

Connecticut Department of Transportation

Qualified Product List

August 2021

Connecticut Department of Transportation
Bureau of Engineering and Construction
Division of Facilities & Transit
Engineering Services

APPROVALS

Product Evaluation Committee Secretary

8/17/21

Date

Product Evaluation Committee Chairman

Date

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Division of Facilities & Transit
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Product Evaluation Committee Chairman
Division of Facilities & Transit
Engineering Services

Preface

This report has been developed as a means for determining what products, suppliers, manufacturers, equipment and methodologies may be used on CTDOT construction projects. The items referenced have met the approval of CTDOT personnel in one of the following ways:

- They have been approved by the Product Evaluation Committee
- They have been used successfully since before the establishment of a formal approval process.
- They currently satisfy Department of Transportation specifications.

It should be understood that this document is open to refinement and will be under close scrutiny to ensure that the information contained herein is complete and accurate. Over the years, many items will be added and deleted.

Many products that may be used in CTDOT will not be represented in this document because they conform to a generic specification, and the approval procedure is in accordance with the standard specifications.

- CTDOT's Product Evaluation Web Site (Policy and Procedure for New Product Evaluation)
- AASHTO's NATIONAL TRANSPORTATION PRODUCT EVALUATION PROGRAM (NTPEP)
- NTPEP DATAMINE (AASHTO PRODUCT EVALUATION LIST)

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Addendum

<u>Date:</u>	<u>Item Changed</u>	<u>Page #:</u>
8/21	Eliminated “Qualified Product References (with Acceptance Criteria)” section found on pages 47 to 54 of the previous publication posted March 2020.	
8/21	Changed Supplier for GreenPatch contact information from Mr. Scott Herman of Flushing NY to Mr. Dario Amicucci of Mount Vernon NY. Eliminated reference to local distributor since product is available through several	2
8/21	Updated Product Company contact to Aquaphalt- RoadStone Production 1230 River Rd. Charlottesville, Va. 22901 866-784-5031	2
8/21	DeWALT rebranding of Anchors & Fastners update. Powers Fastners removed from QPL with Chem stud, Pure GP and T308 being discontinued. The AC100+, PE1000+, Pure110+ now DeWalt brand.	4
8/21	Added ADA Truncated Dome Detectable Warning Systems : ADA Solutions Inc. Iron Dome	7
8/21	Company name change from BBA Fiberweb, Inc of Tennessee changed to Berry Global Inc. for Typar 3401G geotextile	16
8/21	Revised criteria for “Penetrating Sealer Protective Compound” as a result Bridge Design Standard Practices Committee’s adoption of owned special provision #0819002A-Penetrating Sealer Protective Compound” on July 27,2021.	31
8/21	Added Construction Roll-up Sign Retroreflective Sheeting Type VI: Avery Dennison Corp. WU-7000 White and WU-7014 Fluorescent Orange	36
8/21	Added Retroreflective Sheeting Type XI: Avery Dennison Corp. T-11500 White, T-11505 Blue, T-11507 Green, T-11508 Red, and T-11513 Fluorescent Yellow-Green	41
8/21	Recertified Bridge Preservation, LLC’s Bridge Deck Membrane System with new Expiration Date of May 1, 2024	43

Historical listing of Connecticut Department of Transportation Qualified Product List(s)

<u>Posting Date</u>	<u>Report Link</u>
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March 2020 -----	<u>Qualified Products</u>
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June 2019 -----	<u>Qualified Products</u>
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Qualified Product Lists – Continued

The following pages contain lists, which are directly referenced in either the standard specifications or in special provisions as Qualified Products Lists. These lists will be updated annually, and no product may be used in these categories unless it is shown on an appropriate list.

Bituminous Concrete Patching Materials (Cold Applied):

SPECIFICATION: REFERENCE FILE No. 2011-01

PREAPPROVAL CRITERIA: Compliance with Section 22a-174-20(k) of the Regulations of Connecticut

Manufacturer/Supplier	Product Brand Name
B. Metcalf Asphalt Benjamin Metcalf 104 Interlaken Rd Lakeville, CT 06039 Website: www.bmetcalfasphalt.com	GemPatch
Cold Mix Manufacturing Corp. Mr. Darion Amicucci 65 Edison Avenue Mount Vernon, NY 10550 Office Telephone: 800-985-9192 Website: www.GREENPATCH.com	GreenPatch
Aquaphalt - RoadStone Production 1230 River Rd. Charlottesville, Va. 22901 Website: www.aquaphalt.com	Aquaphalt
The EZ Street Company Mr. Tom Francione 1786 NW 82 Avenue Miami, FL 33126 Website: www.ezstreetasphalt.com	EZ Street Cold Asphalt

