

ADDENDUM NO. 1

Sedgwick County Project: 2022 Painted Pavement Marking (R175-R)

The items contained herein now become a part of the referenced plans and specifications. Please read the following items and acknowledge receipt of this addendum on the Proposal Page Number P-1. NOTE: THIS ADDENDUM MUST BE ACKNOWLEDGED TO CONSTITUTE A VALID BID.

SPECS:

- Replace Index with Index Revised (Add Special Provision for Thermoplastic Pavement Marking; Update Page Numbers)
- Replace NTB-1 with NTB-1R (Increase length of project from 176 miles to 210 miles)
- Replace SOP-1 with SOP-1R (Increase paint quantity and add Thermoplastic items)
- Add Special Provision Thermoplastic Pavement Marking
- Replace QI-1 to 5 with QI-1R to 5R (Update quantities and add Thermoplastic quantities)
- Replace LM-1 with LM-1R (Add locations to map)

By: **James Weber**
James Weber, P.E.
Director of Public Works/County Engineer

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Date: February 22, 2022

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NOTICE TO BIDDERS

NOTICE IS HEREBY GIVEN that sealed proposals for construction work in
SEDGWICK COUNTY, State of Kansas, said work known as Sedgwick County Project
2022 Painted Pavement Marking (R175-R)

will be received at the Sedgwick County Purchasing Office, 525 N. Main, Room 823, Wichita, Kansas, 67203, until 1:45 p.m., Central Time, Tuesday, March 1, 2022, and then publicly opened at 2:00 p.m. at the Requests for Quotation/Proposal Meeting. Recommendations for purchase will be made the following Thursday at 10:00 a.m. at the Board of Bids and Contracts Meeting. The project to be constructed or improved is approximately 210 miles and is briefly described as follows (the "Project"):

Contractor Installed Painted Pavement Marking
on selected roads in Sedgwick County, Kansas

Proposals must be accompanied by a certified or cashier's check, or bid bond with a Surety licensed in the State of Kansas and acceptable to the County Clerk in an amount to be at least five percent (5%) of the proposal. Checks to be made payable to the County Clerk of Sedgwick County, Kansas, and drawn on a solvent Kansas Bank. These checks are to be retained by the County Clerk until the contract for the project shall have been awarded and are a guarantee that if awarded the contract, the bidder will enter a contract and give bonds as required.

Contract Documents are available in electronic form only and may be downloaded from
<https://ssc.sedgwickcounty.org/constructionprojects/>.

Company information of persons downloading Contract Documents will be collected to generate a plan holder list which will be updated and available on the Public Works construction project page found at www.sedgwickcounty.org/public_works/construction_info.asp.

If you experience any issues accessing the documents, please contact Ginger Cullen at Sedgwick County Public Works, (316) 660-1777.

Contract documents for the Project may be viewed at the following locations:

Office of the County Engineer, 1144 S. Seneca, Wichita, Kansas 67213
Office of the County Clerk, 525 N. Main, Wichita, Kansas 67203

The successful bidder will be furnished with one (1) set of paper Contract Documents.

The Board of County Commissioners reserves the right to reject any and all proposals and to waive technicalities.

BOARD OF COUNTY COMMISSIONERS
SEDGWICK COUNTY, KANSAS

NTB-1R

SCHEDULE OF PRICES

Project No.: 2022 Painted Pavement Marking (R175-R)

Type of Work: Pavement Marking

Bidding Item	Approx. Quantity	Unit	Unit Price	Amount
Pavement Marking Paint (White)	12,850	Gallon		
Pavement Marking Paint (Yellow)	4,200	Gallon		
Pavement Marking (Thermoplastic)(White)(4")(0.090")	53,500	Lin. Ft.		
Pavement Marking (Thermoplastic)(Yellow)(4")(0.090")	18,500	Lin. Ft.		
GRAND TOTAL				

In Words:

DOLLARS

Company or Firm Name

BY

TITLE

SPECIAL PROVISION

NOTE: This special provision is generally written in the imperative mood. The subject, "the *Contractor*" is implied. Also implied in this language are "shall", "shall be", or similar words and phrases. The word "will" generally pertains to decisions or actions of Sedgwick County Public Works.

THERMOPLASTIC PAVEMENT MARKING

1. DESCRIPTION

This special provision covers a retroreflective thermoplastic pavement marking material of a type that is applied to the road surface in a molten state by ribbon extrusion or screed extrusion with a surface application of glass beads. Upon cooling to a normal pavement temperature it produces a retroreflective marking of specified thickness and width capable of resisting deformation by traffic and maintenance vehicles.

BID ITEMS

Thermoplastic Pavement Marking (*) (+) (#)

* White or Yellow

+ Width (When bid per lineal foot) or
Symbol Type

Thickness

Pavement Pre-heating

2. CLASSIFICATION

The thermoplastic material shall be homogeneously composed of pigment, filler, resins, and glass beads. The thermoplastic shall be available in white and yellow.

