SECTION 33 05 97.23

UNDERGROUND UTILITY WARNING TAPE

\*\* Display hidden text to show notes to specifier. (CTRL+SHIFT+8)\*\*

\*\* NOTE TO SPECIFIER \*\* Damage Prevention Solutions, LLC; Underground warning tape. This section is based on the products of Damage Prevention Solutions, LLC, which is located at:

660 Hunters Place, STE 102

Charlottesville, VA 22911

Tol Free Tel: 800-254-8718

Tel: 434-202-8710

Fax: 800-254-8718

Email: **sales@damageprevention.com**

Web: [**https://www.damageprevention.com**](https://www.damageprevention.com)

[[**Click here**](https://www.damageprevention.com/signaltape)] for product webpage.

Signaltape® Underground Warning Tape was designed to prevent excavation damage by providing a robust alert to excavators approaching a buried utility. Signaltape is designed to not shear when pulled to the surface unlike traditional extruded warning films; its performance is due to a high tensile embedded core material arranged in a sinusoidal wave to maximize utility coverage and provide slack to facilitate pulling tape to the surface.

Part 1 GENERAL

1. SECTION INCLUDES
	1. Underground Utility Warning Tape.
2. RELATED REQUIREMENTS

\*\*NOTE TO SPECIFIER\*\* Delete any sections below not relevant to this project; add others as required.

* 1. Section 26 56 00 (16520) – Exterior Lighting.
	2. Section 33 01 00 (02950) – Operation and Maintenance of Utilities.
	3. Section 33 10 00 (02510) – Water Utilities.
	4. Section 33 30 00 (02530) – Sanitary Sewage.
	5. Section 33 40 00 (02600) – Stormwater Utilities.
	6. Section 33 50 00 (02550) – Hydrocarbon Utilities.
	7. Section 33 60 00 (02550) – Hydronic and Steam Energy Utilities.
	8. Section 33 70 00 – Electrical Utilities.
	9. Section 33 71 19 (02580) – Underground Ducts and Manholes.
	10. Section 33 80 00 – Communication Utilities.
	11. Section 34 40 00 (13550) – Transportation Signaling and Control Equipment
	12. Section 40 10 00 (15200) – Gas and Vapor Process Piping and Ductwork
	13. Section 40 20 00 (15200) – Liquid Process Piping
1. REFERENCE STANDARDS
	1. ASTM D2103 – Standard Specification for Polyethylene Film and Sheeting
	2. ASTM D6755 – Standard Test Method for Breaking Strength and Elongation of Textile Webbing, Tape and Braided Material
	3. APWA Uniform Color Code
2. SUBMITTALS

\*\*NOTE TO SPECIFIER\*\* Delete if not applicable to product type.

* 1. Submit under provisions of Section 01 30 00 – Administrative Requirements.
	2. Product Data
		1. Manufacturer’s data sheets on each product to be used.
		2. Preparation instructions and recommendations.
		3. Typical installation methods.
	3. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.
	4. Samples: Two representative units of each size and color specified.
1. CLOSEOUT SUBMITTALS
	1. Documentation: Record actual locations of utility lines.
2. QUALITY ASSURANCE
	1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
	2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
	3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
3. DELIVERY, STORAGE, AND HANDLING
	1. Store and handle in strict compliance with manufacturer’s written instructions and recommendations.
	2. Protect from damage due to weather, excessive temperature, and construction operations.
4. SITE CONDITIONS
	1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer’s recommended limits.
5. WARRANTY
	1. Manufacturer’s standard conditional limited warranty unless indicated otherwise.

Part 2 PRODUCTS

1. MANUFACTURERS
	1. Acceptable Manufacturer: Damage Prevention Solutions, LLC, which is located at 660 Hunters Place, STE 102, Charlottesville, Virginia 22911; Toll Free Tel: 800-254-8718; Tel: 434-202-8710; Fax: 800-254-8718; Email: sales@damageprevention.com Web: <https://www.damageprevention.com>

\*\*NOTE TO SPECIFIER\*\* Delete one of the following two paragraphs: coordinate with requirements of Division 1 section on product option and substitutions.

* 1. Substitutions: Not permitted.
	2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 – Product Requirements.
1. PERFORMANCE AND DESIGN REQUIREMENTS
	1. Uniform Colors per APWA Uniform Color Code.
		1. Red: Electric Power Lines, Cables, Conduit and Lighting Cables.
		2. Yellow: Gas, Oil, Steam, Petroleum or Gaseous Materials.
		3. Orange: Communication, Alarm or Signal Lines, Cables or Conduit
		4. Blue: Potable Water.
		5. Green: Sewers and Drain Lines.
		6. Purple: Reclaimed Water, Irrigation and Slurry Lines.
	2. Non-Detectable Tapes: 100 percent virgin polyethylene film with a printed message.
	3. Ink Printing: Permanent and cannot be removed by normal handling or upon burial.
	4. Chemical Composition of Tape and Ink: Inert and will not degrade when exposed to acids, alkalis, and other destructive substances commonly found in soil.
	5. Useful Life: Lasts longer than utility lines.
2. PRODUCT TYPES
	1. Basis of Design: Signaltape as manufactured by Damage Prevention Solutions.
		1. Material: 100 percent virgin pigmented polyolefin film with a printed message on one side.

\*\*NOTE TO SPECIFIER\*\* Delete options not required. Change printing to desired message.

* + 1. Color: Red. Printing: CAUTION ELECTRIC LINE BURIED BELOW.
		2. Color: Yellow. Printing: CAUTION GAS BURIED BELOW.
		3. Color: Orange. Printing: CAUTION COMMUNICATION LINE BURIED BELOW.
		4. Color: Green. Printing: CAUTION SEWER LINE BURIED BELOW.
		5. Color: Blue. Printing: CAUTION WATER LINE BURIED BELOW.
		6. Color: Purple. Printing: CAUTION RECLAIMED WATER LINE BURIED BELOW.

\*\*NOTE TO SPECIFIER\*\* Delete tape width options not required.

* + 1. Tape Width: 4 inch
		2. Tape Width: 6 inch
		3. Tape Width: 12 inch
		4. Minimum Overall Thickness per ASTM D2103: 50 MIL
		5. Maximum Elongation of Embedded Fiber per ASTM D6775: 30 percent
		6. Break Strength of Embedded Fiber of at least 3,000 lbf per ASTM D6775
		7. Embedded fiber arranged in sinusoidal wave to allow ratio of 1.25 to 1 or greater.
		8. Custom Printing: Permanent black ink on colored tape. Can be custom printed with company names, logo, phone numbers, and/or messages in full color.

Part 3 EXECUTION

1. INSTALLATION
	1. Install in accordance with manufacturer’s instructions approved submittals and in proper relationship with adjacent construction.
2. REPAIR
	1. Repair in accordance with manufacturer’s instructions.

END OF SECTION