

The Procurement Division of Knox County, Tennessee will receive sealed bids for the provision of **Pavement Marking Materials and Road Striping Services** as specified herein. Bids must be received by **2:00 p.m.** on **December 14, 2022**. Late bids will neither be considered nor returned.

Deliver Bids To:

**Bid Number 3345
Knox County Procurement Division
Suite 100
1000 North Central Street
Knoxville, Tennessee 37917**

The Bid Envelope must show the Company Name, Bid Number, Bid Name & Bid Opening Date.

SECTION I GENERAL TERMS AND CONDITIONS

- 1.1 ADDITIONAL INFORMATION:** Knox County wants requests for additional information routed to Brian Hubbs, Construction and Contract Specialist, at 865-215-5753. Additional information requests and questions may be emailed to brian.hubbs@knoxcounty.org. If you have not heard from the Buyer in a reasonable amount of time, please call for further assistance. Information about the Knox County Procurement Division may be obtained on the internet at www.knoxcounty.org/procurement.
- 1.2 ACCEPTANCE:** Vendors shall hold their price firm and subject to acceptance by Knox County for a period of ninety (90) business days from the date of the bid opening, unless otherwise indicated in their bid.
- 1.3 ALTERNATIVE BIDS:** Knox County will not accept alternate bids (those not equal to specifications) unless authorized by the Invitation for Bids.
- 1.4 AUDIT HOTLINE:** Knox County has established an Audit Hotline to report potential fraud and waste. To report potential fraud, waste or abuse, please call 1-866-858-4443 (toll-free). You can also file a report online by accessing <http://www.knoxcounty.org/hotline/index.php>.

Vendors are hereby cautioned that this Audit Hotline does not replace the Award Protest Procedures found in Section VI, Item M of the Knox County Procurement Regulations.

- 1.5 AWARD:** Award will be made to the most responsive, responsible bidder(s) meeting specifications, who presents the product or service that is in the best interest of Knox County. Knox County reserves the right to award this bid on a location basis, zone basis, schedule basis, item-by-item basis, an all or none basis, or by multiple award, whichever is in the best interest of the County. Knox County reserves the right to not award this bid. Award will be made in accordance with the evaluation criteria specified herein.
- 1.6 BID DELIVERY:** Knox County requires respondents, when hand delivering bids, to time and date stamp the envelope before depositing it in the bid box. Knox County will not be responsible for any lost or misdirected mail sent by common carrier, nor will Knox County be responsible for submittals delivered to addressees and Suites other than the delivery address and Suite specified at the top of this solicitation. The time clock in the Procurement Division shall serve as the official record of time.

Solicitations must be in a sealed envelope/box prior to entering the Procurement Division office. Procurement Division personnel are not allowed to see the submittal nor assist in placing documents in an envelope/box. Additionally, the Procurement Division is not responsible for providing materials (e.g.: envelopes, boxes, tape) for submittals.

- 1.7 BUSINESS OUTREACH PROGRAM:** Knox County has established a Business Outreach Program, which has the responsibility of increasing opportunity for small, minority and women owned businesses. This is being accomplished through community education programs, policy edification, active recruitment of interested businesses and process re-engineering. Knox County is committed to ensuring full and equitable participation for all disadvantaged businesses. Knox County welcomes submittals from those disadvantaged businesses that have an interest in providing goods and/or services listed herein.

In addition, Knox County strongly encourages the inclusion of disadvantaged businesses by non-disadvantaged contractors who may wish to partner or subcontract portions of this agreement in order to accomplish the successful delivery of goods and/or services. If you are a disadvantaged business and would like additional information about our Business Outreach Program please contact:

Diane Woods, CPPB, Business Outreach Administrator
Knox County Procurement
Telephone: 865-215-5760
Fax: 865-215-5778
Email: diane.woods@knoxcounty.org

- 1.8 CLOSURES:** During periods of closure due to unforeseen circumstances in Knox County or closures at the direction of the Knox County Mayor, the Procurement Division will enact the following procedures in regards to solicitations and closures:
- If the Mayor closes the Administrative offices prior to the time set for solicitation opening of any business day, all solicitations due that same day will be moved to the next operational business day.
 - Other unforeseen circumstances shall be at the sole discretion of the Procurement Director.
 - Knox County shall not be liable for any commercial carrier's decision regarding deliveries during any unforeseen circumstances.
- 1.9 CONFLICT OF INTEREST:** Vendors must have read and complied with the "Non-Conflict of Interest" statement provided in the vendor registration process prior to the opening of this solicitation. Knox County's Non-Conflict of Interest Policy is available for review at https://www.knoxcounty.org/purchasing/conflict_policy.php.
- 1.10 COPIES:** Knox County **requires** that bids being submitted by hand be submitted with one (1) marked original and one (1) exact copy. If submitting electronically, no additional copies are needed.
- 1.11 DECLARATIVE STATEMENT:** Any statement or words (e.g.: must, shall, will) are declarative statements and the vendor must comply with the condition. Failure to comply with any such condition may result in their bid being non-responsive and disqualified.
- 1.12 ELECTRONIC TRANSMISSION OF BIDS:** Knox County's Procurement Division **will** accept, and strongly encourages, electronically transmitted bids through the County's On-Line Procurement System. Facsimile and Email submissions are strictly prohibited.
- 1.13 HOW TO DO BUSINESS:** Knox County utilizes a web-based procurement software system, "KnoxBuys." The system provides our clients (vendors, County departments and the citizens of Knox County) with a more enhanced and end-user friendly means of accessing our services. The system allows for on-line vendor registration and maintenance, electronic receipt of purchase orders, on-line retrieval and submittal of quotes, bids and proposals for our vendor-clients and on-line requisitioning and receiving for our county departments. In order for the County to maximize its investment and minimize the cost associated with office operations we need your help. When doing business with Knox County we are urging you to please go to our website at www.knoxcounty.org/procurement, register as a vendor in our on-line procurement system, "KnoxBuys", if you have not done so and whenever possible to conduct your business with the County through this site. If you have any questions please contact the Procurement Division Representative listed in Section 1.1 of this document.
- 1.14 INCURRED COSTS:** Knox County will not be responsible for any costs incurred by the bidder in the preparation of their bid.
- 1.15 MULTIPLE BIDS:** Knox County may consider multiple bids that meet specifications.
- 1.16 NON-COLLUSION:** Vendors, by submitting a signed bid, certify that the accompanying bid is not the result of, or affected by, any unlawful act of collusion with any other person or company engaged in the same line of business or commerce, or any other fraudulent act punishable under Tennessee or United States law.
- 1.17 PAYMENT METHOD:** Knox County utilizes two (2) methods of placing orders for products. The first is the use of Purchase Orders. These purchase orders will be issued from the Knox County Procurement Division via the method selected by the Vendor during registration. The Purchase Order will detail the quantity, specific item(s) and the contracted price for each item.

The second method is the use of the Knox County Credit Card (VISA). Orders placed on the credit card will list the same information as the Purchase Order. Vendors will be given the card information and approval to process the transaction for the requesting department. Vendors must indicate in their bid response if the Vendor will accept the Knox County Credit Card (VISA) as form of payment. Bidders are prohibited to charge Knox County any type of merchant fee from their financial institution to accept this type of payment.

- 1.18 PROCESSING TIME FOR PAYMENT:** Vendors are advised that a minimum of thirty (30) days is required to process invoices for payment when the invoicing instructions herein are followed.
- 1.19 PROOF OF FINANCIAL AND BUSINESS CAPABILITY:** Bidders must, upon request, furnish satisfactory evidence of their ability to furnish products or services in accordance with the terms and conditions of these specifications. Knox County will make the final determination as to the bidders' ability.
- 1.20 RECYCLING:** Knox County, in its continuing efforts to lessen the amount of landfill waste and to further recycling efforts, requests that bids be sent electronically. Bids being submitted on paper shall:
- 1.20.1** Be submitted on recycled paper
 - 1.20.2** Not include pages of unnecessary advertising
 - 1.20.3** Be made on both sides of each sheet of paper.
- 1.21 RESTRICTIVE OR AMBIGUOUS SPECIFICATIONS:** It is the responsibility of the prospective bidder to review the entire Invitation for Bids (IFB) packet and to notify the Procurement Division if the specifications are formulated in a manner that would unnecessarily restrict competition.
- Any such protest or question regarding the specifications or bid procedures must be received in the Procurement Division no later than **4:30 p.m. local time on November 30, 2022**. These requirements also apply to specifications that are ambiguous.
- 1.22 SIGNING OF BIDS:** In order to be considered all bids must be signed. Please sign the original in **blue ink**. By signing the bid document, the bidder acknowledges and accepts the terms and conditions stated in the document. The submission of your bid through our on-line portal will be the acknowledgement of signature.
- 1.23 TAXES:** Knox County purchases are not subject to taxation. Tax exemption certificates will be provided upon request.
- 1.24 TERM BID AGREEMENTS:** If this bid results in a term bid Contract with the vendor, Knox County must receive all general price decreases that other similar customers receive.
- 1.25 TITLE VI OF THE CIVIL RIGHTS ACT:** "Nondiscrimination in Federally Assisted Programs" - "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." 42 U.S.C. section 2000d. It is the policy of Knox County Government that all its services and activities be administered in conformance with the requirements of Title VI.
- 1.26 USE OF BID FORMS:** Vendors must complete the bid forms contained in the bid package. Failure to complete the bid forms may result in rejection of their bid.
- 1.27 VENDOR DEFAULT:** Knox County reserves the right, in case of vendor default, to procure the articles or services from other sources and hold the defaulting vendor responsible for any excess costs occasioned thereby. Should vendor default be due to a failure to perform or because of a request for a price increase, Knox County reserves the right to remove the vendor from the County's bidder's list for twenty-four (24) months.
- 1.28 VENDOR REGISTRATION:** Prior to the opening of this bid, **ALL BIDDERS** must be registered with the Procurement Division. A vendor application may be submitted online at www.knoxcounty.org/procurement. Select the On-Line Vendor Registration link and complete the forms. Vendors must be registered with the Procurement Division **prior** to submitting their bid. Knox County shall not be responsible for technical difficulties experienced by vendors trying to register or submit their bid electronically less than twenty-four (24) hours prior to the bid opening time.
- 1.29 WAIVING OF INFORMALITIES:** Knox County reserves the right to waive minor informalities or technicalities when it is in the best interest of Knox County.