3. MATERIALS

a. The vendor shall have the option of formulating the material according to its own specifications. However, the solid resin shall be a "maleic-modified glycerol ester resin" (alkyd binder). The alkyd binder shall consist of a mixture of synthetic resins; at least one of which is solid at room temperature, and high boiling point plasticizers. At least one-third of the binder composition shall be solid maleic-modified glycerol ester resin and shall be no less than eight (8) percent by weight of the entire material formulation. The alkyd binder shall not contain petroleum based hydrocarbon resins. The physical and chemical properties contained in this special provision shall apply regardless of the vendor's specifications. The material upon heating to application temperature shall not exude fumes that are toxic, or injurious to persons or property. The pigment, beads, and filler shall be well dispersed in the resin.

b. **Glass Beads.**

- i. **Pre-mix:** The pre-mix beads shall be uncoated and conform to AASHTO M247-81 (1986) Type I.

SPECIAL PROVISION – THERMOPLASTIC PAVEMENT MARKING

- ii. **Drop-on:** The drop-on beads shall be moisture resistant coated, and they shall conform to AASHTO M247-81 (1986) Type I. The beads shall have a minimum of 80 percent true spheres.

4. REQUIREMENTS OF THE THERMOPLASTIC MIXTURE

- a. **Specific Gravity.** The specific gravity of the thermoplastic material shall not exceed 2.3.
- b. **Composition.** The pigment, beads, and filler shall be uniformly dispersed in the resin. The material shall be free from skins, dirt, and foreign objects and shall comply with the requirements in Table 1.

Table 1. Composition (Percentages by Weight)

Component	White	Yellow
Binder	18.0 min.	18.0 min.
Glass Beads	30.0 min.	30.0 min.
Titanium Dioxide	10.0 min.	N/A
Yellow Pigment	N/A	2.0 min.
Calcium Carbonate & Inert Fillers	42.0 max.	50.0 max.

- c. **Physical Characteristics.** The thermoplastic material after heating for 4 hours ± 5 minutes at $425^{\circ} \pm 3^{\circ}$ Fahrenheit (F)($218^{\circ} \pm 2^{\circ}$ Celsius) under agitation shall meet the following luminosity and color requirements:
 - i. **Luminosity**
White: Daylight reflectance at 45 degrees, 0 degrees – 75% minimum
Yellow: Daylight reflectance at 45 degrees, 0 degrees – 45% minimum
 - ii. **Color**
The colors shall match Federal Highway Administration yellow and white color specifications.
 - iii. **Set Time**
When applied at a temperature of $412.5^{\circ}\text{F} \pm 12.5^{\circ}\text{F}$ ($211^{\circ}\text{C} \pm 7^{\circ}\text{C}$) and thickness of 60 mils to 185 mils (1.5mm to 4.7mm) the material shall set to bear traffic in not more than 2 minutes when the air and road surface temperature is approximately $50^{\circ}\text{F} \pm 3^{\circ}\text{F}$ ($10^{\circ}\text{C} \pm 2^{\circ}\text{C}$) and not more than ten minutes when the air and road surface temperature is approximately $90^{\circ}\text{F} \pm 3^{\circ}\text{F}$ ($32^{\circ}\text{C} \pm 2^{\circ}\text{C}$).

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iv. **Bond Strength**

After heating the thermoplastic material for 4 hours ± 5 minutes at $425^{\circ}\text{F} \pm 3^{\circ}\text{F}$ ($218^{\circ}\text{C} \pm 2^{\circ}\text{C}$), the bond strength to Portland cement concrete shall exceed 180 psi (1.24Mpa), (Method – ASTM D4796-88).

v. **Cracking Resistance at Low Temperature**

After heating the thermoplastic material for 4 hours ± 5 minutes at $425^{\circ}\text{F} \pm 3^{\circ}\text{F}$ ($218^{\circ}\text{C} \pm 2^{\circ}\text{C}$), applying to concrete blocks for cooling $15^{\circ}\text{F} \pm 3^{\circ}\text{F}$ ($9.4^{\circ}\text{C} \pm 1.7^{\circ}\text{C}$), the material shall show no cracks when observed from a distance exceeding 12 inches (30cm).

vi. **Impact Resistance**

After heating the thermoplastic material for 4 hours ± 5 minutes at $425^{\circ}\text{F} \pm 3^{\circ}\text{F}$ ($218^{\circ}\text{C} \pm 2^{\circ}\text{C}$) and forming test specimens, the impact resistance shall be a minimum of 10 inch pounds (1.13J).

vii. **Softening Point**

After heating the thermoplastic material for 4 hours ± 5 minutes at $425^{\circ}\text{F} \pm 3^{\circ}\text{F}$ ($218^{\circ}\text{C} \pm 2^{\circ}\text{C}$) and testing in accordance with ASTM D36, the materials shall have a softening point of $215^{\circ}\text{F} \pm 15^{\circ}\text{F}$ ($102.5^{\circ}\text{C} \pm 9.5^{\circ}\text{C}$).

viii. **Flowability**

After heating the thermoplastic material for 4 hours ± 5 minutes at $425^{\circ}\text{F} \pm 3^{\circ}\text{F}$ ($218^{\circ}\text{C} \pm 2^{\circ}\text{C}$) and testing for flowability, the white thermoplastic shall have a minimum percent residue of 18 and the yellow thermoplastic shall have a maximum residue of 21 percent.

ix. **Yellowness Index**

The white thermoplastic material shall not exceed a yellowness index of 0.15.

x. **Flowability – Extended**

After heating the thermoplastic material for 8.5 hours ± 5 minutes at $425^{\circ}\text{F} \pm 3^{\circ}\text{F}$ ($218^{\circ}\text{C} \pm 2^{\circ}\text{C}$) and testing for flowability, the thermoplastic shall have a maximum percent residue of 28 percent.

xi. **Flash Point**

The thermoplastic material shall have a flash point not less than 475°F (246°C) when tested in accordance with ASTM D92 “Flash and Fire Points by Cleveland Open Cup.”