[Table Last Revised 07/21/21]

Continued on Next Page:

Qualified Product Lists – Continued

Bituminous Concrete Patching Materials (Cold Applied) - Continued:

Manufacturer/Supplier	Product Brand Name
Tri-Products, LLC Mr. Mike Jennings 89 Ship Street Providence, RI 02903 Website: www.hudsoncompanies.com	Plus Patch Asphalt Emulsion
Logan County Asphalt Mr. Steven McBride 2905 Commerce Boulevard Guthrie, OK 73044 Website: www.prolinecoldasphalt.com	ProLine Cold Asphalt Patching Material
Quality Pavement Repair Mr. Anthony J. Fagnoli 154 Bouckhart Avenue Rochester, NY 14622 Website: www.qprcoldpatch.com	QPR
UNIQUE Paving Materials Corp William Stull. 3993 East 93 rd Street Cleveland, OH 44105 Website: www.uniquepavingmaterials.com	UPM Permanent Pavement Repair Material

[Table Last Revised 12-24-20]

Qualified Product Lists – Continued

Chemical Anchors:

SPECIFICATION: Standard Specification, M.03.07

PREAPPROVAL CRITERIA:

1. ASTM E-1512 pullout test by an independent laboratory.
2. The use of all chemical anchors (referenced in Standard Specifications Section M.03.07) in sustained tensile-load overhead applications is prohibited where failure of the chemical adhesive would result in a risk to the public. This applies to all design and ongoing construction projects. Other anchorage alternatives must be used for such applications.

Manufacturer/Supplier	Product Brand Name
A & P Foglia, Inc. 14 Hickory Drive East Brunswick, NJ 08816	Magnabond
Adhesives Technology Corp. 450 East Copans Road Pompano Beach, FL 33064 Website: www.atcepoxy.com .	Ultrabond: HS-1CC 1 1300 2 HS-200 Dural HS Gel
Covert Operations, Inc. 1940 Freeman Avenue Signal Hill, CA 90755 Website:	CIA Gel 7000
Dayton Superior Chemical Division 4226 Kansas Avenue Kansas City, KS 66106 Website: www.daytonsuperiorchemical.com	Highway Fast Set Epoxy (AHT) ResCon 304 (Symons) Sure Anchor I (J-51)
DEWALT 701 East Joppa Road Towson, MD 21286 Telephone: (800) 524-3244 Web Site: www.powers.com	DEWALT AC 100+ Gold DEWALT PE1000+ DEWALT Pure50+ DEWALT PURE110+

[Table Last Revised 1-11-21]

Continued on Next Page:

Qualified Product Lists – Continued

Chemical Anchors - Continued:

Manufacturer/Supplier	Product Brand Name
Fosroc, Inc. 150 Carley Court Georgetown, KY 40324	Thoroc: Anchor Bond Anchortite
Hilti, Inc. P.O. Box 21148 Tulsa, OK 74121 Website: www.us.hilti.com	Hilti: HIT-RE 500V3 HIT RE-100 HIT HY100 HTE50 HVA Capsules HY-200 RE500
ITW Commercial Construction 1300 North Michael Drive Wood Dale, IL 60191 Website: www.ramset-redhead.com	Epcon Ceramic 6 Granite 5 RedHead A7+ RedHead G5+ RedHead C6+
Kelken Construction Systems P.O. Box 284 Parlin, NJ 08859 Website: www.kelken.com	Kelibond Anchors KeligROUT KeligROUT 101
MKT Fastening LLC #1 Gunnebo Drive Lonoke, AR 72086 Website: www.mktfastening.com	Liquid Roc: 300 28oz. Twin Tube 300 Capsule Anchors Polyester Pump 500 Epoxy Twin Tube
Polygem, Inc. 1105 Carolina Avenue West Chicago, IL 60185 Website: www.polygem.com	Polybac 1257

[Table Last Revised 3-22-20]

Continued on Next Page:

Qualified Product Lists – Continued

Chemical Anchors - Continued:

Manufacturer/Supplier	Product Brand Name
Simpson StrongTie Anchoring Systems 4120 Dublin Boulevard, Suite 400 Dublin, CA 94568 Website: www.simpsonanchors.com	EDOT ET-HP (formally known as Simpson Strong-Tie Epoxy-Tie) Simpson Strong-Tie Acrylic-Tie
Unisorb Installation Technologies P.O. Box 1000 Jackson, MI 49204-1000 Website: www.unisorb.com	Unisorb Capsule Anchor
Unitex 3101 Gardner Avenue Kansas City, MO 64120 Website: www.unitex-chemicals.com	Pro-Poxy: 300 300 Fast Sonneborn Epogel (ChemRex, Inc.)
USP Structural Connectors 14305 Southcross Drive – Suite 200 Burnsville, MN 55306 Website: http://www.uspconnectors.com	CIA-GEL 6000-GP
W.R. Meadows, Inc. 300 Industrial Drive Hampshire, IL 60140 Website: www.wrmeadows.com	Sealtight Rezi-Weld Gel Paste UCE
Wejit, Inc. 7737 Japine Drive Liverpool, NY 13090 315-396-8063 (Cell) Website: www.wejit.com	Inject-TITE: AWF (All Weather Formula) Fast Set