SECTION II OBLIGATIONS, RIGHTS AND REMEDIES

These terms and conditions shall be part of the Contract. Knox County reserves the right to negotiate other terms and conditions it deems appropriate and necessary under the circumstances to protect the public's trust.

- 2.1 **ALTERATIONS OR AMENDMENTS:** No alterations, amendments, changes, modifications or additions to this Contract shall be binding on Knox County without the prior written approval of the County.
- 2.2 **APPROPRIATION:** In the event no funds are appropriated by Knox County for the goods or services in any fiscal year or insufficient funds exist to purchase the goods or services, then the Contract shall expire upon the expenditure of previously appropriated funds or the end of the current fiscal year, whichever occurs first, with no further obligations owed to or by either party.
- 2.3 **ASSIGNMENT:** Contractor shall not assign or sub-contract this agreement, its obligations or rights hereunder to any party, company, partnership, incorporation or person without the prior written specific consent of Knox County.
- 2.4 **BOOKS AND RECORDS:** Contractor shall maintain all books, documents, accounting records and other evidence pertaining to the goods and services provided under this Contract and make such materials available at its offices at all reasonable times during the contract period and for three (3) years from the date of the final payment under this agreement for inspection by County or by any other governmental entity or agency participating in the funding of this agreement, or any authorized agents thereof; copies of said records to be furnished if requested. Such records shall include those books, documents and accounting records that represent the Contractor's costs of manufacturing, acquiring or delivering the products and services governed by this agreement.
- 2.5 **CHILD LABOR:** Contractor agrees that no products or services will be provided or performed under this Contract which have been manufactured or assembled by child labor.
- 2.6 **COMPLIANCE WITH ALL LAWS:** Contractor is assumed to be familiar with and agrees to observe and comply with all Federal, State, and Local laws, statutes, ordinances, and regulations in any manner affecting the provision of goods and/or services, and all instructions and prohibitive orders issued regarding this work and shall obtain all necessary permits.
- 2.7 **CRIMINAL HISTORY CHECK:** Any and all successful bidders, Contractor's employees, and any Contractor's sub-contractors and their employees must submit to a criminal history records check, at the Contractor's expense, conducted by the Tennessee Bureau of Investigation and the Federal Bureau of Investigation prior to permitting the employee to have contact with students or enter school grounds when students are present. Reference Tennessee Code Annotated Section 49-5-413. Bidders **must** submit with their bid the Criminal History Affidavit of Compliance (Attachment B).
- 2.8 **DEFAULT:** If Contractor fails to perform or comply with any provision of this Contract or the terms or conditions of any documents referenced and made a part hereof, Knox County may terminate this Contract, in whole or in part, and may consider such failure or noncompliance a breach of Contract. Knox County expressly retains all its rights and remedies provided by law in case of such breach, and no action by Knox County shall constitute a waiver of any such rights or remedies. In the event of termination for default, Knox County reserves the right to purchase its requirements elsewhere, with or without competitive bidding.
- 2.9 **GOVERNING LAW; VENUE:** This agreement shall be exclusively construed, governed, and controlled by the Laws of the State of Tennessee without regard to principles of law, including conflicts of law, of any other jurisdiction, territory, country, and/or province. Any dispute arising out of or relating to this agreement shall exclusively be brought in the Chancery Court or the Circuit Court of Knox County, Tennessee. Each party consents to personal jurisdiction thereto and waives any defenses base on personal jurisdiction, venue and inconvenient forum.
- 2.10 **INCORPORATION:** All specifications, drawings, technical information, Invitation for Bids, Bid, Award and similar items referred to or attached or which are the basis for this Contract are deemed incorporated by reference as if set out fully herein.

- 2.11 INDEMNIFICATION/HOLD HARMLESS:** Contractor shall indemnify, defend, save and hold harmless Knox County, its officers, agents and employees from all suits, claims, actions or damages of any nature brought because of, arising out of, or due to breach of the agreement by Contractor, its subcontractors, suppliers, agents, or employees or due to any negligent act or occurrence or any omission or commission of Contractor, its subcontractors, suppliers, agents or employees.
- 2.12 INDEPENDENT CONTRACTOR:** Contractor shall acknowledge that it and its employees serve as independent contractors and that Knox County shall not be responsible for any payment, insurance or incurred liability.
- 2.13 INSPECTION AND ACCEPTANCE:** Warranty periods shall not commence until Knox County inspects and formally accepts the goods and/or services. The terms, conditions and timing of acceptance shall be determined by Knox County. Knox County reserves the right to reject any or all items or services not in conformance with applicable specifications, and Contractor assumes the costs associated with such nonconformance. Acceptance of goods or services does not constitute a waiver of latent or hidden defects or defects not readily detectable by a reasonable person under the circumstances.
- 2.14 IRAN DIVESTMENT ACT:** By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to Tennessee Code Annotated § 12-12-106.
- 2.15 LIMITATIONS OF LIABILITY:** In no event shall Knox County be liable for any indirect, incidental, consequential, special or exemplary damages or lost profits, even if Knox County has been advised of the possibility of such damages.
- 2.16 NO BOYCOTT OF ISRAEL:** Pursuant to Tennessee Code Annotated Title 12, Chapter 4, Part 1, by submission of a response to this solicitation, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint response each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not currently engaged in, and will not for the duration of the contract engage in, a boycott of Israel.
- 2.17 NON-DISCRIMINATION AND NON-CONFLICT STATEMENT:** Contractor agrees that no person on the grounds of handicap, age, race, color, religion, sex, national origin or any individual trait or characteristic found to be an illegal consideration, shall be excluded from participation in, or be denied benefits of, or be otherwise subjected to discrimination in the performance of this agreement or in the employment practices of Vendor. Contractor shall upon request show proof of such non-discrimination and shall post in conspicuous places available to all employees and applicants notices of non-discrimination. Contractor covenants that it complies with the Fair Wage and Hour Laws, the National Labor Relations Act, and other federal and state employment laws as applicable. Contractor covenants that it does not engage in any illegal employment practices.
- Contractor covenants that it has no public or private interest and shall not acquire directly or indirectly any interest, which would conflict in any manner with the provision of its goods or performance of its services. Contractor warrants that no part of the total contract amount provided herein shall be paid directly or indirectly to any officer or employee of Knox County as wages, compensation, or gifts in exchange for acting as officer, agent, employee, sub-contractor or consultant to Contractor in connection with any goods provided or work contemplated or performed relative to the agreement.
- 2.18 ORDER OF PRECEDENCE:** In the event of inconsistent or conflicting provisions of this Contract and referenced documents, the following descending order of precedence shall prevail: (1) Contract, (2) Invitation for Bids, (3) Bid, (4) Award, (5) Special Terms and Conditions, (6) General Terms and Conditions, (7) Specifications, (8) Drawings.
- 2.19 REMEDIES:** Knox County shall have all rights and remedies afforded under the U.C.C. and Tennessee law in Contract and in tort, including but not limited to rejection of goods, rescission, right of set-off, refund, incidental, consequential and compensatory damages and reasonable attorney's fees.
- 2.20 RIGHT TO INSPECT:** Knox County reserves the right to make periodic inspections of the manner and means the service is performed or the goods are supplied.
- 2.21 SEVERABILITY:** If any provision of this Contract is declared illegal, void or unenforceable, the remaining provisions shall not be affected but shall remain in force and in effect.

- 2.22 TAX COMPLIANCE:** Pursuant to Resolution R-07-1-903 passed by the Commission of Knox County, Tennessee, Contractor hereby acknowledges, by submission of its bid and signature that it is current in its respective Federal, State, County, and City taxes of whatever kind or nature and is not delinquent in any way. Delinquent status must be disclosed or risk debarment by the Knox County Procurement Division.
- 2.23 TERMINATION:** County may terminate this agreement with or without cause, upon written notice of not less than thirty (30) calendar days. In the event of termination by either party, fees due for services satisfactorily performed or goods accepted prior to the termination date shall be paid.
- 2.24 WARRANTY:** Contractor warrants to Knox County that all items delivered and all services rendered shall conform to the specifications, drawings, bid and/or other descriptions furnished and/or incorporated by reference, and will be fit for the particular purpose purchased, of merchantable quality, good workmanship, and free from defects. Contractor extends to Knox County all warranties allowed under the U.C.C. Contractor shall provide copies of warranties to the County. Return of merchandise not meeting warranties shall be at contractor's expense.

SECTION III SPECIAL TERMS AND CONDITIONS

- 3.1 INTENT:** The intent of this solicitation is to obtain a qualified contractor(s) to provide Pavement Marking Materials and Striping Services as desired by Knox County at an economical price. Knox County intends to make a Best Value Award. Best Value means more than low bid. It includes the initial cost, service quality and other factors detailed herein.
- 3.2 ACCEPTANCE:** Bidders are advised that the payment of an invoice does not necessarily constitute as an acceptance of services that are provided. Acceptance requires a specific written action by Knox County so stating.
- 3.3 ACCOUNT SET-UP:** The successful Vendor(s) will be required to set up separate accounts for Knox County Engineering and Public Works, Knox County Schools, and any other departments that may use this Term Contract. Upon award of the Contract, a list of all departments with the associated agency will be provided to the successful Vendor(s). The successful Contractor(s) will be required to invoice, as well as post payment, to the proper agency.

