Periodically clean PCMS units if necessary.

5.0 Measurement. The Department will measure each item below in Months. For partial months the Department will pay in 0.25 increments based on the number of calendar days in the below table.

Partial Month Payment Schedule	
Days	Increment
0-7 days	0.25
8-14 days	0.50
15-21 days	0.75
22-31 days	1.00

5.1 Portable Queue Warning Alert System includes cellular (SAT communications will be required if cellular is not available), all supporting field equipment, website, and unlimited data reports accessible by the Engineer. It will be measured by the number of months authorized by the Engineer for use on the project.

5.2 Queue Warning PCMS will be measured by each individual unit multiplied by the number of months authorized by the Engineer for use on the project.

5.3 Queue Warning Portable Radar Sensors will be measured by each individual unit multiplied by the number of months authorized by the Engineer for use on the project. Queue Warning Portable Radar Sensors will not be measured for payment if the Contractor utilizes a system operating on crowd sourcing data. Crowd sourcing data systems will only be allowed as approved by the engineer and will be considered incidental to Portable Queue Warning Alert System.

6.0 Payment.

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
26136EC	Portable Queue Warning Alert System	Month
26137EC	Queue Warning PCMS	Month
26138EC	Queue Warning Portable Radar Sensors	Month

Rev 9/2021

SPECIAL NOTE FOR PAVER MOUNTED TEMPERATURE PROFILES

This Special Note will apply when indicated on the plans or in the proposal. Section references herein are to the Department's Standard Specifications for Road and Bridge Construction current edition.

1.0 DESCRIPTION. Provide a paver mounted infrared temperature equipment to continually monitor the temperature of the asphalt mat immediately behind all paver(s) during the placement operations for all mainline pavements (including ramps for Interstates and Parkways) within the project limits. Provide thermal profiles that include material temperature and measurement locations.

2.0 MATERIALS AND EQUIPMENT. In addition to the equipment specified in Subsection 403.02 Utilize a thermal equipment supplier that can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verification, and data management and processing as needed during the Project to maintain equipment within specifications and requirements.

Provide operator settings, user manuals, required viewing/export software for analysis. Ensure the temperature equipment will meet the following:

(A) A device with one or more infrared sensors that is capable of measuring in at least 1 foot intervals across the paving width, with a minimum width of 12 feet, or extending to the recording limits of the equipment, whichever is greater. A **Maximum of two (2)** brackets are allowed in the influence area under the sensors. A temperature profile must be made on at least 1 foot intervals longitudinally down the road:

(B) Infrared sensor(s):

(1) Measuring from 32°F to 400°F with an accuracy of $\pm 2.0\%$ of the sensor reading.

(C) Ability to measure the following:

(1) The placement distance using a Global Positioning System (GPS) or a Distance Measuring Instrument (DMI) and a Global Positioning System (GPS).

(2) Stationing

(D) GPS: Accuracy ± 4 feet in the X and Y Direction

(E) Latest version of software to collect, display, retain and analyze the mat temperature readings during placement. The software must have the ability to create and analyze:

(1) Full collected width of the thermal profiles,

(2) Paver speed and

(3) Paver stops and duration for the entire Project.

(F) Ability to export data automatically to a remote data server ("the cloud").

At the preconstruction meeting, provide the Cabinet with rights to allow for web access to the data file location. Access to the data is not to be hindered in any way. The Contractor will provide the Cabinet with any vendor specific software, user id, passwords, etc. needed to access the data through this service, cost of this access is incidental to the thermal profile bid item. The Cabinet is to have access to all data as it is being collected. If a third party is used for collecting and distributing the data the Cabinet is to have the same access rights and time as the Contractor.

This web-based software must also provide the Department with the ability to download the raw files and software and to convert them into the correct format.

(G) The thermal profile data files must provide the following data in a neat easy to read table format.

(1) Project information including Road Name and Number, PCN, Beginning and Ending MPs.

(2) IR Bar Manufacturer and Model number

(3) Number of Temperature Sensors (N)

(4) Spacing between sensors and height of sensors above the asphalt mat

(5) Total number of individual records taken each day (DATA BLOCK)

- (a) Date and Time reading taken
- (b) Latitude and Longitude
- (c) Distance paver has moved from last test location
- (d) Direction and speed of the paver
- (e) Surface temperature of each of the sensors

3.0 CONSTRUCTION. Provide the Engineer with all required documentation at the pre-construction conference.

- (A) Install and operate equipment in accordance with the manufacturer’s specifications.
- (B) Verify that the temperature sensors are within ± 2.0% using an independent temperature device on a material of known temperature. Collect and compare the GPS coordinates from the equipment with an independent measuring device.
 - (1) Ensure the independent survey grade GPS measurement device is calibrated to the correct coordinate system (using a control point), prior to using these coordinates to validate the equipment GPS.
 - (2) The comparison is considered acceptable if the coordinates are within 4 feet of each other in the X and Y direction.
- (C) Collect thermal profiles on all Driving Lanes during the paving operation and transfer the data to the “cloud” network or if automatic data transmission is not available, transfer the data to the Engineer at the end of daily paving.
- (D) Contact the Department immediately when System Failure occurs. Daily Percent Coverage will be considered zero when the repairs are not completed within two (2) working days of System Failure. The start of this two (2) working day period begins the next working day after System Failure.
- (E) Evaluate thermal profile segments, every 150 feet, and summarize the segregation of temperature results. Results are to be labeled as Minimal 0°-25°F, Moderate 25.1°-50°F and Severe >50°. Severe readings over 3 consecutive segments or over 4 or more segments in a day warrant investigation on the cause of the differential temperature distribution.

4.0 MEASUREMENT. The Department will measure the total area of the pavement lanes mapped by the infrared scanners. Full payment will be provided for all lanes with greater than 85% coverage. Partial payment will be made for all areas covered from 50% coverage to 85% coverage at the following rate Coverage area percentage X Total bid amount. And area with less than 50% coverage will not be measured for payment.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

- 1. Payment is full compensation for all work associated with providing all required equipment, training, and documentation.
- 2. Delays due to GPS satellite reception of signals or equipment breakdowns will not be considered justification for contract modifications or contract extensions.

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT	SQFT

SPECIAL NOTE FOR ELECTRONIC DELIVERY MANAGEMENT SYSTEM (e-Ticketing) ASPHALT

This Special Note will apply when indicated on the plans or in the proposal. Section references herein are to the Department’s Standard Specifications for Road and Bridge Construction current edition.

1.0 DESCRIPTION. Incorporate an e-Ticketing Delivery Software for weighed asphalt material delivered to the project to report loads and provide daily running totals of weighed asphalt material for pay items and incidental work during the construction processes from the point of measurement and loading to the point of incorporation to the project.

2.0 MATERIALS AND EQUIPMENT. Contractor shall supply material data in JavaScript Object Notation (JSON) documents to the KYTC e-Ticketing Delivery Software (KYTC e-Ticketing Portal) via Application Programming Interface (API) or direct connection. Test and verify that ticket data can be shared from the original source no fewer than 30 days prior to material placement activities. An e-Ticketing Delivery Software supplier can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verifications, and data management and processing as needed during the Project to maintain material data delivery capabilities. Virtual meetings may be hosted in lieu of on-site meetings when deemed appropriate by the Engineer.

Provide e-Ticketing Delivery Software that will meet the following:

- 1. The e-Ticketing Delivery Software shall be fully integrated with the Contractor’s Load Read-Out scale system at the material source location.
- 2. The e-Ticketing Delivery Software shall provide real-time delivery to KYTC e-Ticketing Portal.
- 3. Transmit any updates to the ticket data within 5 minutes of a change.

3.0 CONSTRUCTION. Provide the Engineer with the manufacturer’s specifications and all required documentation for data access at the pre-construction conference.

A. Construction Requirements

- 1. Install and operate software in accordance with the manufacturer’s specifications.
- 2. Verify that all pertinent information is provided by the software within the requirements of this Special Note.

B. Data Deliverables

Provide to the Engineer a means in which to gather report summaries by way of iOS apps, web pages, or any other method at the disposal of the Engineer. The Engineer may request data at any time during the project.

1. Asphalt Material

a. Real-time Continuous Data Items

Provide the Engineer access to JSON documents capable of being transmitted through the KYTC’s e-Ticketing Portal that displays the following information in real-time with a web-based system compatible with iOS and Windows environments.

- Each Truck
 - Supplier Name
 - Supplier Address
 - Supplier Phone
 - Plant location
 - Date
 - Time at source
 - Project Location

- Contract ID#
- Carrier Name
- Unique Truck ID
- Description of Material
- Mix Design Number
- Gross, Tare and Net Weight
- Weighmaster

4.0 MEASUREMENT. The Department will not measure the electronic delivery management system.

5.0 PAYMENT. The Department will not measure this work for payment and will consider all items contained in this note to be incidental to the asphalt mixtures on the project, as applicable.

May 5, 2025

SPECIAL NOTE FOR ELECTRONIC DELIVERY MANAGEMENT SYSTEM (e-Ticketing) AGGREGATE

This Special Note will apply when indicated on the plans or in the proposal. Section references herein are to the Department’s Standard Specifications for Road and Bridge Construction current edition.

1.0 DESCRIPTION. Incorporate an e-Ticketing Delivery Software for weighed aggregate material delivered to the project to report loads and provide daily running totals of weighed aggregate material for pay items and incidental work during the construction processes from the point of measurement and loading to the point of incorporation to the project.

2.0 MATERIALS AND EQUIPMENT. Contractor shall supply material data in JavaScript Object Notation (JSON) documents to the KYTC e-Ticketing Delivery Software (KYTC e-Ticketing Portal) via Application Programming Interface (API) or direct connection. Test and verify that ticket data can be shared from the original source no fewer than 30 days prior to material placement activities. An e-Ticketing Delivery Software supplier can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verifications, and data management and processing as needed during the Project to maintain material data delivery capabilities. Virtual meetings may be hosted in lieu of on-site meetings when deemed appropriate by the Engineer.

Provide e-Ticketing Delivery Software that will meet the following:

- 1. The e-Ticketing Delivery Software shall be fully integrated with the Contractor’s Load Read-Out scale system at the material source location.
- 2. The e-Ticketing Delivery Software shall provide real-time delivery to KYTC e-Ticketing Portal.
- 3. Transmit any updates to the ticket data within 5 minutes of a change.

3.0 CONSTRUCTION. Provide the Engineer with the manufacturer’s specifications and all required documentation for data access at the pre-construction conference.

A. Construction Requirements

- 1. Install and operate software in accordance with the manufacturer’s specifications.
- 2. Verify that all pertinent information is provided by the software within the requirements of this Special Note.

B. Data Deliverables

Provide to the Engineer a means in which to gather report summaries by way of iOS apps, web pages, or any other method at the disposal of the Engineer. The Engineer may request data at any time during the project.

1. Aggregate Material

a. Real-time Continuous Data Items

Provide the Engineer access to JSON documents capable of being transmitted through the KYTC’s e-Ticketing Portal that displays the following information in real-time with a web-based system compatible with iOS and Windows environments.

- Each Truck
 - Supplier Name
 - Supplier Address
 - Supplier Phone
 - Plant location
 - Date
 - Time at source
 - Project Location

- Contract ID#
- Carrier Name
- Unique Truck ID
- Description of Material
- Load Number
- Gross, Tare and Net Weight
- Weighmaster

4.0 MEASUREMENT. The Department will measure the electronic delivery management system as a lump sum item.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

1. Payment is full compensation for all work associated with providing all required equipment, training, and documentation.
2. Payment will be full compensation for costs related to providing the e-Ticketing Delivery Software, including integration with plant load-out systems, and report viewing/exporting process. All quality control procedures including the software representative’s technical support and on-site training shall be included in the Contract lump sum price.

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
26248EC	ELECTRONIC DELIVERY MGMT SYSTEM-AGG	LS

May 5, 2025

SPECIAL NOTE FOR EXPERIMENTAL KYCT AND FIELD RUT TESTING

June 2025 Update

1.0 General

1.1 Description. The KYCT (Kentucky Method for Cracking Test) and the IDEAL-RT/IDT-HT test results will help determine if the mixture is susceptible to cracking and rutting. During the experimental phase, data will be gathered and analyzed by the Department to determine the durability and stability of the bituminous mixes. Additionally, the data will help the Department to create future performance-based specifications which will include the KYCT and field rutting test methods.

2.0 Equipment

2.1 KYCT Testing Equipment. The Department will require a Marshall Test Press with digital recording capabilities. Other CT testing equipment may be used for testing with prior approval by the Department.

2.2 Water Baths. One or more water baths will be required that can maintain a temperature of 77° +/- 1.8° F with a digital thermometer showing the water bath temperature. Also, one water bath shall have the ability to suspend gyratory specimen fully submerged in water in accordance with AASHTO T-166, current edition.

2.3 Field Rutting Tests. If the contractor elects to perform the IDEAL-RT test, in conformance with ASTM D8360-22, the acquisition of the "Option A" or "Option B" test fixture is required. If the IDT-HT is desired, the test press utilized for the KYTC is sufficient. The Department shall approve all test configurations at their discretion.

2.4 Gyratory Molds. Gyratory molds will be required to assist in the production of gyratory specimens in accordance with AASHTO T-312, current edition.

2.5 Ovens. Adequate (minimum of two ovens) will be required to accommodate the additional molds and asphalt mixture necessary to perform the acceptance testing as outlined in Section 402 of the Kentucky Standard Specifications for Road and Bridge Construction, current edition.

2.6 Department Equipment. The Department will provide gyratory molds, PINE 850 Test Press with digital recordation, and CT testing equipment to assist during this experimental phase so data can be gathered.

3.0 Testing Requirements

3.1 Acceptance Testing. Perform all acceptance testing and aggregate gradation as according with Section 402 and Section 403 of the Kentucky Standard Specifications for Road and Bridge Construction, current edition.

3.2 KYCT Testing. Perform crack resistance analysis (KYCT) in accordance with the current Kentucky Method for KYCT Index Testing during the plant production of all surface mixtures. Conform to KYTC Specifications for Mix Design approvals. All production testing is currently informational.

3.2.1 KYCT Frequency. Obtain an adequate sample of hot mix asphalt to ensure the acceptance testing, gradation, and KYCT gyratory samples can be fabricated and is representative of the bituminous mixture. Acceptance specimens shall be fabricated first, then after the specified amount of oven conditioning, fabricate the KYCT samples with the gyratory compactor in accordance with Section 2.4 of this Special Note. Analysis of the KYCT specimens will be required one per subplot produced from the same asphalt material and at the same time as the acceptance specimen is sampled and tested.

3.2.2 Number of Specimens and Conditioning. Fabricate specimens in accordance with the Kentucky Method for KYCT Index Testing. Contrary to the method, for field specimens, fabricate three replicates for cracking resistance analyses and three replicates for rutting resistance analyses. The specimens shall be compacted at the temperature in accordance with KM 64-411.

Contrary to the Kentucky Method, plant produced bituminous material shall be short-term conditioned immediately after sampling for two hours uncovered in the oven at compaction temperature in accordance with KM 64-411.

While the fabricated specimens are allowed to cool in air (fan is permissible) for 30 minutes +/- 5 minutes, find the bulk specific gravity of each specimen according to AASHTO T166. Next, condition the replicates in a 77 °F water bath for 30 minutes +/- 5 minutes. To ensure confidence and reliability of the test results provided by KYCT testing and Field Rut testing, reheating of the asphalt mixture is prohibited.

3.2.3 Long Term Aging CT's. For long-term aging and cracking resistance considerations in mix design, mix and condition 3 specimens uncovered for 20 hours at compaction temperature in accordance with KM 64-411. Perform KYCT testing in accordance with KM 64-450 and record the results on the Long-Term KYCT tab of the latest version of the MixPack.

3.2.4 Record Times. For each subplot, record the time required between drying aggregates in the plant to KYCT specimen fabrication. The production time may vary due to the time that the bituminous material is held in the silo. Record the preconditioning time when the time exceeds the one-hour specimen cool down time as required in accordance with The Kentucky Method for KYCT Index Testing. The preconditioning time may exceed an hour if the technician is unable to complete the test on the same day or within the specified times as outlined in The Kentucky Method for KYCT Index Testing. The production time and the preconditioning time shall be recorded on the AMAW.

3.2.5 File Name. As according to section 7.12 of The Kentucky Method for KYCT Index Testing, save the filename with the following format: "CID_Aproved Mix Number_Lot Number_Sublot Number_Date"

3.3 Field Rut Testing. Perform the rut resistance analysis (IDEAL-RT or IDT-HT) in accordance with ASTM D8360-22 or ALDOT458, respectively. Contrary to ASTM D8360 & ALDOT458, precondition the test specimens in a water bath or forced draft oven at 50 °C +/- 1 °C for 60 +/- 5 min before completing the test.

3.3.1 Field Rut Testing Frequency. Perform one test per lot of mixture produced. The plant produced bituminous material sampled for the field rut test does not have to be obtained at the same time as the acceptance and KYCT sample. If the field rut test sample is not obtained at the same time as the KYCT sample, determine the Maximum Specific Gravity of the KYCT sample in accordance with AASHTO T-209 coinciding with the test specimens.

3.3.2 Number of Specimens and Conditioning. Fabricate in accordance with the Kentucky Method for KYCT Index Testing. Contrary to the method, for field specimens, fabricate three

replicates for rutting resistance analyses. The specimens shall be compacted at the temperature in accordance with KM 64-411. Contrary to the Kentucky Method, plant produced bituminous material shall be short-term conditioned immediately after sampling for two hours uncovered in the oven at compaction temperature in accordance with KM 64-411.

3.3.3 Record Times. Record the production time as according to section 3.2.3 in this special note. Also record the time that the specimens were fabricated. All times shall be recorded on the AMAW.

3.3.4 File Name. Record all field rut data in the latest version of the AMAW.

4.0 Data

Submit the AMAW and all test data that was obtained for acceptance, gradation, KYCT, and field rut testing within five working days once all testing has been completed for a lot to Central Materials Lab and the District Materials Engineer. Also, any data and or comments that the asphalt contractor or district personnel deem informational during this experimental phase, shall also be submitted to the Central Materials Lab and the District Materials Engineer. Any questions or comments regarding any item in this Special Note can be directed to the Central Office, Division of Materials, Asphalt Branch.

5.0 Payment

Any additional labor and testing equipment that is required to fabricate and test the KYCT and field rut specimens shall be considered incidental to the asphalt surface line item. The Department will perform the testing for the KYCT and field rut specimens if a producer does not possess the proper equipment.

June 12th, 2025

SPECIAL NOTE FOR DOLOMITIC POLISH-RESISTANT AGGREGATE IN CLASS A 0.38-IN. AND 0.50-IN. NOMINAL ASPHALT MIXTURES

Contrary to Subsection 403.03.03, when utilizing a dolomitic polish-resistant aggregate as the coarse portion of the Class A 0.38-in. or 0.50-in.-nominal asphalt surface mixture, provide an asphalt mixture conforming to the following requirements:

- 70 percent of total combined aggregate is Class A polish-resistant aggregate.
- Any coarse aggregate utilized in the mixture shall be classified as Class A polish-resistant.
- Non-dolomitic substitutes from other Class A sources may be used as direct substitutes
- All mixes must have DFT testing/results submitted to Division of Materials with any supporting documentation prior to completion of the project.

Dynamic Friction Testing Procedure. Prepare samples for DFT analysis in accordance with PP 104. Friction testing shall be conducted by an AASHTO-accredited facility and data shall be provided in accordance with ASTM E1911 conforming to the following three-wheel polishing schedule. Variations to the testing frequency or methodology shall be coordinated with Division of Materials prior to testing.

<i>Polishing Cycles</i>
5,000
25,000
75,000
150,000

SPECIAL NOTE FOR RECYCLED ASPHALT PAVEMENT (RAP) STOCKPILE MANAGEMENT

I. GENERAL

The use of reclaimed asphalt pavement (RAP) from Department projects or other approved sources in hot mix asphalt (HMA) or warm mix asphalt (WMA) shall be subject to stockpile management and handling of material as described in this section.

The Department approves RAP on a stockpile basis, following the process set forth in this method. The contractor's responsibilities in the process are as follows:

- To obtain the Department's approval of all RAP prior to its use on a Department project and to deliver test data and samples as required
- To monitor and preserve the quality and uniformity of the approved material during storage and handling, adding no unapproved material to the existing stockpile
- To comply with the Department's requirements regarding replenishment of approved stockpiles

The Department will approve RAP based on its composition and variability in gradation and asphalt content, and on visual inspections of the stockpile, which the Department may conduct at its discretion. The Department may withdraw approval of a stockpile if the requirements of this specification are not followed in good faith.

The Maximum Percentage Allowed in a mix design will be based on these criteria and on the category of RAP source, as defined in this document.

II. APPROVAL PROCESS

Qualified asphalt producers (listed in List of Approved Materials-Asphalt Mixing Plants) may submit requests for RAP stockpile approval to the Asphalt Branch, Division of Materials, in the Annual Certification for Previously Approved Asphalt Mixing Plants and Related Equipment. The requester shall provide test results as prescribed in Part IID. The Division of Materials may, at their discretion, collect samples or inspect a RAP stockpile consistent with Section IIE.

Upon completion of the review of testing results and, if applicable, visual inspection, the Division of Materials, Asphalt Branch will approve or disapprove the material by letter and will assign a Stockpile Identification Number for each approved RAP stockpile. Note: The contractor's average gradation and asphalt content, as listed in the approval letter, shall be the gradation used in subsequent mix designs. The approval letter will state the applicable limits on the use of the material in mix designs and will summarize the Department's findings, listing the average gradation and asphalt content from the contractor's tests and the corresponding values found by the Department. Where the Maximum Percentage Allowed is low due to variability, the contractor may elect to improve the uniformity of the material by further processing and may again sample, test, and request approval for the material.

No material shall be added to a stockpile after it has been approved, except as provided in Parts V, VI, and VII below.

IIA. RAP Quality Management Plan

For a contractor to receive approval to use RAP on any department project, a RAP Quality Management Plan must first be approved by the department. The RAP Quality Management Plan shall be submitted to the

Division of Materials annually for approval as part of the Contractor's Quality Control Plan/Checklist. The Quality Management Plan is required to demonstrate how the Contractor will provide consistency and quality of material utilized in all asphalt mixes produced for use on Department projects. The Quality Management Plan shall include:

- Unprocessed RAP Stockpiles
 - Designation of stockpile(s) as single or multiple source
 - Designation of stockpile(s) as classified or unclassified
 - Designation of stockpile(s) as captive or continuously replenishing
 - Plan for how stockpile(s) is built (layers, slope, etc.)
 - Plan to minimize stockpile(s) contamination
- Processing and Crushing
 - Equipment used to feed screener or crusher
 - Excavation process based on equipment type
- Processing Millings
 - Single Project or Source
 - Screening, Fractionation, or Crushing plan
 - Multiple Source
 - Process to achieve uniform material from stockpile
 - Screening, Fractionation, or Crushing plan
- Processed RAP Stockpiles
 - Minimization of segregation
 - Minimization of moisture

IIB. RAP Stockpile Placement

All processed RAP stockpiles shall be placed on a sloped, paved surface. The requirement for a paved surface may be waived by the Cabinet if the Contractor's RAP Quality Management Plan demonstrates effective material handling that will minimize deleterious material from beneath the processed stockpile entering the plant. *No processed stockpile will be placed directly on grass or dirt.*

IIC. Stockpile Identification Signs

RAP stockpiles shall be identified with posted signs displaying the gradation of material in the stockpile (course, intermediate, or fine). These signs shall be made of weatherproof material and shall be highly visible. Numerals shall be easily readable from outside the stockpile area. If a stockpile exists in two or more parts, each part must have its own sign.

IID. Standard Approval Procedure

The Contractor shall obtain random samples representative of the entire stockpile and shall have each sample tested for gradation and asphalt content according to KM 64-426, KM 64-427, and AASHTO T308. The material samples must be in its final condition after all crushing and screening. At least one sample shall be obtained for each 1,000 tons of processed RAP, with a minimum of five samples per stockpile. Sampling shall be performed according to the method prescribed for asphalt mix aggregates in the Department's Materials Field Testing and Sampling Manual and KM 64-601. The minimum sampling size (after quartering) for tests of RAP samples is 1,500 g. except for samples containing particles more than one inch in diameter, for which the minimum is 2,000 g.

To request approval of a RAP stockpile, submit the following documents to the Division of Materials. It is the requester's responsibility to correctly address, label, and deliver these submittals:

- Submit request for approval at beginning of the paving season as part of the Annual Certification for Previously Approved Asphalt Mixing Plants and Related Equipment.
- If requesting approval after paving season begins, submit memo, including stockpile portion of the inspection list for Annual Certification for Previously Approved Asphalt Mixing Plants and Related Equipment, to Division of Materials.
- Reports of the tests prescribed above using the Stockpile <INSERT NAME> document.
- A drawing of the plant site showing the location of the stockpile to be approved *and all other stockpiles on the premises*

Mail, deliver or email the request form, with test reports and site drawing, to:

Kentucky Transportation Cabinet
Division of Materials
ATTN: Asphalt Branch Manager
1227 Wilkinson Boulevard
Frankfort, Kentucky 40601

Robert.Semones@ky.gov

III. Tests and inspections by the Department

The Department shall have the right to observe the collection of samples, or to perform the sampling and testing as a verification of contractor submittal. As a condition of approval, the Department may at any time inspect and sample RAP stockpiles for which approval has been requested and may perform additional quality control tests to determine the consistency and quality of the material.

The approval letter issued by the Department will include any results of verification testing performed by the Cabinet. The approved contractor results should be used by mix design technicians in the design calculations.

III. RAP STOCKPILE TIERED MANAGEMENT AND EFFECTIVE BINDER CONTENT

The stockpile management and approval requirements will be tiered based on the maximum cold feed percentages as defined in this section and Table 1. below.

Table 1. Tiered Testing Requirements

Mix Type	0-≤12%	12-≤20%	20-≤35%
Surface	Tier 1	Tier 2	Tier 3
Base	Tier 1	Tier 2	Tier 3

NOTE: All asphalt mixes and binder selection will be subject to Section 409 of the current Standard Specifications.

The following requirements will apply based on the percentage of RAP in the mix.

Tier 1

Tier 1 mixes (less than or equal to 12% RAP) will be subject to the requirements of sections IIA, IIB, and IIC.

Tier 2

Tier 2 mixes (12% to less than 20% RAP) will be subject to the requirements of Section II in its entirety and Table 2 requirements.

Tier 3

Tier 3 Asphalt Base mixes with 20% to less than 35% RAP, Tier 3 Asphalt Surface mixes with 20% to less than 30% RAP will be subject to Section II in its entirety and Table 2 requirements.

IV. MAXIMUM PERCENTAGE OF RAP ALLOWED

The Maximum Percent of RAP allowed in mix designs shall be the lowest percentage determined by the gradation and asphalt content of the RAP, as established under the criteria below, and requirements listed in Section III.

Limits according to range in gradation and bitumen content

The Maximum Percent of RAP Allowed, based on gradation and asphalt content, shall be determined by the Department using the standard deviation of these values. This standard deviation will be calculated using data provided by the contractor from at least five samples. While the contractor is required to provide the data from these tested samples, the Department retains the discretion to perform its own sampling and testing to support or verify its findings. An apparent outlier shall not be considered in determining these ranges. Where one result appears to be unrepresentative of the whole, two or more additional samples shall be tested. The outlying value of all tests shall then be excluded from the range. The maximum percentage of RAP allowable shall be the lowest percentage determined according to Table 2 below.