[Table Last Revised 3-22-20]

Qualified Product Lists – Continued

Detectable Warning – (ADA Truncated Dome Detectable Warning Systems)

SPECIFICATION: Standard Specification 9.21

PREAPPROVAL CRITERIA: Federal Standard 595A Color #22144 or approved equal.

Manufacturer/Supplier	Product Brand Name
Access Products Inc. 241 Main Street, Suite 100 Buffalo, NY 14203 Telephone: 888-679-4022 Website: www.accessproducts.com	Access Tile Detectable Warning Tiles
ADA Solutions, Inc. 323 Andover Street Suite 3 Wilmington, MA 01887 Telephone: 978-262-9900 Website: www.adatile.com	Detectable Warning Tile: Iron Dome Cast-In-Place Tactile Surface Applied Tactile (Retrofit) Cast-In-Place Replaceable Tactile
Armor-Tile 300 International Drive, Suite 100 Williamsville, NY 14221 Telephone: 800-682-2525 Website: www.armor-tile.com/	Armor-Tile Tactile System: Cast-In-Place System Surface Applied System (Retrofit)
Cape Fear Systems, LLC 215 South Water Street, Suite 103 Wilmington, NC 28401 Telephone: 800-456-5263 Website: www.alerttile.com/	<i>alerttile</i> ® Detectable Warnings: alerttile Surfaced Applied alertcast Cast-In-Place
East Jordan Iron Works 5000 Airport Road PO Box 439 East Jordan, MI 49727 Telephone: 231-536-2261 Website: www.ejco.com	DURALAST Detectable Warning Plates Cast Iron Uncoated Natural Finish
TufTile Inc. 1200 Flex Court Lake Zurich, IL 60047 Telephone: 888-960-8897 Website: www.tuftile.com	Cast Iron Wet Set (cast-in-place) Polymer Wet-Set (cast-in-place) Polymer Surface-Applied

[Table Last Revised 9-1-20]

Qualified Product Lists – Continued

Erosion Control Matting

SPECIFICATION: Standard Specification 9.50 & M.13.09

PREAPPROVAL CRITERIA: See below.

In general, organic materials are cheaper than synthetics, will photo-degrade after a period of time leaving a naturally vegetated channel, and are adequate for channels, which are expected to carry storm water flows not exceeding 95.76 Pa shear stress. Synthetic materials generally do not photo-degrade and often remain as a permanent element within a drainage channel, although more expensive, synthetic materials are generally best for critical channels which will carry high flows or velocities of storm water runoff.

Minimum Performance Standards

Erosion control matting is evaluated for use in eight Types, grouped in two Classes. In order for a product to be placed upon the Department's Qualified Products List, it must meet the following Minimum Performance Standards.

Class 1: Slope Protection – Classification is based upon steepness of slope and soil type. The purpose is to protect the seedbed from loss of sediment and promote the establishment of a warm season, perennial vegetative cover.

- Type A. Slopes 3:1 or Flatter – Clay Soils
- Type B. Slopes 3:1 or Flatter – Sandy Soils
- Type C. Slopes Steeper than 3:1 – Clay Soils
- Type D. Slopes Steeper than 3:1 – Sandy Soils

Minimum Acceptable Vegetation Density Standards¹

	<u>Clay Soils</u>	<u>Sandy Soils</u>
Slopes 3:1 or Flatter	80%	70%
Slopes Steeper than 3:1	80%	70%

Minimum Acceptable Sediment Loss Standards (kg/10 m²)¹

	<u>Clay Soils</u>	<u>Sandy Soils</u>
Slopes 3:1 or Flatter	0.35	12.00
Slopes Steeper than 3:1	0.35	27.00

Continued on Next Page:

Qualified Product Lists – Continued

Erosion Control Matting - Continued:

Class 2: Flexible Channel Liner Protection – Classification is based upon the permissible shear stress² (T_p) present. The purpose is to protect the geometry of the channel from loss of sediment, and to promote the establishment of a warm-season, perennial vegetative cover.

Type E. Permissible shear stress: <25 Pa

Type F. Permissible shear stress: 25 to <50 Pa

Type G. Permissible shear stress: 50 to <100 Pa

Type H. Permissible shear stress: ≥ 100 Pa

T_p , the permissible shear stress, indicates the force required to initiate the movement of the lining material.