Invoicing and account information is as follows:

3.3.1 Invoices for Knox County Government:
Knox County Engineering and Public Works
Attn: Accounts Payable
205 West Baxter Avenue
Knoxville, TN 37917

- 3.4 ADDITIONS/DELETIONS:** Knox County reserves the right to add goods and/or services to this term bid or delete goods and/or services that Knox County deems necessary. Any additions/deletions must be approved in writing by Knox County Procurement prior to any changes in service.
- 3.5 AWARD STATUS:** Knox County intends to issue a one (1) year award. Upon the mutual agreement of each vendor and Knox County, the award may be extended for four (4) additional years, one (1) year at a time. This may result in a total of five (5) years. Knox County reserves the right to purchase these items/services from other sources if the need arises. Knox County reserves the right to revoke the award if a pattern of unavailability arises with the vendor. Should Knox County desire not to renew, no reason needs to be given.
- 3.6 BIDDER OBLIGATION:** Each bidder shall become fully acquainted with conditions relating to the scope and restrictions attending the execution of the work under this IFB. The failure or omission of a bidder to become acquainted with existing conditions shall no way relieve the bidder of any obligations with respect to this IFB or to the Contract.
- 3.7 BID EVALUATION:** In evaluating the bids, Knox County reserves the right to use any or all of the ideas from the bids submitted without limitation and to accept any part or all of the successful bid in selecting an operation which is judged to be in the best interest of Knox County. All material submitted becomes the property of Knox County.

- 3.8 BIDS REQUESTED ON BRANDS OR EQUAL:** Unit price bids are requested on products that equal or exceed the quality and performance of the brands and model numbers listed. References to brand names, trade names, model numbers or other descriptions particular to specific brand products are made to establish a required level of quality and functional capabilities, and are not intended to exclude other products of that level. Or equal does not mean the manufacturing process, but rather that the item will perform in the manner needed by the County. Comparable products of other manufacturers will be considered if proof of comparability is contained in the bid. It shall be the responsibility of the bidders, including bidders whose product is referenced to furnish with the bid such specifications, catalog pages, brochures or other data as will provide an adequate basis for determining the quality and functional capabilities of the product offered. Failure to provide this data may be considered valid justification for rejection of a bid.
- 3.9 BONDING:** Vendors are advised that all bonding companies must be listed in the Federal Register, Department of the Treasury Fiscal Service, Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies. All required bonds must be issued through companies licensed to do business in the State of Tennessee.
- 3.10 CERTIFICATIONS:** Contractor's equipment operators shall be certified in the proper operation of the equipment they will use under this Term Contract. Certifications of technicians shall be included in the bid package.
- 3.11 CHANGES AFTER AWARD:** It is possible after award that Knox County may change its needs or requirements. Knox County reserves the right to make such changes after consultation with the Contractor(s). Should additional costs arise, Knox County reserves the right to consider accepting these charges provided the Contractor(s) can document the increased costs. Knox County also reserves the right to accept proposed service changes from the Contractor(s) if they will lower the cost to Knox County and/or provide improved service.
- 3.12 COMMUNICATIONS:** The successful execution of this Contract will require extensive communication between all parties involved. While information may be transmitted via telephone, it should always be followed up with an email. It is essential that the Contractor have an efficient and properly working email capabilities. The Contractor will be required to submit a list of individuals, along with direct phone number, cell phone numbers and email addresses to the agency contracts. These individuals must be familiar with the Knox County Contract and have the authority to make adjustments as requested by Knox County.
- 3.13 COMPLETION OF WORK:** All requested striping shall be completed no later than seven (7) business days from the date the request was received. Once the requested work has been completed, the Contractor will be required to email the Knox County Engineering and Public Works Department at brad.warren@knoxcounty.org stating completion comments that include lengths, quantities used (e.g.: stop bar, white line, and yellow lines) and date completed for our maintenance records.
- 3.14 COMPLIANCE WITH ALL APPLICABLE REGULATIONS:** Vendor agrees and covenants that the company, its agents and employees will comply with all City, County, State and Federal codes, laws, rules and regulations applicable to the business to be conducted under this Contract. If the Vendor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, the Vendor shall bear all costs arising from them.
- 3.15 CONTACT PERSONNEL:** It shall be essential to the success of this Contract to develop a good working relationship with the Contractor(s). It is imperative that the Knox County account be handled efficiently and professionally. Knox County should be assigned no more than two (2) Contractor contacts to handle billing inquiries and service related issues. In the event one (1) or both contacts leave the Knox County account, the Contractor shall formally introduce the new contacts to County personnel. These contacts must be knowledgeable of the County's account to avoid any interruption of service.
- 3.16 CONTRACT EXECUTION:** The award of this bid may result in a Contract between Knox County and the successful Contractor(s). The Knox County Procurement Division will draft the Contract. The Knox County Procurement Division **will not** accept any Contractor's Contract. If these types of Master Agreements, Service Agreements, Terms of Agreements or other submitted Contract agreements are submitted, they **will** be rejected.
- 3.17 DESTINATION AND DELIVERY:** Bidders must include all destination and delivery charges, including mileage, in their price. **There will be no extra hidden charges.** Delivery must be "free on board" to the County department.
- 3.18 DRUG-FREE WORKPLACE:** If the Contractor has five (5) or more employees receiving pay: the Contractor shall have a drug-free workplace program that complies with Title 50, Chapter 9 of the Tennessee Code Annotated, shall provide the affidavit (Attachment C) required by Public Acts, 2000, Chapter 918.

3.19 EQUIPMENT/CAPABILITIES/PERSONNEL: Bidders will be required to list and provide specifications for all the equipment, assets and personnel they utilize in providing pavement marking materials and striping services. The list shall include, but not be limited to, a description of vehicles, trucks, unique equipment, and facilities, including age and condition, and the number of employees available to perform pavement marking materials and road striping services. Certifications for personnel shall be included in the bid package, if applicable.

3.20 EVALUATION CRITERIA: This bid will be evaluated using the following criteria:

Price*	80 Points
Equipment, Capabilities, Hours, and Locations	20 Points

*Knox County will also use three (3) pre-determined sample projects that are typical of the work that will be required of this Contract in order to evaluate pricing submitted.

3.21 EVALUATION REVIEW: Knox County reserves the right to use all pertinent information that might affect the County's judgment as to the appropriateness of an award to the best evaluated bidder. This information may be appended to the bid evaluation process results. Information on a service provider from reliable sources, and not within the service provider's bid, may also be noted and made part of the evaluation file. Knox County shall have sole responsibility for determining a reliable source. Knox County reserves the right to conduct written and/or oral discussions/interviews after the bid opening. The purpose of such discussions/interviews is to provide clarification and/or additional information to make an award that is in the best interest of Knox County.

3.22 EXCEPTIONS TO SPECIFICATIONS: Bidders taking exception to any part or section of these specifications shall indicate such exceptions in their bid response. Failure to indicate any exceptions shall be interpreted as the bidder's intent to fully comply with the specifications as written. Conditional or qualified offers are subject to rejection in whole or in part. Exceptions will be negotiated for a mutual resolution.

3.23 GRATUITIES AND KICKBACKS: It shall be a breach of ethical standards for any person or company to offer, give, or agree to give any employee or former employee, or for any employee or former employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim, or controversy or other particular matter, pertaining to any program requirement of a contract or subcontract or to any solicitation or proposal therefore. It shall be a breach of ethical standards for any payment, gratuity or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or a person associated therewith, as an inducement for the award of a subcontract or order. Breach of the provisions of this paragraph is, in addition to a breach of this Contract, a breach of ethical standards which may result in civil or criminal sanction and/or debarment or suspension from being a contractor or subcontractor under Knox County contracts.

3.24 INTERPRETATION: No oral interpretation will be made to any bidder regarding the meaning of specifications. All questions are to be submitted in writing or electronically (Email) and will be answered in the form of an Addendum to the solicitation by the Knox County Procurement Division.

3.25 INSURANCE: The successful vendor must carry the insurance as indicated on the Insurance Attachment hereto. As proof the vendor's willingness to obtain and maintain the insurance, the vendor must complete, sign and have its insurance agent sign the attachment and submit it with the bid.

Upon the Notification of Intent to Award, the successful vendor will be required to submit a Certificate of Insurance (COI) with the specified coverage and listing Knox County as additional insured; Endorsement Page(s) shall be included. It shall be the successful vendor's responsibility to keep a current COI and Endorsement Page(s) on file with Knox County Procurement as long as the Contract is in effect.

3.26 INVOICE DETAIL: Knox County is requesting invoices to show the following detail to help expedite review and payment. The Contractor(s) may be required to modify invoicing procedures to show the detail. All potential Contractors are hereby cautioned that Knox County will only pay from original invoices and not facsimiles or copies. Invoices which do not adhere to these details may be returned to the Contractor for correction.

3.26.1 The invoice must show the amount due to the Contractor by Knox County

3.26.2 The invoice must show an itemized detailed material count, including: date(s) of service, location of service, item number (if applicable) and description of material(s) and/or service(s) provided, quantity of material(s) and/or service(s) provided, the associated unit price for the material(s) and/or service(s) provided, and the total price for material(s) and/or service(s) provided.

3.26.3 Invoices are to be original and uniquely pre-numbered.

3.26.4 Invoices which do not show this information are subject to rejection.

3.27 **INVOICE REVIEW:** Knox County shall review all invoices for adherence to the terms and conditions of the Contract. Variations from the Contract and Contract pricing are strictly prohibited. Any variations found on the invoice will result in the rejection of those invoices. Rejected invoices will be returned to the Contractor(s) for correction. If a discount for prompt payment is offered, the timeline does not commence until Knox County receives the invoice.