Table 2. Maximum Percent RAP According to Variability in Test Results

	Standard Deviation as calculated above:		
Surface			
% asphalt content	< 0.4	< 0.5	
% passing No. 200 sieve	< 1.25	< 1.5	
% passing Median Sieve	< 4.0	< 5.0	
	Allowable RAP Cold Feed %		
	Tier 3 - 20%-30%	Tier 2 - 12%-20%	Tier 1 - 0%-12%
Base			
% asphalt content	< 0.5	< 0.75	
% passing No. 200 sieve	< 1.5	< 2.25	
% passing Median sieve	< 5.0	< 7.0	
	Allowable RAP Cold Feed %		
	Tier 3 - 20%-35%	Tier 2 - 12%-20%	Tier 1 - 0%-12%

NOTE: These allowances notwithstanding, the Contractor is required to maintain the mixture within the Mixture Control Tolerances of Kentucky Method 443.

The percentage allowable in mix designs shall be limited to meet the design criteria for viscosity established in the Standard Specifications.

V. GENERAL STOCKPILE REQUIREMENTS AND REPLENISHMENT

V.A. Single Pavement Source

Early approval of material from a single pavement source. When a new stockpile is to consist entirely of millings removed from a single existing pavement, the stockpile may be approved based on samples taken during the milling and processing operations, prior to completion of milling. The initial stockpile may be approved as either a new stockpile or a new stockpile in continual replenishment status.

For continual replenishment status, samples shall be taken from the processed stockpile after it reaches 1,000 tons. A total of five initial samples, plus one additional sample for every 1,000 tons, is required. As prescribed in Part II above, the contractor shall test all samples and deliver the test results, together with a letter request for approval in Continual Replenishment status, to the address indicated. The stockpile shall be subject to initial approval as prescribed above in Part II. Once approved, it may be replenished without further approvals as provided in Part VII below.

V.B. Heterogeneous or contaminated material

Asphalt pavement millings containing traffic detection loops, raised pavement markers, or other debris must be separated and excluded before stockpiling RAP for approval for use in KYTC asphaltic concrete mixtures.

No material other than RAP from an approved stockpile shall be included in mixtures for State projects. The following materials are specifically excluded:

- Material contaminated with foreign matter such as liquids, soil, concrete, or debris
- Plant waste, especially waste containing abnormal concentrations of bitumen, drum build-up, or material from spills or plant clean-up operations

The following materials shall not be added to or placed in proximity to an approved stockpile but may be accumulated in a separate stockpile and submitted for approval according to Part III:

- Production mixtures returned to the plant for any reason.
- Mis-proportioned mixtures, especially those generated at start-up.

VI. REPLENISHMENT OF STOCKPILES

An approved RAP stockpile may be replenished with Department approval, provided the replenishment material meets all necessary requirements for approval and maintains uniformity in gradation and asphalt content as outlined in this document.

VI.A. Procedure and approval criteria

The procedure for requesting approval of a stockpile replenishment, that is not in continual replenishment status, shall be the same as for approval of an original stockpile, and the material for the replenishment shall meet all criteria for approval as a new stockpile. RAP proposed for replenishment shall be sampled and tested by the Contractor for gradation and asphalt cement as prescribed in Section II above. The Laboratory shall

review these results and provide approval for use in Department asphalt mix designs, according to Table 2 above.

VI.B. Effect of replenishment on existing approved mix designs

Replenishment of a stockpile may render certain mix designs invalid, depending on the percent RAP allowed in the design and on the difference in average properties between the old and new stockpiles. A replenished stockpile may be used as the RAP ingredient in an existing approved design provided that:

1. The Maximum Percent Allowed for the replenishment stockpile equals or exceeds the percent RAP called for in the mix design. In no case may the Maximum Percent Allowed be exceeded.

However, if a mix design calls for up to 5.0 percent more than the Maximum Percent Allowed for the replenishment, the *design* may be adjusted, with approval, to use the lower percent allowed, provided that the production mixture continues to meet all acceptance criteria. For example, a design which calls for 20 percent RAP may be adjusted and produced with 15 percent if it continues to meet for acceptance.

VII. CONTINUAL REPLENISHMENT WITHOUT RE-APPROVAL

At the request of the contractor, a previously approved stockpile may be placed in Continual Replenishment Status and may be replenished any number of times without re-approval provided that:

1. Replenishment is within six months of the last stockpile addition.
2. The contractor shall continue to monitor and test the materials added to the stockpile and shall forward these results to the Division of Materials for every 1,000 tons of RAP added to the stockpile.
3. The contractor must certify that replenishment materials are free of contaminants.
4. The Department shall be notified by letter to the Director of the Division of Materials that the stockpile is being replenished on a continual basis.
5. The RAP Maximum Percent Allowed for continual replenishment shall be limited by Sections III and IV.

Note: Upon request, one 20-pound sample bag of RAP for each Continual Replenishment Stockpile shall be submitted to the Division of Materials for petrographic analysis every 12 months.

The Department may inspect, sample, and test such stockpiles at its discretion and may, upon determining that the stockpile is unsuitable, withdraw approval of the material and all mix designs which include it. Approval of the stockpile may be withdrawn at any time based upon extreme or erratic ingredient proportions, unsuitable ingredients, or poor performance, as determined by the Division of Materials, Asphalt Branch. The Department will conduct periodic comparison testing on the opposite quarters of samples submitted by the Contractor for special replenishment approval category. The approval of the stockpile may be withdrawn if

erroneous information was found on the contractor's testing and/or improper sampling procedures were involved after a thorough investigation.

VIII. DEPLETION OF STOCKPILE AND EXPIRATION OF APPROVAL

When a stockpile has been fully depleted, the Contractor may replenish it within 24 months after the date of depletion; a depleted stockpile not replenished after 24 months will be removed from the approved list and may not be replenished.

Approval of a stockpile may be withdrawn if, in the finding of the Division of Materials, Asphalt Branch, the total amount of material used in new mixtures equals the total tonnage of the original stockpile plus all approved replenishments. Six years from the original approval of a stockpile or from its most recent replenishment, a stockpile shall be presumed to be depleted, and its approval shall expire. This shall apply to all stockpiles, regardless of status or history of use.

IX. RECORDS

The Contractor shall maintain records at the plant site on all RAP stockpiles. These records shall be available for inspection by representatives of the Department and shall include the following:

- All test results.
- The Department's approval letter for each stockpile and replenishment, together with the Contractor's requests for approval and all data submitted therewith.
- A current drawing of all stockpile locations at the plant site, including unapproved stockpiles, showing stockpile numbers of all stockpiles approved for State work.

X. RELOCATION OF STOCKPILE

If material from an approved RAP stockpile is to be moved to another location, the contractor shall seek approval from the Department prior to its further use on State projects. A letter request shall be submitted to the Division of Materials indicating the current stockpile location, the total quantity of material to be moved, and the amount, if any, to remain in the current location. The Division of Materials will issue an approval letter applicable to the new location.

June 18, 2025



KENTUCKY TRANSPORTATION CABINET

Department of Highways

DIVISION OF RIGHT OF WAY & UTILITIES

RIGHT OF WAY CERTIFICATION

TC 62-226

Rev. 01/2016

Page 1 of 1

☒	Original	☐	Re-Certification	RIGHT OF WAY CERTIFICATION	
ITEM #		COUNTY		PROJECT # (STATE)	PROJECT # (FEDERAL)
1-20010.00		Lyon		FD52 072 0024 045-055	NHPP 0242 (080)
PROJECT DESCRIPTION					
Address Condition of Pavement on I-24 MP 45.000 to MP 54.842 (Combined Item Number 1-20062)					
☒	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		-0-	EXCEPTION (S) Parcel #	ANTICIPATED DATE OF POSSESSION WITH EXPLANATION	
Number of Parcels That Have Been Acquired					
Signed Deed					
Condemnation					
Signed ROE					
Notes/ Comments (Use Additional Sheet if necessary)					
LPA RW Project Manager			Right of Way Supervisor		
Printed Name				Printed Name	
Signature				Signature	 Digitally signed by Frances Westlie Date: 2025.01.23 08:33:50 -06'00'
Date				Date	
Right of Way Director			FHWA		
Printed Name				Printed Name	
Signature		 Digitally signed by Kelly Divine Date: 2025.01.23 12:21:30 -06'00'		Signature	
Date				Date	



KENTUCKY TRANSPORTATION CABINET

Department of Highways

DIVISION OF RIGHT OF WAY & UTILITIES

RIGHT OF WAY CERTIFICATION

TC 62-226

Rev. 01/2016

Page 1 of 1

☒	Original	☐	Re-Certification	RIGHT OF WAY CERTIFICATION	
ITEM #		COUNTY		PROJECT # (STATE)	PROJECT # (FEDERAL)
2-20062		Caldwell		FD52 017 0024 054-056	NHPP 0242(081)
PROJECT DESCRIPTION					
Pavement rehab on I-24 in Caldwell County from MP 54.842 to MP 55.537.					
☒	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		0	EXCEPTION (S) Parcel #	ANTICIPATED DATE OF POSSESSION WITH EXPLANATION	
Number of Parcels That Have Been Acquired					
Signed Deed					
Condemnation					
Signed ROE					
Notes/ Comments (Use Additional Sheet if necessary)					
LPA RW Project Manager			Right of Way Supervisor		
Printed Name			Printed Name		
Signature			Signature		
Date			Date		Digitally signed by Jennifer K. Cox Date: 2025.01.23 06:43:36 -06'00'
Right of Way Director			FHWA		
Printed Name			Printed Name		
Signature			Signature		
Date		Digitally signed by Kelly Divine Date: 2025.01.23 07:48:43 -06'00'	Date		

UTILITIES AND RAIL CERTIFICATION NOTE

LYON COUNTY, I-24
ADDRESS CONDITION OF I-024 FROM MILEPOINT 45 TO
MILEPOINT 54.842 (2024CR)
ITEM # 1-20010.00

Utility coordination efforts conducted by the project sponsor have determined that no significant 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.

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)

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.

UTILITIES AND RAIL CERTIFICATION NOTE

LYON COUNTY, I-24
ADDRESS CONDITION OF I-024 FROM MILEPOINT 45 TO
MILEPOINT 54.842 (2024CR)
ITEM # 1-20010.00

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.

AREA UTILITIES CONTACT LIST AS PROVIDED BY KY 811

<u>Utility Company/Agency</u>	<u>Contact Name</u>	<u>Contact Information</u>
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UTILITIES AND RAIL CERTIFICATION NOTE

Caldwell County, I-24
ADDRESS CONDITION OF I-024 FROM MILEPOINT 54.842 TO
MILEPOINT 55.537 (2024CR)
ITEM # 2-20062.00

Utility coordination efforts conducted by the project sponsor have determined that no significant 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.

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)**

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.

UTILITIES AND RAIL CERTIFICATION NOTE

Caldwell County, I-24

ADDRESS CONDITION OF I-024 FROM MILEPOINT 54.842 TO
MILEPOINT 55.537 (2024CR)
ITEM # 2-20062.00

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.

AREA UTILITIES CONTACT LIST AS PROVIDED BY KY 811

<u>Utility Company/Agency</u>	<u>Contact Name</u>	<u>Contact Information</u>
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MATERIAL SUMMARY

CONTRACT ID: 251029

NHPP 0242 (080)

DE01700242518

I-24 FROM THE LYON COUNTY LINE MP 54.842 TO MP 55.498 PAVEMENT REHAB WITH PAVING ALTERNATES, A DISTANCE OF .65 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0005	00003	CRUSHED STONE BASE	10,153.00	TON
0010	00008	CEMENT STABILIZED ROADBED	15,843.00	SQYD
0015	00078	CRUSHED AGGREGATE SIZE NO 2	24.00	TON
0020	00100	ASPHALT SEAL AGGREGATE	125.00	TON
0025	00103	ASPHALT SEAL COAT	15.00	TON
0030	00190	LEVELING & WEDGING PG64-22	6.00	TON
0035	00214	CL3 ASPH BASE 1.00D PG64-22	1,374.00	TON
0040	00217	CL4 ASPH BASE 1.00D PG64-22	4,140.00	TON
0045	00219	CL4 ASPH BASE 1.00D PG76-22	1,885.00	TON
0050	00312	CL3 ASPH SURF 0.50D PG64-22	335.00	TON
0055	00335	CL4 ASPH SURF 0.50A PG76-22	1,043.00	TON
0060	00356	ASPHALT MATERIAL FOR TACK	27.00	TON
0065	00358	ASPHALT CURING SEAL	32.00	TON
0070	01006	PERFORATED PIPE EDGE DRAIN-6 IN	6,732.00	LF
0075	01011	NON-PERFORATED PIPE-6 IN	264.00	LF
0080	01015	INSPECT & CERTIFY EDGE DRAIN SYSTEM - CALDWELL COUNTY	1.00	LS
0085	01033	PERF PIPE HEADWALL TY 4-6 IN	24.00	EACH
0090	02014	BARRICADE-TYPE III	16.00	EACH
0095	02058	REMOVE PCC PAVEMENT	15,437.00	SQYD
0100	02542	CEMENT	308.00	TON
0105	02562	TEMPORARY SIGNS	625.00	SQFT
0110	02650	MAINTAIN & CONTROL TRAFFIC - CALDWELL COUNTY	1.00	LS
0115	02654	TRUCK MOUNTED ATTENUATOR	1.00	EACH
0120	02655	CROSSOVER - #4	1.00	LS
0125	02671	PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH
0130	02697	EDGE LINE RUMBLE STRIPS	7,312.00	LF
0135	02701	TEMP SILT FENCE	1,000.00	LF
0140	02702	SAND FOR BLOTTER	63.00	TON
0145	02705	SILT TRAP TYPE C	2.00	EACH
0150	02708	CLEAN SILT TRAP TYPE C	2.00	EACH
0155	02726	STAKING - CALDWELL COUNTY	1.00	LS
0160	02898	RELOCATE CRASH CUSHION	1.00	EACH
0165	03171	CONC BARRIER WALL TYPE 9T	1,750.00	LF
0170	05953	TEMP SEEDING AND PROTECTION	500.00	SQYD
0175	05963	INITIAL FERTILIZER	0.10	TON
0180	05964	MAINTENANCE FERTILIZER	0.10	TON
0185	05985	SEEDING AND PROTECTION	500.00	SQYD
0190	05992	AGRICULTURAL LIMESTONE	0.40	TON
0195	06511	PAVE STRIPING-TEMP PAINT-6 IN	16,818.00	LF
0200	06542	PAVE STRIPING-THERMO-6 IN W	5,486.00	LF
0205	06543	PAVE STRIPING-THERMO-6 IN Y	3,657.00	LF
0210	06546	PAVE STRIPING-THERMO-12 IN W	150.00	LF

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0215	06556	PAVE STRIPING-DUR TY 1-6 IN W	4,571.00	LF
0220	06557	PAVE STRIPING-DUR TY 1-6 IN Y	3,657.00	LF
0225	06585	PAVEMENT MARKER TY IVA-MW TEMP	65.00	EACH
0230	06586	PAVEMENT MARKER TY IVA-MY TEMP	65.00	EACH
0235	06613	INLAID PAVEMENT MARKER-B W/R	46.00	EACH
0240	08912	CRASH CUSHION TY 6 CLASS T TL3	1.00	EACH
0245	10203ND	PAVEMENT ADJUSTMENT - (CALDWELL COUNTY)	1.00	LS
0250	20071EC	JOINT ADHESIVE	3,656.00	LF
0255	20411ED	LAW ENFORCEMENT OFFICER	200.00	HOURL
0260	22664EN	WATER BLASTING EXISTING STRIPE	16,818.00	LF
0265	24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT	150,385.00	SF
0270	26136EC	PORTABLE QUEUE WARNING ALERT SYSTEM	90.00	MONT
0275	26137EC	QUEUE WARNING PCMS	90.00	MONT
0280	26138EC	QUEUE WARNING PORTABLE RADAR SENSORS	90.00	MONT
0285	26237EC	CONNECTED ARROW PANEL	9.00	MONT
0290	26248EC	ELECTRONIC DELIVERY MGMT SYSTEM - AGG - CALDWELL COUNTY	1.00	LS
0295	00003	CRUSHED STONE BASE	11,340.00	TON
0300	00008	CEMENT STABILIZED ROADBED	15,843.00	SQYD
0305	00078	CRUSHED AGGREGATE SIZE NO 2	24.00	TON
0310	00100	ASPHALT SEAL AGGREGATE	125.00	TON
0315	00103	ASPHALT SEAL COAT	15.00	TON
0320	00214	CL3 ASPH BASE 1.00D PG64-22	1,374.00	TON
0325	00312	CL3 ASPH SURF 0.50D PG64-22	335.00	TON
0330	00356	ASPHALT MATERIAL FOR TACK	2.00	TON
0335	00358	ASPHALT CURING SEAL	32.00	TON
0340	01006	PERFORATED PIPE EDGE DRAIN-6 IN	6,732.00	LF
0345	01011	NON-PERFORATED PIPE-6 IN	264.00	LF
0350	01015	INSPECT & CERTIFY EDGE DRAIN SYSTEM - CALDWELL COUNTY	1.00	LS
0355	01033	PERF PIPE HEADWALL TY 4-6 IN	24.00	EACH
0360	02058	REMOVE PCC PAVEMENT	15,437.00	SQYD
0365	02086	JPC PAVEMENT-13 IN	12,647.00	SQYD
0370	02542	CEMENT	308.00	TON
0375	02562	TEMPORARY SIGNS	625.00	SQFT
0380	02650	MAINTAIN & CONTROL TRAFFIC - CALDWELL COUNTY	1.00	LS
0385	02655	CROSSOVER - #4	1.00	LS
0390	02671	PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH
0395	02695	RUMBLE STRIPS TYPE 3	3,656.00	LF
0400	02697	EDGELINE RUMBLE STRIPS	3,656.00	LF
0405	02701	TEMP SILT FENCE	1,000.00	LF
0410	02702	SAND FOR BLOTTER	63.00	TON
0415	02705	SILT TRAP TYPE C	2.00	EACH
0420	02708	CLEAN SILT TRAP TYPE C	2.00	EACH
0425	02726	STAKING - CALDWELL COUNTY	1.00	LS
0430	02898	RELOCATE CRASH CUSHION	1.00	EACH
0435	03171	CONC BARRIER WALL TYPE 9T	1,750.00	LF
0440	05953	TEMP SEEDING AND PROTECTION	500.00	SQYD
0445	05963	INITIAL FERTILIZER	0.10	TON
0450	05964	MAINTENANCE FERTILIZER	0.10	TON
0455	05985	SEEDING AND PROTECTION	500.00	SQYD

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0460	05992	AGRICULTURAL LIMESTONE	0.40	TON
0465	06511	PAVE STRIPING-TEMP PAINT-6 IN	16,818.00	LF
0470	06556	PAVE STRIPING-DUR TY 1-6 IN W	9,143.00	LF
0475	06557	PAVE STRIPING-DUR TY 1-6 IN Y	7,314.00	LF
0480	06560	PAVE STRIPING-DUR TY 1-12 IN W	150.00	LF
0485	06585	PAVEMENT MARKER TY IVA-MW TEMP	65.00	EACH
0490	06586	PAVEMENT MARKER TY IVA-MY TEMP	65.00	EACH
0495	06613	INLAID PAVEMENT MARKER-B W/R	46.00	EACH
0500	08912	CRASH CUSHION TY 6 CLASS T TL3	1.00	EACH
0505	10203ND	PAVEMENT ADJUSTMENT - (CALDWELL COUNTY)	1.00	LS
0510	20411ED	LAW ENFORCEMENT OFFICER	200.00	HOURL
0515	23147EN	HIGH TENSION CABLE-ROPE BARRIER	600.00	LF
0520	23148EN	END ANCHORS	2.00	EACH
0525	24255EC	REMOVE CABLE GUARDRAIL BARRIER SYSTEM	600.00	LF
0530	26136EC	PORTABLE QUEUE WARNING ALERT SYSTEM	90.00	MONT
0535	26137EC	QUEUE WARNING PCMS	90.00	MONT
0540	26138EC	QUEUE WARNING PORTABLE RADAR SENSORS	90.00	MONT
0545	26237EC	CONNECTED ARROW PANEL	9.00	MONT
0550	26248EC	ELECTRONIC DELIVERY MGMT SYSTEM - AGG - CALDWELL COUNTY	1.00	LS
0555	02568	MOBILIZATION	1.00	LS
0560	02569	DEMOBILIZATION	1.00	LS

CONTRACT ID: 251029

NHPP 0242 (080)

DE07200242518

I-24 BEGINNING AT MP 45.171 EXTENDING TO MP 54.842 PAVEMENT REHAB WITH PAVING ALTERNATES, A DISTANCE OF 9.67 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0565	00003	CRUSHED STONE BASE	146,994.00	TON
0570	00008	CEMENT STABILIZED ROADBED	228,018.00	SQYD
0575	00071	CRUSHED AGGREGATE SIZE NO 57	100.00	TON
0580	00078	CRUSHED AGGREGATE SIZE NO 2	326.00	TON
0585	00100	ASPHALT SEAL AGGREGATE	1,793.00	TON
0590	00103	ASPHALT SEAL COAT	215.00	TON
0595	00190	LEVELING & WEDGING PG64-22	80.00	TON
0600	00214	CL3 ASPH BASE 1.00D PG64-22	19,776.00	TON
0605	00217	CL4 ASPH BASE 1.00D PG64-22	59,590.00	TON
0610	00219	CL4 ASPH BASE 1.00D PG76-22	27,132.00	TON
0615	00312	CL3 ASPH SURF 0.50D PG64-22	4,823.00	TON
0620	00335	CL4 ASPH SURF 0.50A PG76-22	13,783.00	TON
0625	00356	ASPHALT MATERIAL FOR TACK	380.00	TON
0630	00358	ASPHALT CURING SEAL	456.00	TON
0635	01006	PERFORATED PIPE EDGE DRAIN-6 IN	98,421.00	LF
0640	01011	NON-PERFORATED PIPE-6 IN	3,524.00	LF
0645	01015	INSPECT & CERTIFY EDGE DRAIN SYSTEM - LYON COUNTY	1.00	LS

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0650	01021	PERF PIPE HEADWALL TY 1-6 IN	16.00	EACH
0655	01025	PERF PIPE HEADWALL TY 2-6 IN	6.00	EACH
0660	01029	PERF PIPE HEADWALL TY 3-6 IN	10.00	EACH
0665	01033	PERF PIPE HEADWALL TY 4-6 IN	294.00	EACH
0670	01982	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	168.00	EACH
0675	01983	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	24.00	EACH
0680	02003	RELOCATE TEMP CONC BARRIER	22,500.00	LF
0685	02014	BARRICADE-TYPE III	10.00	EACH
0690	02058	REMOVE PCC PAVEMENT	222,171.00	SQYD
0695	02351	GUARDRAIL-STEEL W BEAM-S FACE	8,963.00	LF
0700	02367	GUARDRAIL END TREATMENT TYPE 1	1.00	EACH
0705	02370	GUARDRAIL END TREATMENT TYPE 2M	9.00	EACH
0710	02372	REMOVE GUARDRAIL CON TO BR END	11.00	EACH
0715	02373	GUARDRAIL END TREATMENT TYPE 3	6.00	EACH
0720	02381	REMOVE GUARDRAIL	9,030.00	LF
0725	02542	CEMENT	4,433.00	TON
0730	02562	TEMPORARY SIGNS	1,875.00	SQFT
0735	02650	MAINTAIN & CONTROL TRAFFIC - LYON COUNTY	1.00	LS
0740	02654	TRUCK MOUNTED ATTENUATOR	1.00	EACH
0745	02655	CROSSOVER - #1	1.00	LS
0750	02655	CROSSOVER - #2	1.00	LS
0755	02655	CROSSOVER - #3	1.00	LS
0760	02671	PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH
0765	02677	ASPHALT PAVE MILLING & TEXTURING	707.00	TON
0770	02697	EDGE LINE RUMBLE STRIPS	157,860.00	LF
0775	02701	TEMP SILT FENCE	1,000.00	LF
0780	02702	SAND FOR BLOTTER	912.00	TON
0785	02705	SILT TRAP TYPE C	6.00	EACH
0790	02708	CLEAN SILT TRAP TYPE C	6.00	EACH
0795	02726	STAKING - LYON COUNTY	1.00	LS
0800	02898	RELOCATE CRASH CUSHION	3.00	EACH
0805	03171	CONC BARRIER WALL TYPE 9T	29,100.00	LF
0810	05953	TEMP SEEDING AND PROTECTION	1,500.00	SQYD
0815	05963	INITIAL FERTILIZER	0.10	TON
0820	05964	MAINTENANCE FERTILIZER	0.10	TON
0825	05985	SEEDING AND PROTECTION	1,500.00	SQYD
0830	05992	AGRICULTURAL LIMESTONE	1.00	TON
0835	06511	PAVE STRIPING-TEMP PAINT-6 IN	242,050.00	LF
0840	06542	PAVE STRIPING-THERMO-6 IN W	50,606.00	LF
0845	06543	PAVE STRIPING-THERMO-6 IN Y	40,484.00	LF
0850	06556	PAVE STRIPING-DUR TY 1-6 IN W	86,393.00	LF
0855	06557	PAVE STRIPING-DUR TY 1-6 IN Y	68,803.00	LF
0860	06585	PAVEMENT MARKER TY IVA-MW TEMP	108.00	EACH
0865	06586	PAVEMENT MARKER TY IVA-MY TEMP	108.00	EACH
0870	06613	INLAID PAVEMENT MARKER-B W/R	658.00	EACH
0875	08912	CRASH CUSHION TY 6 CLASS T TL3	3.00	EACH
0880	10203ND	PAVEMENT ADJUSTMENT - (LYON COUNTY)	1.00	LS
0885	20071EC	JOINT ADHESIVE	52,619.00	LF
0890	20191ED	OBJECT MARKER TY 3	1.00	EACH

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0895	20411ED	LAW ENFORCEMENT OFFICER	1,000.00	HOURL
0900	21380ES719	GUARDRAIL THRIE BEAM	625.00	LF
0905	22664EN	WATER BLASTING EXISTING STRIPE	242,050.00	LF
0910	23147EN	HIGH TENSION CABLE-ROPE BARRIER	600.00	LF
0915	23148EN	END ANCHORS	2.00	EACH
0920	24255EC	REMOVE CABLE GUARDRAIL BARRIER SYSTEM	337.00	LF
0925	24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT	2,029,751.00	SF
0930	25078ED	THRIE BEAM GUARDRAIL TRANSITION TL-3	7.00	EACH
0935	26136EC	PORTABLE QUEUE WARNING ALERT SYSTEM	90.00	MONT
0940	26137EC	QUEUE WARNING PCMS	90.00	MONT
0945	26138EC	QUEUE WARNING PORTABLE RADAR SENSORS	90.00	MONT
0950	26233EC	MOBILIZATION FOR CONCRETE SURF TREATMENT - LYON COUNTY	1.00	LS
0955	26236EC	THRIE BEAM BULLNOSE TERMINAL	6.00	EACH
0960	26237EC	CONNECTED ARROW PANEL	36.00	MONT
0965	26248EC	ELECTRONIC DELIVERY MGMT SYSTEM - AGG - LYON COUNTY	1.00	LS
0970	00003	CRUSHED STONE BASE	131,164.00	TON
0975	00008	CEMENT STABILIZED ROADBED	228,018.00	SQYD
0980	00071	CRUSHED AGGREGATE SIZE NO 57	100.00	TON
0985	00078	CRUSHED AGGREGATE SIZE NO 2	326.00	TON
0990	00100	ASPHALT SEAL AGGREGATE	1,793.00	TON
0995	00103	ASPHALT SEAL COAT	215.00	TON
1000	00214	CL3 ASPH BASE 1.00D PG64-22	19,776.00	TON
1005	00312	CL3 ASPH SURF 0.50D PG64-22	5,531.00	TON
1010	00356	ASPHALT MATERIAL FOR TACK	26.00	TON
1015	00358	ASPHALT CURING SEAL	456.00	TON
1020	01006	PERFORATED PIPE EDGE DRAIN-6 IN	98,421.00	LF
1025	01011	NON-PERFORATED PIPE-6 IN	3,524.00	LF
1030	01015	INSPECT & CERTIFY EDGE DRAIN SYSTEM - LYON COUNTY	1.00	LS
1035	01021	PERF PIPE HEADWALL TY 1-6 IN	16.00	EACH
1040	01025	PERF PIPE HEADWALL TY 2-6 IN	6.00	EACH
1045	01029	PERF PIPE HEADWALL TY 3-6 IN	10.00	EACH
1050	01033	PERF PIPE HEADWALL TY 4-6 IN	294.00	EACH
1055	01982	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	168.00	EACH
1060	01983	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	24.00	EACH
1065	02003	RELOCATE TEMP CONC BARRIER	22,500.00	LF
1070	02014	BARRICADE-TYPE III	10.00	EACH
1075	02058	REMOVE PCC PAVEMENT	222,171.00	SQYD
1080	02086	JPC PAVEMENT-13 IN	167,062.00	SQYD
1085	02351	GUARDRAIL-STEEL W BEAM-S FACE	8,963.00	LF
1090	02367	GUARDRAIL END TREATMENT TYPE 1	1.00	EACH
1095	02370	GUARDRAIL END TREATMENT TYPE 2M	9.00	EACH
1100	02372	REMOVE GUARDRAIL CON TO BR END	11.00	EACH
1105	02373	GUARDRAIL END TREATMENT TYPE 3	6.00	EACH
1110	02381	REMOVE GUARDRAIL	9,030.00	LF
1115	02403	REMOVE CONCRETE MASONRY	15.00	CUYD
1120	02542	CEMENT	4,433.00	TON