Minimum Acceptable Vegetation Density Standards¹

70%

Minimum Acceptable Sediment Loss Standards¹

	<u>Average Soil Deformation (cm)</u>
Shear Stress 1 to 100 Pa	1.15
Shear Stress > 100 Pa	1.00

It should be recognized that those products listed by brand or trade name on the Qualified Products List have demonstrated their ability to meet or exceed the Department's minimum Performance standards. It is the Contractor's option as to which product he or she actually uses on a project, provided that the product used is on the Qualified Products List for that application.

It will be the district's responsibility to verify that the Erosion Control Matting proposed by the Contractor is, in fact, listed as an acceptable product on the Qualified Products List.

It should also be recognized that the decision to undergo testing for possible approval rests solely with the manufacturers or distributors of Erosion Control Matting. The Department has created a fair but rigorous testing process for Erosion Control Matting. The Department does not choose or stipulate which products are to be tested.

The Department's position is that, while we encourage the evaluation of new products for possible use in our operations, we cannot utilize a product that has not been tested and approved through the Department's evaluation process.

Continued on Next Page:

Qualified Product Lists – Continued

Erosion Control Matting - Continued:

As new products are tested on an annual basis, those meeting our requirements will be added to the Qualified Products List. If, by the time actual field installation of Erosion Control Matting commences on a project, new products have been added to the Qualified Products List, the Contractor may elect to use these newly approved products even though they were not an “approved” product at the time bids were received on the project.

¹ Final Performance Analysis – 1995 Evaluation Cycle, Texas DOT/Texas Transportation Institute, Hydraulics and Erosion Control Laboratory, February 1996.

² Shear Stress ranges based on values published in FHWA Hydraulic Engineering Circular No. 15 (HEC-15), Design of Roadside Channels with Flexible Linings, Publication No. FHWA-ZP-87-7, April 19

Continued on Next Page:

Qualified Product Lists – Continued

Erosion Control Matting - Continued:

SPECIFICATION: Standard Specification, Section 9.50 & M.13.09

PREAPPROVAL CRITERIA: Certified Test Report

Manufacturer/Supplier	Class 1: Slope Protection *				Class 2: Flexible Channel Type Protection			
	Type A	Type B	Type C	Type D	Type E *	Type F *	Type G *	Type H **
American Excelsior Co. 831 Pioneer Avenue Rice Lake, WI 54868 Website: www.curlex.com	AEC Premier Coconut AEC Premier Straw/Coconut AEC Premier StrawDoubleNet AEC Premier StrawSingleNet AEC Premier Curlex I AEC Premier Curlex I CL AEC Premier Curlex II CL AEC Premier Curlex NetFree	AEC Premier Coconut AEC Premier Straw/Coconut AEC Premier StrawDoubleNet AEC Premier StrawSingleNet Bindex BFM Curlex I Curlex I CL Curlex II CL Curlex NetFree Curlex NetFree	AEC Premier Coconut AEC Premier Straw/Coconut AEC Premier StrawDoubleNet Bindex BFM Curlex I Curlex I CL	AEC Premier Coconut AEC Premier Straw/Coconut AEC Premier StrawDoubleNet Bindex BFM Curlex I Curlex I CL Curlex II Curlex II CL Curlex NetFree	AEC Premier Straw/Coconut AEC Premier StrawDoubleNet AEC PremierCoconut Curlex Enforcer Curlex II Curlex II CL Curlex III Recyclex Recyclex TRM-V	AEC Premier Coconut AEC Premier Straw/Coconut AEC Premier StrawDoubleNet Curlex Enforcer Curlex II Curlex II CL Curlex III Recyclex Recyclex TRM-V	Curlex Enforcer Recyclex Recyclex TRM-V	Curlex Enforcer Recyclex Recyclex TRM-V
Belton Industries 8613 Roswell Road Atlanta, GA 30350		Geocoir/DeKoWe 700 Geocoir/DeKoWe 900		Geocoir/DeKoWe 700 Geocoir/DeKoWe 900				
Contech Construction Products, Inc. 265 Highland Avenue Cheshire, CT 06410 Website: www.contech-cpi.com	Ero-Mat Ero-Mat Hi-Velocity Ero-Mat Standard	Ero-Mat Ero-Mat Standard	Ero-Mat Hi-Velocity					

[Table Last Revised 12-24-20]

* Products listed in this category are generally temporary (bio- or photo-degradable). Exceptions are noted.

** Products listed in this category are generally permanent (non-bio- or non-photo-degradable). Exceptions are noted.

TYPE E – Generally includes, but is not limited to, Woven Paper Net, Jute Net.