3.28 **INVOICING PROCEDURES:** Knox County requests that invoices be easy to read and understand. Invoices are to be original and uniquely pre-numbered. Each participating agency to this Contract may require different invoicing information and procedures. This information and procedures shall be provided to the successful Contractor(s) prior to Contract execution. There shall be no additional charges for this information and procedures to be included.

Invoices shall be sent to the "Bill To" address printed on the Purchase Order. Each department or division of Knox County is responsible for its own budget. Departments cannot charge or pay bills for another department. Therefore, it is critical that your business invoices specify the department that desire to purchase from you.

Do not credit payments to any other department's account. Invoices must be submitted in triplicate and must match the corresponding Purchase Order number. There shall be no component billing.

If a complete invoice, submitted in accordance with the guidelines stipulated herein, remains unpaid after thirty (30) days, contact the appropriate department listed in the "Bill To" section of the Purchase Order to determine its status.

3.29 **NEWS RELEASES BY VENDORS:** As a matter of policy, Knox County does not endorse the services of a Contractor. A Contractor will not make news releases concerning any resultant Contract from this solicitation without the prior written approval of Knox County.

3.30 **NO CONTACT POLICY:** After the date and time that the vendor receives this solicitation, any contact initiated by any bidder with any Knox County representative, other than the Procurement Division representative listed herein, concerning this Invitation for Bids, is strictly prohibited. Any such unauthorized contact may cause the disqualification of the bidder from this procurement transaction.

3.31 **OFFER WITHDRAWAL:** No bid can be withdrawn after it is filed unless the bidder makes a request in writing to the Knox County Procurement Division **prior** to the time set for the opening of bids or unless the County fails to accept within ninety (90) days after the date fixed for opening the Invitation for Bids.

3.32 **PERFORMANCE AND PAYMENT BONDS:** The successful Contractor(s) may be required to submit both a Performance Bond and a Payment Bond (each equal to 100% of the job cost) when any one (1) project exceeds \$25,000 in value. The bonds will be returned upon the successful and satisfactory completion of the project.

3.33 **POSSESSION OF WEAPONS:** All vendors and their employees and their agents are prohibited from possessing any weapons on Knox County property without prior written consent from the County. In the case of a vendor whose contract requires possession of firearms or other weapons to successfully complete their contract, vendor must provide personnel who are bonded to bear said weaponry.

3.34 **PRICING:** The Contractor(s) warrants that the unit price stated for all items shall remain firm for a period of twelve (12) months from the first day of the Contract period. If the Contractor's price is increased after the initial year, Knox County must be given a written notice to consider. Such a request shall include as a minimum, (1) the cause for the adjustment; (2) the amount of the change requested with documentation to support the requested adjustment. Price increases will only be considered at the renewal period(s). If the price increase is rejected the vendor may:

- a. Continue with the existing prices
- b. Request a lower price increase
- c. Not accept the renewal offer.

If a price increase is approved by Knox County Procurement and the requesting department the approval notification will be done in writing and the Contractor(s) will be notified of the new price schedule and the effective date of the increase. This documentation will become part of the bid file. No approvals will be authorized verbally.

- 3.35 PUBLIC RECORDS ACT:** Knox County is subject to the Tennessee Public Records Act 10-7-503 et seq. Bidders are cautioned that all documents submitted on behalf of this Invitation for Bids shall be open to the public for viewing and inspection and Knox County will comply with all legitimate requests.
- 3.36 QUANTITIES:** Knox County does not guarantee any quantities to be purchased from this term Contract. For informational purposes: Knox County spent approximately \$300,000.00 during fiscal year 2022 for these products/services.
- 3.37 RECORDS:** Contractor(s) will maintain records of services provided to Knox County and make them available upon request by any of the respective participating agencies. The successful Contractor(s) shall only disclose the records of the requesting agency and not disclose other agency information.
- 3.38 REJECTION OF BIDS:** Knox County reserves the right to reject any and all bids received as a result of this request and to waive any informality, technical defect or clerical error in any bid, as the interests of the County may require. Non-acceptance of any bid will be devoid of any criticism of the bid and of any implication that the bid is deficient in any manner. Non-acceptance of any bid shall be construed as meaning simply that the County does not deem the bid to be acceptable or that another bid was deemed to be more advantageous to Knox County for the particular services proposed.
- 3.39 REMOVAL OF VENDOR'S EMPLOYEES:** The successful Contractor(s) agrees to utilize only experienced licensed, responsible and capable people in the performance of the work. Knox County may require that the successful Contractor(s) remove from the job covered by this contract, employees who endanger persons or property or whose continued employment under this contract is inconsistent with the interest of Knox County.
- 3.40 SAFETY AND PROTECTION:** The Contractor(s) shall be solely and completely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work to be performed. The Contractor(s) shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent injury to, all employees on the work site and other persons, including but not limited to, the general public who may be affected thereby. All work is to be done as required as by TOSHA, OSHA, EPA and AHERA.
- Knox County does not assume any responsibility for the protection of or for loss of materials, from the time that the Contract operations have commenced until the final acceptance of the work by the department designee. Contractor(s) shall be required to furnish their employees with the proper personal protective clothing and equipment. Contractor(s) shall also be required to dispose of this clothing and equipment in compliance with all regulatory requirements.
- Contractor(s) will ensure that its employees observe and exercise all necessary caution and discretion so as to avoid injury to person or damage to property of any and all kinds. All buildings, appurtenances and furnishings shall be protected by the vendor from damage, which might be done or caused by works performed under this contract. Such damages to the foregoing shall be repaired and / or replaced by approved methods so as to restore the damaged areas to their original condition at the expense of the Contractor.
- 3.41 SAFETY TRAINING:** The Contractor is responsible for training their employees in safety and health regulations for the job, assuring compliance with the Occupational Safety and Health Act (OSHA), the Environmental Protection Agency (EPA) and any other Regulatory Agency. Vendors, by submission of their bid, also affirm that their employees working under this Contract have been properly trained in the safe operation of all equipment to be used under this Contract.
- 3.42 SUBMIT QUESTIONS:** Prospective bidders may submit questions concerning this solicitation until **4:30 p.m. local time on November 30, 2022**. Submit questions as noted in Section 1.1.
- 3.43 TIMELINE FOR CONSTRUCTION AND LIQUIDATED DAMAGES:** The work to be performed under this Contract shall be issued to the Contractor in multiple call-outs. Call-outs will consist of items for work to be performed at various locations. For each call-out, the Contractor shall provide a continuous operation (uninterrupted performance on successive working days until project completed). The Contractor shall begin work no later than the first working day occurring after notice is received from Knox County.

For each working day occurring after the seven (7) days completion that the Contractor fails to complete work on requested projects or does not maintain a continuous operation, the sum of Five Hundred Dollars (\$500.00) will be deducted from monies due the Contractor and for each working day thereafter until completion. The deductions are not penalties, but liquidated damages. Failure to adhere to these timelines will result in liquidated damages and/or Contract termination.

SECTION IV SCOPE OF WORK FOR PAVEMENT MARKING MATERIALS AND ROAD STRIPING SERVICES

4.1 **SCOPE OF WORK:** Knox County is seeking a Contractor(s) to furnish and install plastic and painted pavement markings in accordance with State specifications. Knox County reserves the right to procure these materials and services from other contractors if the need arises.

4.2 **ADD THE FOLLOWING TO THE END OF 716.07(d):** Only the area of the lines will be measured for payment.

4.3 **ADD THE FOLLOWING AS (h) UNDER 716.07:** Removal of Existing Painted Line – The removal of broken line and solid barrier line will be measured along the center of each line. Only painted line will be measured for payment.

4.4 **CONTRACTOR'S RESPONSIBILITIES:** At Contractor's own expense, the Contractor shall:

4.4.1 Contractor must provide all material, labor, supplies, equipment and expertise to accomplish the work described herein.

4.4.2 Provide competent supervision.

4.4.3 Provide competent workers.

4.4.4 Take precautions necessary to protect persons or property against injury or damage and be responsible for any such damage, or injury that occurs as a result of their fault or negligence.

4.4.5 Contractor shall be solely responsible for claims of wet paint on vehicles.

4.4.6 Contractor shall dash the appropriate line width through all intersections that are in horizontal and vertical curves.

4.5 **REMOVAL OF PAINTED MARKINGS:** Painted pavement markings shall be removed where specified or directed by the Engineer. The method used for paint removal shall be approved by the Engineer prior to the beginning of the work. Removal of existing painted pavement markings by painting over with black paint or asphalt shall not be allowed. When the method of removal causes sand or other materials to be accumulated on the pavement, the residue shall be removed as the work progresses. Paint markings shall be removed by the method that causes the least possible damage to the pavement. All damage to the pavement or surface caused by pavement marking removal shall be repaired as directed by the Engineer at the Contractor's expense.

Where a plastic marking will replace the painted marking and paint removal is specified in the Contract documents, enough of the paint shall be removed to assure proper installation of the plastic. The paint removal shall be uniform and shall expose a minimum of seventy-five percent (75%) of the surface area that is to receive the plastic materials.

4.6 **SMALL JOBS:** Large automatic spray application machinery meeting all of the preceding requirements sometimes is not appropriate and thus will not be required for the following operations, provided the Contractor selects pavement marking equipment capable of producing a uniform, acceptable finished product consistent with the plans and specifications:

4.6.1 Installation of temporary pavement markings.

4.6.2 Installation of permanent markings on projects having a total length of one thousand (1,000) feet or less.

4.6.3 Installation of permanent pavement markings on an individual project segment having a total length of one thousand (1,000) feet or less on an intermittent project.

4.6.4 Cleaning the pavement surface prior to the placement of any pavement

Temporary markings on final pavement surfaces shall be carefully located and placed so as to underlie or coincide with the permanent pavement marking.