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1125	02562	TEMPORARY SIGNS	1,875.00	SQFT
1130	02650	MAINTAIN & CONTROL TRAFFIC - LYON COUNTY	1.00	LS
1135	02655	CROSSOVER - #1	1.00	LS
1140	02655	CROSSOVER - #2	1.00	LS
1145	02655	CROSSOVER - #3	1.00	LS
1150	02671	PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH
1155	02677	ASPHALT PAVE MILLING & TEXTURING	707.00	TON
1160	02695	RUMBLE STRIPS TYPE 3	52,620.00	LF
1165	02697	EDGE LINE RUMBLE STRIPS	153,363.00	LF
1170	02701	TEMP SILT FENCE	1,000.00	LF
1175	02702	SAND FOR BLOTTER	912.00	TON
1180	02705	SILT TRAP TYPE C	6.00	EACH
1185	02708	CLEAN SILT TRAP TYPE C	6.00	EACH
1190	02726	STAKING - LYON COUNTY	1.00	LS
1195	02898	RELOCATE CRASH CUSHION	3.00	EACH
1200	03171	CONC BARRIER WALL TYPE 9T	29,100.00	LF
1205	05953	TEMP SEEDING AND PROTECTION	1,500.00	SQYD
1210	05963	INITIAL FERTILIZER	0.10	TON
1215	05964	MAINTENANCE FERTILIZER	0.10	TON
1220	05985	SEEDING AND PROTECTION	1,500.00	SQYD
1225	05992	AGRICULTURAL LIMESTONE	1.00	TON
1230	06511	PAVE STRIPING-TEMP PAINT-6 IN	242,050.00	LF
1235	06542	PAVE STRIPING-THERMO-6 IN W	50,604.00	LF
1240	06543	PAVE STRIPING-THERMO-6 IN Y	40,484.00	LF
1245	06556	PAVE STRIPING-DUR TY 1-6 IN W	86,393.00	LF
1250	06557	PAVE STRIPING-DUR TY 1-6 IN Y	68,803.00	LF
1255	06585	PAVEMENT MARKER TY IVA-MW TEMP	108.00	EACH
1260	06586	PAVEMENT MARKER TY IVA-MY TEMP	108.00	EACH
1265	06613	INLAID PAVEMENT MARKER-B W/R	658.00	EACH
1270	08912	CRASH CUSHION TY 6 CLASS T TL3	3.00	EACH
1275	10203ND	PAVEMENT ADJUSTMENT - (LYON COUNTY)	1.00	LS
1280	20191ED	OBJECT MARKER TY 3	1.00	EACH
1285	20411ED	LAW ENFORCEMENT OFFICER	1,000.00	hour
1290	21380ES719	GUARDRAIL THRIE BEAM	625.00	LF
1295	23147EN	HIGH TENSION CABLE-ROPE BARRIER	600.00	LF
1300	23148EN	END ANCHORS	2.00	EACH
1305	24255EC	REMOVE CABLE GUARDRAIL BARRIER SYSTEM	337.00	LF
1310	25078ED	THRIE BEAM GUARDRAIL TRANSITION TL-3	7.00	EACH
1315	26136EC	PORTABLE QUEUE WARNING ALERT SYSTEM	90.00	MONTH
1320	26137EC	QUEUE WARNING PCMS	90.00	MONTH
1325	26138EC	QUEUE WARNING PORTABLE RADAR SENSORS	90.00	MONTH
1330	26233EC	MOBILIZATION FOR CONCRETE SURF TREATMENT - LYON COUNTY	1.00	LS
1335	26236EC	THRIE BEAM BULLNOSE TERMINAL	6.00	EACH
1340	26237EC	CONNECTED ARROW PANEL	36.00	MONTH
1345	26248EC	ELECTRONIC DELIVERY MGMT SYSTEM - AGG - LYON COUNTY	1.00	LS
1350	02403	REMOVE CONCRETE MASONRY	15.00	CUYD
1355	08001	STRUCTURE EXCAVATION-COMMON	17.00	CUYD
1360	08100	CONCRETE-CLASS A	27.00	CUYD
1365	08150	STEEL REINFORCEMENT	1,583.00	LB

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1370	23378EC	CONCRETE SEALING	1,488.00	SQFT
1375	02403	REMOVE CONCRETE MASONRY	15.00	CUYD
1380	08001	STRUCTURE EXCAVATION-COMMON	16.00	CUYD
1385	08100	CONCRETE-CLASS A	27.00	CUYD
1390	08150	STEEL REINFORCEMENT	1,583.00	LB
1395	23378EC	CONCRETE SEALING	1,474.00	SQFT
1400	04793	CONDUIT-1 1/4 IN	30.00	LF
1405	04795	CONDUIT-2 IN	10.00	LF
1410	04820	TRENCHING AND BACKFILLING	35.00	LF
1415	04830	LOOP WIRE	800.00	LF
1420	04895	LOOP SAW SLOT AND FILL	150.00	LF
1425	20359NN	GALVANIZED STEEL CABINET	1.00	EACH
1430	20360ES818	WOOD POST	2.00	EACH
1435	20391NS835	ELECTRICAL JUNCTION BOX TYPE A	1.00	EACH
1440	02742	TRAINEE PAYMENT REIMBURSEMENT - GROUP 2, 3, 4 OPERATOR	1,400.00	hour
1445	02568	MOBILIZATION	1.00	LS
1450	02569	DEMOBILIZATION	1.00	LS

Contract Id: _____ Contractor: _____

Section Engineer: _____ District & County: _____

DESCRIPTION	UNIT	QTY LEAVING PROJECT	QTY RECEIVED@BB YARD
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.

PART II

SPECIFICATIONS AND STANDARD DRAWINGS

STANDARD SPECIFICATIONS

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 PORTABLE CHANGEABLE MESSAGE SIGNS

This Special Note will apply when indicated on the plans or in the proposal.

1.0 DESCRIPTION. Furnish, install, operate, and maintain variable message signs at the locations shown on the plans or designated by the Engineer. Remove and retain possession of variable message signs when they are no longer needed on the project.

2.0 MATERIALS.

2.1 General. Use LED Variable Message Signs Class I, II, or III, as appropriate, from the Department's List of Approved Materials.

Unclassified signs may be submitted for approval by the Engineer. The Engineer may require a daytime and nighttime demonstration. The Engineer will make a final decision within 30 days after all required information is received.

2.2 Sign and Controls. All signs must:

- 1) Provide 3-line messages with each line being 8 characters long and at least 18 inches tall. Each character comprises 35 pixels.
- 2) Provide at least 40 preprogrammed messages available for use at any time. Provide for quick and easy change of the displayed message; editing of the message; and additions of new messages.
- 3) Provide a controller consisting of:
 - a) Keyboard or keypad.
 - b) Readout that mimics the actual sign display. (When LCD or LCD type readout is used, include backlighting and heating or otherwise arrange for viewing in cold temperatures.)
 - c) Non-volatile memory or suitable memory with battery backup for storing pre-programmed messages.
 - d) Logic circuitry to control the sequence of messages and flash rate.
- 4) Provide a serial interface that is capable of supporting complete remote control ability through land line and cellular telephone operation. Include communication software capable of immediately updating the message, providing complete sign status, and allowing message library queries and updates.
- 5) Allow a single person easily to raise the sign to a satisfactory height above the pavement during use, and lower the sign during travel.
- 6) Be Highway Orange on all exterior surfaces of the trailer, supports, and controller cabinet.
- 7) Provide operation in ambient temperatures from -30 to + 120 degrees Fahrenheit during snow, rain and other inclement weather.
- 8) Provide the driver board as part of a module. All modules are interchangeable, and have plug and socket arrangements for disconnection and reconnection. Printed circuit boards associated with driver boards have a conformable coating to protect against moisture.
- 9) Provide a sign case sealed against rain, snow, dust, insects, etc. The lens is UV stabilized clear plastic (polycarbonate, acrylic, or other approved material) angled to prevent glare.
- 10) Provide a flat black UV protected coating on the sign hardware, character PCB, and appropriate lens areas.
- 11) Provide a photocell control to provide automatic dimming.

- 12) Allow an on-off flashing sequence at an adjustable rate.
- 13) Provide a sight to aim the message.
- 14) Provide a LED display color of approximately 590 nm amber.
- 15) Provide a controller that is password protected.
- 16) Provide a security device that prevents unauthorized individuals from accessing the controller.
- 17) Provide the following 3-line messages preprogrammed and available for use when the sign unit begins operation:

/KEEP/RIGHT/⇒⇒⇒/	/MIN/SPEED/**MPH/
/KEEP/LEFT/⇐⇐⇐/	/ICY/BRIDGE/AHEAD/ /ONE
/LOOSE/GRAVEL/AHEAD/	LANE/BRIDGE/AHEAD/
/RD WORK/NEXT/**MILES/	/ROUGH/ROAD/AHEAD/
/TWO WAY/TRAFFIC/AHEAD/	/MERGING/TRAFFIC/AHEAD/
/PAINT/CREW/AHEAD/	/NEXT/***/MILES/
/REDUCE/SPEED/**MPH/	/HEAVY/TRAFFIC/AHEAD/
/BRIDGE/WORK/***0 FT/	/SPEED/LIMIT/**MPH/
/MAX/SPEED/**MPH/	/BUMP/AHEAD/
/SURVEY/PARTY/AHEAD/	/TWO/WAY/TRAFFIC/

*Insert numerals as directed by the Engineer.
Add other messages during the project when required by the Engineer.

2.3 Power.

- 1) Design solar panels to yield 10 percent or greater additional charge than sign consumption. Provide direct wiring for operation of the sign or arrow board from an external power source to provide energy backup for 21 days without sunlight and an on-board system charger with the ability to recharge completely discharged batteries in 24 hours.

3.0 CONSTRUCTION. Furnish and operate the variable message signs as designated on the plans or by the Engineer. Ensure the bottom of the message panel is a minimum of 7 feet above the roadway in urban areas and 5 feet above in rural areas when operating. Use Class I, II, or III signs on roads with a speed limit less than 55 mph. Use Class I or II signs on roads with speed limits 55 mph or greater.

Maintain the sign in proper working order, including repair of any damage done by others, until completion of the project. When the sign becomes inoperative, immediately repair or replace the sign. Repetitive problems with the same unit will be cause for rejection and replacement.

Use only project related messages and messages directed by the Engineer, unnecessary messages lessen the impact of the sign. Ensure the message is displayed in either one or 2 phases with each phase having no more than 3 lines of text. When no message is needed, but it is necessary to know if the sign is operable, flash only a pixel.

When the sign is not needed, move it outside the clear zone or where the Engineer directs. Variable Message Signs are the property of the Contractor and shall be removed from the project when no longer needed. The Department will not assume ownership of these signs.

4.0 MEASUREMENT. The final quantity of Variable Message Sign will be

11

the actual number of individual signs acceptably furnished and operated during the project. The Department will not measure signs replaced due to damage or rejection.

5.0 PAYMENT. The Department will pay for the Variable Message Signs at the unit price each. The Department will not pay for signs replaced due to damage or rejection. Payment is full compensation for furnishing all materials, labor, equipment, and service necessary to, operate, move, repair, and maintain or replace the variable message signs. 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>
02671	Portable Changeable Message Sign	Each

Effective June 15, 2012

SPECIAL NOTE FOR LONGITUDINAL PAVEMENT JOINT ADHESIVE

1. DESCRIPTION. This specification covers the requirements and practices for applying an asphalt adhesive material to the longitudinal joint of the surface course of an asphalt pavement. Apply the adhesive to the face of longitudinal joint between driving lanes for the first lane paved. Then, place and compact the adjacent lane against the treated face to produce a strong, durable, waterproof longitudinal joint.
2. MATERIALS, EQUIPMENT, AND PERSONNEL.

2.1 Joint Adhesive. Provide material conforming to Subsection 2.1.1.

2.1.1 Provide an adhesive conforming to the following requirements:

Property	Specification	Test Procedure
Viscosity, 400 ° F (Pa·s)	4.0 – 10.0	ASTM D 4402
Cone Penetration, 77 ° F	60 – 100	ASTM D 5329
Flow, 140 ° F (mm)	5.0 max.	ASTM D 5329
Resilience, 77 ° F (%)	30 min.	ASTM D 5329
Ductility, 77 ° F (cm)	30.0 min.	ASTM D 113
Ductility, 39 ° F (cm)	30.0 min.	ASTM D 113
Tensile Adhesion, 77 ° F (%)	500 min.	ASTM D 5329, Type II
Softening Point, ° F	171 min.	AASHTO T 53
Asphalt Compatibility	Pass	ASTM D 5329

Ensure the temperature of the pavement joint adhesive is between 380 and 410 °F when the material is extruded in a 0.125-inch-thick band over the entire face of the longitudinal joint.

2.2. Equipment.

2.2.1 Melter Kettle. Provide an oil-jacketed, double-boiler, melter kettle equipped with any needed agitation and recirculating systems.

2.2.2 Applicator System. Provide a pressure-feed-wand applicator system with an applicator shoe attached.

2.3 Personnel. Ensure a technical representative from the manufacturer of the pavement joint adhesive is present during the initial construction activities and available upon the request of the Engineer.

3. CONSTRUCTION.

3.1 Surface Preparation. Prior to the application of the pavement joint adhesive, ensure the face of the longitudinal joint is thoroughly dry and free from dust or any other debris that would inhibit adhesion. Clean the joint face by the use of compressed air.

11N

Ensure this preparation process occurs shortly before application to prevent the return of debris on the joint face.

3.2 Pavement Joint Adhesive Application. Ensure the ambient temperature is a minimum of 40 ° F during the application of the pavement joint adhesive. Prior to applying the adhesive, demonstrate competence in applying the adhesive according to this note to the satisfaction of the Engineer. Heat the adhesive in the melter kettle to the specified temperature range. Pump the adhesive from the melter kettle through the wand onto the vertical face of the cold joint. Apply the adhesive in a continuous band over the entire face of the longitudinal joint. Do not use excessive material in either thickness or location. Ensure the edge of the extruded adhesive material is flush with the surface of the pavement. Then, place and compact the adjacent lane against the joint face. Remove any excessive material extruded from the joint after compaction (a small line of material may remain).

3.3 Pavement Joint Adhesive Certification. Furnish the joint adhesive's certification to the Engineer stating the material conforms to all requirements herein prior to use.

3.4 Sampling and Testing. The Department will require a random sample of pavement joint adhesive from each manufacturer's lot of material. Extrude two 5 lb. samples of the heated material and forward the sample to the Division of Materials for testing. Reynolds oven bags, turkey size, placed inside small cardboard boxes or cement cylinder molds have been found suitable. Ensure the product temperature is 400°F or below at the time of sampling.

4. MEASUREMENT. The Department will measure the quantity of Pavement Joint Adhesive in linear feet. The Department will not measure for payment any extra materials, labor, methods, equipment, or construction techniques used to satisfy the requirements of this note. The Department will not measure for payment any trial applications of Pavement Joint Adhesive, the cleaning of the joint face, or furnishing and placing the adhesive. The Department will consider all such items incidental to the Pavement Joint Adhesive.
5. PAYMENT. The Department will pay for the Pavement Joint Adhesive at the Contract unit bid price and apply an adjustment for each manufacturer's lot of material based on the degree of compliance as defined in the following schedule. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

11N

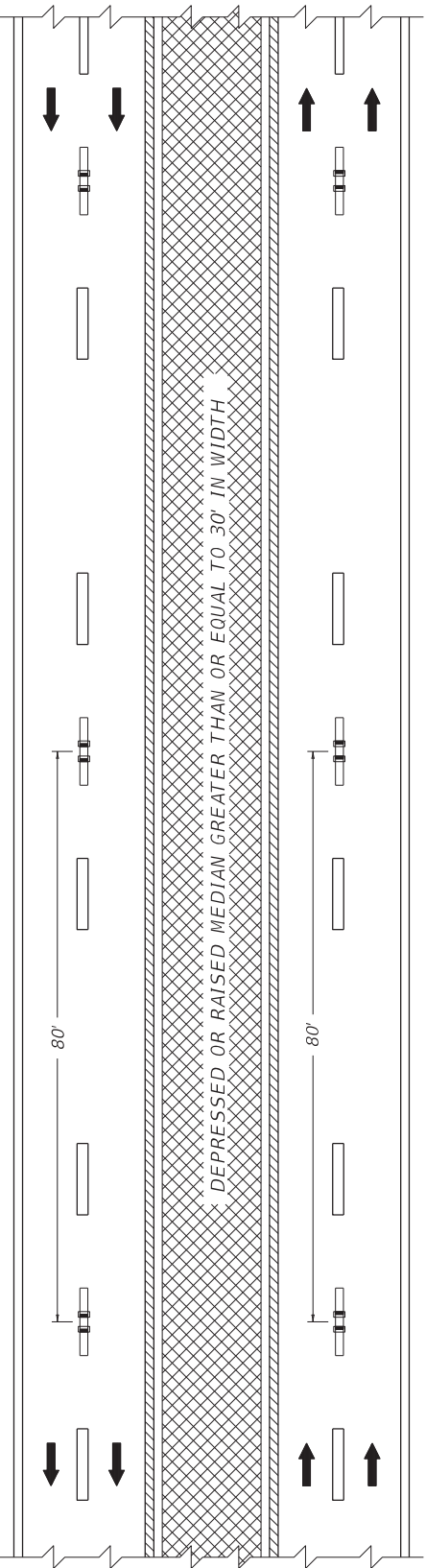
Pavement Joint Adhesive Price Adjustment Schedule						
Test	Specification	100% Pay	90% Pay	80% Pay	50% Pay	0% Pay
Joint Adhesive Referenced in Subsection 2.1.1						
Viscosity, 400 ° F (Pa•s)			3.0-3.4	2.5-2.9	2.0-2.4	≤1.9
ASTM D 3236	4.0-10.0	3.5-10.5	10.6-11.0	11.1-11.5	11.6-12.0	≥ 12.1
Cone Penetration, 77 ° F			54-56	51-53	48-50	≤ 47
ASTM D 5329	60-100	57-103	104-106	107-109	110-112	≥ 113
Flow, 140 ° F (mm) ASTM D 5329	≤ 5.0	≤ 5.5	5.6-6.0	6.1-6.5	6.6-7.0	≥ 7.1
Resilience, 77 ° F (%) ASTM D 5329	≥ 30	≥ 28	26-27	24-25	22-23	≤ 21
Tensile Adhesion, 77 ° F (%) ASTM D 5329	≥ 500	≥ 490	480-489	470-479	460-469	≤ 459
Softening Point, ° F AASHTO T 53	≥ 171	≥ 169	166-168	163-165	160-162	≤ 159
Ductility, 77 ° F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9
Ductility, 39 ° F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9

Code
20071EC

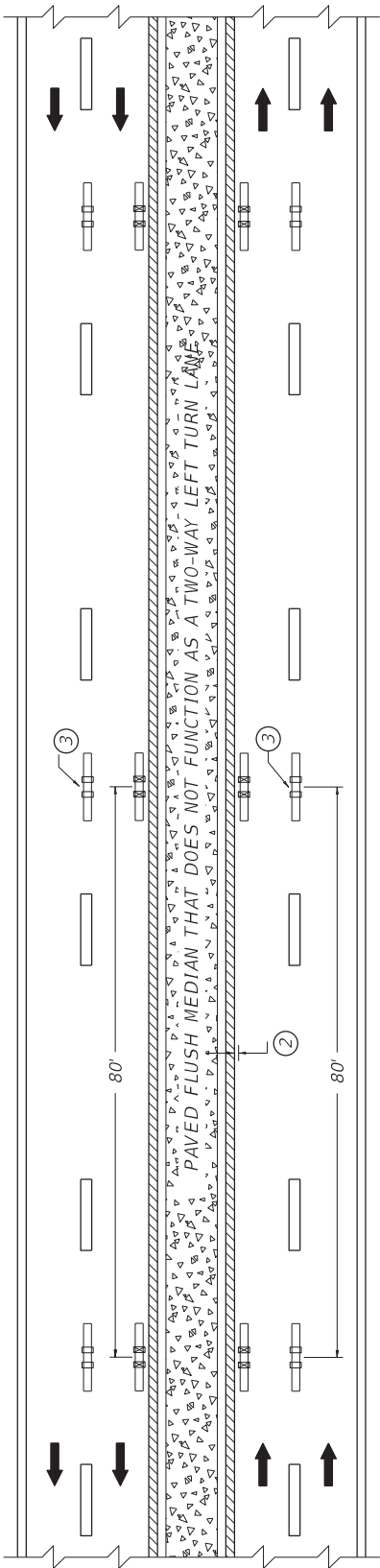
Pay Item
Joint Adhesive

Pay Unit
Linear Foot

May 7, 2014



ARRANGEMENT "C" (DIVIDED HIGHWAY WITH DEPRESSED OR RAISED MEDIAN GREATER THAN OR EQUAL TO 30' IN WIDTH)



ARRANGEMENT "D" (DIVIDED HIGHWAY WITH PAVED FLUSH MEDIAN THAT DOES NOT FUNCTION AS A TWO-WAY LEFT TURN LANE)

- ~ NOTES ~
1. MARKERS INSTALLED ALONG LANE LINES SHOULD BE PLACED BETWEEN AND IN LINE WITH THE SKIPS.
 2. MARKERS INSTALLED ALONG EDGE LINES SHOULD BE PLACED SO THAT THE NEAR EDGE OF THE GROOVE IS NO MORE THAN 1" FROM THE NEAR EDGE OF THE LINE.
 3. IF WIDTH OF PAVED FLUSH MEDIAN IS GREATER THAN OR EQUAL TO 30', BI-DIRECTIONAL (WHITE-RED) MARKERS SHALL BE USED ALONG THE LANE LINES IN LIEU OF MONO-DIRECTIONAL (WHITE) MARKERS.
 4. MARKERS SHALL NOT BE INSTALLED ON TOP OF THE PAVEMENT JOINT. OFFSET MARKERS A MINIMUM OF 2" FROM THE PAVEMENT JOINT. ENSURE THAT THE FINISHED LINE OF MARKERS IS STRAIGHT WITH MINIMAL LATERAL DEVIATION. MARKERS MAY BE ELIMINATED OR PLACEMENT ADJUSTED AT THE DISCRETION OF THE ENGINEER.
 5. MARKERS SHALL BE INSTALLED AT 40' SPACING ALONG SOLID WHITE AUXILIARY LANES. MARKER COLOR SHALL MATCH THE MARKERS INSTALLED ALONG THE WHITE LANE LINES.
- BID ITEMS
- 06610 - INLAID PAVEMENT MARKER - MW
 - 06612 - INLAID PAVEMENT MARKER - BY
 - 06613 - INLAID PAVEMENT MARKER - B W/R
- UNIT TO BID
- EACH
 - EACH
 - EACH

LEGEND

BI-DIRECTIONAL PAVEMENT MARKER (YELLOW)

BI-DIRECTIONAL PAVEMENT MARKER (WHITE-RED)

MONO-DIRECTIONAL PAVEMENT MARKER (WHITE)

MARKINGS (YELLOW)

MARKINGS (WHITE)

FLUSH MEDIAN

DEPRESSED OR RAISED MEDIAN

DRAWING NOT TO SCALE

KENTUCKY
DEPARTMENT OF HIGHWAYS
INLAID PAVEMENT MARKER ARRANGEMENTS
MULTI-LANE ROADWAYS

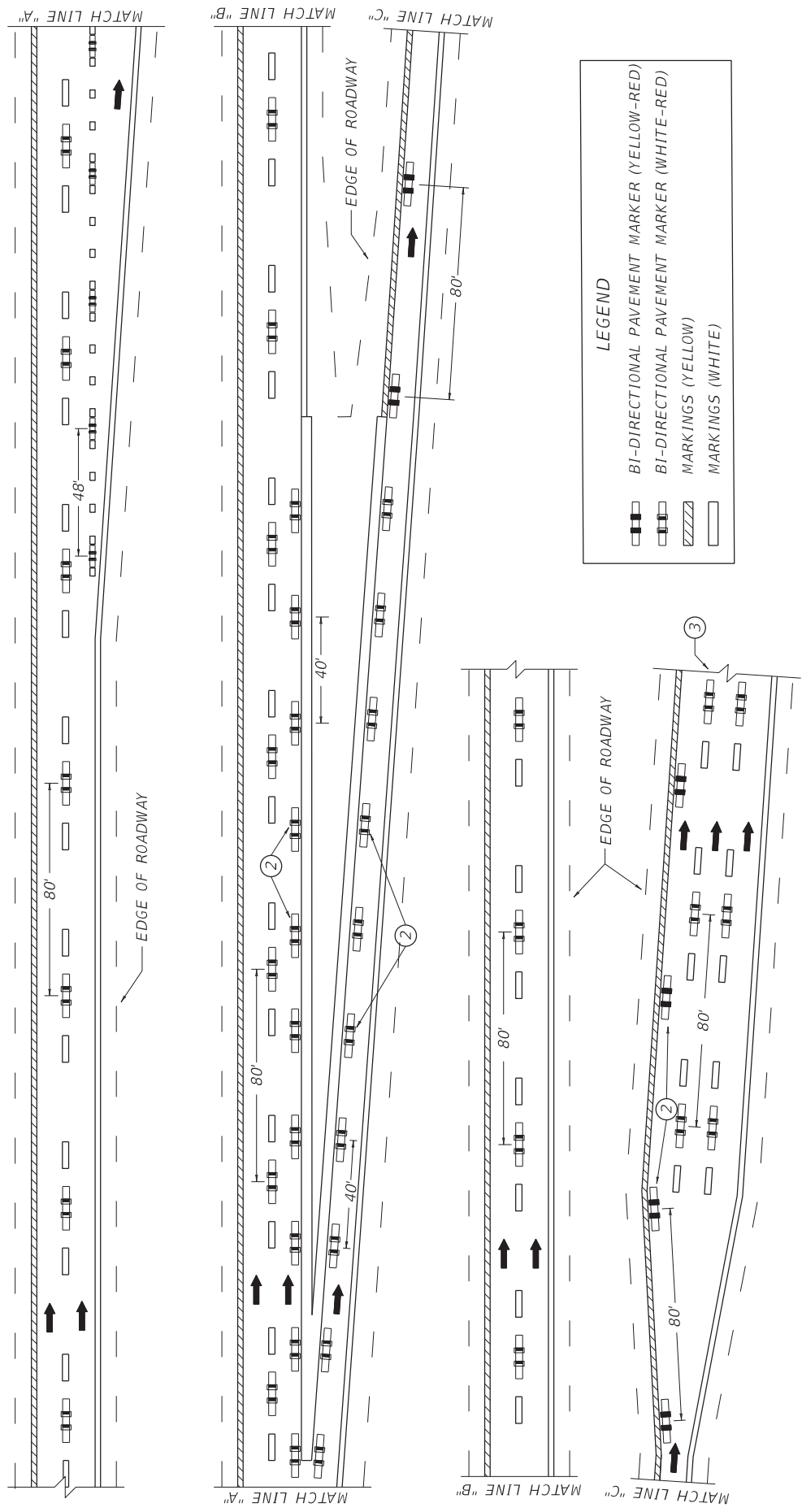
SUBMITTED

DIVISION DIRECTOR

06-09-21

DATE

007



- ~ NOTES ~
1. MARKERS INSTALLED ALONG LANE LINES SHALL BE PLACED BETWEEN AND IN LINE WITH THE SKIPS.