TYPE F – Generally includes, but is not limited to, Fiberglass Roving (single or double).

TYPE G – Generally includes, but is not limited to, Straw with Net, Curled Wood Mat.

TYPE H – Generally includes, but is not limited to, Synthetic Net.

Continued on Next Page:

Qualified Product Lists – Continued

Erosion Control Matting – Continued:

SPECIFICATION: Standard Specification, Section 9.50 & M.13.09

PREAPPROVAL CRITERIA: Certified Test Report

Manufacturer/Supplier	Class 1: Slope Protection *				Class 2: Flexible Channel Type Protection			
	Type A	Type B	Type C	Type D	Type E *	Type F *	Type G *	Type H **
Conwed Fibers 219 Simpson Street Conover, NC 28613	Futerra Mat	Futerra Mat						
East Coast Erosion Blankets 443 Bricker Road Bernville, PA 19506	ECS - 1 ECS - 1B ECS - 1D ECS - 2 ECS - 2B ECS - 2D ECSC - 2 ECSC - 2B ECX - 1 ECX - 2	EC - 7Y EC - 9Y ECS - 1B ECS - 1D ECS - 2 ECS - 2B ECS - 2D ECS - 2 ECSC - 2 ECSC - 2B ECX - 1 ECSC - 2 ECSC - 2B ECX - 1 ECX - 2 ECX - 2	ECC - 2 ECC - 2B ECC - 3 ECP - 2 ECS - 2 ECS - 2B ECS - 2D ECSC - 2 ECSC - 2B ECX - 1 ECX - 2	EC - 7Y EC - 9Y ECC - 2 ECC - 2B ECC - 3 ECC - 2B ECC - 3 ECP - 2 ECS - 2 ECS - 2B ECS - 2D ECSC - 2 ECSC - 2B ECX - 1 ECX - 2	ECC - 2 ECC - 2B ECC - 3 ECP - 2 10 oz. ECP - 2 T-RECS ECP - 3 ECSC - 3	ECC - 2 ECC - 2B ECC - 3 ECP - 2 10 oz. ECP - 2 T-RECS ECP - 3 ECSC - 3	ECC - 2 ECC - 2B ECC - 3 ECP - 2 10 oz. ECP - 2 T-RECS ECP - 3 ECSC - 3	ECC - 2 ECC - 2B ECC - 3 ECP - 2 10 oz. ECP - 2 T-RECS ECP - 3 ECSC - 3
ErosionControlBlanket.com P.O. Box 69 Riverton, Manitoba R0C 2R0 Canada	S31 S31UVD	S31 S31UVD	S32 S32UVD	S32 S32UVD	P42 S32 S32UVD	P42 S32 S32UVD	P42	P42
Enviroscape ECM 22700 Street, Rt. 613 Oakwood, OH 45873	S1000 S1000BD S2000 S2000BD SC3000 SC3000BD	S1000 S1000BD S2000 S2000BD SC3000 SC3000BD	C4000 C4000BD	C4000 C4000BD	S1000 S1000BD S2000 S2000BD SC3000 SC3000BD	C4000 C4000BD		

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TYPE E – Generally includes, but is not limited to, Woven Paper Net, Jute Net.

TYPE F – Generally includes, but is not limited to, Fiberglass Roving (single or double).

TYPE G – Generally includes, but is not limited to, Straw with Net, Curled Wood Mat.

TYPE H – Generally includes, but is not limited to, Synthetic Net.

Continued on Next Page:

Qualified Product Lists – Continued

Erosion Control Matting – Continued:

SPECIFICATION: Standard Specification, Section 9.50 & M.13.09

PREAPPROVAL CRITERIA: Certified Test Report

Manufacturer/Supplier	Class 1: Slope Protection *				Class 2: Flexible Channel Type Protection			
	Type A	Type B	Type C	Type D	Type E *	Type F *	Type G *	Type H **
Greenstreak Group 3400 Tree Court Boulevard St. Louis, MO 63122	Pec-Mat	Pec-Mat					Pec-Mat	Pec-Mat
North American Green 14649 Highway 41 Evansville, IN 47711	S150 S150BN S75 S75BN SC150 SC150BN	S150 S150BN S75 S75BN SC150 SC150BN	S150 S150BN SC150 SC150BN	C125 C125BN S150 S150BN SC150 SC150BN	C125 C125BN P300	P300	P300	C350 Biodegradable P300
SI Geosolutions (formally known as Synthetic Industries) 6025 Lee Highway Chattanooga, TN 37421 www.fixsoil.com	Landlok: CS2 unseeded S1 S2 TRM435	Landlok: CS2 unseeded S1 S2 TRM 435	Landlok: C2 CS2 unseeded S2 TRM 435	Landlok: C2 CS2 unseeded S2 TRM 435	Landlok: C2 TRM 435 TRM 450 TRM1060	Landlok: C2 TRM 435 TRM 450 TRM1060	Landlok: C2 TRM 1060 TRM 435 TRM 450	Landlok: TRM 1060 TRM 435 TRM 450 Pyramat: SFB 12
US Erosion Control Products 1034 Albany Avenue W. Pearson, GA 31642							US-1S US-2C US-2S US-2S	US-2P10 US-2P12

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TYPE F – Generally includes, but is not limited to, Fiberglass Roving (single or double).