4.7 **STANDARD:** The latest revision of the Manual on Uniform Traffic Control Devices for streets and highways published by the FHWA and in reasonably close conformity to the lines, dimensions, patterns, locations, and details shown on the plans or established by the Engineer will be the standard for this bid.

- 4.8** **STATE SPECIFICATIONS:** All items must meet Tennessee Department of Transportation, Bureau of Highways Standard Specifications.
- 4.9** **TRAFFIC CONTROL:** Contractor must provide traffic control to maintain safety for both the Contractor and public. The Contractor must provide an adequate staff to maintain traffic in and around the work area. Contractor will provide all necessary equipment (e.g.: stop/slow signs, barrels, cones). Contractor will be responsible for the flow of traffic and must maintain a safe environment for traffic at all times.
- 4.10** **WET PAINT:** Contractor will be responsible for any and all claims of wet paint on any vehicle. Contractor shall indemnify Knox County as per in Section 2.11.

Please note that it is not necessary to return pages one (1) through twelve (12). You must complete and return pages thirteen (13) through twenty-two (22).

SECTION V VENDOR INFORMATION FOR BID NUMBER 3345, PAVEMENT MARKING MATERIALS AND ROAD STRIPING SERVICES

Bidders are welcome to attach additional documentation to fully address any required responses. Please clearly reference any attachments to the appropriate subsection.

5.1 Vendor: _____

5.2 Vendor number as assigned by Knox County: _____

5.3 Street Address: _____

City: _____ State: _____ Zip: _____

5.4 Contact Person: _____

5.5 Telephone Number: _____

5.6 Vendor's Email address: _____

5.7 By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to Tennessee Code Annotated § 12-12-106.

Pursuant to Tennessee Code Annotated Title 12, Chapter 4, Part 1, by submission of a response to this solicitation, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint response each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not currently engaged in, and will not for the duration of the contract engage in, a boycott of Israel.

Authorizing Signature: _____
(Sign in BLUE ink)

5.8 Vendor's Knox County Business License Number: _____
(If Applicable) *Attach A Copy Of The License.*

5.9 I acknowledge the receipt of: (please write "yes" if you received one)

Addendum 1 _____ Addendum 2 _____ Addendum 3 _____ Addendum 4 _____

5.10 Do you accept the terms and conditions of the bid? YES NO YES WITH EXCEPTION
(Please circle your answer)

If you do not fully accept the terms and conditions, please note the exceptions below:

5.11 Total Number of Local Employees: _____

5.12 Business Location:

Address:

Hours of Operation:

Monday – Friday: _____

Saturday: _____

SECTION VI VENDOR INFORMATION FOR BID NUMBER 3345, PAVEMENT MARKING MATERIALS AND ROAD STRIPING SERVICES – CONTINUED

VENDOR NAME: _____

- | | | | |
|-------------|---|------------|-----------|
| 5.13 | Did you include the correct number of exact copies as detailed in Section 1.10? | YES | NO |
| 5.14 | Will you accept Knox County Credit Cards as payment as detailed in Section 1.17? | YES | NO |
| 5.15 | Did you complete and include your Criminal History Affidavit as detailed in Section 2.7? | YES | NO |
| 5.16 | Did you include your certifications as detailed in Section 3.10? | YES | NO |
| 5.17 | Can you meet the Completion of Work requirement as detailed in Section 3.13? | YES | NO |
| 5.18 | Did you complete and include your Drug Free Affidavit as detailed in Section 3.18? | YES | NO |
| 5.19 | Did you include a list of equipment owned and available for service to Knox County Government as detailed in Section 3.19? | YES | NO |
| 5.20 | Did you complete and include the Insurance Checklist as detailed in Section 3.25? | YES | NO |
| 5.21 | Can you meet the Timeline for Construction as detailed in Section 3.43? | YES | NO |
| 5.22 | Bond (cost per thousand) | \$ | _____ |

SECTION VI VENDOR PRICING FOR BID NUMBER 3345, PAVEMENT MARKING MATERIALS AND ROAD STRIPING SERVICES

VENDOR NAME: _____

(See Appendix A for Specifications)

Item	Description		Unit of Measure	Price
1	411.12.03	Scoring Rumble Stripe (Non – Cont. 8”)	LM	
2	411.12.04	Scoring Rumble Stripe (Non – Cont. 4”)	LM	
3	713.02.14	Flexible Delineators (White)	EACH	
4	713.02.15	Flexible Delineators (Yellow)	EACH	
5	716.01.01	Raised Pavement Markers	EACH	
6	716.01.10	Snowplowable Reflective Marker	EACH	
7	716.01.30	Removal of Snowplowable Reflective Marker	EACH	
8	716.01.40	Remove and Replace Lens on Snowplowable Reflective Marker	EACH	
9	716.02.01	Plastic Pavement Marking (per 4” Line)	LF	
10	716.02.02	Plastic Pavement Marking (8” Barrier Line)	LF	
11	716.02.03	Plastic Pavement Marking (Crosswalk)	LF	
12	716.02.04	Plastic Pavement Marking (Channelized Striping per 12” Line)	LF	
13	716.02.05	Plastic Pavement Marking (STOP Line)	LF	
14	716.02.06	Plastic Pavement Marking (Turn Lane Arrow)	EACH	
15	716.02.07	Plastic Pavement Marking (24” Barrier Line)	LF	
16	716.02.08	Plastic Pavement Marking (8” Dotted Line)	LF	
17	716.02.09	Plastic Pavement Marking (Longitudinal X-Walk)	LF	
18	716.02.10	Plastic Pavement Marking (6” Line)	LF	
19	716.02.11	Plastic Pavement Marking (6” Dotted Line)	LF	
20	716.03.01	Plastic Pavement Marking (ONLY)	EACH	
21	716.03.02	Plastic Pavement Marking (R x R)	EACH	
22	716.03.03	Plastic Pavement Marking (Stop Ahead)	EACH	
23	716.03.04	Plastic Pavement Marking (SCHOOL)	EACH	
24	716.03.06	Plastic Pavement Marking (Signal Ahead)	EACH	
25	716.03.07	Plastic Pavement Marking (Stop)	EACH	

SECTION VI VENDOR PRICING FOR BID NUMBER 3345, PAVEMENT MARKING MATERIALS AND ROAD STRIPING SERVICES – CONTINUED

VENDOR NAME: _____

Item	Description		Unit of Measure	Price
26	716.03.08	Plastic Pavement Marking (Ped-Xing)	EACH	
27	716.04.01	Plastic Pavement Marking (Straight – Turn Arrow)	EACH	
28	716.04.03	Plastic Pavement Marking (4" Dotted Line)	LF	
29	716.04.05	Plastic Pavement Marking (Straight Arrow)	EACH	
30	716.04.10	Plastic Pavement Marking (HANDICAP SYMBOL)	EACH	
31	716.04.12	Plastic Pavement Marking (Yield Line)	EACH	
32	716.05.01	Painted Pavement Marking (per 4" Line)	LF	
33	716.05.02	Painted Pavement Marking (8" Barrier Line)	LF	
34	716.05.04	Painted Pavement Marking (Chnz Striping)	SY	
35	716.05.05	Painted Pavement Marking (Stop Line)	LF	
36	716.05.06	Painted Pavement Marking (Turn Lane Arrow)	EACH	
37	716.05.08	Painted Pavement Marking (Parking Line)	LF	
38	716.05.20	Painted Pavement Marking (6" Line)	LF	
39	716.05.21	Painted Pavement Marking (4" Dotted Line)	LF	
40	716.05.50	Painted Pavement Marking (8" Line)	LF	
41	716.08.01	Removal of Pavement Marking Line (per 4" Line)	LF	
42	716.08.04	Removal of Pavement Marking (Chnz Striping)	SY	
43	716.08.05	Removal of Pavement Marking (Stop Line)	LF	
44	716.08.06	Removal of Pavement Marking (Turn Lane Arrow)	EACH	
45	716.08.12	Removal of Word Pavement Markings	EACH	
46	716.12.01	Enhanced Flat Thermo PM (4")	LM	
47	716.12.02	Enhanced Flat Thermo PM	LM	
48	716.12.03	Enhanced Flat Thermo (8" Barrier)	LF	
49	716.12.04	Enhanced Flat Thermo (4" Dotted)	LF	

SECTION VI VENDOR PRICING FOR BID NUMBER 3345, PAVEMENT MARKING MATERIALS AND ROAD STRIPING SERVICES – CONTINUED

VENDOR NAME: _____

Item	Description		Unit of Measure	Price
50	716.12.05	Enhanced Flat Thermo (6" Dotted)	LF	
51	716.12.06	Enhanced Flat Line Thermo (8" Line)	LF	
52	716.12.07	Enhanced Flat Line Thermo (8" Broken Line)	LF	
53	716.12.08	Enhanced Flat Line Thermo (12" Barrier)	LF	
54	716.12.09	Enhanced Flat Line Thermo (12" Line)	LF	
55	716.12.10	Enhanced Flat Line Thermo (12" Dotted)	LF	
56	716.13.01	Spray Thermo PM (60 mil. 4 in.)	LM	
57	716.13.02	Spray Thermo PM (60 mil. 6 in.)	LM	
58	716.13.03	Spray Thermo PM (60 mil. 8 in. Barrier)	LF	
59	716.13.04	Spray Thermo PM (60 mil. 4 in. Dotted)	LF	
60	716.13.05	Spray Thermo PM (60 mil. 6 in Dotted)	LF	
61	N/A	Painted 4 in. Line (to be used in Parking Lots)	LF	
62	N/A	3M® All Weather Traffic Paint or Equal	LF	
63	N/A	TCBW-2X White Traffic Curb with White Reflectors*	EACH	
64	N/A	TP2-36WO-DW-DW-2 White Posts with two (2) Reflective White Bands*	EACH	
65	N/A	TCEW White End Piece*	EACH	

***Barrier curb shall be bolt down "FG 300 Interstate Grade Curb System" as manufactured by Pexco or equivalent. Bidder shall include detailed submittal sheets for the product they are bidding.**

**ATTACHMENT A
KNOX COUNTY PROCUREMENT DIVISION
INSURANCE CHECKLIST
INVITATION FOR BIDS NUMBER 3345**

THE CERTIFICATE OF INSURANCE MUST SHOW ALL COVERAGES & ENDORSEMENTS WITH "YES" AND ITEMS 20 TO 23.