- d. **Storage Life.** The material shall meet the requirements of this special provision for a period of at least 1 year. The thermoplastic must also melt uniformly with no evidence of skins or unmelted particles for this minimum 1-year period. The manufacturer shall replace any material not meeting the above requirements.

- e. **Primer Sealer.** Primer sealers for use on Portland cement concrete or hot mix asphaltic Concrete surfaces prior to application of the thermoplastic material shall be either

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recommended by the thermoplastic material manufacturer or especially compounded for use with the specified thermoplastic material.

5. APPLICATION PROPERTIES

- a. The thermoplastic material shall readily apply to the pavement at temperatures of 400°F – 440°F (204°C – 226°C) from approved equipment to produce “an extruded line which shall be continuous and uniform to shape having clear and sharp dimensions” at a thickness of 0.090 – 0.125 in. (2.286 – 3.175mm). Low wear longitudinal and special markings, i.e., lane lines, center lines, edge lines, gore, island, diagonal strip markings, and bike lane symbols/legends, shall have a minimum thickness of 0.090 inch (2.286mm) at the edges and a maximum of 0.120 inch (3.048mm) at the center with a minimum of 0.090 inch (2.286mm) maintained throughout. High wear and transverse markings, i.e., stop lines, symbols and legends, shall have a minimum thickness of 0.125 inch (3.175mm) at the edges and a maximum of 0.188 inch (4.775 mm) at the center with a minimum of 0.125 inch (3.175mm) maintained throughout.
- b. The material shall not exude fumes which are toxic, obnoxious or injurious to persons, animals or property when it is heated during applications. The manufacturer shall provide material safety data sheets for the product.
- c. The application of additional glass beads by drop-on method shall be at a uniform rate not to exceed 10 pounds (4.53kg) of glass spheres every 100 ft² (9,29m²) of marking.
- d. The material, when formed into traffic markings, must be readily renewable by placing an overlay of new material directly over old markings of the same material. Such new material shall bond itself to the old markings in such a manner that no splitting or separation takes place.

6. PACKAGING AND MARKINGS

- a. The thermoplastic material shall be packaged in suitable containers that will not adhere to the product during shipment and storage. The container of thermoplastic material shall weigh approximately 50 pounds (23kg). Each container shall designate the color, binder (alkyd), extrusion, user information, manufacturer’s name and address, batch number and date of manufacture. Each batch manufactured shall have its own separate number. The label shall warn the user that the material shall be heated in the range of 400°F – 440°F (204°C – 226°C). No mislabeled containers shall be allowed for any reason.
- b. The Contractor shall assume all costs arising from the use of the patented materials, equipment, devices or processes used on or incorporated in the work. The Contractor agrees to indemnify and save harmless the Engineer from all legal suits or action of every nature for, or on account of, the use of any patented materials, equipment, devices or processes.

7. MATERIAL ACCEPTANCE

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Final acceptance of the particular lot of thermoplastic material or drop-on glass spheres shall be based on receipt of written certification of the following:

1. Compliance with the specification for material composition requirements.
2. Compliance with the physical properties of the thermoplastic material or glass spheres with the specification.
3. Manufacturer's test results for each lot of thermoplastic material or glass spheres.
4. Identification requirements are satisfactory.

Written certification shall be delivered to the Engineer via the General Contractor no less than 48 hours prior to the placement of the thermoplastic.

8. METHODS OF SAMPLING AND TESTING

- a. The minimum batch size of thermoplastic material when tested shall not be less than 2000 pounds (907kg) unless the total order is less than that amount. A small trial batch should be made prior to making the thermoplastic marking material in large quantities to make certain the finished product will comply with all requirements of this special provision.
- b. The thermoplastic material shall conform to AASHTO M249-79 (1986) and T250 with the appropriate method in Federal Test Method Standard No. 141 or ASTM designation. At the Engineer's discretion, the material may be tested by State or independent laboratories following ASTM test methods D-4960-89, D-4797-88, and D-4796-88.

9. THERMOPLASTIC PERFORMANCE AND APPLICATION CHARACTERISTICS

- a. The thermoplastic material shall not deteriorate by contact with sodium chloride, calcium chloride or other chemicals used to prevent roadway ice. Additionally, the thermoplastic shall not deteriorate because of the oil content of pavement materials or from contact with oil droppings other effects of traffic.
- b. All application equipment shall be approved by The Engineer prior to use on the project. Application equipment shall provide for varying traffic marking application widths.

The material shall be applied to the pavement by ribbon extrusion or by screed extrusion. The equipment shall have a heated path for material flow between melting kettles and the die, inclusive.

Motorized units shall have a totally closed material delivery system between the melting kettles and application die(s) to prevent loss of temperature. All melting of the thermoplastic material shall be performed on the application equipment.