TYPE G – Generally includes, but is not limited to, Straw with Net, Curled Wood Mat.

TYPE H – Generally includes, but is not limited to, Synthetic Net.

Continued on Next Page:

Qualified Product Lists – Continued

Erosion Control Matting – Continued:

SPECIFICATION: Standard Specification, Section 9.50 & M.13.09

PREAPPROVAL CRITERIA: Certified Test Report

Manufacturer/Supplier	Class 1: Slope Protection *				Class 2: Flexible Channel Type Protection			
	Type A	Type B	Type C	Type D	Type E *	Type F *	Type G *	Type H **
Verdyol Alabama, Inc. P.O. Box 605 407 Miles Parkway Pell City, AL 35125	Ero-Mat: Standard Excelsior: Hi-Velocity Standard	Ero-Mat: Standard Excelsior: Standard	Excelsior: Hi-Velocity					
Western Excelsior Corp. 4609 E Boonville-New Harmony Road Evansville, IN 47725	Excel R-1 Excel S-2 Excel SR-1 Excel SS-2	Excel R-1 Excel S-2 Excel SR-1 Excel SS-2	Excel S-2 Excel SS-2	Excel S-2 Excel SS-2	Excel PP5-8 Excel S-2 ExcelSD-3	Excel PP5-8 Excel SD-3	Excel PP5-8 Excel PP5-10 Excel PP5-12	Excel PP5-10 Excel PP5-12

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TYPE G – Generally includes, but is not limited to, Straw with Net, Curled Wood Mat.

TYPE H – Generally includes, but is not limited to, Synthetic Net.

Qualified Product Lists – Continued

Geotextiles:

SPECIFICATION: Standard Specification, Sections 2.19, 7.51, 7.55 and M.08.01-19

PREAPPROVAL CRITERIA: Certified Test Report According to AASHTO M 288

The following list denotes those geotextiles that are approved for use on ConnDOT projects. The categories listed are in accordance with the AASHTO M 288 specification. Geotextile selection shall be based on the following definitive information and the applicable design criteria.

1. **Subsurface Drainage** – Geotextiles within this category shall be used for, but not limited to, the following applications: pavement edge drains; interceptor drains; wall drains; recharge basins and relief wells. The geotextile shall be designed to allow the passage of water normal to its surface while retaining in situ soil without clogging. Class A drainage applications for fabrics are where installation stresses are more severe than Class B applications, i.e., very coarse, sharp, angular aggregate is used; a heavy degree of compaction (95% or greater by AASHTO method T 99) is specified; or, depth of trench is greater than 3.00 m. Class B drainage applications are those where the fabric is used with smooth graded surfaces having no sharp angular projections, no sharp angular aggregate is used; compaction requirements are light (less than 95% by AASHTO method T 99); and, trenches are less than 3.00 m in depth.
2. **Sediment Control** – Geotextiles within this category shall be used as a barrier-fence designed to remove suspended particles from the water that passes through it. “Wire Supported” signifies that fabric is supported with a mesh made of wire or plastic.
3. **Erosion Control** – Geotextiles within this category shall be used for, but not limited to, the following applications: cut and fill slope protection; protection of various small drainage structures and ditches, wave protection for causeways and shoreline roadway embankments; and, and scour protection for structures such as bridges and abutments. The geotextile shall be designed to allow the passage of water while retaining in situ soil without clogging. Class A erosion control applications are those where the fabrics are used under conditions where installation stresses are more severe than Class B, i.e., aggregate placement height should be less than 1.00 m; and, aggregate weights should not exceed 115.00 kg. Class B erosion control applications are those where the fabric is used in structures or under conditions where the fabric is protected by a sand cushion or by “zero drop height” placement of aggregate.
4. **Separation** – Geotextiles within this category shall be used for, but are not limited to, the following applications: separation of dissimilar materials, such as subgrades and pavement base courses and zones in embankments, foundations and select fill materials. When soil stabilization is the primary concern, the Design Engineer is cautioned that a detailed process must be followed, taking into consideration not only the separation properties of the geotextile, but its reinforcement function as well. The geotextile shall be designed to allow the passage of water while retaining in situ soil without clogging.