REQUIRED:	NUMBER	TYPE OF COVERAGE	COVERAGE LIMITS																												
YES	1.	WORKERS COMPENSATION	STATUTORY LIMITS OF TENNESSEE																												
YES	2.	EMPLOYERS LIABILITY	\$100,000 PER ACCIDENT \$100,000 PER DISEASE \$500,000 DISEASE POLICY LIMIT																												
YES	3.	AUTOMOBILE LIABILITY <table border="1" style="margin-left: 20px;"> <tr> <td style="width: 20px; text-align: center;">X</td> <td style="width: 100px;">ANY AUTO-SYMBOL (1)</td> <td style="width: 20px;"></td> <td style="width: 20px;"></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	X	ANY AUTO-SYMBOL (1)																			<table border="1" style="width: 100%;"> <tr> <td style="width: 70%;">COMBINE SINGLE LIMIT (Per -Accident)</td> <td style="width: 30%; text-align: center;">\$1,000,000</td> </tr> <tr> <td>BODY INJURY (Per -Person)</td> <td></td> </tr> <tr> <td>BODY INJURY (Per-Accident)</td> <td></td> </tr> <tr> <td>PROPERTY DAMAGE (Per-Accident)</td> <td></td> </tr> </table>	COMBINE SINGLE LIMIT (Per -Accident)	\$1,000,000	BODY INJURY (Per -Person)		BODY INJURY (Per-Accident)		PROPERTY DAMAGE (Per-Accident)	
X	ANY AUTO-SYMBOL (1)																														
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YES	4.	COMMERCIAL GENERAL LIABILITY	LIMITS																												
		<table border="1" style="width: 100%;"> <tr> <td style="width: 30%;"></td> <td style="width: 20%; text-align: center;">CLAIM MADE</td> <td style="width: 10%; text-align: center;">X</td> <td style="width: 10%; text-align: center;">OCCUR</td> <td style="width: 30%;"></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		CLAIM MADE	X	OCCUR							<table border="1" style="width: 100%;"> <tr> <td style="width: 70%;">EACH OCCURRENCE</td> <td style="width: 30%; text-align: center;">\$ 1,000,000</td> </tr> <tr> <td>FIRE LEGAL LIABILITY</td> <td style="text-align: center;">\$ 100,000</td> </tr> <tr> <td>MED EXP (Per person)</td> <td style="text-align: center;">\$ 5,000</td> </tr> <tr> <td>PERSONAL & ADV INJURY</td> <td style="text-align: center;">\$ 1,000,000</td> </tr> <tr> <td>GENERAL AGGREGATE</td> <td style="text-align: center;">\$ 2,000,000</td> </tr> <tr> <td>PRODUCTS-COMPLETED OPERATIONS/AGGREGATE</td> <td style="text-align: center;">\$ 2,000,000</td> </tr> </table>	EACH OCCURRENCE	\$ 1,000,000	FIRE LEGAL LIABILITY	\$ 100,000	MED EXP (Per person)	\$ 5,000	PERSONAL & ADV INJURY	\$ 1,000,000	GENERAL AGGREGATE	\$ 2,000,000	PRODUCTS-COMPLETED OPERATIONS/AGGREGATE	\$ 2,000,000						
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YES	5.	PREMISES/OPERATIONS	\$1,000,000 CSL BI/PD EACH OCCURRENCE \$2,000,000 ANNUAL AGGREGATE																												
YES	6.	INDEPENDENT CONTRACTOR	\$1,000,000 CSL BI/PD EACH OCCURRENCE \$1,000,000 ANNUAL AGGREGATE																												
YES	7.	CONTRACTUAL LIABILITY (MUST BE SHOWN ON CERTIFICATE)	\$1,000,000 CSL BI/PD EACH OCCURRENCE \$1,000,000 ANNUAL AGGREGATE																												
YES	8.	XCU COVERAGE	NOT TO BE EXCLUDED																												
YES	9.	UMBRELLA LIABILITY COVERAGE	\$2,000,000																												
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NO	11.	MISCELLANEOUS E & O	\$500,000 PER OCCURRENCE/CLAIM																												
NO	12.	MOTOR CARRIER ACT ENDORSEMENT	\$1,000,000 BI/PD EACH OCCURRENCE UNINSURED MOTORIST (MCS-90)																												
NO	13.	MOTOR CARGO INSURANCE																													
NO	14.	GARAGE LIABILITY	\$1,000,000 BODILY INJURY, PROPERTY DAMAGE PER OCCURRENCE																												
NO	15.	GARAGEKEEPER'S DIRECT LIABILITY	\$500,000 COMPREHENSIVE \$500,000 COLLISION																												
NO	16.	INLAND MARINE BAILEE'S INSURANCE	\$																												
NO	17.	DISHONESTY BOND	\$																												
NO	18.	BUILDERS RISK	PROVIDE COVERAGE IN THE FULL AMOUNT OF THE CONTRACT UNLESS PROVIDED BY OWNER.																												
NO	19.	USL&H	FEDERAL STATUTORY LIMITS																												

- 20. CARRIER RATING SHALL BE BEST'S RATING OF A-VII OR BETTER OR ITS EQUIVALENT.
- 21. THE COUNTY SHALL BE LISTED AS AN ADDITIONAL INSURED ON ALL POLICIES EXCEPT WORKERS' COMPENSATION AND AUTO. ENDORSEMENT PAGE(S) MUST BE PROVIDED FOR EACH CERTIFICATE OF INSURANCE AS LONG AS THE CONTRACT IS IN EFFECT.
- 22. CERTIFICATE OF INSURANCE SHALL SHOW THE BID NUMBER AND TITLE.
- 23. OTHER INSURANCE REQUIRED_____.

INSURANCE AGENT'S STATEMENT AND CERTIFICATION: I HAVE REVIEWED THE ABOVE REQUIREMENTS WITH THE BIDDER NAMED BELOW AND HAVE ADVISED THE BIDDER OF REQUIRED COVERAGE.

Agency Name: _____ Authorizing Signature: _____

BIDDER'S STATEMENT AND CERTIFICATION: IF AWARDED THE CONTRACT, I WILL COMPLY WITH THE CONTRACT INSURANCE REQUIREMENTS.

Bidder Name: _____ Authorizing Signature: _____

**ATTACHMENT B
INVITATION FOR BIDS NUMBER 3345**

AFFIDAVIT OF COMPLIANCE

WITH

TENNESSEE CRIMINAL HISTORY RECORDS CHECK

TENNESSEE CODE ANNOTATED, SECTION 49-5-413

(To be submitted with bid by contractor)

I, _____, President or other Principal

Officer of _____, swear or affirm that the
Name of Company

Company is in compliance with Public Chapter 587 of 2007, codified at Tennessee Code Annotated 49-5-413, in effect at the time of this bid submission at least to the extent required of governmental entities. I further swear or affirm that the company is in compliance with Tennessee Code Annotated, § 49-5-413.

President or Principal Officer

For: _____
Name of Company

STATE OF TENNESSEE}
COUNTY OF _____ }

Subscribed and sworn before me by _____,

President or Principal Officer of _____,

On this _____ day of _____ 2_____.

Notary Public

My Commission expires: _____

**ATTACHMENT C
INVITATION FOR BIDS NUMBER 3345**

AFFIDAVIT OF COMPLIANCE

WITH

**DRUG-FREE WORKPLACE REQUIREMENTS OF
TENNESSEE CODE ANNOTATED, § 50-9-113**

(To be submitted with bid by contractor with five (5) or more employees)

I, _____, President or other Principal Officer of

_____, swear or affirm that the
Name of Company

Company has a drug-free workplace program that complies with Title 50, Chapter 9, Tennessee Code Annotated, in effect at the time of this bid submission at least to the extent required of governmental entities. I further swear or affirm that the company is in compliance with Tennessee Code Annotated, § 50-9-113.

President or Principal Officer

For: _____
Name of Company

STATE OF TENNESSEE {COUNTY OF _____ }

Subscribed and sworn before me by _____,

President or principal officer of _____,

On this _____ day of _____ 2_____.

Notary Public

My Commission expires: _____



Transportation Safety Division

3M™ Connected Roads All Weather Elements

Product Bulletin CR
AWEMay 2019

Replaces Product Bulletin Series Dry, Series 50, Series 70, Series 90, and Series Wet Dated January 2019

1 Description

3M Connected Roads All Weather Elements (“Elements”) have been designed for use on roadways and highways, primarily as long line pavement markings. They can be used in either new marking applications or as parts of maintenance marking applications. Elements, when used with compatible binders, form markings that are highly visible, day and night, under both dry and wet weather conditions.

Table 1. 3M Connected Roads All Weather Elements product family.

Series Names			
Dry White	50	90	Wet White
Dry Yellow	51	91	Wet Yellow
Dry M White	50M	70M	Wet M White
Dry M Yellow	51M	71M	Wet M Yellow
Dry E White	50E	70E	Wet E White
Dry E Yellow	51E	71E	Wet E Yellow

2 Composite Optic Construction

Elements consist of an outer layer of microcrystalline ceramic beads partially embedded into composite cores to provide optimal performance under dry and/or wet conditions.