2. MARKERS INSTALLED ALONG EDGE LINES SHALL BE PLACED SO THAT THE NEAR EDGE OF THE GROOVE IS NO MORE THAN 1" FROM THE NEAR EDGE OF THE LINE.

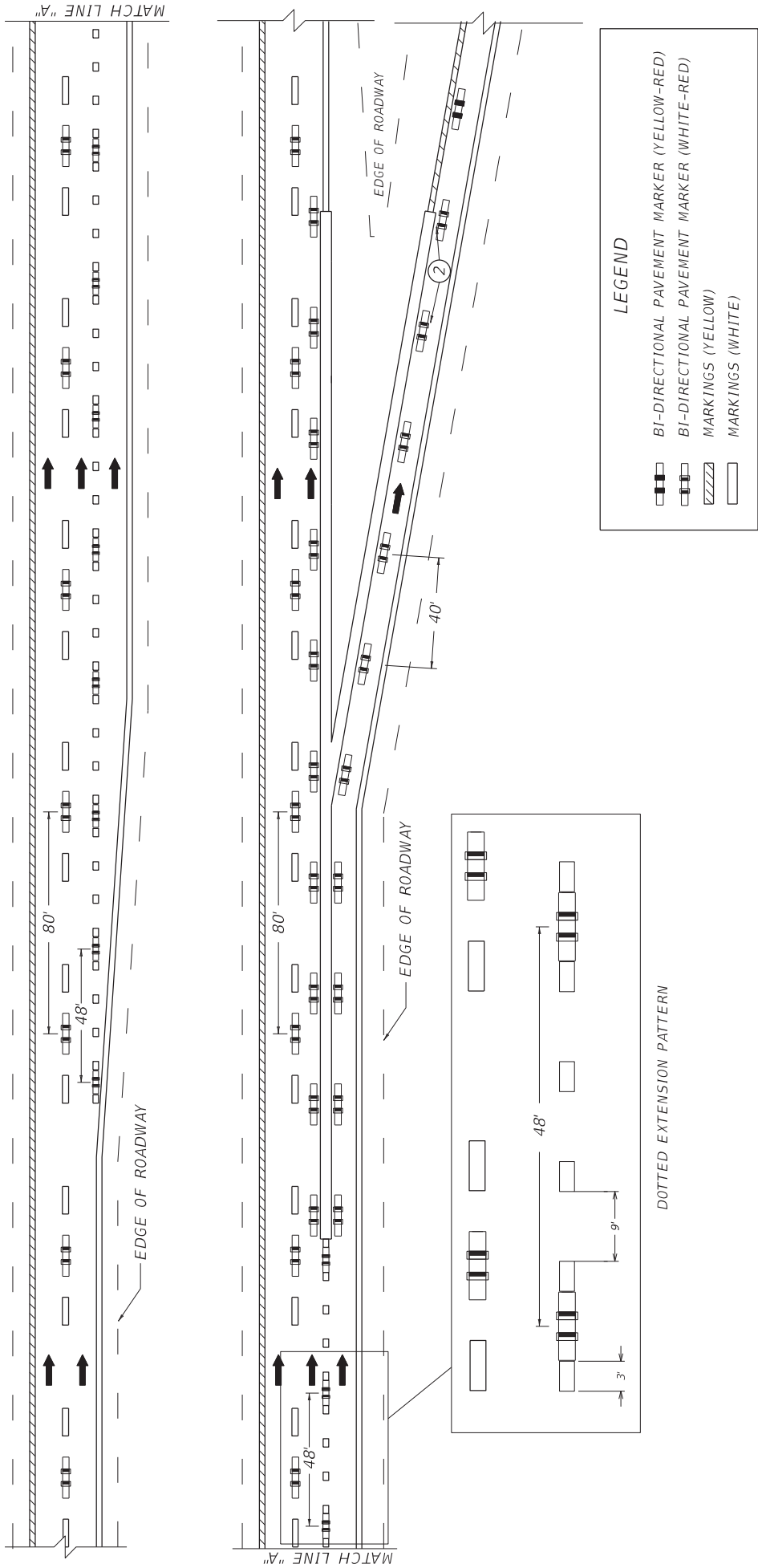
3. MARKERS SHALL BE CONTINUED ALONG THE ENTIRE LENGTH OF THE RAMP UNTIL THE INTERSECTION WITH THE CROSS-STREET.

4. MARKERS SHALL NOT BE INSTALLED ON TOP OF THE PAVEMENT JOINT. OFFSET MARKERS A MINIMUM OF 2" FROM THE PAVEMENT JOINT. ENSURE THAT THE FINISHED LINE OF MARKERS IS STRAIGHT WITH MINIMAL LATERAL DEVIATION. MARKERS MAY BE ELIMINATED OR PLACEMENT ADJUSTED AT THE DISCRETION OF THE ENGINEER.

DRAWING NOT TO SCALE
USE WITH CUR. STD. DWG.
TPM-201

KENTUCKY DEPARTMENT OF HIGHWAYS	INLAID PAVEMENT MARKER ARRANGEMENT	EXIT GORE AND OFF-RAMP	SUBMITTED <i>[Signature]</i> DIVISION DIRECTOR	06-09-21	011
				DATE	

BID ITEMS
06613 - INLAID PAVEMENT MARKER - B-W/R
06614 - INLAID PAVEMENT MARKER - B-Y/R
UNIT TO BID
EACH
EACH

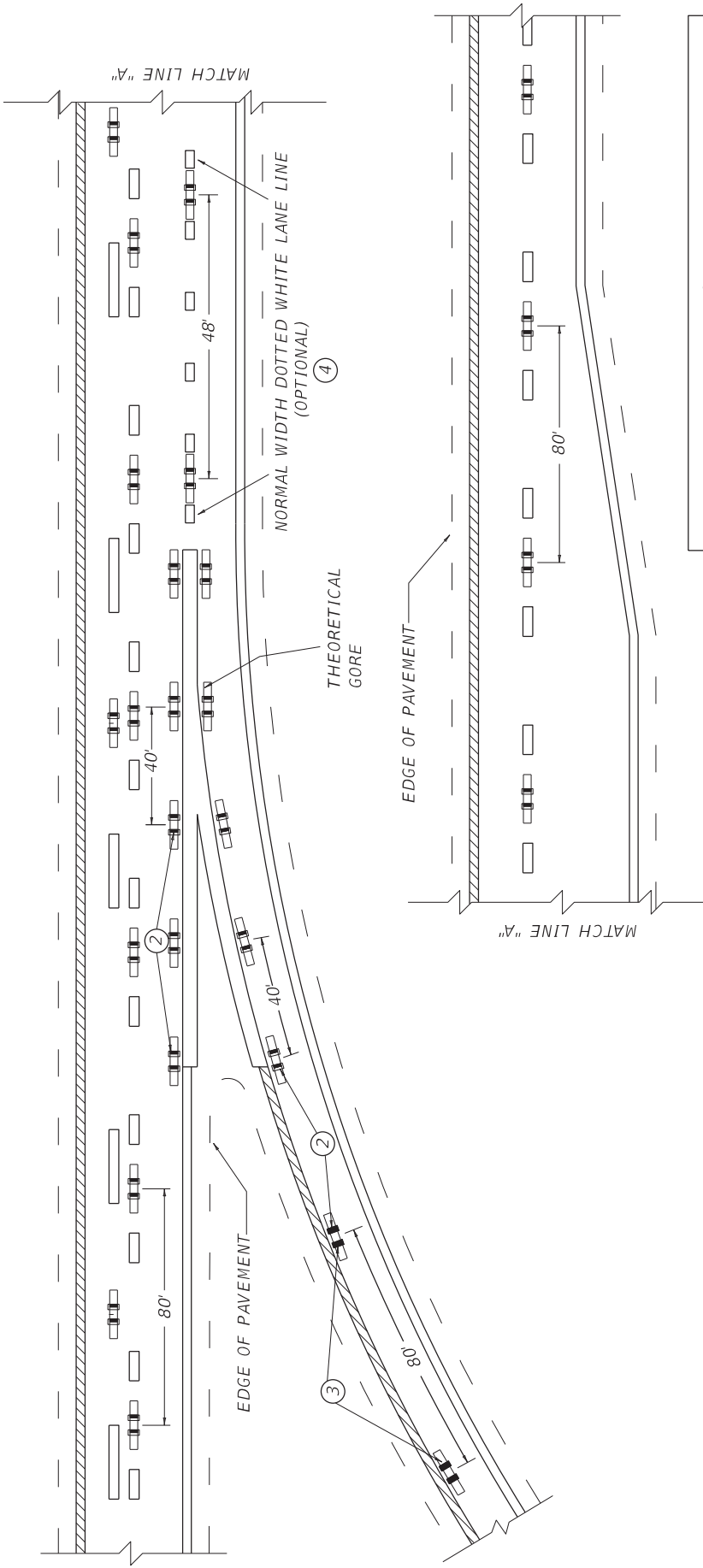


- ~ NOTES ~
1. MARKERS INSTALLED ALONG LANE LINES SHALL BE PLACED BETWEEN AND IN LINE WITH THE SKIPS.
 2. MARKERS INSTALLED ALONG EDGE LINES SHALL BE PLACED SO THAT THE NEAR EDGE OF THE GROOVE IS NO MORE THAN 1" FROM THE NEAR EDGE OF THE LINE.
 3. MARKERS SHALL BE CONTINUED ALONG THE ENTIRE LENGTH OF THE RAMP UNTIL THE INTERSECTION WITH THE CROSS-STREET.
 4. ON TWO-LANE, TWO-WAY HIGHWAYS, MARKERS INSTALLED ALONG GORE MARKINGS SHALL BE MONO-DIRECTIONAL (WHITE).
 5. MARKERS SHALL NOT BE INSTALLED ON TOP OF THE PAVEMENT JOINT. OFFSET MARKERS A MINIMUM OF 2" FROM THE PAVEMENT JOINT. ENSURE THAT THE FINISHED LINE OF MARKERS IS STRAIGHT WITH MINIMAL LATERAL DEVIATION. MARKERS MAY BE ELIMINATED AT THE DISCRETION OF THE ENGINEER.
 6. MARKERS INSTALLED ALONG THE RAMP EDGELINE SHALL BE SPACED AT 80' INTERVALS.
- BID ITEMS
- 06613 - INLAID PAVEMENT MARKER - B-W/R
- 06614 - INLAID PAVEMENT MARKER - B-Y/R
- UNIT TO BID
- EACH
- EACH

DRAWING NOT TO SCALE.

KENTUCKY
DEPARTMENT OF HIGHWAYS
INLAID PAVEMENT MARKER
ARRANGEMENT
FOR PARALLEL
DECELERATION LANE

SUBMITTED 06-09-21
DIVISION DIRECTOR
012



~ NOTES ~

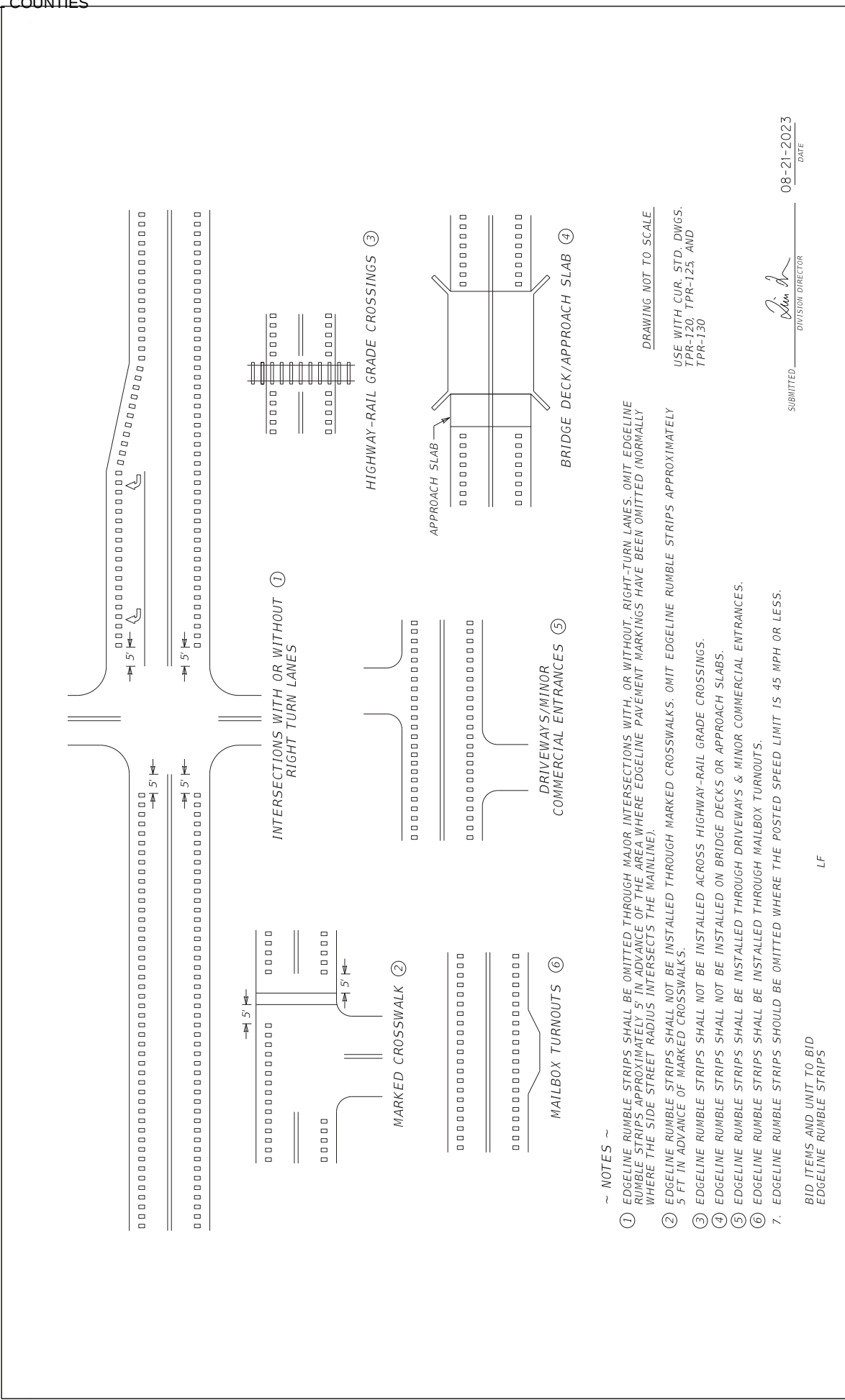
- 1. MARKERS INSTALLED ALONG LANE LINES SHALL BE PLACED BETWEEN AND IN LINE WITH THE SKIPS.
- 2. MARKERS INSTALLED ALONG EDGE LINES SHALL BE PLACED SO THAT THE NEAR EDGE OF THE GROOVE IS NO MORE THAN 1" FROM THE NEAR EDGE OF THE LINE.
- 3. BI-DIRECTIONAL (YELLOW-RED) MARKERS ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE YELLOW EDGE LINE FROM THE INTERSECTION OF THE CROSS-STREET TO THE BEGINNING OF THE GORE AREA.
- 4. IF DOTTED EXTENSIONS ARE USED IN THE TAPERED ACCELERATION LANE, MARKERS SHALL BE INSTALLED AS DEPICTED.
- 5. MARKERS SHALL NOT BE INSTALLED ON TOP OF THE PAVEMENT JOINT. OFFSET MARKERS A MINIMUM OF 2" FROM THE PAVEMENT JOINT. ENSURE THAT THE FINISHED LINE OF MARKERS IS STRAIGHT WITH MINIMAL LATERAL DEVIATION. MARKERS MAY BE ELIMINATED OR PLACEMENT ADJUSTED AT THE DISCRETION OF THE ENGINEER.
- 6. THE NORMAL WIDTH DOTTED WHITE LANE LINE SHALL EXTEND FOR AT LEAST HALF THE LENGTH OF THE FULL-WIDTH ACCELERATION LANE PLUS TAPER MEASURED FROM THE THEORETICAL GORE.

BID ITEMS AND UNIT TO BID
INLAID PAVEMENT MARKER (B-W/R, B-Y/R, BY, MW, MY) EACH

DRAWING NOT TO SCALE
USE WITH CUR. STD. DWG.
TPM-200

KENTUCKY DEPARTMENT OF HIGHWAYS		SUBMITTED <i>[Signature]</i> DIVISION DIRECTOR	06-09-21
			DATE
			014

KENTUCKY DEPARTMENT OF HIGHWAYS
INLAID PAVEMENT MARKER ARRANGEMENT ON-RAMP WITH PARALLEL ACCELERATION LANE



- ~ NOTES ~
- ① EDGELINE RUMBLE STRIPS SHALL BE OMITTED THROUGH MAJOR INTERSECTIONS WITH OR WITHOUT RIGHT-TURN LANES. OMIT EDGELINE RUMBLE STRIPS APPROXIMATELY 5' IN ADVANCE OF THE AREA WHERE EDGELINE PAVEMENT MARKINGS HAVE BEEN OMITTED (NORMALLY WHERE THE SIDE STREET RADIUS INTERSECTS THE MAINLINE).
 - ② EDGELINE RUMBLE STRIPS SHALL NOT BE INSTALLED THROUGH MARKED CROSSWALKS. OMIT EDGELINE RUMBLE STRIPS APPROXIMATELY 5 FT IN ADVANCE OF MARKED CROSSWALKS.
 - ③ EDGELINE RUMBLE STRIPS SHALL NOT BE INSTALLED ACROSS HIGHWAY-RAIL GRADE CROSSINGS.
 - ④ EDGELINE RUMBLE STRIPS SHALL NOT BE INSTALLED ON BRIDGE DECKS OR APPROACH SLABS.
 - ⑤ EDGELINE RUMBLE STRIPS SHALL BE INSTALLED THROUGH DRIVEWAYS & MINOR COMMERCIAL ENTRANCES.
 - ⑥ EDGELINE RUMBLE STRIPS SHALL BE INSTALLED THROUGH MAILBOX TURNOUTS.
 - 7. EDGELINE RUMBLE STRIPS SHOULD BE OMITTED WHERE THE POSTED SPEED LIMIT IS 45 MPH OR LESS.

DRAWING NOT TO SCALE

USE WITH CUR. STD. DWGS.
TPR-120, TPR-125, AND
TPR-130

SUBMITTED *[Signature]* 08-21-2023
DIVISION DIRECTOR DATE

BID ITEMS AND UNIT TO BID
EDGELINE RUMBLE STRIPS
LF

COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	ITEM NO.	COUNTY OF
	SHEET NO.	

DRAWING TITLE: SEPIA 028 - EDGELINE RUMBLE STRIP PLACEMENT DETAILS

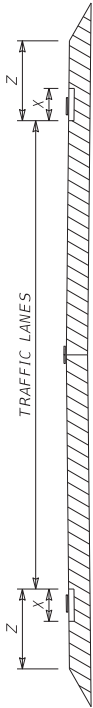
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USER: collinsd@gh

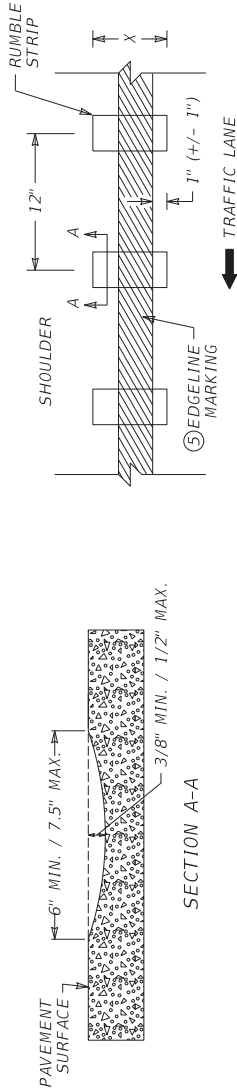


OpenRoads Designer v12.02.4

SHOULDER WIDTH (Z) ②	RUMBLE TYPE ①	RUMBLE LENGTH (X) ③
>= 1' up to < 3'	ELRS	8"
>= 3' up to < 6.5'	ELRS ⑥	8"
>= 6.5' up to < 8'	ELRS ⑥	12"
>= 8'	ELRS ⑥	16"



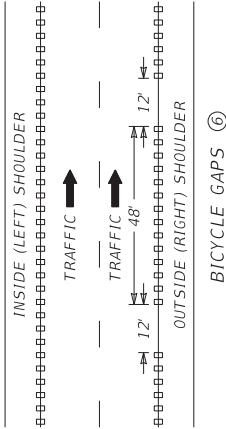
PAVEMENT CROSS-SECTION
(FOR EDGE LINE RUMBLE STRIPS)



SECTION A-A

~ NOTES ~

- FOR MULTI-LANE ROADWAYS, THE RUMBLE TYPE TO BE INSTALLED IS EDGE LINE RUMBLE STRIPS (ELRS).
- FOR EDGE LINE RUMBLE STRIPS, THE SHOULDER WIDTH (Z) IS FROM THE LANE SIDE EDGE OF THE EDGE LINE RUMBLE STRIP TO THE OUTSIDE EDGE OF SHOULDER PAVEMENT.
- THE RUMBLE LENGTH (X) MAY BE MODIFIED AS DIRECTED BY THE ENGINEER.
- THE DIMENSIONS SHOWN ON THIS DRAWING ARE APPROXIMATE. MAINTAIN RUMBLE STRIP DIMENSIONS AND SPACING AS MUCH AS POSSIBLE.
- PLACE THE EDGE LINE MARKING SO THAT THE LANE SIDE EDGE OF THE MARKING GENERALLY FOLLOWS THE LANE SIDE EDGE OF THE RUMBLE STRIP. THE TARGET IS FOR THE LANE SIDE EDGE OF THE MARKING TO BE 1" BEYOND THE LANE SIDE EDGE OF THE RUMBLE STRIP WITH AN ACCEPTABLE VARIANCE OF +/- 1".
- EDGE LINE RUMBLE STRIPS ALONG OUTSIDE (RIGHT) SHOULDERS THAT ARE 3' OR WIDER SHALL INCLUDE BICYCLE GAPS AS DETAILED. BICYCLE GAPS ARE NOT REQUIRED ON INSIDE (LEFT) SHOULDERS.
NOTE: BICYCLE GAPS SHALL NOT BE USED ON INTERSTATES AND PARKWAYS.
- RUMBLE STRIPS SHOULD BE OMITTED WHERE THE POSTED SPEED LIMIT IS 45 MPH OR LESS, OR WHEN THE SHOULDER WIDTH (Z) IS LESS THAN 1 FT.



DRAWING NOT TO SCALE
USE WITH CUR. STD. DWG.
TPR-115

LF
LF

SUBMITTED *[Signature]* 08-21-2023
DIVISION DIRECTOR DATE

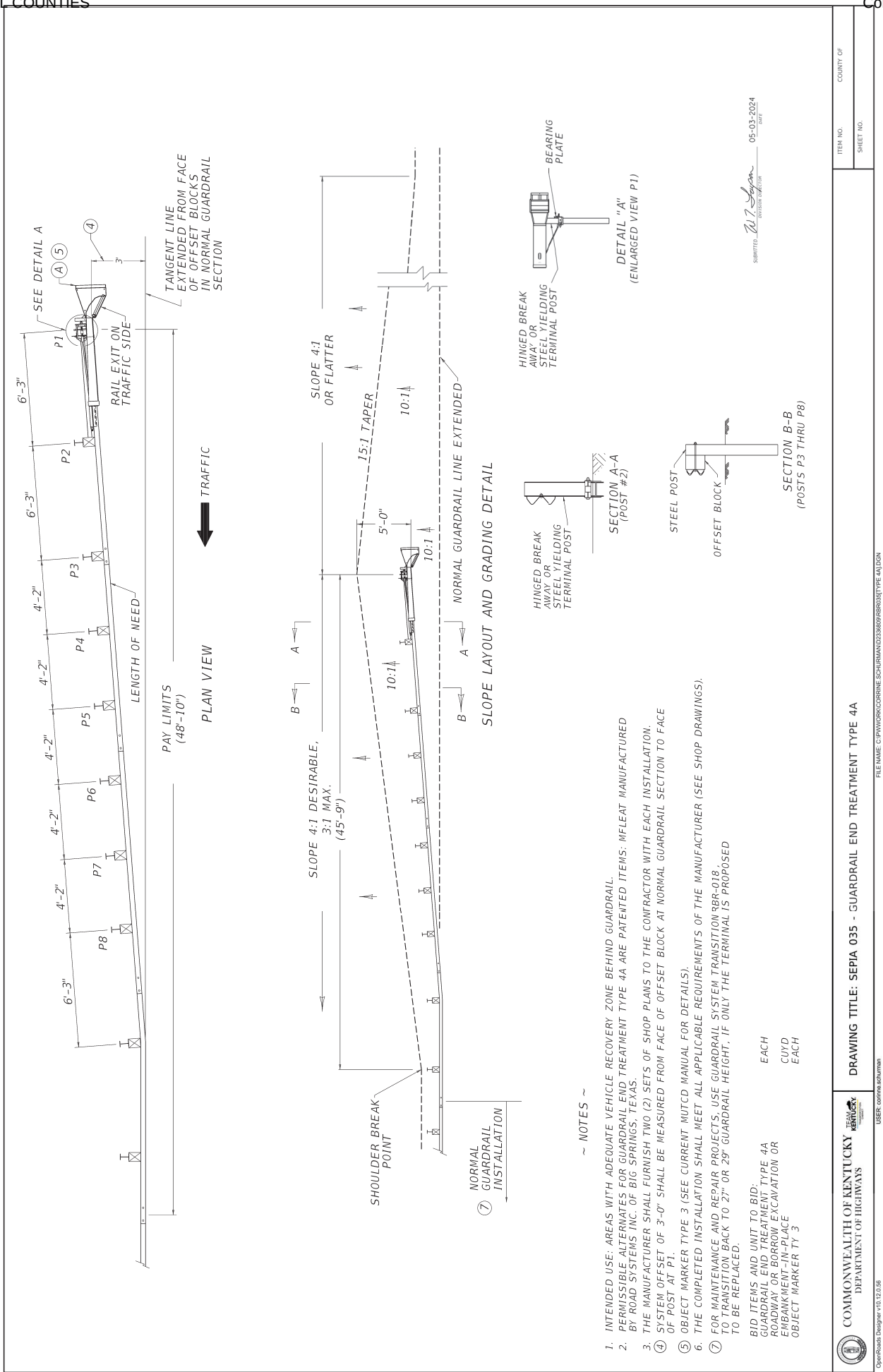


DRAWING TITLE: SEPIA 030 - EDGE LINE RUMBLE STRIP DETAILS MULTI-LANE ROADWAYS AND RAMPS

FILE NAME: C:\PAV\BROW\KTC_C\WILLIAMS\BROW\2025\TPR115.DGN

USER: williamsjg

ITEM NO. COUNTY OF
SHEET NO.