Non-motorized hand applicators shall have a protective hood over the die area with a source of heat mounted on the hood to provide heat to the die area. The die shall be attached to the non-motorized applicator at the factory. Walk behind carts with open-air systems for

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use on symbols and transverse lines shall be approved by the Engineer prior to use on the project. Approval may include sample application of thermoplastic material, at Contractor expense, for comparison against unacceptable work as described in section 12.0 of this special provision.

Motorized units shall have an electronic skip-timing system to target specified material thickness(es) (in mils). This system shall also adjust bead tank pressure to provide specified bead application rate(s) (in lbs/100ft²).

An auxiliary low-speed propulsion system initiated and regulated by the electronic skip-timing system is preferred, but not mandatory.

- c. The equipment used to install hot applied thermoplastic material by contract under this special provision shall be constructed to provide continuous uniform heating to temperatures of 400°F – 440°F (204°C – 226°C), mixing and agitation of the material. Conveying parts of the equipment between the main material reservoir and the line-dispensing device shall prevent accumulation and clogging. All parts of the equipment that come in contact with the material shall be constructed for easy accessibility and exposure for cleaning and maintenance. The equipment shall operate so that all mixing and conveying parts including the line dispensing device maintains the material at the plastic temperature. The use of pans, aprons or similar appliances that the dispenser overruns will not be permitted under this special provision. The equipment shall provide for varying traffic marking application widths.
- d. The application equipment shall be mobile and maneuverable to the extent that straight markings can be followed and normal curves can be made in a true arc.
- e. Glass spheres applied to the surface of the completed marking shall be applied by an automatic bead dispenser attached to the marking machine so that the beads are dispensed closely behind the installed marking. The glass sphere dispenser shall be equipped with an automatic cut-off control synchronized with the cut-off of the thermoplastic material.
- f. A special kettle shall be provided for uniformly melting and heating the thermoplastic material. (The kettle shall be mounted on motorized equipment.) It shall be equipped with an automatic thermostat control device and material thermometer for positive temperature control and to prevent overheating or underheating of the material. The heating kettle and all related application equipment shall meet the requirements of the national Fire Underwriters and the National Fire Protection Association of the state and local authorities.

10. INSTALLATION TECHNIQUES

a. Surface Preparation

i. Moisture

All surfaces shall be inspected for moisture content prior to application of the thermoplastic material. Approximately two square feet (0.372m²) of a clear plastic or tar paper shall be laid on the road surface and held in place for 15-

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20 minutes. The underside of the plastic or tar paper shall then be inspected for a build up of condensation from the road surface. If the amount of condensed moisture is of a sufficient amount to result in water dripping from the plastic or tar paper when held in a vertical position, thermoplastic material shall not be applied. This test shall be repeated until the moisture in the road surface has been allowed to evaporate to a level whereby there is not excessive build up of condensation on the underside of the plastic or tar paper.

ii. **Cleaning**

All surfaces shall be clean of all non-asphaltic materials and dry before thermoplastic can be applied. Cleaning methods shall include, but not be limited to, compressed air, power broom and water. All cleaning shall be performed to the satisfaction of the Engineer prior to the installation of the marking material. If the thermoplastic is to be applied over existing paint lines, the paint line shall be swept with a mechanical sweeper or wire brush to remove poorly adhered paint and dirt that would interfere with the proper bonding of the thermoplastic material. Latence and curing compound shall be removed from all new Portland cement concrete surfaces by loose grain abrasive pressure blasting. The Contractor shall take full responsibility for pavement/shoulder damage due to surface cleaning.

iii. **Layout**

The pavement marking shall be placed in proper alignment with guidelines established on the roadway. All guidelines greater than one-half inch (12.7mm) in width shall be completely covered by thermoplastic material or removed by a method approved by the Engineer after thermoplastic application. Deviation from alignment established shall not exceed two inches (50.8mm), and, in addition, the deviation in alignment of the marking being placed shall not exceed one inch (25.4mm) per 200 feet (70m) of roadway nor shall any deviation be abrupt. Longitudinal markings shall be offset at least two inches (50.8mm) from construction joints and pavement seams/edges. All temporary/construction pavement marking shall be removed prior to the application of the thermoplastic material.

iv. **Sealer**

A primer sealer of the type recommended by the manufacturer of the thermoplastic material shall be applied on all Portland cement concrete pavement surfaces, all asphaltic surfaces greater than 2 years in age, and, if recommended by the manufacturer, on other types of pavement surfaces, prior to the installation of the thermoplastic material. The primer shall be applied as recommended by the thermoplastic manufacturer, and it shall be void of solvent and water prior to the application of thermoplastic material.

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11. TEMPERATURE REQUIREMENTS

The ambient air and road surface shall be 55°F (12.8°C) for screed extrusion and 65°F (18.3°C) for ribbon extrusion and rising before application of thermoplastic material can begin. Wind chill shall be considered in conjunction with the air temperature. If the wind chill factor creates an apparent air temperature of 45°F (7.2°C) or less for screed extrusion and 55°F (12.8°C) for ribbon extrusion or less, thermoplastic material application will not be allowed.

12. CONTRACTOR RESPONSIBILITY

The Contractor shall notify the Engineer a minimum of 48 hours prior to the application of the thermoplastic material to enable an inspector to be present during the application process. At the time of notification, the Contractor shall indicate the manufacturer and the lot numbers of the thermoplastic that he intends to use. A check should be made by the Contractor to insure that the approved lot numbers appear on the material packaging. Failure to do so is cause for rejection of the thermoplastic material.

