

Item No. **829S**  
**Designated Bicycle Lane Markings**

**829S.1 Description**

This item shall govern the markings for Designated Bicycle Lanes of the colors, types and sizes required in Standard Detail No. 829S-1, "Bicycle Lane Markings" and/or indicated on the Drawings. Designated Bicycle Lanes shall be for the exclusive use of bicycle traffic.

This specification is applicable for projects or work involving either inch-pound or SI units. Within the text and accompanying tables, inch-pound units are given preference followed by SI units shown within parentheses.

**829S.2 Submittals**

The submittal requirements of this specification item include:

- A. Identification of the types of marking materials (i.e. thermoplastic or paint type) materials proposed for each type of lane marking (i.e. lane striping, words and symbols),
- B. Guidemark layout and installation plan.

**829S.3 Materials**

The bicycle lane markings (i.e. lane striping, words and symbols) shall conform to the requirements of Standard Specification Item No. 871S, "Reflectorized Pavement Markings".

**829S.4 Installation**

A. General

Designated Bicycle Lanes shall be delineated with appropriate lane markings and symbols to alert the automobile/truck driver of the possibility of the presence of bicyclists. Preferential Lane markings and symbols shall be installed in conformance with this specification item, as indicated on the Drawings and/or directed by the Engineer or designated representative. Signs shall be installed in conformance with Standard Specification Item No. 827S, "Designated Bicycle Lane Signing".

Under inclement weather conditions the placement of pavement markings as shown on the Drawings shall be delayed until the time that weather conditions allow the application of pavement lane markings, symbols and words.

B. Lane striping

The lateral extent (or width) of a Designated Bicycle Lane shall be defined by solid white edge striping with a minimum width of 4 inches (100 mm) that separates the bicycle lane from the adjacent traffic lane. With the exception of potential conflict areas, the edge striping shall be continuous throughout the length of the Designated Bicycle Lane. The edge striping may be broken in a 1 to 3 segment-to-gap ratio, with a nominal 3-foot (0.9 meter) segment and a 9-foot (2.7 meters) in potential conflict areas including marked or unmarked pedestrian crosswalks, congested intersections and shared vehicular turning lanes at intersections. The striping shall be installed in conformance with Standard

Specification Item No. 871S, "Reflectorized Pavement Markings", as identified in the Drawings or as directed by the Engineer or designated representative.

C. Symbols

Marking of a Designated Bicycle Lane shall include the installation of Preferential Lane (directional arrow) and Bicycle Rider Symbols, as indicated on Standard Detail 829S-1, "Bicycle Lane Markings". A combination of Preferential Lane and Bicycle Rider symbols shall be installed after each street intersection with the bicycle lane and at a maximum distance of 1000 feet (305 meters) along the bicycle lane. The Preferential Lane Symbols shall be spaced a maximum distance of 250 feet (75 meters) apart. The striping shall be installed in conformance with Standard Specification Item No. 871S, "Reflectorized Pavement Markings", as identified in the Drawings or as directed by the Engineer or designated representative.

**829S.5 Maintenance of Markings**

The Contractor shall be responsible for maintaining all bicycle lane markings for 30-calendar days after installation. Lane markings, that fail to meet the requirements of this specification for 30 calendar days from the date of installation, shall be removed and replaced by the Contractor at the Contractor's expense. The 30-calendar day maintenance requirement will be required for replaced markings from the time the original markings were installed.

**829S.6 Construction Methods**

A. Placement and Maintenance.

When required by the Engineer, the Contractor and the Engineer shall review the sequence of Work to be followed and the estimated progress schedule.

The Contractor shall exercise due diligence in the selection of materials and placement of bicycle lane markings. The Contractor at its own expense shall maintain lane markings to the satisfaction of the Engineer or designated representative in accordance with this Specification Item.

Markings may be placed on streets either free of traffic or open to traffic. On streets already open to traffic, the markings shall be placed under traffic conditions that exist with a minimum of interference to the operation of the facility. Traffic control shall be as shown on the Drawings or as approved in writing by the Engineer or designated representative. All markings placed under open-traffic conditions shall be protected from traffic damage and disfigurement.

Guidemarks to mark the lateral location of pavement markings shall be in proper alignment with the final location of future standard markings as shown on the Drawings or as directed by the Engineer or designated representative. The Contractor shall establish the pavement marking guide and the Engineer or designated representative will verify the location of the guides. Any guidemarks, which are not in alignment with standard markings, shall be removed by the Contractor at its own expense.

Markings shall essentially have a uniform cross-section. The density and quality of markings shall be uniform throughout their thickness. The applied markings shall have no more than five (5) percent, by area, of holes or voids and shall be free of blisters.

Unless otherwise shown on the Drawings, pavement markings may be applied by any method that will yield markings meeting the requirements of the Specification Item.

Unless approved otherwise in writing by the Engineer or designated representative, all Portland cement concrete pavement surfaces shall have standard markings in place prior to opening to traffic.

All asphaltic surfaces, which are scheduled for opening to traffic, shall be marked with guidemarks immediately following placement and final rolling of any course. Guidemarks shall consist of a single temporary flexible-reflective street marker tab or a single temporary construction raised reflective pavement marker at 40-foot (12-meter) spacings.

The standard lane markings shall be installed in accordance with the Texas Manual on Uniform Traffic Control Devices for Streets and Highways (Texas MUTCD) and as shown on the Drawings.

Surfaces to receive surface treatments (Specification Item 320S) shall be marked in accordance with the Drawings. Unless otherwise shown on the Drawings, the standard pavement markings shall be placed in accordance with Texas MUTCD, no sooner than three (3) days nor later than two (2) weeks after the placement of the surface treatment.