~ NOTES ~

1. INTENDED USE: AREAS WITH ADEQUATE VEHICLE RECOVERY ZONE BEHIND GUARDRAIL.
2. PERMISSIBLE ALTERNATES FOR GUARDRAIL END TREATMENT TYPE 4A ARE PATENTED ITEMS: MFELEAT MANUFACTURED BY ROAD SYSTEMS INC. OF BIG SPRINGS, TEXAS.
3. THE MANUFACTURER SHALL FURNISH TWO (2) SETS OF SHOP PLANS TO THE CONTRACTOR WITH EACH INSTALLATION.
4. SYSTEM OFFSET OF 3'-0" SHALL BE MEASURED FROM FACE OF OFFSET BLOCK AT NORMAL GUARDRAIL SECTION TO FACE OF POST AT P1.
5. OBJECT MARKER TYPE 3 (SEE CURRENT MUTCD MANUAL FOR DETAILS).
6. THE COMPLETED INSTALLATION SHALL MEET ALL APPLICABLE REQUIREMENTS OF THE MANUFACTURER (SEE SHOP DRAWINGS).
7. FOR MAINTENANCE AND REPAIR PROJECTS: USE GUARDRAIL SYSTEM TRANSITION RBR-018, TO TRANSITION BACK TO 27" OR 29" GUARDRAIL HEIGHT, IF ONLY THE TERMINAL IS PROPOSED TO BE REPLACED.

BID ITEMS AND UNIT TO BID:
GUARDRAIL END TREATMENT TYPE 4A
ROADWAY OR BORROW EXCAVATION OR
EMBANKMENT-IN-PLACE
OBJECT MARKER TY 3
EACH
CUYD
EACH



DRAWING TITLE: SEPIA 035 - GUARDRAIL END TREATMENT TYPE 4A

FILE NAME: C:\PW\WORK\CORP\NE SCH\BAND\035\080\RR035\TYPE 4A.DGN

USER: corpbz\jmurphy

OpenRoads Designer V10.12.0.26

ITEM NO.	COUNTY OF
SHEET NO.	

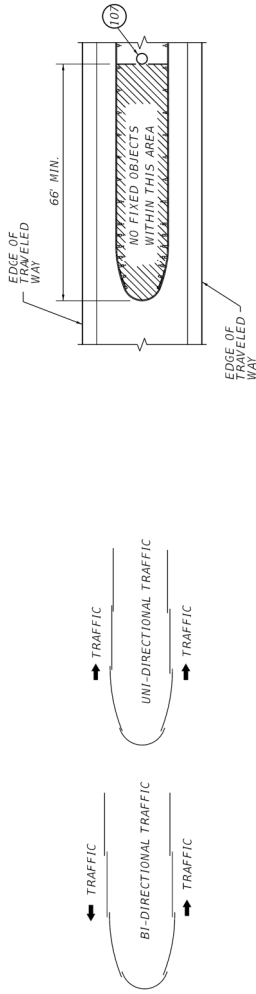
SUBMITTED: *T. J. Seaman* 05-03-2024
DATE

APPROVED
STATE HIGHWAY ENGINEER
DATE

SUBMITTED
DIVISION DIRECTOR
DATE
03-03-2025

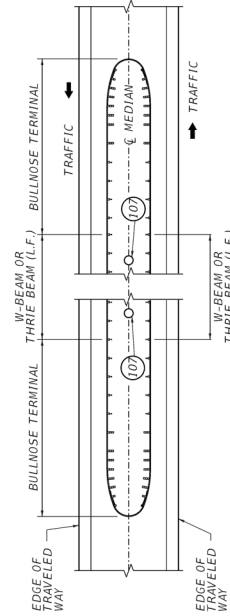
REVISION NUMBER: 0
REVISION DATE: 12.10.2024

BARRIERS



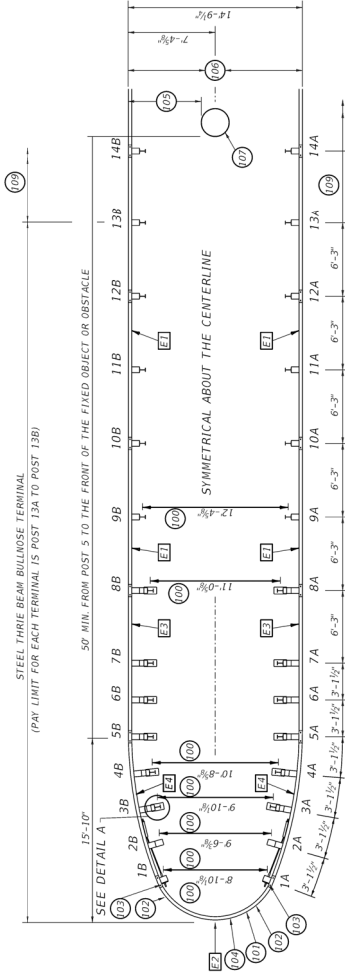
OBSTACLE FREE AREA
INSIDE BULLNOSE

LAPPING DETAIL



MEDIAN FIXED OBJECT SHIELDING PAY LIMITS

DETAIL A



PLAN VIEW
TYPICAL BULLNOSE LAYOUT

~ NOTES ~

- 100 DIMENSIONS ARE MEASURED TO THE CENTER OF THE GUARDRAIL POSTS.
ON THE PLAN SHEETS, THE DESIGNER MUST INCLUDE THE STATION AND OFFSET MEASUREMENTS FOR THE CENTER OF THE GUARDRAIL POSTS OF THE BULLNOSE. REFER TO SHEET 3 FOR DETAILS.
REFER TO DETAIL A FOR MORE INFORMATION.
- 101 U-BOLT CABLE CLIPS (3 PER CABLE) SPACED OUT ON NOSE, TO HOLD CABLE TO BACKSIDE OF THE RAIL
- 102 NOSE CABLE WITH SWAGGED END BUTTONS.
- 103 NOSE CABLE ANCHOR PLATE (BACKSIDE OF SPLICE).
- 104 THE SLACK IN THE NOSE CABLES SHALL BE EVENLY DISTRIBUTED BETWEEN THE CABLE CLIP FASTENERS AND POST NO. 1 ON EITHER SIDE OF THE NOSE.
- 105 MINIMUM WORKING WIDTH 4'-2".
GRADING INSIDE THE THRIE BEAM TERMINAL BEYOND POST 13 MAY BE ADJUSTED FOR DRAINAGE. PROVIDED THERE IS A MINIMUM OF 2 FEET OF FILL BEHIND THE POSTS TO ENSURE ADEQUATE SUPPORT FOR THE SYSTEM.
- 106 MINIMUM WIDTH OF SYSTEM IS 14' - 0 1/2" MEASURED FROM FACE OF GUARDRAIL TO FACE OF GUARDRAIL.
- 107 FIXED OBJECT OR OTHER OBSTACLE.
- 108 PARTS E1 THROUGH E4 ARE THRIE BEAM RAILS.
SEE SHEET 8 FOR DETAILS.
- E1 UNBENT STANDARD THRIE BEAM RAIL (POST 8 AND BEYOND)
- E2 SLOTTED THRIE BEAM RAIL (POST 18 TO POST 1A)
- E3 SLOTTED THRIE BEAM RAIL (POST 5 TO POST 8)
- E4 SLOTTED THRIE BEAM RAIL (POST 1 TO POST 5)
- 109 BEYOND POST 12 - CAN CONSTRUCT W-BEAM GUARDRAIL OR THRIE BEAM GUARDRAIL. IF W-BEAM GUARDRAIL IS USED, THE RAIL FROM POST 12 TO 13 BY USING A THRIE BEAM CONNECTOR (INCIDENTAL TO THE BULLNOSE TERMINAL BID ITEM) FOLLOWED BY A STANDARD POST AND BLOCK, SPACED AT 3' - 1 1/2'. THE GUARDRAIL SHALL BE INSTALLED TO THE INSIDE OF THE SPACING AND TRANSITION THE BULLNOSE RAIL HEIGHT TO 31" OVER A 12'-6" BEAM LENGTH. FOR ADDITIONAL DETAILS SEE ABR-001, ABR-005 AND THE DETAIL ON SHEET 2.
- FOR THRIE BEAM INSTALLATIONS BEYOND POST 12, TRANSITION THE BULLNOSE RAIL HEIGHT TO 33" OVER A 12' - 6" BEAM LENGTH.
- 110 SEE SHEET 5 FOR DETAILS ON THE INSTALLATION OF DELINEATOR REFLECTORS.
- 111 SEE SHEET 4 FOR MEDIAN GRADING.
- 112 THRIE BEAM RAILS MAY NEED TO BE FIELD BENT TO FIT THE LOCATION.
- 113 IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2'-2" MINIMUM DIAMETER OF THE ROCK REMOVAL IS 12" DIAMETER.
- 114 SEE SHEET 3 FOR INSTALLATION LAYOUT DETAILS OF THE BULLNOSE TERMINAL.

SEPIA NUMBER
SEPIA 095

SHEET 001: SYMMETRICAL BULLNOSE

STEEL THRIE BEAM BULLNOSE TERMINAL

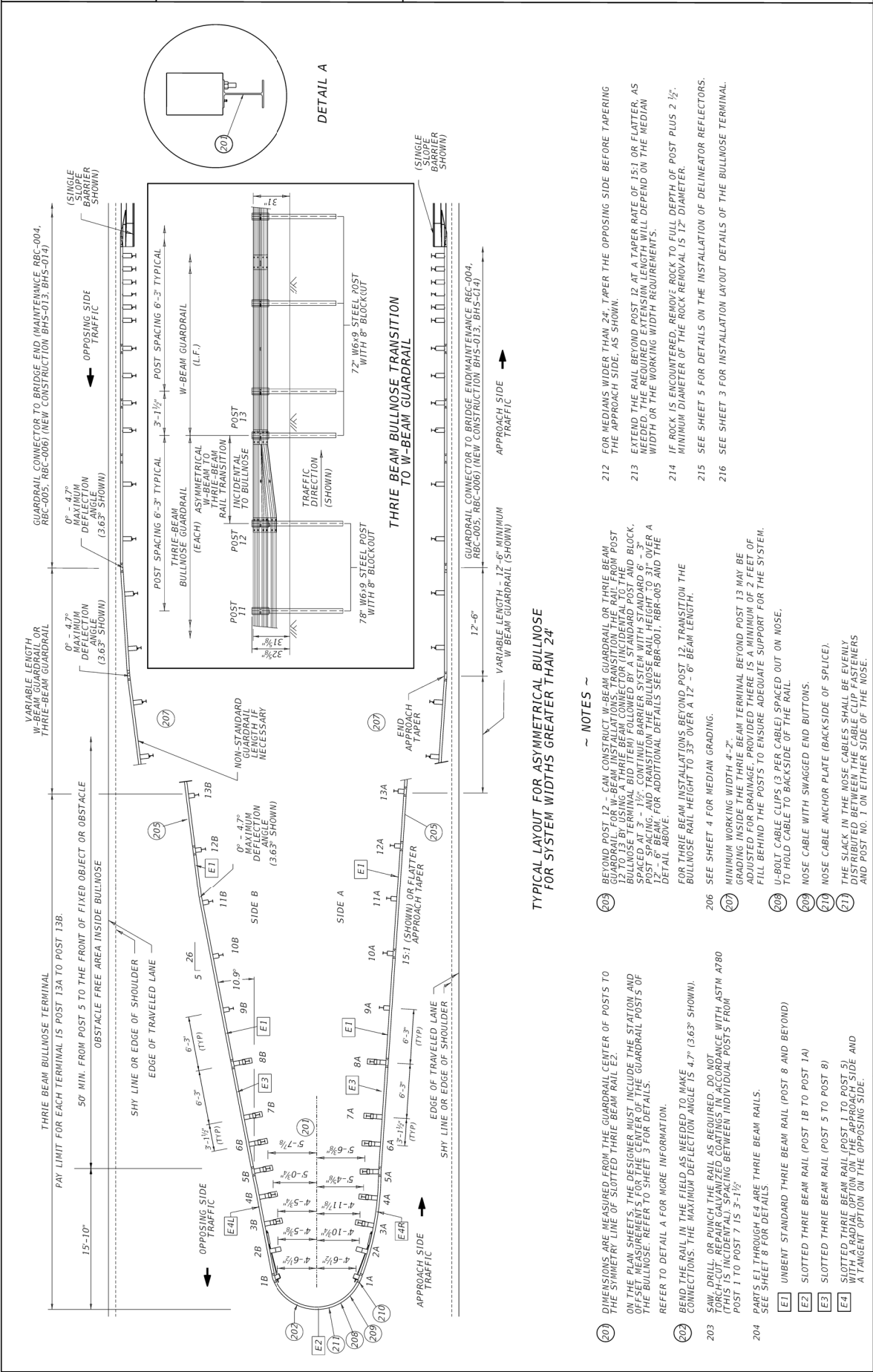
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

FILE NAME: C:\KYTC\STANDARDS\ORGANIZATION\CIVIL\KYTC STANDARDS\DOCS\KYTC001B.SHEET SEEDS\KYTC STANDARDS BORDER SEED.DWG

OpenRoads Designer 23.08.01.11

APPROVED
STATE HIGHWAY ENGINEER
DATE
SUBMITTED
DIVISION DIRECTOR
DATE
REVISION NUMBER: 0
REVISION DATE: 12.10.2024

BARRIERS



SEPIA NUMBER
SEPIA 095

SHEET 002: ASYMMETRICAL BULLNOSE

STEEL THRIE BEAM BULLNOSE TERMINAL

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

FILE NAME: C:\KYTC\STANDARDS\ORGANIZATION\CIVIL\KYTC STANDARDS\DOCS\KYTC002\B-SHEET SEEDS\KYTC STANDARDS BORDER SEED.DWG

USER: railnet.sps

OpenRoads Designer 22.08.01.11

- 212 FOR MEDIANS WIDER THAN 24', TAPER THE OPPOSING SIDE BEFORE TAPERING THE APPROACH SIDE, AS SHOWN.
- 213 EXTEND THE RAIL BEYOND POST 12 AT A TAPER RATE OF 15:1 OR FLATTER, AS NEEDED. THE REQUIRED EXTENSION LENGTH WILL DEPEND ON THE MEDIAN WIDTH OR THE WORKING WIDTH REQUIREMENTS.
- 214 IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2". MINIMUM DIAMETER OF THE ROCK REMOVAL IS 12" DIAMETER.
- 215 SEE SHEET 5 FOR DETAILS ON THE INSTALLATION OF DELINEATOR REFLECTORS.
- 216 SEE SHEET 3 FOR INSTALLATION LAYOUT DETAILS OF THE BULLNOSE TERMINAL.

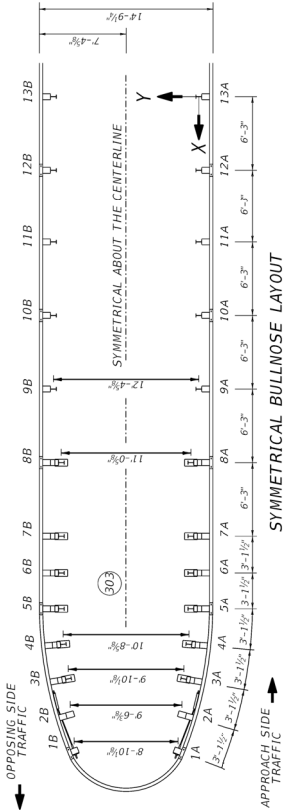
- 203 BEYOND POST 12, CAN CONSTRUCT W-BEAM GUARDRAIL OR THRIE BEAM GUARDRAIL. IF THRIE BEAM GUARDRAIL IS USED, THE THRIE BEAM GUARDRAIL SHALL BE USED TO THE BULLNOSE TERMINAL (BID ITEM) FOLLOWED BY A STANDARD POST AND BLOCK, SPACED AT 3' - 1 1/2'. CONTINUE BARRIER SYSTEM WITH STANDARD 6' - 3" W-BEAM GUARDRAIL. FOR ADDITIONAL DETAILS SEE RBR-001, RBR-005 AND THE DETAIL ABOVE.
- 204 FOR THRIE BEAM INSTALLATIONS BEYOND POST 12, TRANSITION THE BULLNOSE RAIL HEIGHT TO 33" OVER A 12' - 6" BEAM LENGTH.
- 206 SEE SHEET 4 FOR MEDIAN GRADING.
- 207 MINIMUM WORKING WIDTH 4'-2". GRADING INSIDE THE THRIE BEAM TERMINAL BEYOND POST 13 MAY BE ADJUSTED FOR DRAINAGE, PROVIDED THERE IS A MINIMUM OF 2 FEET OF FILL BEHIND THE POSTS TO ENSURE ADEQUATE SUPPORT FOR THE SYSTEM.
- 208 U-BOLT CABLE CLIPS (3 PER CABLE) SPACED OUT ON NOSE, TO HOLD CABLE TO BACKSIDE OF THE RAIL.
- 209 NOSE CABLE WITH SWAGGED END BUTTONS.
- 210 NOSE CABLE ANCHOR PLATE (BACKSIDE OF SPLICE).
- 211 THE SLACK IN THE NOSE CABLES SHALL BE EVENLY DISTRIBUTED BETWEEN THE CABLE CLIP FASTENERS AND POST NO. 1 ON EITHER SIDE OF THE NOSE.

- 201 DIMENSIONS ARE MEASURED FROM THE GUARDRAIL CENTER OF POSTS TO THE SYMMETRY LINE OF SLOTTED THRIE BEAM RAIL E2.
- 202 ON THE PLAN SHEETS, THE DESIGNER MUST INCLUDE THE STATION AND POST NUMBERS FOR EACH POST. THE BULLNOSE REFER TO SHEET 5 FOR DETAILS. REFER TO DETAIL A FOR MORE INFORMATION.
- 203 BEND THE RAIL IN THE FIELD AS NEEDED TO MAKE CONNECTIONS. THE MAXIMUM DEFLECTION ANGLE IS 4.7° (3.63° SHOWN).
- 204 SAW DRILL OR PUNCH THE RAIL AS REQUIRED. DO NOT FORCE CUT REPAIR GALVANIZED COATINGS. ACCORDANCE WITH ASTM A780 (THIS IS INCIDENTAL) SPACING BETWEEN INDIVIDUAL POSTS FROM POST 1 TO POST 7 IS 3'-1 1/2". SEE SHEET 8 FOR DETAILS.
- 205 PARTS E1 THROUGH E4 ARE THRIE BEAM RAILS.
- E1 UNBENT STANDARD THRIE BEAM RAIL (POST 8 AND BEYOND)
- E2 SLOTTED THRIE BEAM RAIL (POST 18 TO POST 1A)
- E3 SLOTTED THRIE BEAM RAIL (POST 5 TO POST 8)
- E4 SLOTTED THRIE BEAM RAIL (POST 1 TO POST 5)
- THE BULLNOSE TERMINAL SHALL BE INSTALLED ON THE APPROACH SIDE AND A TANGENT OPTION ON THE OPPOSING SIDE.

BULLNOSE TERMINAL INSTALLATION LAYOUT

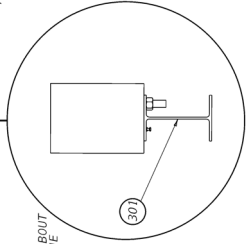
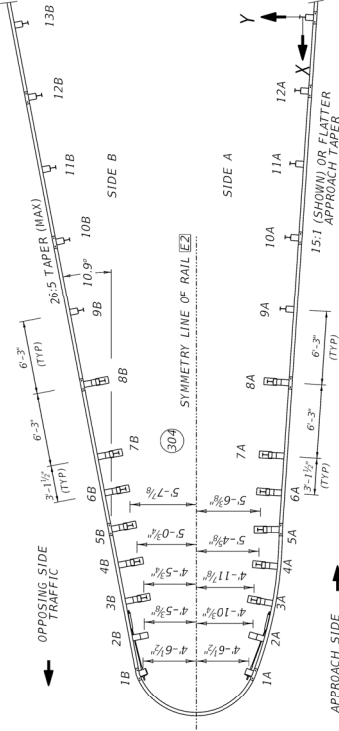
SYMMETRICAL BULLNOSE POST COORDINATES				
POST NUMBER	X (301)	Y (301)	ANGLE OF POST (FLANGE FACE) (303)	
13A	0	0	0	
12A	6'-3"	0	0°-5'	
11A	12'-6"	0	0°-10'	
10A	18'-9"	0	1°-3'	
9A	25'-0"	0	1°-8'	
8A	31'-3"	0	2°-1'	
7A	37'-6"	0	3°-4'	
6A	43'-9"	0	4°-8'	
5A	49'-8 1/2"	0	5°-10'	
4A	55'-10 1/2"	0	6°-7'	
3A	60'-11 1/2"	0	7°-1'	
2A	65'-12 1/2"	0	8°-0'	
1A	70'-0"	0	9°-0'	
13B	0	12'-4 3/8"	0	
12B	6'-3"	12'-4 3/8"	0°-5'	
11B	12'-6"	12'-4 3/8"	0°-10'	
10B	18'-9"	12'-4 3/8"	1°-3'	
9B	25'-0"	12'-4 3/8"	1°-8'	
8B	31'-3"	12'-4 3/8"	2°-1'	
7B	37'-6"	12'-4 3/8"	3°-4'	
6B	43'-9"	12'-4 3/8"	4°-8'	
5B	49'-8 1/2"	12'-4 3/8"	5°-10'	
4B	55'-10 1/2"	12'-4 3/8"	6°-7'	
3B	60'-11 1/2"	12'-4 3/8"	7°-1'	
2B	65'-12 1/2"	12'-4 3/8"	8°-0'	
1B	70'-0"	12'-4 3/8"	9°-0'	

ASYMMETRICAL BULLNOSE POST COORDINATES				
POST NUMBER	X (301)	Y (301)	ANGLE OF POST (FLANGE FACE) (304)	
13A	0	0	0	
12A	6'-2 1/2"	0	0°-5'	
11A	12'-5 1/2"	0	1°-3'	
10A	18'-8 1/2"	0	1°-8'	
9A	24'-11 1/2"	0	2°-1'	
8A	31'-1 1/2"	0	3°-4'	
7A	37'-4 1/2"	0	4°-8'	
6A	43'-8 1/2"	0	5°-10'	
5A	49'-8 1/2"	0	6°-7'	
4A	55'-10 1/2"	0	7°-1'	
3A	60'-11 1/2"	0	8°-0'	
2A	65'-12 1/2"	0	9°-0'	
1A	70'-0"	0	10°-0'	
13B	0	22'-8 1/2"	0	
12B	6'-7 1/2"	22'-8 1/2"	0°-5'	
11B	12'-9 1/2"	21'-3 1/2"	0°-10'	
10B	18'-11 1/2"	20'-1 1/2"	1°-3'	
9B	25'-0 1/2"	18'-11 1/2"	1°-8'	
8B	31'-1 1/2"	17'-1 1/2"	2°-1'	
7B	37'-2 1/2"	15'-11 1/2"	3°-4'	
6B	43'-3 1/2"	14'-2 1/2"	4°-8'	
5B	49'-4 1/2"	12'-8 1/2"	5°-10'	
4B	55'-5 1/2"	10'-4 1/2"	6°-7'	
3B	60'-6 1/2"	8'-0 1/2"	7°-1'	
2B	65'-7 1/2"	5'-6 1/2"	8°-0'	
1B	70'-8 1/2"	3'-2 1/2"	9°-0'	



NOTES ~

- (300) MINIMUM DISTANCE REQUIREMENT: THE LENGTH FROM POST 5 TO THE FRONT OF THE FIXED OBJECT OR OBSTACLE MUST BE A MINIMUM OF 50'.
- (301) DIMENSIONS ARE MEASURED TO THE CENTER OF GUARDRAIL POSTS. REFER TO DETAIL A FOR MORE INFORMATION. USE TOBAC STATION AND PROVIDE IN THE POST LAYOUT THE CENTER OF THE BULLNOSE GUARDRAIL POSTS.
- (302) ON THE PLAN SHEETS, THE DESIGNER MUST INCLUDE THE STATION AND THE FLANGE CENTER OF THE GUARDRAIL POSTS 1 THROUGH 13 FOR THE BULLNOSE.
- (303) FOR THE SYMMETRICAL BULLNOSE LAYOUT AND ANGLE DIMENSIONS POSTS ON SIDE A TO THE CENTER OF POSTS ON SIDE B.
- (304) FOR THE ASYMMETRICAL BULLNOSE LAYOUT AND ANGLE DIMENSIONS TO THE SYMMETRY LINE OF SLOTTED THRIE BEAM RAIL E2.



DETAIL A

SEPIA NUMBER
SEPIA 095

SHEET 003: BULLNOSE TERMINAL INSTALLATION LAYOUT

STEEL THRIE BEAM BULLNOSE TERMINAL



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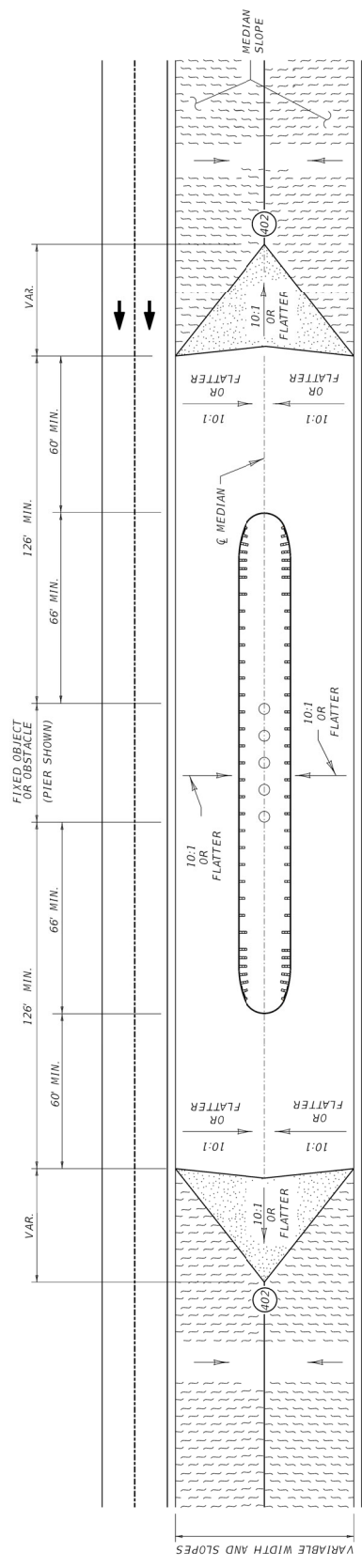
OverRoads Designer 02.08.01.11

REVISION NUMBER: 1
REVISION DATE: 2.24.2025

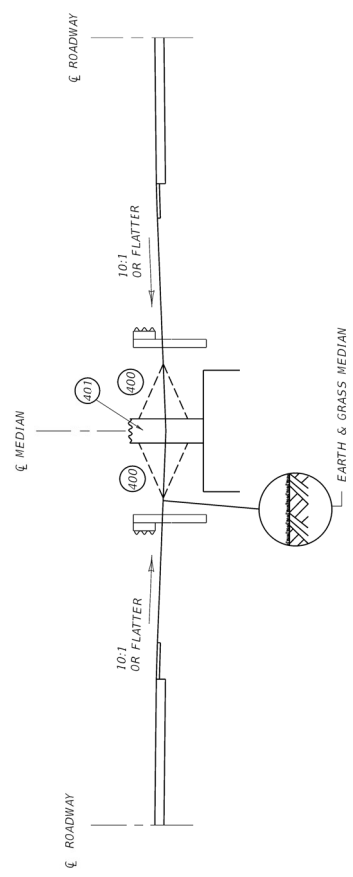
DATE: 03-03-2025
SUBMITTED: *[Signature]*
DIVISION DIRECTOR

DATE: _____
APPROVED: _____
STATE HIGHWAY ENGINEER

BARRIERS



GRADING AT BULLNOSE



CROSS SECTION AT BULLNOSE

- ~ NOTES ~
- 400 MINIMUM WORKING WIDTH 4'-2".
 - GRADING FROM POST 1 TO POST 13 AND THE 60' LEADING OR TRAILING THE THRIE BEAM TERMINAL SHALL BE 10:1 OR FLATTER.
 - GRADING BEYOND POST 13 MAY BE ADJUSTED FOR DRAINAGE, PROVIDED THERE IS A MINIMUM OF 2 FEET OF FILL BEHIND THE POSTS TO ENSURE ADEQUATE SUPPORT FOR THE SYSTEM.
 - 401 FIXED OBJECT OR OTHER OBSTACLE.
 - 402 EVALUATE MEDIAN DRAINAGE AND ENSURE POSITIVE FLOW. INCLUDE A DROP BOX INLET AND PIPING AS NEEDED, AND ENSURE THAT ALL NECESSARY BID ITEMS ARE INCLUDED.
 - 403 WHILE MEDIAN GRADING DETAIL DEPICTS SYMMETRICAL THRIE BEAM BULLNOSE TERMINAL, ALL GRADING REQUIREMENTS APPLY TO ASYMMETRICAL SITUATIONS ALSO.
 - 404 GRADING QUANTITIES MUST BE CALCULATED AND SHOWN AS BID ITEMS.