13. MARGINAL WEATHER INSTALLATION

The Contractor shall bid, per lineal foot, a pay item that will allow for pre-heating the pavement in marginal weather situations, i.e., moisture visible or present (as indicated by bubbles or holes in the finished line; pavement temperature less than 50°F (10°C); cool/windy conditions; etc. Pre-heating shall only be allowed as directed by the Engineer to improve the probability for proper bond between material and pavement. Pre-heating shall be allowed to temperatures not exceeding 150°F (65.5°C). The Contractor shall take full responsibility for pavement damage due to pre-heating the pavement.

14. TIME OF YEAR

Installation of thermoplastic pavement marking material shall be performed between April 1st and October 15th of any calendar year. Any material installed outside of these dates shall be done so only after the marking contractor submits written certification that all liability for proper installation rests with the contractor. The Engineer shall make final determination for acceptability of conditions for installation. Any remedial action shall be the contractor's responsibility.

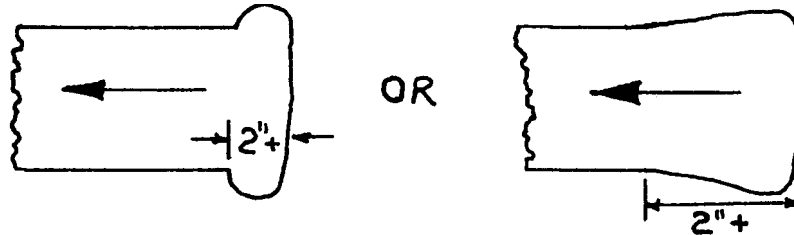
15. PENALTIES

It is agreed to by the Contractor and any sub-contractors that the esthetics, as well as the durability, of the thermoplastic pavement marking is of paramount importance. Under this agreement, penalties shall be levied for substandard work. Substandard work described herein shall carry the prescribed penalties when the Engineer determines the substandard work to be correctable by the Contractor. Illustrations, when used, are for example only.

- a. **Lack of specified thickness.** The full unit price bid per foot shall be penalized if lack of thickness is found more than three (3) times per mile, or project if less than one mile in length. Each line shall be checked a minimum of six (6) times per mile, or project if less than one mile in length, using the random number tables and method of sampling as set forth in section 5.17.06 of Part V of the KDOT Construction Manual.

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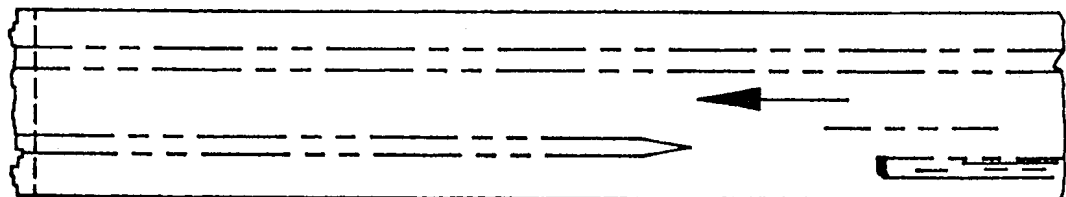
- b. **Lack of specified width.** Payment shall be made with penalty being equal to 25% of the unit price bid per foot for each $\frac{1}{4}$ " of width lacking not to exceed 100% of the unit price bid per foot for the length of the line less than specified width. Penalty shall be imposed upon the first occurrence and every occurrence thereafter.
- c. **Bell ends.** The full unit price bid per foot shall be withheld for wide "bell" ends greater in length than two (2) inches. This penalty shall be for the full ten (10) feet of a lane line or broken center line or for no more than ten (10) feet of a long line.



- d. **Lack of adhesion.** The full unit price bid per foot shall be withheld for one (1) foot for each occurrence if found more than three (3) times per mile, or project if less than one mile in length.

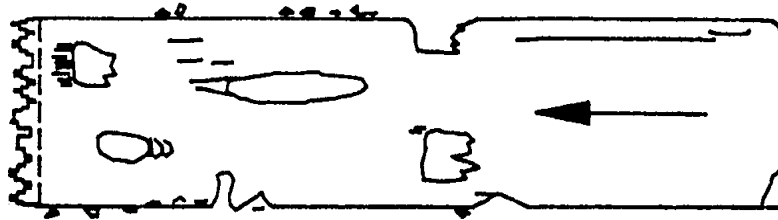


- e. **Line Deviation.** A line that in the judgment of the Engineer deviates from the specified layout by an unreasonable amount shall be replaced. The Contractor shall be responsible for removal of the deviated marking material/repair of the pavement as designated by, and to the satisfaction of, the Engineer at no additional compensation.
- f. **Pitted Line.** The full unit price bid per foot shall be withheld for each pit greater than ten (10) feet in length.