Continued on Next Page:

Qualified Product Lists – Continued

Geotextiles - Continued:

SPECIFICATION: Standard Specification, Sections 2.19., 7.51, 7.55 and M.08.01-19

PREAPPROVAL CRITERIA: Certified Test Report According to AASHTO M 288

Manufacturer/Supplier	Subsurface Drainage		Sediment Control		Erosion Control		Separation	
	Class A	Class B	Wire Supported	Self Supported	Class A	Class B	High Survivability ¹	Medium Survivability ¹
A.H. Harris & Sons, Inc. P.O. Box 311058 367 Alumni Road Newington, CT 06131			Harris Siltfence	Harris Siltfence				
American Engineering Fabrics, Inc. 1 Coffin Avenue New Bedford, MA 02746 Website: www.boomenviro.com	AEF: 200W 300W 600W 650W 880 1080 1280	AEF: 100W 130W 150W 200W 300W 480 480HS 600W 650W 680 880 1080 1280	AEF: 180W	AEF: 100W 150W 180W	AEF: 300W 650W 880 1080 1280	AEF: 100W 180W 300W 480 480HS 650W 680 880 1080 1280	AEF: 300W 1080 1280	AEF: 200W 300W 600W 880 1080 1280
Berry Global Inc. 70 Old Hickory Boulevard Old Hickory, TN 37138		Typar: 3401G	Typar: 3401G	Typar: 3401G		Typar: 3401G		Typar: 3401G

[Table Last Revised 11-19-20]

* Product is satisfactory only where the affected soil contains less than 50% material, by weight, passing the number 200 sieve.

Continued on Next Page:

Qualified Product Lists – Continued

Geotextiles - Continued:

SPECIFICATION: Standard Specification, Sections 2.19., 7.51, 7.55 and M.08.01-19

PREAPPROVAL CRITERIA: Certified Test Report According to AASHTO M 288

Manufacturer/Supplier	Subsurface Drainage		Sediment Control		Erosion Control		Separation	
	Class A	Class B	Wire Supported	Self Supported	Class A	Class B	High Survivability	Medium Survivability
Belton Industries, Inc. P.O. Box 127 Belton, SC 29627 Website: www.boomenviro.com	768 769 977 1475	307 308 751 768 769 977 1475	940	307 940	769 1475	307 769 940 1475	1475	768 977 1475
Carthage Mills 4243 Hunt Road Cincinnati, OH 45242 Website: www.carthagemills.com	Carthage - 6% FX-75NW	Carthage - 6% FX-35HS FX-35NW FX-40HS FX-40NW FX-75NW	FX-11	FX-11	Carthage - 6% FX-55 * FX-66 FX-75NW	Carthage - 6% FX-33 FX-35HS FX-35NW FX-40HS FX-40NW FX-44 FX-55 * FX-66 FX-75NW	FX-66 FX-75NW	FX-55 * FX-66 FX-75NW
DGI Industries P.O. Box 16522 Hooksett, NH 03442 Website: www.dgiindustries.com			CT138036 CT213036	CT138036 CT213036				
Evergreen Technologies Inc. (Div. of Tensar) 200 Miller Sellers Drive Evergreen, AL 36401	TG650	TG420 * TG500 TG650	TG420	TG550	TG700	TG420 * TG500 TG700	TG650	TG500 TG650

* Product is satisfactory only where the affected soil contains less than 50% material, by weight, passing the number 200 sieve.

[Table Last Revised 12-24-20]

Continued on Next Page:

Qualified Product Lists – Continued

Geotextiles - Continued:

SPECIFICATION: Standard Specification, Sections 2.19., 7.51, 7.55 and M.08.01-19

PREAPPROVAL CRITERIA: Certified Test Report According to AASHTO M 288

Manufacturer/Supplier	Subsurface Drainage		Sediment Control		Erosion Control		Separation	
	Class A	Class B	Wire Supported	Self Supported	Class A	Class B	High Survivability	Medium Survivability
First Line Corp. P.O. Box 68 Pearson, GA 31642			CSF 330	CSF 330				
Hanes Geo Components 815 Buxton Street Winston-Salem, NC 27101 Website: www.hanesgeo.com	Terratex: EP NO8	Terratex: EP NO4 NO8 SD SO4	Terratex: SC SC-90	Terratex: SC SC-90	Terratex: GS * NO8	Terratex: GS * GS-150 * NO4 NO8 SD	Terratex: EP HD *	Terratex: EP GS * HD * NO8
Hoechst Celanese Corp. P.O. Box 5650 Spartanburg, SC 29304-5650			Trevira: 011/140			Trevira: 011/140		Trevira: 011/140
Indian Valley Industries Inc. 60-100 Corliss Avenue Johnson City, NY 13790 Website: www.iviindustries.com			CT-3611	CT-3611		CT-3611		

* Product is satisfactory only where the affected soil contains less than 50% material, by weight, passing the number 200 sieve.