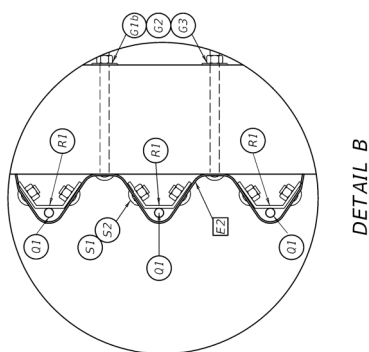
SEPIA NUMBER
SEPIA 095

SHEET 004: GRADING AT BULLNOSE

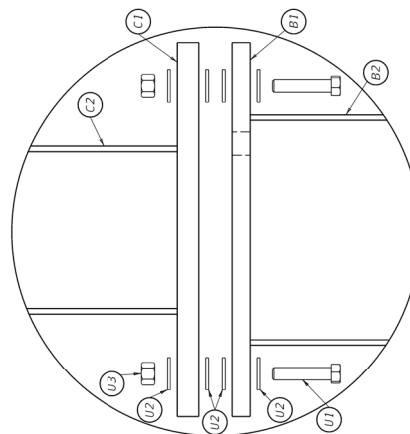
STEEL THRIE BEAM BULLNOSE TERMINAL

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

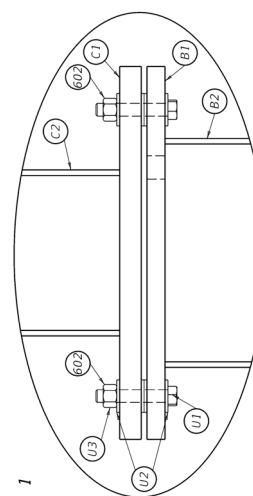
REVISION DATE: 12.10.2024
REVISION NUMBER: 0

REVISION DATE: 12.10.2024
REVISION NUMBER: 0

DETAIL B



EXPLODED VIEW
DETAIL A



DETAIL A

~ NOTES ~

600 SEE SHEET 10 FOR PART DESCRIPTIONS.

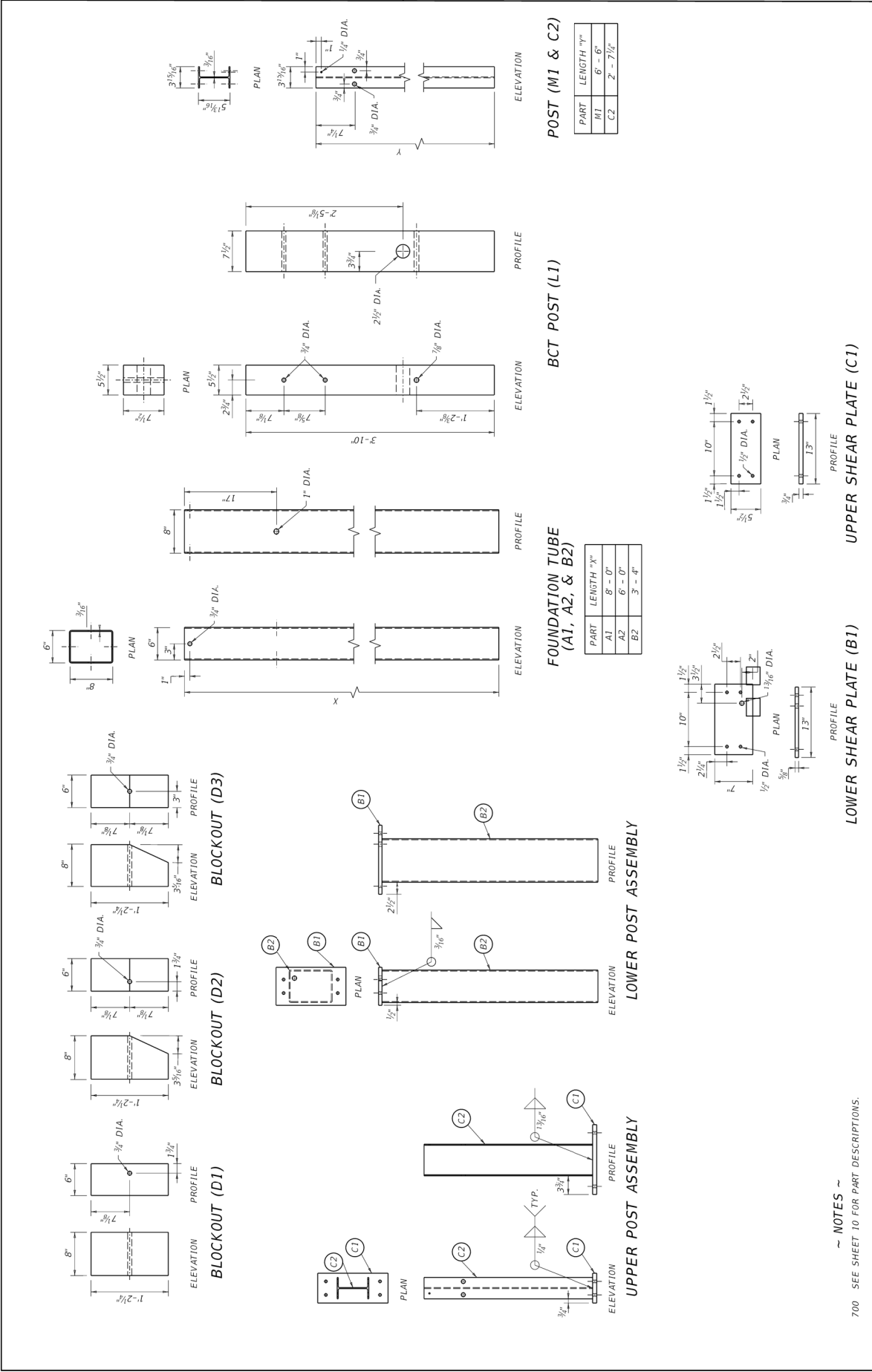
601 RAIL CAN BE E3 OR E4
DEPENDENT
ON POST LOCATION.

602 TORQUE BOLT BETWEEN 60-75
FT-LB

REVISION NUMBER: 0
REVISION DATE: 12.10.2024

DATE: 03-03-2025
SUBMITTED: *[Signature]*
DIVISION: HIGHWAY
APPROVED: *[Signature]*
STATE HIGHWAY ENGINEER

BARRIERS



SEPIA NUMBER
SEPIA 095

SHEET 007: POST, BLOCK, AND HARDWARE DETAILS

STEEL THRIE BEAM BULLNOSE TERMINAL

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

FILE NAME: C:\KYTC\STANDARDS\ORGANIZATION\CH\KYTC_STANDARDS\DC_KYTC\COMMON SHEET SEEDS\KYTC STANDARDS BORDER SEED.DWG

USER: madden.sps

OpenRoads Designer 23.08.01.11

NOTES ~
700 SEE SHEET 10 FOR PART DESCRIPTIONS.

DATE
03-03-2025

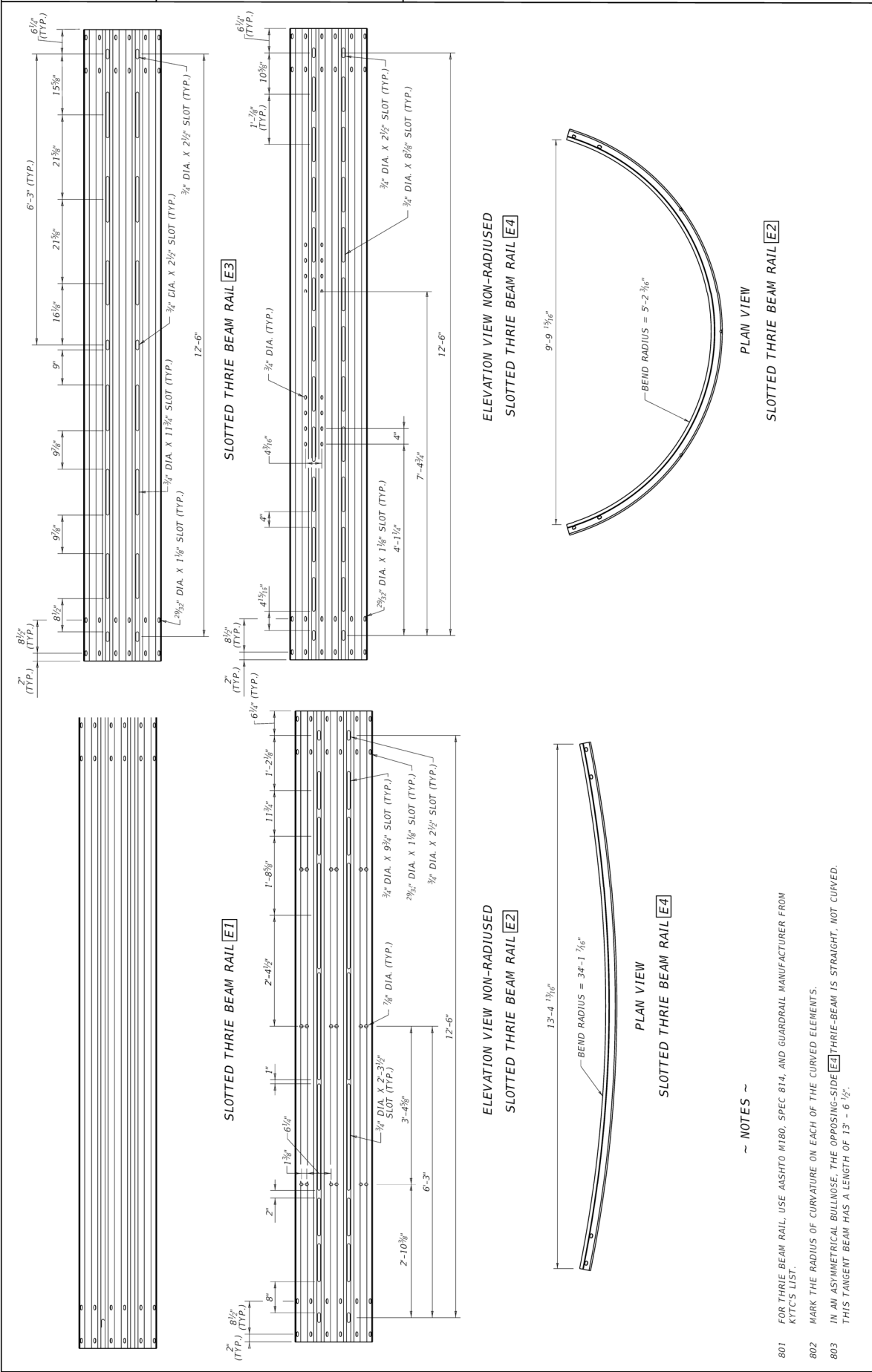
APPROVED
STATE HIGHWAY ENGINEER

DATE
03-03-2025

SUBMITTED
DIVISION DIRECTOR

REVISION NUMBER: 0
REVISION DATE: 12/10/2024

BARRIERS



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

SEAL

FILE NAME: C:\KYTC_STANDARDS\ORGANIZATION\CHL\KYTC_STANDARDS_DOC\KYTCOON\B-SHEET SEEDS\KYTC STANDARDS BORDER SEED.DWG

SHEET 008: SLOTTED THRIE BEAM RAIL

SEP1A NUMBER
SEP1A 095

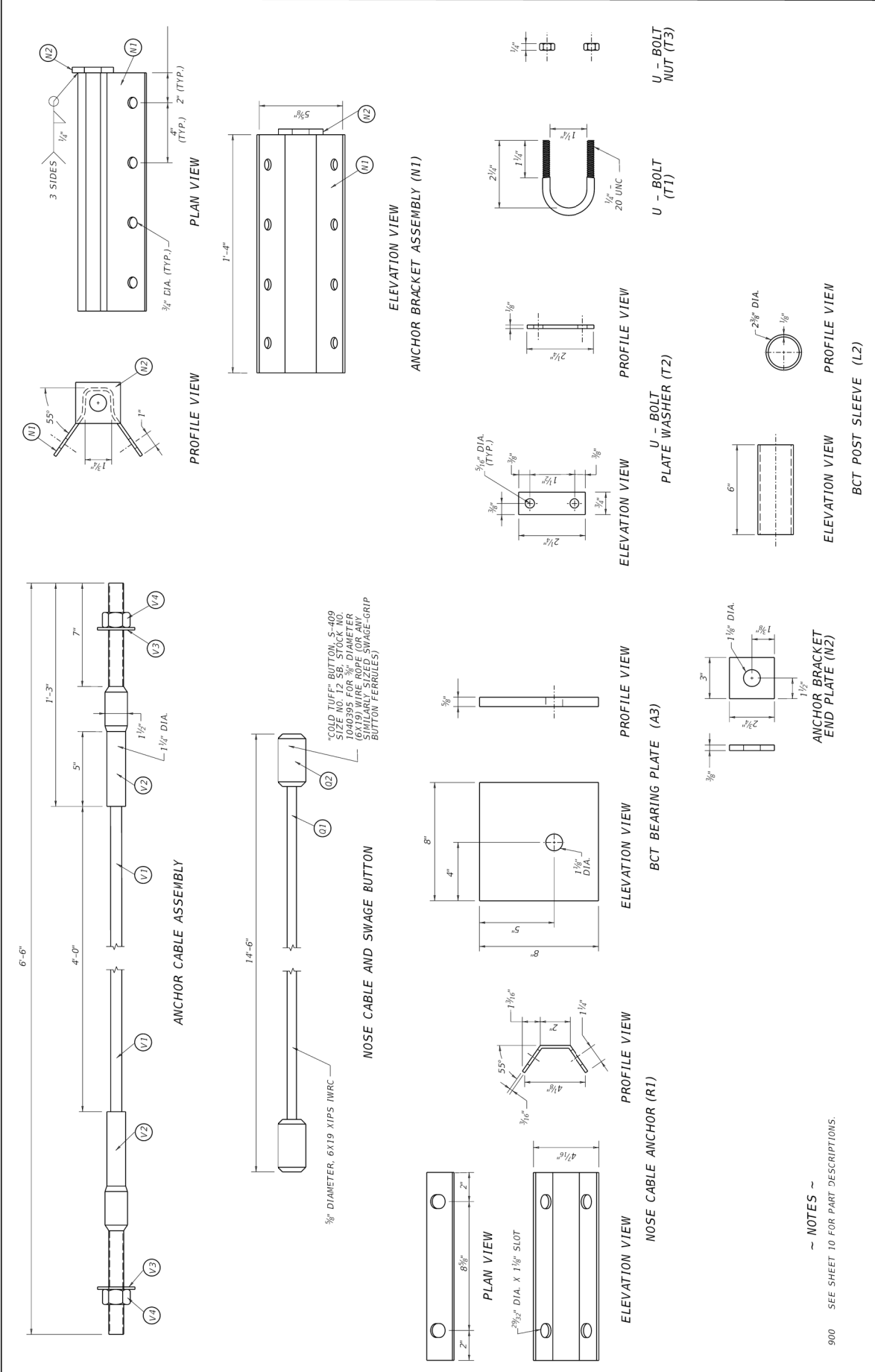
STEEL THRIE BEAM BULLNOSE TERMINAL

SEP1A NUMBER
SEP1A 095

REVISION NUMBER: 0
REVISION DATE: 12.10.2024

DATE: 03-03-2025
SUBMITTED: 03-03-2025
DIVISION: HIGHWAY
ENGINEER: STATE HIGHWAY ENGINEER

BARRIERS



SEPIA NUMBER
SEPIA 095

SHEET 009: ASSEMBLY DETAILS

STEEL THRIE BEAM BULLNOSE TERMINAL

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
USER: madden@kysos

FILE NAME: C:\KYTC\STANDARDS\ORGANIZATION\CIVIL\KYTC STANDARDS\DOCS\KYTC009\B-SHEET SEEDS\KYTC STANDARDS BORDER SEED.DWG

OpenRoads Designer 23.08.01.11

REVISION NUMBER: 0
REVISION DATE: 12.10.2024

DATE: 03-03-2025
SUBMITTED: *[Signature]*
DIVISION DIRECTOR
STATE HIGHWAY ENGINEER
APPROVED

BARRIERS

THRIE BEAM BULLNOSE TERMINAL MATERIALS LIST

PART NUMBER	DESCRIPTION	MATERIAL SPECIFICATION
A1	2 LONG FOUNDATION TUBE	ASHTO M111/ASTM A132 ASTM A500 GRADE B OR ASTM A-501
A2	2 FOUNDATION TUBE	ASHTO M111/ASTM A132 ASTM A500 GRADE B OR ASTM A-501
A3	2 BEARING PLATE AT POST	ASHTO M111/ASTM A132 ASTM A572 MAX. STRENGTH 36 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
B1	12 LOWER SHEAR PLATE	ASHTO M111/ASTM A132 ASTM A572 MAX. STRENGTH 36 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
B2	12 FOUNDATION TUBE	ASHTO M111/ASTM A132 ASTM A500 GRADE B OR ASTM A-501
C1	12 UPPER SHEAR PLATE	ASHTO M111/ASTM A132 ASTM A572 MAX. STRENGTH 36 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI
C2	12 STEEL POST	ASHTO M111/ASTM A132 ASTM A572 MAX. STRENGTH 36 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI
D1	20 BLOCK FOR STEEL POST - WOOD	KYTC SPEC 814
D2	12 TAPERED BLOCK FOR STEEL POST - WOOD	KYTC SPEC 814
D3	2 TAPERED BLOCK FOR BCT POST - WOOD	KYTC SPEC 814
E1	4 THRIE BEAM RAIL - SHOP BENT AND PUNCHED	ASHTO M180, SPEC 814, AND A GUARDRAIL MANUFACTURED FROM KYTC'S LIST OF APPROVED MATERIALS. CURVE GUARDRAIL IN SHOP. MARK THE RADIUS OF CURVATURE ON EACH OF THE CURVED ELEMENTS
E2	1 THRIE BEAM RAIL - SHOP BENT AND PUNCHED	ASHTO M180, SPEC 814, AND A GUARDRAIL MANUFACTURED FROM KYTC'S LIST OF APPROVED MATERIALS. CURVE GUARDRAIL IN SHOP. MARK THE RADIUS OF CURVATURE ON EACH OF THE CURVED ELEMENTS. NOTE: IN AN ASYMMETRICAL BULLNOSE, THE OPPOSING TRAFFIC SIDE (E4 THRIE BEAM IS STRAIGHT, NOT CURVED. THIS TANGENT BEAM HAS A LENGTH OF 13' 6 1/2".
E3	2 THRIE BEAM RAIL - SHOP BENT AND PUNCHED	ASHTO M180, SPEC 814, AND A GUARDRAIL MANUFACTURED FROM KYTC'S LIST OF APPROVED MATERIALS. CURVE GUARDRAIL IN SHOP. MARK THE RADIUS OF CURVATURE ON EACH OF THE CURVED ELEMENTS
E4	2 THRIE BEAM RAIL - SHOP BENT AND PUNCHED	ASHTO M180, SPEC 814, AND A GUARDRAIL MANUFACTURED FROM KYTC'S LIST OF APPROVED MATERIALS. CURVE GUARDRAIL IN SHOP. MARK THE RADIUS OF CURVATURE ON EACH OF THE CURVED ELEMENTS
F1	4 5/8" DIA. HEX HEAD GROUND STRUT AND YOKE BOLT - WASHER 1 1/2" OUTSIDE DIAMETER, 1 1/8" INSIDE DIAMETER WASHER, 3/4" THICK	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
F2	8 5/8" DIA. GROUND STRUT AND YOKE BOLT - WASHER 1 1/2" OUTSIDE DIAMETER, 1 1/8" INSIDE DIAMETER WASHER, 3/4" THICK	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
F3	4 GROUND STRUT AND YOKE BOLT - NUT 3/4" THICK	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
G1a	14 5/8" DIA. POST BOLT - 18" LONG	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
G1b	12 5/8" DIA. POST BOLT - 10" LONG	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
G2	6 POST BOLT - WASHER 1 1/2" OUTSIDE DIAMETER, 1 1/8" INSIDE DIAMETER WASHER, 3/4" THICK	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
G3	26 POST BOLT - NUT 3/4" THICK	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
H1	4 7/8" DIA. TUBE BOLT	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
H2	8 5/8" DIA. TUBE BOLT - WASHER 1 1/2" OUTSIDE DIAMETER, 1 1/8" INSIDE DIAMETER WASHER, 3/4" THICK	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
H3	4 SOIL TUBE BOLT - NUT 1 1/2" THICK	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
J1	36 160 DOUBLE HEAD NAIL	ASTM A153 HOT DIPPED CLASS D. DOUBLE HEAD. ASTM F1667 TYPE 1 STYLE 12 (11 DOUBLE HEAD)
L1	4 BCT TIMBER POST	KYTC SPEC 814, S4S FINISH OR 4 SIDE
L2	2 BCT POST SLEEVE	ASHTO M111/ASTM A132 2 3/8" OD. ASTM S3 GRADE B
M1	8 W6X8.5 OR W6X9 STEEL POST	ASHTO M111/ASTM A132 ASTM A572 MAX. STRENGTH 36 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
N1	2 ANCHOR BRACKET	ASHTO M111/ASTM A132 ASTM A572 MAX. STRENGTH 36 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
N2	2 ANCHOR BRACKET - BEARING PLATE	ASHTO M111/ASTM A132 ASTM A572 MAX. STRENGTH 36 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI

PART NUMBER	QUANTITY	DESCRIPTION	MATERIAL SPECIFICATION
P1	16	5/8" DIA. ANCHOR BRACKET BOLT 1 1/2" LONG, 3/4" DIAMETER - 14 UNC. ANCHOR BRACKET BOLT - WASHER 1 1/2" THICK, 1 1/2" OUTSIDE DIAMETER, 1 1/8" INSIDE DIAMETER	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
P2	32	5/8" DIA. ANCHOR BRACKET BOLT 1 1/2" LONG, 3/4" DIAMETER - 14 UNC. ANCHOR BRACKET BOLT - WASHER 1 1/2" THICK, 1 1/2" OUTSIDE DIAMETER, 1 1/8" INSIDE DIAMETER	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
P3	16	5/8" DIA. ANCHOR BRACKET BOLT 1 1/2" LONG, 3/4" DIAMETER - 14 UNC. ANCHOR BRACKET BOLT - WASHER 1 1/2" THICK, 1 1/2" OUTSIDE DIAMETER, 1 1/8" INSIDE DIAMETER	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
Q1	3	5/8" DIA. NOSE CABLE 6X3 MFS IWRC	6X19 ASHTO M30 / ASTM A741 MFS INDEPENDENT WIRE CORE (IWRC) PR 625 KIPS, IWRC. NOMINAL BREAKING STRENGTH OF 41.2 KIPS.
Q2	6	NOSE CABLE SWAGE BUTTON	COLD TUFF BUTTON, 5-405 SIZE NO. 12-38. STOCK NUMBER 100395 FOR 1/2" DIA. DIAMETER. OR ANY OTHER SIMILAR MANUFACTURER'S RECOMMENDATION. NOMINAL BREAKING STRENGTH OF 41.2 KIPS.
R1	6	NOSE CABLE ANCHOR BRACKET	ASHTO M111/ASTM A132 ASTM A572 MAX. STRENGTH 36 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
S1	120	5/8" DIA. SPICE BOLT - BOLT 11 UNC, 1 1/2" LONG	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
S2	120	SPICE - BOLT NUT 3/4" THICK	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
T1	9	1/4" DIA. NOSE CABLE - U BOLT	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
T2	9	U-BOLT - PLATE WASHER	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
T3	18	U-BOLT NUT	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
U1	48	7/16" DIA. SUP POST ASSEMBLY - DIAMETER 1 1/2" LONG	ASTM A153 OR B695 CLASS 50 OR F3329 UNC FULLY THREADED HEX HEAD TAP BOLT ASTM A449 OR SAE J439 GRADE 5
U2	192	7/16" DIA. SUP POST ASSEMBLY - BREAKAWAY BOLT - WASHER 1 1/2" OUTSIDE DIAMETER, 1 1/8" INSIDE DIAMETER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL GALV. ASHTO M111/ASTM A 132 OR GALV. HOT DIP. TO POST BOLT CLASS C / ASTM F3329 OR GALV. MECHANICALLY TO ASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM A572 MAX. STRENGTH 36 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI
U3	48	SUP POST ASSEMBLY - BREAKAWAY BOLT - NUT	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
V1	2	3/4" DIA. BCT CABLE	ASHTO M30 / ASTM A741 6X19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS), 6X19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS) TYPE II OR IC, CLASS C ZINC COATED MIN. BREAKING STRENGTH OF 42.7 KIPS.
V2	4	ANCHOR CABLE SWAGE FITTING, 1 1/2" DIAMETER	"FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING IN TO CONNECTION: NAME OF MANUFACTURE OR TRADEMARK OF CONNECTION'S MANUFACTURER, SAE OR FASTENING, GRADE FOR ALLOY ELEMENTS.
V3	4	1" DIA. ANCHOR CABLE WASHER	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
V4	4	1" DIA. ANCHOR CABLE NUT	HOT DIP ASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F3329 C OR MECHANICAL GAL. TO ASHTO M238 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1. UNC. OVER TAP NUTS AS SPECIFIED IN ASHTO 291/ASTM A 563. HEAVY HEX HEAD 7/8" ASTM A563DH OR SAE J995 GRADE 5
W1	3	REFLECTOR	SEE SPEC 888, AND KYTC LIST OF APPROVED MATERIALS.