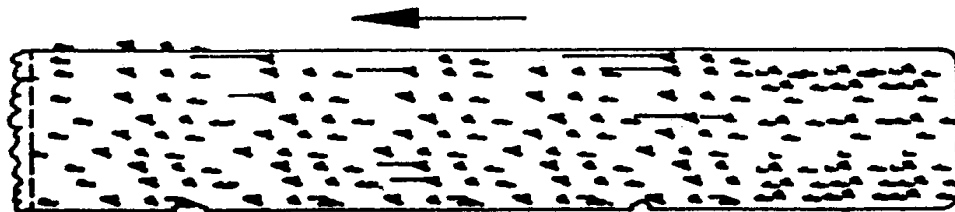


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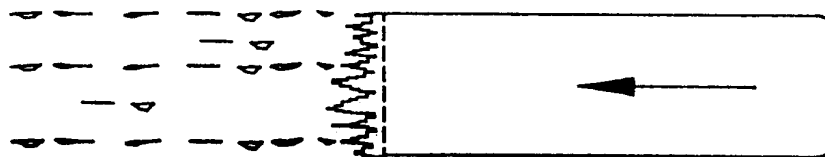
- g. **Gaps in Line or Crumbly Edges.** The full unit price bid per foot shall be withheld for the entire length of the portion of any line receiving less than the required amount of thermoplastic material. Penalty shall be imposed when the Contractor fails to correct line thickness after the second warning within a mile, or project if less than one mile in length.



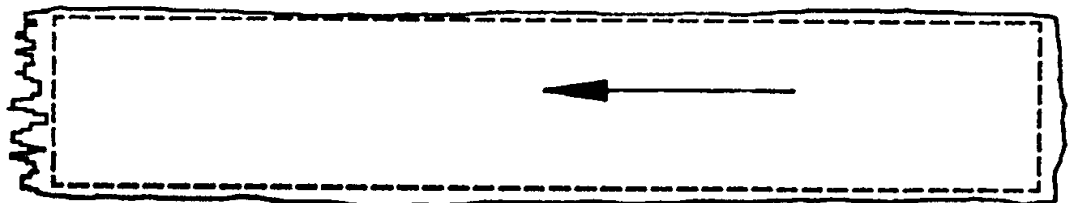
- h. **Rough Line Surface.** The full unit price bid per foot shall be withheld for the entire length of the portion of any line with a rough or “burlap” surface. Penalty shall be imposed upon the first occurrence and every occurrence thereafter.



- i. **Excessive Dripping between Lines.** The full unit price bid per foot shall be penalized for the length of any dribbled open space between broken lines that is not removed to the satisfaction of the Engineer before leaving the project site that work day. Penalty shall be imposed upon the first occurrence and every occurrence thereafter.

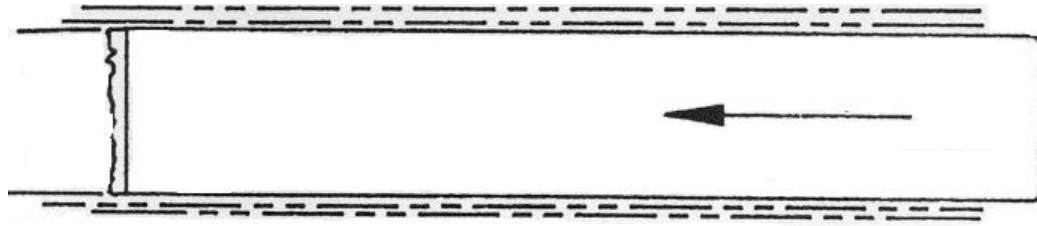


- j. **Swollen Line of Excessive Width:** The full unit price bid per foot shall be penalized for swollen lines in excess of the specified width.

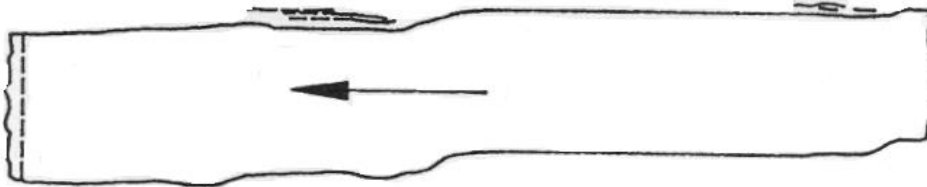


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- k. **Smeared Line Edges.** Fifty (50) percent of the unit price bid per foot shall be penalized for each occurrence of a length greater than fifteen (15) feet.



- l. **Wavy Line.** The full unit price bid per foot shall be withheld for the entire length of waviness in a line caused by poor operation by the driver/operator of the application equipment. Penalty shall be imposed from the first occurrence.



- m. **Lack/Excess of Surface Beads or Improper Application.** The full unit price bid per foot shall be withheld for each lineal foot of material with inappropriate application rate of the surface glass beads. The same penalty shall apply if the beads are not evenly disbursed across and along a line or if the beads imbed improperly. Penalty shall be imposed for each instance that the Contractor fails take corrective action after one warning by the Engineer.
- n. **Work Outside the Scope/Limits of Project.** Payment for all pavement marking work performed shall be withheld in full until the Contractor (a) removes all pavement marking material placed outside the scope/limits of the project, and (b) repairs the pavement surface as directed by and to the satisfaction of the Engineer and the local entity, if different from the Engineer.
- o. **Timeliness.** All thermoplastic material shall be completely installed within one (1) calendar week of the road surface material being laid. Failure to install markings on schedule shall result in liquidated damage of \$1500 per day, separate from the project liquidated damages as stated elsewhere in the Contract documents, until pavement markings are installed on schedule, or completion of the markings completes the project. These liquidated damages shall be imposed each time the Contractor fails to install pavement markings within the one week window as described above.