3 Specifications

3.1 Retroreflectivity

Elements, when tested according to the methods below, shall have the minimum wet and dry cup brightness values presented in Table 2.

Table 2. Minimum initial coefficients of retroreflection [cd/lx/m²].

Property/test method	Series Dry, Dry E, Dry M	Series 50, 50E, 50M	Series 90, 70E, 70M	Series Wet, Wet E, Wet M
Dry Cup Brightness R _A , cd/lx/m ²	White: 18.6 Yellow: 11.5	White: 7.4 Yellow: 4.6	White: 1.8 Yellow: 1.1	N/A
Wet Cup Brightness R _A , cd/lx/m ²	N/A	White: 2.4 Yellow: 1.2	White: 4.2 Yellow: 2.1	White: 6.0 Yellow: 3.0

3.2 Retroreflectivity Measurements

3.2.1 Equipment and Supplies

- 8 to 24 ounce (200 to 800 mL) glass jar and lid
- No. 30 US mesh 8" (200 mm) sieve or close equivalent
- Sieve pan
- Sieve lid
- 400 mL glass beaker
- Glass stir rod or metal spatula
- Large glass or plastic funnel (greater than 5 in. / 130 mm top opening)
- Balance, accurate to 0.1 gram
- Metal or plastic sample weighing pans
- Concentrated Simple Green[®] All Purpose Cleaner
- Drying oven, set to 150 °F (65 °C)
- Sample cups - Glass petri dishes, approximately 2 to 4 in. (50 to 100 mm) diameter and at least ½ in. (12 mm) high
- RoadVista[®] 932 retroreflectometer or equivalent conforming to CIE Publication 054.2-2001 and/or ASTM E1709, capable of pointing nearly vertically down onto a sample resting on a horizontal surface with -4.0° entrance angle and 0.2° observation angle
- Wash bottle with water and soap solution - 200:1 water to pH neutral household dish-washing detergent (5 g/L)

3.2.2 Sample Preparation

1. Collect a representative sample of Elements.
2. Measure out 100 grams of sample using balance.
3. Place 100 grams sample of Elements in clean glass jar and screw on lid.
4. Shake vigorously by hand for one minute to remove fines.
5. Attach sieve pan to bottom of sieve.
6. Empty jar contents onto the sieve.
7. Place lid on sieve, then swirl and shake sieve and contents for 30 seconds.
8. Remove sieve pan and lid and discard pan contents.
9. Transfer sieve contents into a clean 400 mL glass beaker, using funnel if necessary.
10. Pour or spray Simple Green[®] over the Elements until Elements are barely submerged.

11. Swiftly stir submerged Elements with glass rod or spatula for 20 seconds and let stand for 20 minutes. Fill the beaker to at least half way with clean water, then stir for 20 seconds.
12. Decant as much liquid from the beaker as possible without pouring out Elements.
13. Refill beaker containing Elements to at least half way with clean water, stir for 20 seconds, then decant as much liquid as possible. Repeat until rinse water is clean and clear (3-5 times).
14. Pour the Elements from the beaker onto the sieve, to remove any excess water, and spread them out evenly on the sieve screen to form a thin layer. Rinse the elements in the sieve tray with clean water to remove any remaining debris and cleaning solution. Tilt the sieve slightly to allow excess retained water to run out of the sieve.
15. Place the sieve with Elements in the 150 °F (65 °C) drying oven and leave until thoroughly dry (allow at least 30 minutes).
16. Remove sieve and Elements from the oven and allow to cool to room temperature.
17. Transfer enough of the cooled Elements from the sieve to a glass petri dish, using a funnel if necessary, to form an even layer of Elements about ¼ in. (6 mm) deep.

3.2.3 Dry Cup Brightness Test Procedure

1. Calibrate retroreflectometer according to manufacturer's recommendations.
2. Use manufacturer-supplied stabilizing devices to ensure proper alignment of retroreflectometer with the sample in the petri dish.
3. Set the retroreflectometer to take measurements using -4.0° entrance angle and 0.2° observation angle.
4. Place the dish and sample on a flat, level surface.
5. Carefully rest the instrument on the rim of the petri dish with its measurement area positioned over the Elements.
6. Take a measurement and record the R_A value in $cd/lx/m^2$.
7. Repeat the procedure for 2 more samples from each batch or lot and report values as the averages of the three samples.

3.2.4 Wet Cup Brightness Test Procedure

1. Calibrate retroreflectometer according to manufacturer's recommendations.
2. Use manufacturer-supplied stabilizing devices to ensure proper alignment of retroreflectometer with the sample in the petri dish.
3. Set the retroreflectometer to take measurements using -4.0° entrance angle and 0.2° observation angle.
4. Place the dish and sample on a flat, level surface.
5. Using the wash bottle, gently flood and cover the Elements in the petri dish with the soap and water solution. Manually press down any Elements that float to ensure a smooth, even liquid surface above the Elements, across the entire petri dish.
6. Carefully rest the instrument on the rim of the petri dish with its measurement area positioned over the Elements.
7. Take a measurement and record the R_A value in $cd/lx/m^2$.
8. Repeat the procedure for 2 more samples from each batch or lot and report values as the averages of the three samples.

3.3 Gradation

The gradation of Elements shall meet or be within the limits in Table 3.

Table 3. Element gradation.

US Mesh	Micron	Mass Percent of Elements Passing ASTM D1921
10	2000	95-100
14	1410	0-40
20	850	0-5

4 Elements Use and Binder Compatibility

Table 4 presents the general compatibilities of Elements with several common pavement marking binders.

Table 4. General compatibilities of 3M Connected Roads All Weather Elements.

Binder	Target Thickness, final dry/cured (mils, 0.001")	Elements series for high dry reflectivity	Elements series for balanced wet and dry reflectivity	Elements series for high wet reflectivity	Elements series for all wet reflectivity
High build water-borne paint	18-25+	Dry	50	90	Wet
Thermoplastic	≥90	Dry	50	90	Wet
3M LPM 5000	18-25+	Dry	50	90	Wet
Epoxy and Polyurea (excluding LPM 5000)	18-25+	Dry E	50E	70E	Wet E
Methyl Methacrylate (MMA)	20-150+	Dry M	50M	70M	Wet M

4.1 Reflective Elements for High Build Waterborne Paint

Elements Series Dry, 50, 90, and Wet are generally compatible with paints formulated with Dow® FASTRACK™ HD21-A binder. Since formulations may vary, users should test for ultimate compatibility and performance. Markings should be applied at a target wet thickness of at least 25 mils (0.025 inches).

4.2 Reflective Elements for Thermoplastic Markings

Elements Series Dry, 50, 90, and Wet are generally compatible with formulations based on alkyd and hydrocarbon binders with a target thickness greater than 90 mils. At a minimum, these materials should meet AASHTO M249 specifications. Since formulations may vary, users should test for ultimate compatibility and performance.

4.3 Reflective Elements for Epoxy and Polyurea Markings

Elements Series Dry E, 50E, 70E, and Wet E are generally compatible with formulations of epoxy and polyurea pavement markings. Since formulations may vary, users should test for ultimate compatibility and performance.

4.4 Reflective Elements for 3M LPM 5000 Markings

Elements Series Dry, 50, 90, and Wet are compatible with 3M LPM 5000 markings. Please see [3M Product Bulletin 3M LPM 5000](#) for further information.

4.5 Reflective Elements for Methyl Methacrylate (MMA) Markings

Elements Series Dry M, 50M, 70M, and Wet M are generally compatible with MMA pavement markings. Since formulations may vary, users should test for ultimate compatibility and performance.

5 Installation

5.1 Weather and Pavement Conditions

Elements should be applied according to the manufacturers' application guidelines for the appropriate binders.

5.2 Installation Equipment

Elements must be installed using a double-drop Element/bead delivery system. The Elements must be installed as the first drop of the two drop system and at a truck speed of no greater than 8 mph to minimize loss, prevent rolling, and ensure adequate sink. Contact 3M Technical Service at 1-800-553-1380 for additional information on modifying existing equipment.

5.3 Binder Thickness

Elements should be applied at target binder thicknesses according to the guidelines presented in Table 4. Contact 3M Technical Service for product recommendations and additional application information and restrictions.

5.4 Placement of Elements and Beads

Elements and accompanying second drop beads should be applied to pavement marking binders such that the Elements and beads do not roll, thus ensuring that their exposed portions are free of binder material. Elements and beads should be embedded (sunk) into binders to a depth of approximately 50% of their diameter. Under-sinking the Elements and beads will result in their premature loss and the optical failure of the marking. Over-sinking the Elements will result in low dry and wet brightnesses.

5.5 Typical Properties

Typical initial retroreflectance values are shown in Table 5. Some variance should be expected across applications, and all values represent initial properties unless otherwise noted.

Table 5. Typical average initial coefficients of retroreflected luminance^a [mcd/m²/lx].

Property/test method	Series Dry, Dry E, Dry M	Series 50, 50E, 50M	Series 90, 70E, 70M	Series Wet, Wet E, Wet M
Retroreflectivity, Dry Average ASTM E1710	White: 1250 Yellow: 900	White: 700 Yellow: 525	White: 500 Yellow: 375	N/A
Retroreflectivity, Wet Recovery Average ASTM E2177	N/A	White: 275 Yellow: 225	White: 375 Yellow: 300	White: 400 Yellow: 325
Retroreflectivity, Wet Continuous Average ASTM E2832	N/A	White: 200 Yellow: 150	White: 275 Yellow: 225	White: 300 Yellow: 250

a. Typical retroreflectivity results represent average performance for smooth pavement surfaces. Results may vary due to differences in pavement type and surface roughness. Initial readings taken of “M” or “E” Elements must be performed after the treatment has been cleaned off of the Elements. Increased Elements drop rate may be necessary to compensate for increased surface area characteristic of rough pavement surfaces. Wet retroreflectivity testing of markings applied in grooved or recessed surfaces is difficult since water pools in recesses. In such cases, consider installing sections of pavement markings for testing on either a smooth section of the pavement surface, or on rigid panels (50 mil aluminum). If markings are applied to panels, allow them to cure, then move them carefully for retroreflectivity testing - make sure to protect the optics when transporting.