SEPIA NUMBER
SEPIA 095

SHEET 010: MATERIALS LIST

STEEL THRIE BEAM BULLNOSE TERMINAL

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

FILE NAME: C:\KYTC_STANDARDS\ORGANIZATION\CHIL\KYTC_STANDARDS_DOC\KYTC00018.SHEET SEEDS\KYTC STANDARDS BORDER SEED.DWG

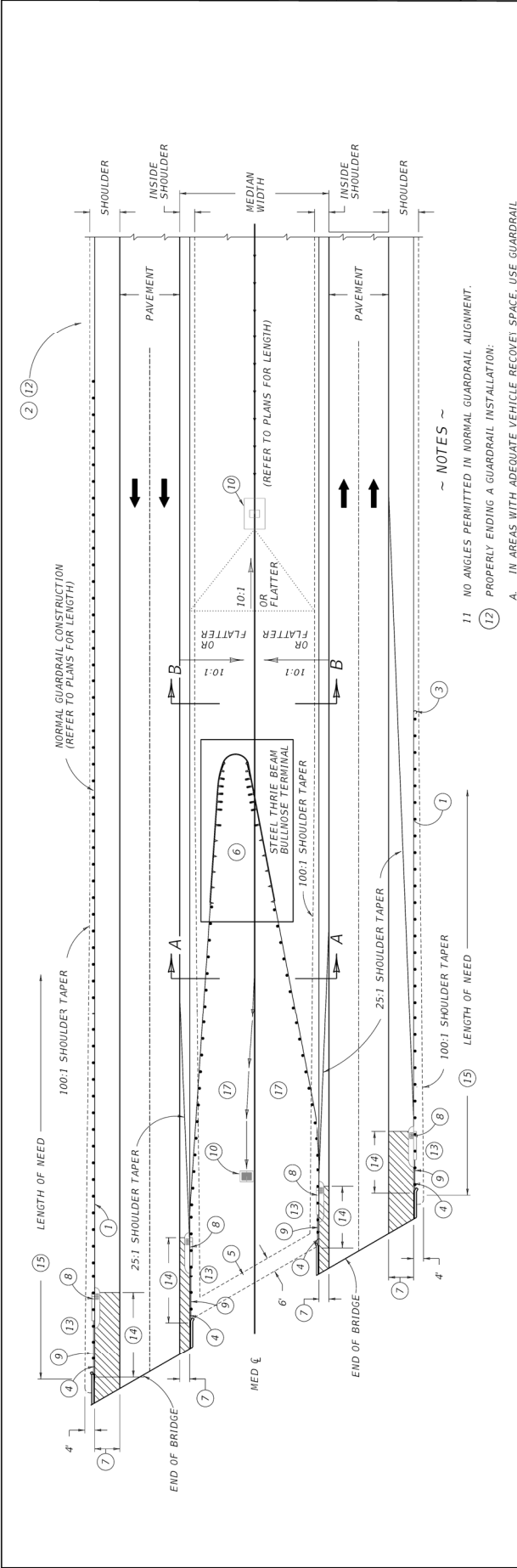
USER: railton.spears

OverRoads Designer 02.08.01.11

REVISION NUMBER: 1
REVISION DATE: 02.28.2025

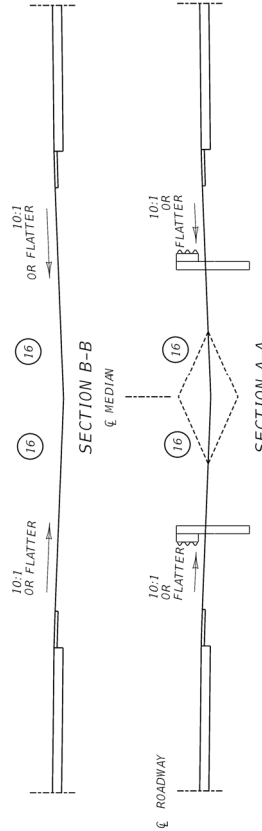
DATE: 02-28-2025
SUBMITTER: *[Signature]*
DIVISION: HIGHWAY ENGINEER
APPROVED: *[Signature]*

BARRIERS



ITEM	STD. DWG. NO
1 STEEL W BEAM GUARDRAIL - SINGLE FACE (NOTE 11)	ABR-SERIES
2 END TREATMENT TYPE 1, 3, OR 4A (NOTE 12)	
3 END TREATMENT TYPE 2A (TRAILING END TERMINAL)	
4 THRIE-BEAM GUARDRAIL TRANSITION	BHS-013, BHS-014
5 6' EARTH DIKE	RGM-001
6 STEEL THRIE BEAM BULLNOSE TERMINAL	SEPIA 095
DRAINAGE ITEMS (IF NECESSARY)	
7 BRIDGE END DRAINAGE AREA (NOTE 13)	RDB OR RDB SERIES
8 CURB BOX INLET TYPE B (SHOWN) OR FLUME INLET	RPM-100
9 STANDARD HEADER CURB OR STANDARD HEADER CURB AND GUTTER	RDB-SERIES
10 DROP BOX INLET (NOTE 13)	

- ~ NOTES ~
- 11 NO ANGLES PERMITTED IN NORMAL GUARDRAIL ALIGNMENT.
- 12 PROPERLY ENDING A GUARDRAIL INSTALLATION:
- A. IN AREAS WITH ADEQUATE VEHICLE RECOVERY SPACE, USE GUARDRAIL END TREATMENT 1 OR 4A.
 - B. IN SOLID ROCK CUTS WITHOUT AN ADEQUATE VEHICLE RECOVERY SPACE, THE GUARDRAIL SHOULD EXTEND TO A SUITABLE RECOVERY AREA AND USE END TREATMENT TYPE 1 OR 4A.
 - C. EARTH CUTS AND SOFT ROCK BACKSLOPES (2:1 OR STEEPER), USE GUARDRAIL END TREATMENT TYPE 3.
- 13 FLATTEN SLOPES AND REMOVE INLET WHEN MEDIAN OR SHOULDER SLOPES AWAY FROM BRIDGE. REFER TO THE PLANS FOR DETAILS.
- 14 VARIABLE LENGTH - SEE APPLICABLE "THRIE-BEAM GUARDRAIL TRANSITION" DRAWINGS (BHS-013 AND BHS-014).
- 15 PROPERLY SHIELD ROADSIDE OBSTACLES AND AREAS OF CONCERN BY CALCULATING THE LENGTH OF NEED (LON) TO DETERMINE THE NECESSARY BARRIER LENGTH.
- 16 SEE SHEET 004 OF SEPIA 095 FOR GRADING DETAILS FOR THE BULLNOSE.
- 17 GRADE TO DRAIN THE MEDIAN AREA BEHIND THE BARRIER WHILE ENSURING THAT A MINIMUM OF 2 FEET OF 10:1 MATERIAL IS PLACED BEHIND THE BARRIER POST.



SEPIA NUMBER
S-RBB-002

FOR TWIN STRUCTURE

GUARDRAIL AND BRIDGE END DRAINAGE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
USER: *[Signature]*
OverRoads Designer: 02.08.01.11

FILE NAME: C:\P\WORK\CORPINE SCHUMAND\0315\RRB02_READY TO POST.DGN

APPROVED DATE: _____ STATE HIGHWAY ENGINEER		SUBMITTED DATE: 04-10-2025 DIVISION DIRECTOR		REVISION DATE: 04-10-2025 REVISION NUMBER: 1	
TEMPORARY					
 R2-10		 R2-11		 S4-4P	
APPLICATION IN ACCORDANCE WITH KRS 189.2327, IN ORDER FOR HIGHER FINES TO BE ESTABLISHED IN A HIGHWAY WORK ZONE, SIGNS INFORMING DRIVERS OF THE WORK ZONE AND THAT FINES ARE HIGHER MUST BE DISPLAYED AND AT LEAST ONE (1) BONA FIDE WORKER MUST BE PRESENT. THE ENGINEER MAY DETERMINE WHETHER TO ESTABLISH A HIGHER FINES ZONE WITHIN A HIGHWAY WORK ZONE BASED ON ENGINEERING JUDGMENT. ~ NOTES ~ 1. THE BEGIN AND END HIGHER FINES ZONE SIGNS SHALL BE 36" X 48" FOR FREEWAYS AND EXPRESSWAYS AND 24" X 30" FOR OTHER ROADWAYS. "WHEN FLASHING" PLAQUES SHALL BE 36" X 18" FOR FREEWAYS EXPRESSWAYS AND 24" X 12" FOR OTHER ROADWAYS. 2. SIGNS SHALL HAVE A WHITE BACKGROUND WITH A BLACK LEGEND AND SHALL BE MOUNTED AT ELEVATIONS AND OFFSETS PRESCRIBED IN THE MUTCD. 3. USE ENGINEERING JUDGMENT WHEN DETERMINING THE LIMITS OF HIGHER FINES ZONES. FOR SHORT LENGTH PROJECTS WHERE WORK WILL OCCUR THROUGHOUT THE PROJECT LIMITS, LOCATE "BEGIN HIGHER FINES ZONE" SIGN ASSEMBLY BETWEEN THE LAST ADVANCE WARNING SIGN AND THE BEGINNING OF THE ACTIVITY AREA AND LOCATE THE "END HIGHER FINES ZONE" SIGN 250' IN ADVANCE OF THE "END ROAD WORK" SIGN. FOR LONG LENGTH PROJECTS WHERE WORK WILL NOT OCCUR THROUGHOUT THE PROJECT LIMITS, CONSIDER PLACING SIGNS ONLY IN AREAS WHERE ACTIVITY IS OCCURRING. 4. SIGNS SHALL BE DUAL-MOUNTED ON MULTI-LANE HIGHWAYS WHERE MEDIAN IS WIDE ENOUGH TO MAINTAIN LATERAL CLEARANCES AS PRESCRIBED IN THE MUTCD. WHERE CONSTRUCTION ONLY AFFECTS ONE DIRECTION OF A DIVIDED HIGHWAY WITH A BARRIER OR WIDE MEDIAN, SIGNS SHALL NOT BE ERCTED FOR OPPOSING DIRECTION. 5. ADDITIONAL SIGNS MAY BE REQUIRED FOR LONG HIGHWAY WORK ZONES OR WHERE RAMPS OR INTERSECTING STREETS JUNCTION WITHIN THE PROJECT LIMITS. 6. "BEGIN HIGHER FINES ZONE" SIGN ASSEMBLIES MAY INCLUDE A "WHEN FLASHING" PLAQUE AND FLASHING BEACONS, BEACONS SHALL BE YELLOW, AT LEAST 8" IN DIAMETER, AND MOUNTED HORIZONTALLY NEAR THE TOP OF THE SIGN ASSEMBLY. BEACONS SHALL FLASH ALTERNATELY AND CONFORM TO PART 45 OF THE MUTCD. 7. HIGHER FINES ZONES SIGNS SHALL BE COVERED IF A BONA FIDE WORKER WILL NOT BE PRESENT FOR A SIGNIFICANT PERIOD OF TIME. IN SUCH CASES, ASSEMBLIES WITH FLASHING BEACONS SHALL BE TURNED OFF. BID ITEM TEMPORARY SIGNS UNIT TO BID SOFT					

SEPIA NUMBER
S-TTD-120-03

ZONE SIGNS

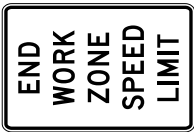
HIGHER FINES

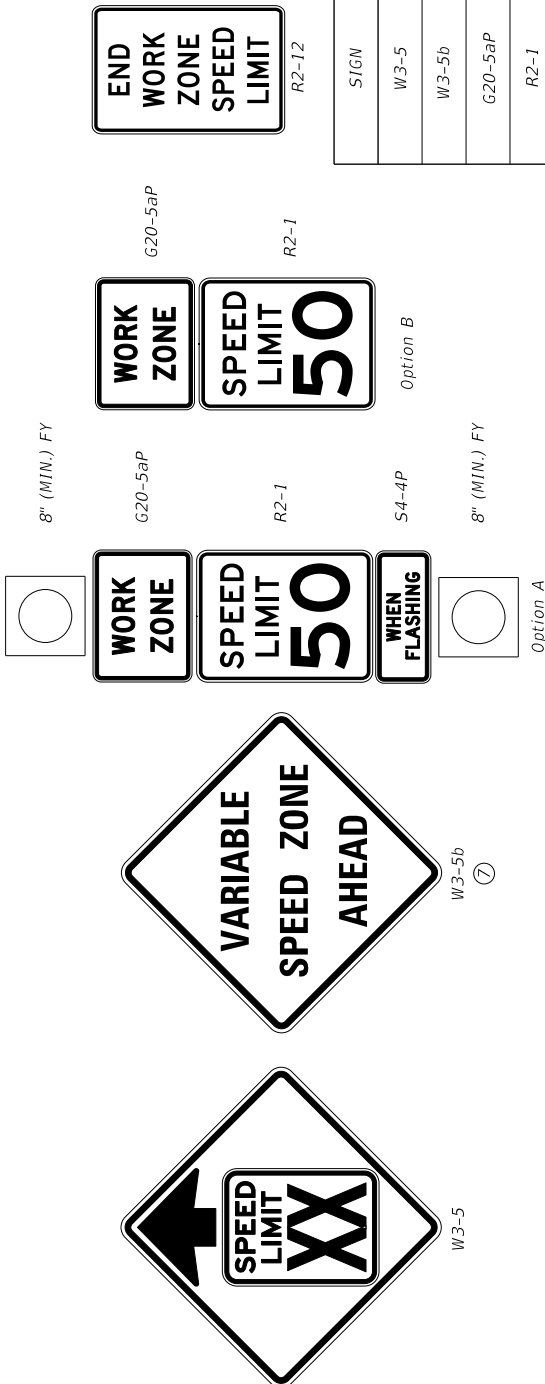
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

FILE NAME: C:\P\WORK\CORRINE SCHIRMANS\ASR1017120.DGN

USER: corrine.schirmans

OpenRoads Designer 23.08.11

		MIN. SIZE	
SIGN	BACKGROUND COLOR	CONVENTIONAL ROAD	EXPRESSWAY/FREEWAY
W3-5	FLUORESCENT ORANGE	36" x 36"	48" x 48"
W3-5b	FLUORESCENT ORANGE	36" x 36"	48" x 48"
G20-5aP	FLUORESCENT ORANGE	24" x 18"	36" x 24"
R2-1	WHITE	24" x 30"	36" x 48"
R2-12	WHITE	24" x 36"	36" x 54"
S4-4P	WHITE	24" x 10"	36" x 18"



1. REDUCED SPEED LIMITS SHOULD BE USED ONLY IN SPECIFIC PORTIONS OF THE WORK ZONE WHERE CONDITIONS OR RESTRICTIVE FEATURES ARE PRESENT. LOWERING THE REGULATORY SPEED LIMIT SHOULD BE AVOIDED AS MUCH AS PRACTICAL BECAUSE DRIVERS REDUCE THEIR SPEEDS ONLY IF THEY CLEARLY PERCEIVE A NEED TO DO SO.
2. SPEED LIMIT MAY BE REDUCED BY 15 MPH WITHOUT A TRAFFIC ENGINEERING INVESTIGATION ON HIGHWAYS WHERE THE NORMAL POSTED SPEED LIMIT IS 70 MPH. THE SPEED LIMIT MAY BE REDUCED BY 10 MPH WITHOUT A TRAFFIC ENGINEERING INVESTIGATION ON OTHER HIGHWAYS. LARGER SPEED REDUCTIONS REQUIRE A TRAFFIC ENGINEERING INVESTIGATION AND APPROVAL OF THE SECRETARY OF TRANSPORTATION.
3. A REDUCED SPEED LIMIT AHEAD (W3-5) SIGN SHALL BE INSTALLED IN ADVANCE OF A WORK ZONE WITH A TEMPORARY WORK ZONE SPEED LIMIT. SIGNS SHALL BE DUAL-MOUNTED ON MULTI-LANE HIGHWAYS WHERE MEDIAN IS WIDE ENOUGH TO MAINTAIN LATERAL CLEARANCES AS PRESCRIBED IN THE MUTCD. THE SPEED LIMIT DISPLAYED ON THE SIGN SHALL MATCH THE DESIRED SPEED LIMIT THROUGH THE WORK ZONE.
4. IF THE END OF THE REDUCED SPEED ZONE DOES NOT COINCIDE WITH THE "END ROAD WORK" SIGN, AN "END WORK ZONE SPEED LIMIT" (R2-12) SIGN SHOULD BE INSTALLED AT THE END OF THE REDUCED SPEED ZONE.

5. SPEED LIMIT ASSEMBLIES MAY INCLUDE A "WHEN FLASHING" PLAQUE AND FLASHING BEACONS. BEACONS SHALL BE YELLOW, AT LEAST EIGHT (8) INCHES IN DIAMETER, AND MOUNTED VERTICALLY. BEACONS SHALL FLASH ALTERNATELY AND CONFORM TO ITEM 45 OF THE MUTCD. (R2-1) SIGN SHOULD BE INSTALLED AT THE END OF THE REDUCED SPEED ZONE.
5. IF A SPEED LIMIT IS TO APPLY TO THE ENTIRE LENGTH OF THE WORK ZONE, THE REDUCED SPEED LIMIT AHEAD (W3-5) SIGN SHOULD BE INSTALLED BETWEEN THE FIRST AND SECOND ADVANCE WARNING SIGN, AND THE SPEED LIMIT (R2-1) SIGN OR FLASHER ASSEMBLY SHOULD BE INSTALLED BETWEEN THE SECOND AND THIRD ADVANCE WARNING SIGN. IF A SPEED LIMIT ONLY APPLIES TO A SHORT SECTION OF A LONGER WORK ZONE, THE W3-5 SIGN SHOULD BE MOUNTED APPROXIMATELY 500 FEET IN ADVANCE OF THE SPEED LIMIT SIGN ASSEMBLY AND NO CLOSER THAN 250 FEET TO ANY OTHER SIGNS.

7. A "VARIABLE SPEED ZONE AHEAD" (W3-5b) SIGN SHOULD ONLY BE USED INSTEAD OF A REDUCED SPEED LIMIT AHEAD (W3-5) SIGN IF THE ENGINEER HAS APPROVED THE USE OF VARIABLE WORK ZONE SPEED LIMITS, I.E. WHEN THE WORK ZONE SPEED LIMIT IS VARIED BY TIME OF DAY OR AS CONDITIONS CHANGE. VARIABLE WORK ZONE SPEED LIMITS WILL BE SIGNED WITH SPEED LIMIT ASSEMBLIES UTILIZING FLASHING BEACONS OR SPEED LIMIT SIGNS WITH A CHANGEABLE MESSAGE DISPLAY.

BID ITEM	UNIT TO BID
TEMPORARY SIGNS	SQFT



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

SPEED ZONE SIGNING

FOR WORK ZONES

SEPIA NUMBER
S-TTD-130

PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Non-segregated 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. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (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). 23 CFR 633.102(e).

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. 23 CFR 633.102(e).

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) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals 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). 23 CFR 633.102(b).

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. 23 CFR 633.102(d).

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. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 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 Part 35 and 29 CFR Part 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. 23 CFR 230.409 (g)(4) & (5).

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, sexual orientation, gender identity, 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 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 or other knowledgeable company official.

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, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure 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. 23 CFR 230.409. 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, sexual orientation, gender identity, 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, sexual orientation, gender identity, 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 thereunder. 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, sexual orientation, gender identity, 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, 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. Assurances Required:

- a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.
- b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
 - (1) Withholding monthly progress payments;
 - (2) Assessing sanctions;
 - (3) Liquidated damages; and/or
 - (4) Disqualifying the contractor from future bidding as non-responsible.
- c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

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 more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, 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, sexual orientation, gender identity, 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), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

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 (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), 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 basic hourly 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. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. 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 must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. 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 classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must 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. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

- (i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must 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 be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate 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 used 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) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) 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 will be sent by the contracting officer by email to DBAconformance@dol.gov. 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.

(4) 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 will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The 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.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must 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.

d. *Fringe benefits not expressed as an hourly rate.* 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 may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* 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, in accordance with the criteria set forth in § 5.28, 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.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and 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.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. Basic record requirements (1) Length of record retention. All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) Information required. Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) Additional records relating to fringe benefits. Whenever the Secretary of Labor has found under paragraph 1.e. of this section 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must 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.

(4) Additional records relating to apprenticeship. Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. Certified payroll requirements (1) Frequency and method of submission. The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) Information required. The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHDL/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) Statement of Compliance. Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working 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 [29 CFR part 3](#); and

(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(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) Use of Optional Form WH-347. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under [18 U.S.C. 1001](#) and [31 U.S.C. 3729](#).

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, 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, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices (1) Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform 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 (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must 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, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must 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 this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. 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. 23 CFR 230.111(e)(2). 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 journeyworkers 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 as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 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 as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, 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 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 [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), 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 watchpersons 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. 29 CFR 5.5.

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 and interest from the date of the underpayment. 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 watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* 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.

* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, 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 that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

4. **Subcontracts.** The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. **Anti-retaliation.** It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

- a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;
- b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;
- c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or
- d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

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" in paragraph 1 of Section VI 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: (based on longstanding interpretation)

- (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. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), 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. Pursuant to 23 CFR 635.116(c), 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. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

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 Part 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. 23 CFR 635.108.
- 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 Part 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). 29 CFR 1926.10.

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 Part 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 11, 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 (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

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. 2 CFR 180.220 and 1200.220.

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. 2 CFR 180.320.
- 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. 2 CFR 180.325.
- 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. 2 CFR 180.345 and 180.350.

- 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, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient 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 recipient or subrecipient 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. 2 CFR 180.330.
- 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. 2 CFR 180.220 and 180.300.
- 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. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. 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 System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.
- i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

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 CFR 180.335;.
 - (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, 2 CFR 180.800;
 - (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, 2 CFR 180.700 and 180.800; 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. 2 CFR 180.335(d).
 - (5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and
 - (6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).
- b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. 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). 2 CFR 180.220 and 1200.220.
- a. By signing and submitting this proposal, the prospective lower tier participant 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. 2 CFR 180.365.
- 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, Subpart I, 180.900 – 180.1020, 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 recipient or subrecipient 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 recipient or subrecipient 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. 2 CFR 1200.220 and 1200.332.
- 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. 2 CFR 180.220 and 1200.220.
- 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 System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.
- 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. 2 CFR 180.325.

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4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should 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 Part 20, App. A.

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.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. 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. 46 CFR 381.7.

2. 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 (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS** (23 CFR 633, Subpart B, Appendix B)
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

The Executive Branch Code of Ethics created by Kentucky Revised Statutes (KRS) Chapter 11A, effective July 14, 1992, establishes the ethical standards that govern the conduct of all executive branch employees. The Executive Branch Code of Ethics, which states, in part:

KRS 11A.040 (7) provides:

A present or former public servant listed in KRS 11A.010(9)(a) to (g) shall not, within one (1) year following termination of his or her 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 one (1) year, he or she personally refrains from working on any matter in which he was directly involved during the last thirty-six (36) months of his or her 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 to obtain private benefits.

If you have worked for the executive branch of state government within the past year, 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, 1025 Capital Center Drive, Suite 105, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Revised: March 11, 2025

KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
TRAINING SPECIAL PROVISIONS

This Training Special Provision supersedes subparagraph 7b of the Special Provision entitled ``Specific Equal Employment Opportunity Responsibilities," (Attachment 1), and is in implementation of 23 U.S.C. 140(a).

As part of the contractor's equal employment opportunity affirmative action program training shall be provided as follows:

The contractor shall provide on-the-job training aimed at developing full journeymen in the type of trade or job classification involved.

The number of trainees to be trained under these special provisions and in this contract is shown in "Special Notes Applicable to Project" in the bid proposal.

In the event that a contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided, however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this training special provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment. Prior to commencing construction the contractor shall submit to the Kentucky Transportation Cabinet, Department of Highways for its approval, an acceptable training program on forms provided by the Cabinet indicating the number of trainees to be trained in each selected classification. Failure to provide the Cabinet with the proper documentation evidencing an acceptable training program prior to commencing construction shall cause the Cabinet to suspend the operations of the contractor with (if applicable) working days being charged as usual against the contract time or (if applicable), no additional contract time being granted for the suspension period. The Cabinet will not be liable for the payment of any work performed during the suspension period due to the failure of the contractor to provide an acceptable training program. Said suspension period shall be terminated when an acceptable training program is received by the Cabinet. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeymen status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case. The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Kentucky Transportation Cabinet, Department of Highways and the Federal Highway Administration shall approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs

registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the division office. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed for each hour of training given an employee on this contract in accordance with an approved training program. As approved by the engineer, reimbursement will be made for training persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirements of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program. It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily completed.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

"General Decision Number: KY20250040 09/26/2025

Superseded General Decision Number: KY20240040

State: Kentucky

Construction Type: Highway

Counties: Allen, Ballard, Butler, Caldwell, Calloway, Carlisle, Christian, Crittenden, Daviess, Edmonson, Fulton, Graves, Hancock, Henderson, Hickman, Hopkins, Livingston, Logan, Lyon, Marshall, McCracken, McLean, Muhlenberg, Ohio, Simpson, Todd, Trigg, Union, Warren and Webster 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: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.75 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 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/03/2025
1	02/28/2025
2	04/04/2025
3	05/16/2025
4	07/11/2025
5	07/18/2025
6	08/01/2025
7	08/08/2025
8	08/22/2025
9	09/26/2025

BRIN0004-002 06/01/2024

BALLARD, BUTLER, CALDWELL, CARLISLE, CRITTENDEN, DAVIESS, EDMONSON, FULTON, GRAVES, HANCOCK, HENDERSON, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, MCCrackEN, MCLEAN, MUHLENBERG, OHIO, UNION, and WEBSTER COUNTIES

	Rates	Fringes
BRICKLAYER		
Ballard, Caldwell, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, Marshall, and McCracken Counties.....	\$ 33.70	16.57
Butler, Edmonson, Hopkins, Muhlenberg, and Ohio Counties.....	\$ 33.70	16.57
Daviess, Hancock, Henderson, McLean, Union, and Webster Counties.....	\$ 33.70	16.57

BRTN0004-005 06/01/2024

ALLEN, CALLOWAY, CHRISTIAN, LOGAN, SIMPSON, TODD, TRIGG, and WARREN COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 33.70	16.57

CARP0357-002 04/01/2025

	Rates	Fringes
CARPENTER.....	\$ 33.89	24.02
DIVER.....	\$ 51.21	24.02
PILEDRIVERMAN.....	\$ 34.39	24.02

ELEC0369-006 05/27/2025

BUTLER, EDMONSON, LOGAN, TODD & WARREN COUNTIES:

Rates	Fringes
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ELECTRICIAN.....	\$ 40.96	22.44

ELEC0429-001 06/01/2024		

ALLEN & SIMPSON COUNTIES:

	Rates	Fringes
ELECTRICIAN.....	\$ 34.92	14.75

ELEC0816-002 06/01/2025		

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN,
FULTON (Except a 5 mile radius of City Hall in Fulton), GRAVES,
HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCracken & TRIGG COUNTIES:

	Rates	Fringes
ELECTRICIAN.....	\$ 36.75	28%+\$8.85

Cable spicers receive \$.25 per hour additional.		

ELEC1701-003 07/01/2024		

DAVIess, HANCOCK, HENDERSON, HOPKINS, MCLEAN, MUHLENBERG, OHIO,
UNION & WEBSTER COUNTIES:

	Rates	Fringes
ELECTRICIAN.....	\$ 37.10	8.60+30.8%

Cable spicers receive \$.25 per hour additional.		

ELEC1925-002 01/01/2025		

FULTON COUNTY (Up to a 5 mile radius of City Hall in Fulton):

	Rates	Fringes
CABLE SPLICER.....	\$ 28.85	15.50
ELECTRICIAN.....	\$ 28.60	15.49

ENGI0181-017 07/01/2025		

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 41.55	19.60
GROUP 2.....	\$ 38.69	19.60
GROUP 3.....	\$ 39.14	19.60
GROUP 4.....	\$ 38.37	19.60

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 equals or exceeds 150 ft. - \$1.00 above 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.