16. METHOD OF MEASUREMENT

The thermoplastic pavement marking shall be measured by the linear foot for longitudinal and transverse lines, and per each for symbols as indicated in the Plans and other Contract documents. When measured per linear foot, it will be measured by the linear foot for each length of the various widths and colors complete in place.

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17. BASIS OF PAYMENT

Payment for thermoplastic pavement marking shall be made at the contract lump sum price bid or the contract unit price bid per linear foot of specified width and color, and per each for each symbol, less any applicable penalties as described in section 12.0, or any liquidated damages.

Revised 1-2021

2022 R175R Quantities
(For Information Only - Lin Ft & Each

ROAD	MILE	4"W	6"W	12"W	16"W	24"W	4"Y	12"Y	Lt Arr	Rt Arr	"R"	NOTES
622	1	10504	323				1782					
622	2	10344	305				3987					
622	3	10534					2316					
622	4	10336					1290					
622	5	10491					3929					
622	6	10324					4733					
622	7	9934					1979					
622	8	10606					1290					
622	9	10430					4684					
622	35	2210					707					Middle Section
622.5	30	6376	2448			114	9093	971	7	3		Pawnee
622.5	31	9148	2870			36	11015	89	6			Pawnee
624	15	10303					2774					
624	16	10292					2097					
624	17	10291					4101					
626	22	7023					1498					E of K42
626	32	10396					3057					
626	33	10597					5157					
626	34	10671					1310					
626	35	10340					3960					
626	36	10309					3311					
628	19	6978	115			40	7339		55	3		East of K42
628	20	10010					1210					
628	21	10428	151				4269	46	3			
628	22	9609	818			24	7914	141	5			
628	24	9869	442			72	4140	194	4			
628	29		7710		445	227	9216	114	30	3		
628	32	10110					4940					
630	22	10660					4334					
630	24	9375	396			35	2472	40	2			
632	16	9792						1210				East of K42
632	22	10516			88	66	2337				4	
632	23	10564	268				5463	145	4			
632	24	9383	1491			37	4052	61	2			
632	25	3712	1473			148	4212		2			W 1/2 Mile
632	29	4834	110		88	92	3980	71	2		4	E of Clifton
632	30	10038	105				4770	83	2			
632	31	10090	105				1220					
634	25	11232	65		140	33	6225	25	2			
634	26	9961	322		130	89	4157	32				
634	27		3060			103	13536	443	37			
634	28		1810				7508					E 1/2 Mile
634	29		2544		88	113	8974	341	14			
634	32		4392				16018	44	1			

ROAD	MILE	4"W	6"W	12"W	16"W	24"W	4"Y	12"Y	Lt Arr	Rt Arr	"R"	NOTES
634	33		1970				7626					
634	34		1940				7522					
634	35		2570				10192					
634	36		2600				10430					
636	1	10284					2705					
636	2	10490					1300					
636	3	10525					1310					
636	4	10530					1310					
636	5	10502					2651					
636	6	10380					1320					
636	7	10570					3470					
636	8	10332					1310					
636	9	13670					2925					
636	15	10478					2565					
636	16	10430					1320					
636	17	10472					1300					
636	18	10456					2211					
636	19	10242					1280					
636	20	10635					1310					
636	21	10480			88	66	2434				4	
636	22	10613					1320					
636	23	10605					1310					
636	24	5313					670					W 1/2 Mile
636	27	6204	340	152			3839					E 3/4 Mile
636	33	10471					3929	62		4		
636	34	1659					1173					W 1/4 Mile
636.5	35	2167					300					
638	26	10286				15	3405					
638	27	9589	657			14	4429					
638	28	10214					2613					
638	33	10414					1290					
638	34	10835					3067					
638	35	10535					2895					
638	36	10669			44	33	5572				2	
639	29	13122	232	50			8660	43				
640	25	10390			88	60	3945					
640	26	10165					1667					
640	32	9130	68	111			4559	1	1	3		
640	33	7308					7746					
642	15	10718					2135					
642	16	10568					4192					
642	17	10362					3380					
642	30	3130					3049					
642	31	10256					5140					
642	32	10792					6650					
642	33	10299					5887					
642	34	10547			88	66	5690				4	
642	35	10646					7686					

ROAD	MILE	4"W	6"W	12"W	16"W	24"W	4"Y	12"Y	Lt Arr	Rt Arr	"R"	NOTES
642	36	10574					5745					
644	32	9879	218		30	61	4967	63	2			
647	9	3348					1810					
648	22	10451					2792					
648	23	10460					2180					
648	24	9985			88	66	3716					
771	Q	3946	3445				4859					S of US54
772	Q	5891	405				2246					S of US54
772	R	10646					2294					
772	S	8160			90	48	8932					
772	T				88	355	9242					
773	U	10405					1576					
773	V	10850					13167					
773	W	10346					2697					
773	X	9902					1240					
773	Y	10792					1340					
773	Z	10460					1200					
773	ZA	10484					1310					
773	ZB	10760					6671					
773	ZC	10468					3693					
773	ZD	10536					5346					
781	R	10822			88	66	2145				4	
782	R	4052			88	66	5396				4	
783	R	9857		46	88	88	2694					
783	S	10437					1300					
783	T	10750					2916					
787	U	10708					3129					
787	V	10347					3901					
787	W	10162					2885					
787	X	10216					2216					
787	Y	10880					1260					
787	Z	10216					3270					
787	ZA	10530					1310					
787	ZB	10600					1320					
787	ZC	10683					3852					
791	U	10338					4314					
791	V	10231					2724					
795	R	9676	484	33		66	9426	22	9	2		
795	S	9647	216	123		29	2318	16	3			
795	T	10686					2907					
797	R	5351					660					S 1/2 Mile
797	S	10665					3405					
797	T	10546					1310					
797	U	10822					1290					
797	V	10504					1310					
797	W	10406					1300					
797	X	10277					2624					
797	Y	10732					1340					