**B. Marking Removal.**

Any bicycle lane markings placed by the Contractor that conflict with any succeeding lane markings shall be removed by the Contractor at its own expense in accordance with Standard Specification Item 874S, "Eliminating Existing Pavement Markings and Markers", except for measurement and payment.

**829S.7 Measurement**

This Standard Specification Item will be measured by material type (i.e. Type I or Type II) in lineal foot (lineal meter: 1 lineal meter is equal to 3.281 lineal feet) of standard lane marking (striping), by each symbol and by each letter of word markings, or by any other unit as shown on the Drawings. Where double stripes are placed, each stripe will be measured separately.

**829S.8 Payment**

The work performed and materials furnished in accordance with this Standard Specification Item and measured as provided under "Measurement" will be paid for at the Unit bid price for "Reflectorized Bicycle Lane Pavement Markings" of the various types, shapes, sizes, widths and thickness (Type I markings only) specified. The unit bid prices shall include full compensation for furnishing all materials, labor, tools, equipment and incidentals necessary to place, maintain and remove, when required, the markings, except as described below.

Removal of existing markings will be paid for under Specification Item 874S, "Eliminating Existing Pavement Markings and Markers".

Payment will be made under one or more of the following:

**Pay Item 829S-A:** Type I Bicycle Lane Markings, \_\_inches in width, white in color  
per lineal foot

**Pay Item 829S-B:** Type I Bicycle Lane Preferential (directional arrow) Symbols,  
white in color per each

- Pay Item 829S-C:** Type I Bicycle Lane (Bike Rider) Symbol, white in color per each
- Pay Item 829S-D:** Type I Bicycle Lane Letters, white in color per each
- Pay Item 829S-E:** Type II Bicycle Lane Markings, \_\_ inches in width, white in color per lineal foot
- Pay Item 829S-F:** Type II Bicycle Lane Preferential (directional arrow) Symbols, white in color per each
- Pay Item 829S-G:** Type II Bicycle Lane (Bike Rider) Symbol, white in color per each
- Pay Item 829S-H:** Type II Bicycle Lane Letters, white in color per each

**END**

<b><u>SPECIFIC</u> CROSS REFERENCE MATERIALS</b>
Specification Item 829S, "Designated Bicycle Lane Markings"

City of Austin Standard Details

<u>Designation</u>	<u>Description</u>
Detail No. 829S-1	Bicycle Lane Markings"

City of Austin Standard Specifications

<u>Designation</u>	<u>Description</u>
Item No. 320S	Two Course Surface Treatment
Item No. 827S	Designated Bicycle Lane Signing"
Item No. 860S	Pavement Marking Paint (Reflectorized)
Item No. 871S	Reflectorized Pavement Markings
Item No. 874S	Eliminating Existing Pavement Markings and Markers

Texas State Technical Documents:

<u>Designation</u>	<u>Description</u>
(Texas MUTCD)	Texas Manual on Uniform Traffic Control Devices

<b><u>RELATED</u> CROSS REFERENCE MATERIALS</b>
Specification Item 829S, "Designated Bicycle Lane Markings"

City of Austin Contract Documents

<u>Designation</u>	<u>Description</u>
Section 00300U	Bid Form (Unit Price)

City of Austin Standard Specification Items

<u>Designation</u>	<u>Description</u>
Item No. 315S	Milling Asphaltic Concrete Paving
Item No. 340S	Hot Mix Asphaltic Concrete Pavement
Item No. 341S	Paving Fabric
Item No. 350S	Heating, Scarifying and Repaving
Item No. 360	Concrete Pavement
Item No. 801S	Construction Detours
Item No. 803S	Barricades, Signs and Traffic Handling
Item No. 824S	Traffic Signs
Item No. 863S	Reflectorized Pavement Markers
Item No. 864S	Abbreviated Pavement Markings
Item No. 867S	Epoxy Adhesive
Item No. 872S	Prefabricated Pavement Markings

Item No. 875S Pavement Surface Preparation For Markings

<b><u>RELATED</u></b> CROSS REFERENCE MATERIALS - Continued
Specification Item 829S, "Designated Bicycle Lane Markings"

Texas Department of Transportation: Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges

<u>Designation</u>	<u>Description</u>
Item No. 351	Repairing Existing Flexible Pavement Structure
Item No. 354	Planing and/or Texturing Pavement
Item No. 358	Asphaltic Concrete Surface Rehabilitation
Item No. 360	Concrete Pavement
Item No. 427	Surface Finishes for Concrete
Item No. 666	Reflectorized Pavement Markings
Item No. 667	Prefabricated Pavement Markings
Item No. 677	Eliminating Existing Pavement Markings and Markers
Item No. 678	Pavement Surface Preparation For Markings

Texas Department of Transportation: Manual of Testing Procedures

<u>Designation</u>	<u>Description</u>
Tex-729-I	Sampling of Traffic Markers
Tex-732-I	Sampling of Prefabricated Pavement Marking Materials
Tex-828-B	Determining Functional Characteristics of Pavement Markings
Tex-829-B	Method For Measuring Pavement Temperature
Tex-854-B	Evaluation Of Thermoplastic Striping For Uniformity And Thickness

Texas Department of Transportation: Departmental Materials Specification

<u>Designation</u>	<u>Description</u>
DMS-4100	Jiggle Bar Tile
DMS-4200	Pavement Markers (Reflectorized)
DMS-4300	Traffic Buttons
DMS-4210	Pavement Markers
DMS-6130	Bituminous Adhesive
DMS-8200	Pavement Paint
DMS-8220	Thermoplastic marking material
DMS-8240	Prefabricated Marking Materials
DMS-8300	Flat Surface Reflective Sheeting
YPT-10 &/or WPT-10	Pavement Paint