IRON0070-005 06/01/2025

BUTLER COUNTY (Eastern eighth, including the Townships of Decker, Lee & Tilford);
EDMONSON COUNTY (Northern three-fourths, including the Townships of Asphalt, Bee Spring, Brownsville, Grassland, Huff, Kyrock, Lindseyville, Mammoth Cave, Ollie, Prosperity, Rhoda, Sunfish & Sweden)

Rates Fringes

IRONWORKER

Structural; Ornamental; Reinforcing; Precast Concrete Erectors.....	\$ 36.17	25.80

IRON0103-004 08/01/2024		

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, OHIO, UNION & WEBSTER COUNTIES
BUTLER COUNTY (Townships of Aberdeen, Bancock, Casey, Dexterville, Dunbar, Elfie, Gilstrap, Huntsville, Logansport, Monford, Morgantown, Provo, Rochester, South Hill & Welchs Creek);
CALDWELL COUNTY (Northeastern third, including the Township of Creswell);
CHRISTIAN COUNTY (Northern third, including the Townships of Apex, Crofton, Kelly, Mannington & Wynns);
CRITTENDEN COUNTY (Northeastern half, including the Townships of Grove, Mattoon, Repton, Shady Grove & Tribune);
MUHLENBERG COUNTY (Townships of Bavier, Beech Creek Junction, Benton, Brennen, Browder, Central City, Cleaton, Depoy, Drakesboro, Eunis, Graham, Hillside, Luzerne, Lynn City, Martwick, McNary, Millport, Moorman, Nelson, Paradise, Powderly, South Carrollton, Tarina & Weir)

	Rates	Fringes
Ironworkers:.....	\$ 35.34	26.4

* IRON0492-003 05/01/2025		

ALLEN, LOGAN, SIMPSON, TODD & WARREN COUNTIES
BUTLER COUNTY (Southern third, including the Townships of Boston, Berrys Lick, Dimple, Jetson, Quality, Sharer, Sugar Grove & Woodbury);
CHRISTIAN COUNTY (Eastern two-thirds, including the Townships of Bennettstown, Casky, Herndon, Hopkinsville, Howell, Masonville, Pembroke & Thompsonville);
EDMONSON COUNTY (Southern fourth, including the Townships of Chalybeate & Rocky Hill);
MUHLENBERG COUNTY (Southern eighth, including the Townships of Dunnior, Penrod & Rosewood)

	Rates	Fringes
Ironworkers:.....	\$ 35.32	16.44

IRON0782-006 08/01/2025		

BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCracken & TRIGG COUNTIES
CALDWELL COUNTY (Southwestern two-thirds, including the Townships of Cedar Bluff, Cider, Claxton, Cobb, Crowtown, Dulaney, Farmersville, Fredonia, McGowan, Otter Pond & Princeton);
CHRISTIAN COUNTY (Western third, Excluding the Townships of Apex, Crofton, Kelly, Mannington, Wynns, Bennettstown, Casky, Herndon, Hopkinsville, Howell, Masonville, Pembroke & Thompsonville);
CRITTENDEN COUNTY (Southwestern half, including the Townships of Crayne, Dycusburg, Frances, Marion, Mexico, Midway, Sheridan & Told)

	Rates	Fringes
Ironworkers:		
Projects with a total contract cost of \$20,000,000.00 or above.....	\$ 37.47	26.49
All Other Work.....	\$ 35.63	26.49

LAB00189-005 07/01/2025		

BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN,
LIVINGSTON, LYON, MARSHALL & MCCracken COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 26.87	19.66
GROUP 2.....	\$ 27.12	19.66
GROUP 3.....	\$ 27.17	19.66
GROUP 4.....	\$ 27.77	19.66

LABORER 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; Blaster; 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

ALLEN, BUTLER, CALDWELL, CHRISTIAN, DAVIESS, EDMONSON, HANCOCK,
HOPKINS, LOGAN, MCLEAN, MUHLENBERG, OHIO, SIMPSON, TODD, TRIGG
& WARREN COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 26.87	19.66
GROUP 2.....	\$ 27.12	19.66
GROUP 3.....	\$ 27.17	19.66
GROUP 4.....	\$ 27.77	19.66

LABORER 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; Blaster; 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

LAB00561-001 07/01/2025

CRITTENDEN, HENDERSON, UNION & WEBSTER COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 28.55	18.77
GROUP 2.....	\$ 28.80	18.77
GROUP 3.....	\$ 28.85	18.77
GROUP 4.....	\$ 29.45	18.77

LABORER 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; Blaster; 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

PAIN0032-002 09/01/2024

BALLARD COUNTY

	Rates	Fringes
Painters:		
Bridges.....	\$ 36.77	21.77
All Other Work.....	\$ 34.47	21.77
Spray, Blast, Steam, High & Hazardous (Including Lead Abatement) and All Epoxy - \$1.00 Premium		

PAIN0118-003 06/01/2014

EDMONSON COUNTY:

	Rates	Fringes
Painters:		
Brush & Roller.....	\$ 18.50	11.97
Spray, Sandblast, Power		

Tools, Waterblast & Steam Cleaning.....	\$ 19.50	11.97

PAIN0156-006 04/01/2024		

DAVISS, HANCOCK, HENDERSON, MCLEAN, OHIO, UNION & WEBSTER
COUNTIES

	Rates	Fringes
Painters:		
BRIDGES		
GROUP 1.....	\$ 30.77	20.30
GROUP 3.....	\$ 31.77	20.30
GROUP 4.....	\$ 35.00	20.30
ALL OTHER WORK:		
GROUP 1.....	\$ 29.62	20.30
GROUP 2.....	\$ 30.37	20.30
GROUP 3.....	\$ 30.62	20.30
GROUP 4.....	\$ 31.77	20.30

PAINTER CLASSIFICATIONS

GROUP 1 - Brush & Roller

GROUP 2 - Plasterers

GROUP 3 - Spray; Sandblast; Power Tools; Waterblast;
Steamcleaning; Brush & Roller of Mastics, Creosotes, Kwinch
Koate & Coal Tar Epoxy

GROUP 4 - Spray of Mastics, Creosotes, Kwinch Koate & Coal
Tar Epoxy

PAIN0500-002 06/01/2025		
Caldwell, Calloway, Carlisle, Christian, Crittenden, Fulton, Graves, Hickman, Hopkins, Livingston, Lyon, Marshall, McCracken & Trigg Counties:		

	Rates	Fringes
Painters:		
Bridges.....	\$ 31.50	15.60
All Other Work.....	\$ 25.25	15.60
Waterblasting units with 3500 PSI and above - \$.50 premium Spraypainting and all abrasive blasting - \$1.00 premium Work 40 ft. and above ground level - \$1.00 premium		

PLUM0184-002 07/01/2025		
Ballard, Caldwell, Calloway, Carlisle, Christian, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, Marshall, McCracken and Trigg Counties		

	Rates	Fringes
Plumber; Steamfitter.....	\$ 44.26	20.28

PLUM0502-004 08/01/2024

ALLEN, BUTLER, EDMONSON, SIMPSON & WARREN

	Rates	Fringes
Plumber; Steamfitter.....	\$ 41.90	24.89

PLUM0633-002 08/01/2024		

DAVIESS, HANCOCK, HENDERSON, HOPKINS, LOGAN, MCLEAN,
MUHLENBERG, OHIO, TODD, UNION & WEBSTER COUNTIES:

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 38.41	22.26

TEAM0089-003 04/01/2025		

ALLEN, BUTLER, EDMONSON, LOGAN, SIMPSON & WARREN COUNTIES

	Rates	Fringes
Truck drivers:		
Zone 1:		
Group 1.....	\$ 25.72	27.81
Group 2.....	\$ 25.90	27.81
Group 3.....	\$ 26.98	27.81
Group 4.....	\$ 26.00	27.81

GROUP 1 - Greaser; Tire Changer

GROUP 2 - Truck Mechanic; Single Axle Dump; Flat Bed; All
Terrain Vehicles when used to haul materials; Semi Trailer
or Pole Trailer when used to pull building materials and
equipment; Tandem Axle Dump; Driver of Distributors

GROUP 3 - Mixer All Types

GROUP 4 - Winch and A-Frame when used in transporting
materials; Ross Carrier; Fork Lift when used to transport
building materials; Driver on Pavement Breaker; Euclid and
Other Heavy Earth Moving Equipment; Low Boy; Articulator
Cat; Five Axle Vehicle

TEAM0215-003 04/01/2025

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, MUHLENBERG, OHIO
& WEBSTER COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1.....	\$ 27.35	27.81
Group 2.....	\$ 27.58	27.81
Group 3.....	\$ 27.65	27.81
Group 4.....	\$ 27.66	27.81

GROUP 1: Greaser, Tire Changer

GROUP 2: Truck Mechanic

GROUP 3: Single Axle Dump; Flat Bed; All Terrain Vehicle when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Driver of Distributors; Mixer All Types

GROUP 4: Euclid and other heavy earth moving equipment; Low Boy; Articulator Cat; 5 Axle Vehicle; Winch and A- Frame when used in transporting materials; Ross Carrier; Fork Lift when used to transport building materials; Driver on Pavement Breaker

TEAM0236-001 04/01/2025

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCracken,TODD & TRIGG COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1.....	\$ 25.72	27.81
Group 2.....	\$ 25.90	27.81
Group 3.....	\$ 25.90	27.81
Group 4.....	\$ 25.98	27.81
Group 5.....	\$ 26.00	27.81

GROUP 1: Greaser, Tire Changer

GROUP 2: Truck Mechanic

GROUP 3: Single Axle Dump; Flat Bed; All Terrain Vehicle when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Drivers of Distributors

GROUP 4: Euclid and other heavy earth moving equipment; Low Boy; Articulator Cat; Five Axle Vehicle; Winch and A-Frame when used in transporting materials; Ross Carrier

GROUP 5: Mixer All Types

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors 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, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information

on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate 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. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may

include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the 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. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

----- WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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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

PART IV

BID ITEMS

251029

Section: 0001 - ROADWAY - ASPHALT ALTERNATE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00003		CRUSHED STONE BASE	157,147.00	TON		\$	
0020	00008		CEMENT STABILIZED ROADBED	243,861.00	SQYD		\$	
0030	00071		CRUSHED AGGREGATE SIZE NO 57	100.00	TON		\$	
0040	00078		CRUSHED AGGREGATE SIZE NO 2	350.00	TON		\$	
0050	00100		ASPHALT SEAL AGGREGATE	1,918.00	TON		\$	
0060	00103		ASPHALT SEAL COAT	230.00	TON		\$	
0070	00190		LEVELING & WEDGING PG64-22	86.00	TON		\$	
0080	00214		CL3 ASPH BASE 1.00D PG64-22	21,150.00	TON		\$	
0090	00217		CL4 ASPH BASE 1.00D PG64-22	63,730.00	TON		\$	
0100	00219		CL4 ASPH BASE 1.00D PG76-22	29,017.00	TON		\$	
0110	00312		CL3 ASPH SURF 0.50D PG64-22	5,158.00	TON		\$	
0120	00335		CL4 ASPH SURF 0.50A PG76-22	14,826.00	TON		\$	
0130	00356		ASPHALT MATERIAL FOR TACK	407.00	TON		\$	
0140	00358		ASPHALT CURING SEAL	488.00	TON		\$	
0150	01006		PERFORATED PIPE EDGE DRAIN-6 IN	105,153.00	LF		\$	
0160	01011		NON-PERFORATED PIPE-6 IN	3,788.00	LF		\$	
0170	01015		INSPECT & CERTIFY EDGE DRAIN SYSTEM CALDWELL COUNTY	1.00	LS		\$	
0180	01015		INSPECT & CERTIFY EDGE DRAIN SYSTEM LYON COUNTY	1.00	LS		\$	
0190	01021		PERF PIPE HEADWALL TY 1-6 IN	16.00	EACH		\$	
0200	01025		PERF PIPE HEADWALL TY 2-6 IN	6.00	EACH		\$	
0210	01029		PERF PIPE HEADWALL TY 3-6 IN	10.00	EACH		\$	
0220	01033		PERF PIPE HEADWALL TY 4-6 IN	318.00	EACH		\$	
0230	01982		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	168.00	EACH		\$	
0240	01983		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	24.00	EACH		\$	
0250	02003		RELOCATE TEMP CONC BARRIER	22,500.00	LF		\$	
0260	02014		BARRICADE-TYPE III	26.00	EACH		\$	
0270	02058		REMOVE PCC PAVEMENT	237,608.00	SQYD		\$	
0280	02351		GUARDRAIL-STEEL W BEAM-S FACE	8,963.00	LF		\$	
0290	02367		GUARDRAIL END TREATMENT TYPE 1	1.00	EACH		\$	
0300	02370		GUARDRAIL END TREATMENT TYPE 2M	9.00	EACH		\$	
0310	02372		REMOVE GUARDRAIL CON TO BR END	11.00	EACH		\$	
0320	02373		GUARDRAIL END TREATMENT TYPE 3	6.00	EACH		\$	
0330	02381		REMOVE GUARDRAIL	9,030.00	LF		\$	
0340	02542		CEMENT	4,741.00	TON		\$	
0350	02562		TEMPORARY SIGNS	2,500.00	SQFT		\$	
0360	02650		MAINTAIN & CONTROL TRAFFIC CALDWELL COUNTY	1.00	LS		\$	
0370	02650		MAINTAIN & CONTROL TRAFFIC LYON COUNTY	1.00	LS		\$	
0380	02654		TRUCK MOUNTED ATTENUATOR	2.00	EACH		\$	
0390	02655		CROSSOVER #1	1.00	LS		\$	

Report Date 9/25/25

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0400	02655		CROSSOVER #2	1.00	LS		\$	
0410	02655		CROSSOVER #3	1.00	LS		\$	
0420	02655		CROSSOVER #4	1.00	LS		\$	
0430	02671		PORTABLE CHANGEABLE MESSAGE SIGN	4.00	EACH		\$	
0440	02677		ASPHALT PAVE MILLING & TEXTURING	707.00	TON		\$	
0450	02697		EDGE LINE RUMBLE STRIPS	165,172.00	LF		\$	
0460	02701		TEMP SILT FENCE	2,000.00	LF		\$	
0470	02702		SAND FOR BLOTTER	975.00	TON		\$	
0480	02705		SILT TRAP TYPE C	8.00	EACH		\$	
0490	02708		CLEAN SILT TRAP TYPE C	8.00	EACH		\$	
0500	02726		STAKING CALDWELL COUNTY	1.00	LS		\$	
0510	02726		STAKING LYON COUNTY	1.00	LS		\$	
0520	02898		RELOCATE CRASH CUSHION	4.00	EACH		\$	
0530	03171		CONC BARRIER WALL TYPE 9T	30,850.00	LF		\$	
0540	05953		TEMP SEEDING AND PROTECTION	2,000.00	SQYD		\$	
0550	05963		INITIAL FERTILIZER	0.20	TON		\$	
0560	05964		MAINTENANCE FERTILIZER	0.20	TON		\$	
0570	05985		SEEDING AND PROTECTION	2,000.00	SQYD		\$	
0580	05992		AGRICULTURAL LIMESTONE	1.40	TON		\$	
0590	06511		PAVE STRIPING-TEMP PAINT-6 IN	258,868.00	LF		\$	
0600	06542		PAVE STRIPING-THERMO-6 IN W	56,092.00	LF		\$	
0610	06543		PAVE STRIPING-THERMO-6 IN Y	44,141.00	LF		\$	
0620	06546		PAVE STRIPING-THERMO-12 IN W	150.00	LF		\$	
0630	06556		PAVE STRIPING-DUR TY 1-6 IN W	90,964.00	LF		\$	
0640	06557		PAVE STRIPING-DUR TY 1-6 IN Y	72,460.00	LF		\$	
0650	06585		PAVEMENT MARKER TY IVA-MW TEMP	173.00	EACH		\$	
0660	06586		PAVEMENT MARKER TY IVA-MY TEMP	173.00	EACH		\$	
0670	06613		INLAID PAVEMENT MARKER-B W/R	704.00	EACH		\$	
0680	08912		CRASH CUSHION TY 6 CLASS T TL3	4.00	EACH		\$	
0690	10203ND		PAVEMENT ADJUSTMENT (CALDWELL COUNTY)	1.00	LS	\$242,703.0	\$	\$242,703.00
0700	10203ND		PAVEMENT ADJUSTMENT (LYON COUNTY)	1.00	LS	\$3,434,609.	\$	\$3,434,609.00
0710	20071EC		JOINT ADHESIVE	56,275.00	LF		\$	
0720	20191ED		OBJECT MARKER TY 3	1.00	EACH		\$	
0730	20411ED		LAW ENFORCEMENT OFFICER	1,200.00	hour		\$	
0740	21380ES719		GUARDRAIL THRIE BEAM	625.00	LF		\$	
0750	22664EN		WATER BLASTING EXISTING STRIPE	258,868.00	LF		\$	
0760	23147EN		HIGH TENSION CABLE-ROPE BARRIER	600.00	LF		\$	
0770	23148EN		END ANCHORS	2.00	EACH		\$	
0780	24255EC		REMOVE CABLE GUARDRAIL BARRIER SYSTEM	337.00	LF		\$	
0790	24891EC		PAVE MOUNT INFRARED TEMP EQUIPMENT	2,180,136.00	SF		\$	
0800	25078ED		THRIE BEAM GUARDRAIL TRANSITION TL-3	7.00	EACH		\$	
0810	26136EC		PORTABLE QUEUE WARNING ALERT SYSTEM	180.00	month		\$	
0820	26137EC		QUEUE WARNING PCMS	180.00	month		\$	

Report Date 9/25/25

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0830	26138EC		QUEUE WARNING PORTABLE RADAR SENSORS	180.00	MONT		\$	
0840	26233EC		MOBILIZATION FOR CONCRETE SURF TREATMENT LYON COUNTY	1.00	LS		\$	
0850	26236EC		THRIE BEAM BULLNOSE TERMINAL	6.00	EACH		\$	
0860	26237EC		CONNECTED ARROW PANEL	45.00	MONT		\$	
0870	26248EC		ELECTRONIC DELIVERY MGMT SYSTEM - AGG CALDWELL COUNTY	1.00	LS		\$	
0880	26248EC		ELECTRONIC DELIVERY MGMT SYSTEM - AGG LYON COUNTY	1.00	LS		\$	

Section: 0002 - ROADWAY - CONCRETE ALTERNATE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0890	00003		CRUSHED STONE BASE	142,504.00	TON		\$	
0900	00008		CEMENT STABILIZED ROADBED	243,861.00	SQYD		\$	
0910	00071		CRUSHED AGGREGATE SIZE NO 57	100.00	TON		\$	
0920	00078		CRUSHED AGGREGATE SIZE NO 2	350.00	TON		\$	
0930	00100		ASPHALT SEAL AGGREGATE	1,918.00	TON		\$	
0940	00103		ASPHALT SEAL COAT	230.00	TON		\$	
0950	00214		CL3 ASPH BASE 1.00D PG64-22	21,150.00	TON		\$	
0960	00312		CL3 ASPH SURF 0.50D PG64-22	5,866.00	TON		\$	
0970	00356		ASPHALT MATERIAL FOR TACK	28.00	TON		\$	
0980	00358		ASPHALT CURING SEAL	488.00	TON		\$	
0990	01006		PERFORATED PIPE EDGE DRAIN-6 IN	105,153.00	LF		\$	
1000	01011		NON-PERFORATED PIPE-6 IN	3,788.00	LF		\$	
1010	01015		INSPECT & CERTIFY EDGE DRAIN SYSTEM CALDWELL COUNTY	1.00	LS		\$	
1020	01015		INSPECT & CERTIFY EDGE DRAIN SYSTEM LYON COUNTY	1.00	LS		\$	
1030	01021		PERF PIPE HEADWALL TY 1-6 IN	16.00	EACH		\$	
1040	01025		PERF PIPE HEADWALL TY 2-6 IN	6.00	EACH		\$	
1050	01029		PERF PIPE HEADWALL TY 3-6 IN	10.00	EACH		\$	
1060	01033		PERF PIPE HEADWALL TY 4-6 IN	318.00	EACH		\$	
1070	01982		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	168.00	EACH		\$	
1080	01983		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	24.00	EACH		\$	
1090	02003		RELOCATE TEMP CONC BARRIER	22,500.00	LF		\$	
1100	02014		BARRICADE-TYPE III	10.00	EACH		\$	
1110	02058		REMOVE PCC PAVEMENT	237,608.00	SQYD		\$	
1120	02086		JPC PAVEMENT-13 IN	179,709.00	SQYD		\$	
1130	02351		GUARDRAIL-STEEL W BEAM-S FACE	8,963.00	LF		\$	
1140	02367		GUARDRAIL END TREATMENT TYPE 1	1.00	EACH		\$	
1150	02370		GUARDRAIL END TREATMENT TYPE 2M	9.00	EACH		\$	
1160	02372		REMOVE GUARDRAIL CON TO BR END	11.00	EACH		\$	
1170	02373		GUARDRAIL END TREATMENT TYPE 3	6.00	EACH		\$	
1180	02381		REMOVE GUARDRAIL	9,030.00	LF		\$	

251029

PROPOSAL BID ITEMS

Page 4 of 6

Report Date 9/25/25

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1190	02403		REMOVE CONCRETE MASONRY	15.00	CUYD		\$	
1200	02542		CEMENT	4,741.00	TON		\$	
1210	02562		TEMPORARY SIGNS	2,500.00	SQFT		\$	
1220	02650		MAINTAIN & CONTROL TRAFFIC CALDWELL COUNTY	1.00	LS		\$	
1230	02650		MAINTAIN & CONTROL TRAFFIC LYON COUNTY	1.00	LS		\$	
1240	02655		CROSSOVER #1	1.00	LS		\$	
1250	02655		CROSSOVER #2	1.00	LS		\$	
1260	02655		CROSSOVER #3	1.00	LS		\$	
1270	02655		CROSSOVER #4	1.00	LS		\$	
1280	02671		PORTABLE CHANGEABLE MESSAGE SIGN	4.00	EACH		\$	
1290	02677		ASPHALT PAVE MILLING & TEXTURING	707.00	TON		\$	
1300	02695		RUMBLE STRIPS TYPE 3	56,276.00	LF		\$	
1310	02697		EDGE LINE RUMBLE STRIPS	157,019.00	LF		\$	
1320	02701		TEMP SILT FENCE	2,000.00	LF		\$	
1330	02702		SAND FOR BLOTTER	975.00	TON		\$	
1340	02705		SILT TRAP TYPE C	8.00	EACH		\$	
1350	02708		CLEAN SILT TRAP TYPE C	8.00	EACH		\$	
1360	02726		STAKING CALDWELL COUNTY	1.00	LS		\$	
1370	02726		STAKING LYON COUNTY	1.00	LS		\$	
1380	02898		RELOCATE CRASH CUSHION	4.00	EACH		\$	
1390	03171		CONC BARRIER WALL TYPE 9T	30,850.00	LF		\$	
1400	05953		TEMP SEEDING AND PROTECTION	2,000.00	SQYD		\$	
1410	05963		INITIAL FERTILIZER	0.20	TON		\$	
1420	05964		MAINTENANCE FERTILIZER	0.20	TON		\$	
1430	05985		SEEDING AND PROTECTION	2,000.00	SQYD		\$	
1440	05992		AGRICULTURAL LIMESTONE	1.40	TON		\$	
1450	06511		PAVE STRIPING-TEMP PAINT-6 IN	258,868.00	LF		\$	
1460	06542		PAVE STRIPING-THERMO-6 IN W	50,604.00	LF		\$	
1470	06543		PAVE STRIPING-THERMO-6 IN Y	40,484.00	LF		\$	
1480	06556		PAVE STRIPING-DUR TY 1-6 IN W	95,536.00	LF		\$	
1490	06557		PAVE STRIPING-DUR TY 1-6 IN Y	76,117.00	LF		\$	
1500	06560		PAVE STRIPING-DUR TY 1-12 IN W	150.00	LF		\$	
1510	06585		PAVEMENT MARKER TY IVA-MW TEMP	173.00	EACH		\$	
1520	06586		PAVEMENT MARKER TY IVA-MY TEMP	173.00	EACH		\$	
1530	06613		INLAID PAVEMENT MARKER-B W/R	704.00	EACH		\$	
1540	08912		CRASH CUSHION TY 6 CLASS T TL3	4.00	EACH		\$	
1550	10203ND		PAVEMENT ADJUSTMENT (CALDWELL COUNTY)	1.00	LS	\$224,502.0	\$	\$224,502.00
1560	10203ND		PAVEMENT ADJUSTMENT (LYON COUNTY)	1.00	LS	\$3,177,042.	\$	\$3,177,042.00
1570	20191ED		OBJECT MARKER TY 3	1.00	EACH		\$	
1580	20411ED		LAW ENFORCEMENT OFFICER	1,200.00	HOURL		\$	
1590	21380ES719		GUARDRAIL THRIE BEAM	625.00	LF		\$	
1600	23147EN		HIGH TENSION CABLE-ROPE BARRIER	1,200.00	LF		\$	

Report Date 9/25/25

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1610	23148EN		END ANCHORS	4.00	EACH		\$	
1620	24255EC		REMOVE CABLE GUARDRAIL BARRIER SYSTEM	937.00	LF		\$	
1630	25078ED		THRIE BEAM GUARDRAIL TRANSITION TL-3	7.00	EACH		\$	
1640	26136EC		PORTABLE QUEUE WARNING ALERT SYSTEM	180.00	MONT		\$	
1650	26137EC		QUEUE WARNING PCMS	180.00	MONT		\$	
1660	26138EC		QUEUE WARNING PORTABLE RADAR SENSORS	180.00	MONT		\$	
1670	26233EC		MOBILIZATION FOR CONCRETE SURF TREATMENT LYON COUNTY	1.00	LS		\$	
1680	26236EC		THRIE BEAM BULLNOSE TERMINAL	6.00	EACH		\$	
1690	26237EC		CONNECTED ARROW PANEL	45.00	MONT		\$	
1700	26248EC		ELECTRONIC DELIVERY MGMT SYSTEM - AGG CALDWELL COUNTY	1.00	LS		\$	
1710	26248EC		ELECTRONIC DELIVERY MGMT SYSTEM - AGG LYON COUNTY	1.00	LS		\$	

Section: 0003 - BRIDGE- FRIENDSHIP ROAD OVER I-24

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1720	02403		REMOVE CONCRETE MASONRY	15.00	CUYD		\$	
1730	08001		STRUCTURE EXCAVATION-COMMON	17.00	CUYD		\$	
1740	08100		CONCRETE-CLASS A	27.00	CUYD		\$	
1750	08150		STEEL REINFORCEMENT	1,583.00	LB		\$	
1760	23378EC		CONCRETE SEALING	1,488.00	SQFT		\$	

Section: 0004 - BRIDGE-KY-903 OVER I-24

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1770	02403		REMOVE CONCRETE MASONRY	15.00	CUYD		\$	
1780	08001		STRUCTURE EXCAVATION-COMMON	16.00	CUYD		\$	
1790	08100		CONCRETE-CLASS A	27.00	CUYD		\$	
1800	08150		STEEL REINFORCEMENT	1,583.00	LB		\$	
1810	23378EC		CONCRETE SEALING	1,474.00	SQFT		\$	

Section: 0005 - TRAFFIC LOOPS-LYON COUNTY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1820	04793		CONDUIT-1 1/4 IN	30.00	LF		\$	
1830	04795		CONDUIT-2 IN	10.00	LF		\$	
1840	04820		TRENCHING AND BACKFILLING	35.00	LF		\$	
1850	04830		LOOP WIRE	800.00	LF		\$	
1860	04895		LOOP SAW SLOT AND FILL	150.00	LF		\$	
1870	20359NN		GALVANIZED STEEL CABINET	1.00	EACH		\$	

Report Date 9/25/25

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1880	20360ES818		WOOD POST	2.00	EACH		\$	
1890	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	1.00	EACH		\$	

Section: 0006 - TRAINEES

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1900	02742		TRAINEE PAYMENT REIMBURSEMENT GROUP 2, 3, 4 OPERATOR	1,400.00	HOUR		\$	

Section: 0007 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1910	02568		MOBILIZATION	1.00	LS		\$	
1920	02569		DEMOBILIZATION	1.00	LS		\$	