ROAD	MILE	4"W	6"W	12"W	16"W	24"W	4"Y	12"Y	Lt Arr	Rt Arr	"R"	NOTES
797	Z	10534					1300					
797	ZA	10456					1310					
799	R	10104				24	1282					
801	ZD	9824					1811					
802	ZB	2802					320					
803	U	10738					2180					
803	V	11612					2668					
803	W	10490					1320					
803	X	10508					1320					
803	Y	10556					1505					
803	Z	10447					1290					
803	ZA	10334					1400					
803	ZB	9675	250		88	66	9440				4	
805	ZC	2746					330					
807	S	5200					650					
807	Y	5202					650					
809	Y	10298			88	66	2307				4	
809	Z	10474					1330					
809	ZA	10578					1340					
809	ZB	10486					1300					
811	T	9383	110			40	4645	77				
811	U	10468				12	1814					
811	V	10787					1330					
811	Y	10378					1180					
811	Z	10484					1310					
811	ZA	10650					1270					
811	ZB	10454					2460					
811	ZC	10438				22	1300					
811	ZD	10530					1310					
813	U	3046					1549					Middle Section
813	V	10514			88	66	3342				4	
813	Y	10404					1310					
813	Z	10574					1310					
815	U	10452	263			38	3042	80	3			
815	V	11899					2491					All Except COW
817	V	988			76		666	94				
817	X		6097				12316	48	8			
819	X		166			33	4532	50				~S 1/2 Mile
819	Y	6966					3979					
819	Z	140485					1300					
823	X	6846					2379					S 1/2 Mile
823	Y	10171					1260					
823	Z	10218					1150					
823	ZA	10450					1280					
825.5	U	1556	54			31	5678					S 3/4 Mile
825.5	V	9240	160	136		76	920					
825	Z	10346					6406	73				

ROAD	MILE	4"W	6"W	12"W	16"W	24"W	4"Y	12"Y	Lt Arr	Rt Arr	"R"	NOTES
825	ZA	10512					1310					
825	ZB	10538					1250					
826	T		2578		90	50	6570	253	2			S 7/8 Mile
829	ZA	2646					1970					S 1/4 Mile
831	S	3878	3317			186	10873	73				
831	T	10586	3010									
831	U	10384	2830			36	11556	114	2			
831	V	10432	3063			35	11694	119	44			
831	W	5226	3196				6478	156	6			N 1/2 Mile
831	ZA	2596	862				3824	141	3			S 1/4 Mile
831	ZB	10479	2703			37	12270	238	4			
833	S	9162					1208					
833	T	10365					4289					
833	U	10362					1300					
833	ZC	10510			88	66	5118					
833	ZD	11024			88	66	3250					
835	R	4722					4980					
835	X	10436					3986					
835	Y	10434					2679					
835	Z	10489					4030					
835	ZA	10468					1310					
835	ZB	10433			176	132	4450					
837	S	5516					690					S 1/2 Mile
838.5	Y	2645					290					
839	X	10506					3755					
839	Y	10300					3426					
TOTALS		2010027	75127	651	2629	3410	753728	5773	265		38	

Thermoplastic Pavement Marking

610	34	10560					1320					
610	35	10560					5300					
805	B	10582					1300					
835	ZC	10523					4358					
835	ZD	10994					6096					
TOTALS		53219					18374					

NOTE: All totals are Lin. Ft. except for "Lt Arr", "Rt Arr" and "R" which are Each.

2022 Painted Pavement Marking (R175-R) SEDGWICK COUNTY

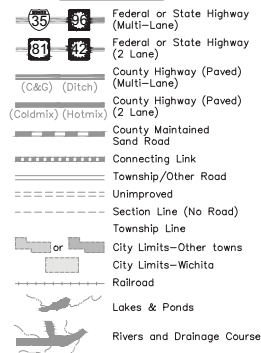
KANSAS

Sedgwick County Public Works
1144 S. Seneca
Wichita, Kansas 67213
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www.sedgwickcounty.org/Public_Works/

1 0 1 2 3 4 5
SCALE OF MILES

LEGEND	
Paint (R175-R)	
Thermoplastic (R175-R)	

MAP LEGEND



K I N G M A N C O U N T Y

T27S

T28S

T29S

R4W

R4W

T26S

T27S

T28S

T29S

R4W

R4W

R3W

R3W

R2W

R2W

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RIE

RIE

R2E

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R1E

R1E

R2E

R2E

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Layout: 2022 Paint (R-175R) Printed: 2/22/2022 10:50 AM By: Schram, Daniel

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City Limits updated as of 01-07-2022