Elements with “E” and “M” designations have been treated to prevent them from over-sinking into the binder and to slow the wicking of the binder onto the Elements. This treatment causes a temporary reduction in retroreflectivity that is regained after exposure to weather and vehicle traffic. Retroreflectivity recovery may take up to 5 weeks, depending on the weather and vehicle traffic levels. Data presented in Table 5 were, therefore, taken after the treatment was cleaned off. Similarly, users should take initial retroreflectivity readings on E and M type Elements after the treatment has been cleaned off by exposure to weather and vehicle traffic. However, if spot checks are required for markings containing “E” or “M” Elements at the time of application, they should only be performed upon fully hardened markings and after the treatment has been manually cleaned off of the Elements. To remove the treatment, soak the line section to be measured with Concentrated Simple Green[®] All Purpose Cleaner. Let stand for 2 minutes, then rinse clean with water. Blot the line with a clean, dry cotton towel to remove excess water and allow to dry completely before performing dry or wet retroreflectivity tests.

Table 6 show typical properties for markings made with Elements.

Table 6. Other typical properties of 3M Connected Roads All Weather Elements.

Property	Test Method	Expected Result
Index of refraction of ceramic beads	ASTM E1967-98	1.89 for Dry, 2.4 for Wet
Acid resistance of glass	24-hr exposure of microcrystalline ceramic beads to 1% solution (by weight) sulfuric acid	No more than 15% of beads showing distinct opaque surface upon microscopic examination

5.6 Traffic Marking Binder Material

The marking binder shall be of quality and type as designated by governing agency. The quality binder shall be thoroughly mixed, homogeneous, and applied to the road surface per manufacturer's specifications.

5.7 3M Connected Roads All Weather Elements

Elements must be installed using the double-drop Element/bead delivery system. The Elements must be installed as the first drop of the double-drop system. The Elements shall be of the color of the traffic marking binder. Element types shall also be chosen for each binder type according to the criteria described in Table 4. The typical gradation for Elements is shown in Table 3. Contact 3M application engineering for additional installation questions.

5.8 3M Connected Roads All Weather Elements Application Rates

Minimum Elements application rates for smooth or densely-packed pavement surfaces are presented in Table 7.

The application rates stated provide good initial retroreflectivity and match the longevity, or restripe frequency, of most pavement marking binder systems to which the Elements are installed. More heavily traveled roads will require greater quantities of Elements to achieve similar longevities.

Rough pavement surfaces (open-graded mixes, large stone mixes, etc.) can have up to 50% more surface area than smooth surfaces. As a result, rough pavement surfaces require greater quantities of marking materials (binder, Elements, and beads) than smooth surfaces to achieve similar coverages.

Table 7. 3M Connected Roads All Weather Elements application rates.

Units	Minimum for Durable Markings on Smooth Surface	Minimum for High Build Paint or Temporary Markings on Smooth Surface
Pounds per 4-inch lineal foot	0.018	0.009
Pounds per mile, 4-inch width	93	46.5
Grams per 4-inch lineal foot	8	4
Grams per square foot	24	12
Grams per square meter	260	130
Pounds per gallon - 20 mils ~240 ft/gal	4.2	2.1
Pounds per gallon - 25 mils ~ 190 ft/gal	3.4	1.7
Pounds/100 Sq ft	5.3	2.6

5.9 Second Drop Glass Beads

A second drop of glass beads is necessary to improve physical characteristics, durabilities of finished markings, and assure expected track-free times. Glass beads usually provide some measure of increased visibility during dry conditions as well.

Many different glass bead gradations are currently used for pavement markings. Table 8 presents glass bead gradations appropriate for application to paint, polyurea, epoxy, 3M LPM 5000, MMA, and thermoplastic.

The gradation of the second drop must meet or be within the limits in Table 8.

Table 8. Typical gradations of second drop glass beads.

Common bead types with liquid pavement markings Bead gradations - mass percent passing (ASTM D1214)					
US Mesh	Microns	AASHTO M247 Type 1	Missouri Specification Type P ^a	FP03 718.19 Type 3	18/50 (Utah) Performance Specification
12	1700			100	
14	1410			95-100	
16	1180	100		80-95	
18	1000			10-40	65-80
20	850	95-100	90-97	0-5	
25	710			0-2	
30	600	75-95	60-87		0-30
40	425				
50	300	15-35	0-15		0-5
70	212		0-5		
80	180				
100	150	0-5			

a. A minimum of 15% of the total weight shall be from direct melt glass. All +30 US mesh beads shall be 85% minimum rounds and have a minimum crush strength of 30 lbs. in accordance with ASTM D1213.

Typical glass bead application rate ranges are shown in Table 9.

Table 9. Typical glass bead application rates.

Binder Type Units	High Build Waterborne Paint	Polyurea / 3M LPM 5000	Epoxy ^a	MMA	Thermoplastic
Pounds per 4" lineal foot	0.026 - 0.053	0.033 - 0.053	0.05 - 0.0917	0.033 - 0.053	0.033 - 0.053
Grams per 4" lineal foot	12 - 24	15 - 24	22.7 - 41.6	15 - 24	15 - 24
Pounds per gallon - 20 mils ~240 ft/gal	6.4 - 12.8	8.0 - 12.8	12 - 22		
Pounds per gallon - 25 mils ~190 ft/gal	5.1 - 10.2	6.4 - 10.2	9.5 - 17.4		
Pounds/100 Sq ft	7.94 - 15.87	9.92 - 15.87	15 - 27.5	9.92 - 15.87	9.92 - 15.87
Preferred bead type	Missouri Type P or 18/50 (Utah)			18/50 (Utah) or FP -3 #718.19 Type 3	

a. Bead drop rate may be adjusted to achieve adequate track-free time.

5.10 Quality of Second Drop Glass Beads

The required glass beads shall have an index of refraction of 1.5 when tested by the immersion method at 25 °C (77 °F). The glass beads shall be surface treated for optimal performance with the liquid binder traffic marking. The glass beads shall have a minimum of 70% rounds as measured according to ASTM D1155. The surfaces of the glass beads shall be free of pits and scratches. The glass beads retained on a #40 U.S. mesh sieve (425 microns) shall have a minimum crush strength of 30 pounds, in accordance with ASTM D1213.

6 Storage

For best results, store Elements, covered and off the ground, in a cool (40-100 °F, 4-38 °C), dry area, indoors or outdoors. Use Elements within one year of receipt. Follow binder and glass bead manufacturers' instructions for storage.

7 Health and Safety Information

Read all health hazard, precautionary, and first aid statements found in the Safety Data Sheet (SDS) and/or product labels of chemicals prior to handling or use. Refer to SDSs for information regarding volatile organic compound (VOC) contents of chemical products. Consult local regulations and authorities for possible restrictions on product VOC content and/or VOC emissions.

8 Quality Policy and Warranty Information

8.1 3M Basic Product Warranty

3M has no control over application methods or the quality of the surface to which materials are applied. Therefore, 3M's warranty for Elements shall be limited to the quality of materials supplied.

Elements are warranted ("Basic Warranty") to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this product bulletin. If the Elements are proven not to have met the Basic Warranty on their shipment date, then a buyer's exclusive remedy, and 3M's sole obligation, at 3M's option, will be refund or replacement of the Elements.

8.2 Disclaimer

THE 3M WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY IMPLIED WARRANTY ARISING OUT OF A COURSE OF DEALING OR OF PERFORMANCE, CUSTOM, OR USAGE OF TRADE.

8.3 Limitation of Liability

Except for the limited remedy stated above, and except where prohibited by law, 3M will not be liable for any loss or damage arising from the use of or the inability to use the Elements or any 3M product, whether direct, indirect, special, incidental, or consequential damages (including but not limited to lost profits, business, or revenue in any way), regardless of the legal theory asserted including warranty, contract, negligence, or strict liability. Before using, the user shall determine the suitability of Elements for his/her intended use and the user assumes all risk and liability whatsoever in connection therewith.

3M assumes no responsibility for any injury, loss, or damage arising out of the use of a product that is not of our manufacture. Where reference is made in our literature to a commercially available product made by another manufacturer (for example, application equipment), it shall be the user's responsibility to ascertain its effectiveness and to take any precautionary measures required for its use, as outlined by the product's manufacturer.

9 Other Product Information

Always confirm that you have the most current version of the applicable product bulletin, information folder, or other product information from 3M's Website at <http://www.3M.com/roadsafety>.

10 Literature References

3M IF 5.22	All Weather Paint Application Guidelines for Elements and Glass Beads on a High-Build Waterborne Traffic Marking Paint
3M IF 5.23	3M™ Connected Roads All Weather Elements Application Guidelines for 3M Connected Roads All Weather Elements
3M IF 5.24	3M™ All Weather Thermoplastic Pavement Markings Application Guidelines
3M IF 5.28	Liquid Pavement Marking Application Guidelines Series 5000
3M PB AWP	All Weather Paint
3M PB AWT	All Weather Thermoplastic
3M PB LPM 5000	3M™ Liquid Pavement Marking Series 5000

ASTM Test Methods are available from ASTM International, West Conshohocken, PA.

**For Information or
Assistance Call: 1-800-
553-1380
In Canada Call:
1-800-3M HELPS (1-800-364-3577)**

Internet:

<http://www.3M.com/roadsafety>

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