[Table Last Revised 12-24-20]

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Qualified Product Lists – Continued

Geotextiles - Continued:

SPECIFICATION: Standard Specification, Sections 2.19., 7.51, 7.55 and M.08.01-19

PREAPPROVAL CRITERIA: Certified Test Report According to AASHTO M 288

Manufacturer/Supplier	Subsurface Drainage		Sediment Control		Erosion Control		Separation	
	Class A	Class B	Wire Supported	Self Supported	Class A	Class B	High Survivability	Medium Survivability
LINQ Industrial Fabrics, Inc. 4550 W. Fifth North Street Summerville, SC 29483	180EX 225EX 250EX 275EX 350EX	180EX 125EX 130EX 150EX 225EX 250EX 275EX 350EX	180 102 104 105	180 102 104 105	180EX 225EX 250EX 275EX 350EX GTF 400E	180EX 125EX 130EX 150EX 225EX 250EX 275EX 350EX GTF 400E	180EX 225EX 250EX 275EX GTF 300 * 350#X	180EX GTF 200S GTF 200 * GTF 300 * 130EX 150EX 225EX 250EX 275EX 350EX
Mutual Industries Inc. 707 West Grange Street Philadelphia, PA 19120			MISF 1830 MISF 1855	MISF 1830 MISF 1855				
OnSite Systems, Inc. P.O. Box 241166 Charlotte, NC 28224			WCF 120	WCF 120	WCF 200	WCF 150 WCF 200	WCF 300	WCF 200 WCF 300

* Product is satisfactory only where the affected soil contains less than 50% material, by weight, passing the number 200 sieve.

[Table Last Revised 11-19-20]

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Qualified Product Lists – Continued

Geotextiles - Continued:

SPECIFICATION: Standard Specification, Sections 2.19., 7.51, 7.55 and M.08.01-19

PREAPPROVAL CRITERIA: Certified Test Report According to AASHTO M 288

Manufacturer/Supplier	Subsurface Drainage		Sediment Control		Erosion Control		Separation	
	Class A	Class B	Wire Supported	Self Supported	Class A	Class B	High Survivabilityl	Medium Survivability
Propex Geosolutions 6025 Lee Highway Suite 425 PO Box 22788 Chattanooga, TN 37422 Website: www.geotextile.com	Geotex: 104F 135ST 102F 200ST 401 701 801 1071 1291 1701	Geotex 200ST 311 351 401 451 501 601 701 801 1071 1291 1701		Geotex 117F 2130	Geotex 104F 200ST 315ST 102F 801 1071 1291 1701	Geotex 104F 200ST 315ST 102F 351 401 451 601 801 1071 1291 1701	Geotex 315ST 2x2HF 701 801 1071 1291 1701	Geotex 200ST 315ST 2x2HF 451 501 601 701 801 1071 1291 1701
SKAPS Industries 335 Athena Drive Athens, GA 30601	M706 GT170 GT180	GT131 GT135 GT140 GT142 M706	GT135 W100	W100	SW200* SW315* GT180 M706	GT135 GT140 GT142 SW200* SW315*		M706 GT140 GT142 SW200* SW315* GT180

* Product is satisfactory only where the affected soil contains less than 50% material, by weight, passing the number 200 sieve.

[Table Last Revised 12/24/20]

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Qualified Product Lists – Continued

Geotextiles - Continued:

SPECIFICATION: Standard Specification, Sections 2.19., 7.51, 7.55 and M.08.01-19

PREAPPROVAL CRITERIA: Certified Test Report According to AASHTO M 288

Manufacturer/Supplier	Subsurface Drainage		Sediment Control		Erosion Control		Separation	
	Class A	Class B	Wire Supported	Self Supported	Class A	Class B	High Survivability	Medium Survivability
TenCate Geosynthetics 365 South Holland Drive Pendergrass, GA 30567 Website: www.tencategeo.us	170N 180N FW404 FW500 FW700	135N 140N 140NC 140NL FW404 FW500 FW700	FW500 FW700	FW404 FW500 FW700	180N 500X * 600X * FW404 FW500 FW700	140N 140NL 500X * 600X * FW404 FW500 FW700	170N 180N 600X * FW404 FW500 FW700 HP370	140N 500X * 550X 600X * FW500 FW700
TNS Advanced Technologies, Inc. 681 DeYoung Road Greer, SC 29651	R070 R080	R031 R035 R040 R042	R035	W280	R080	R035 R040 R042	R070 R080	R042
US Silt & Site Supply/GETSco Telephone: 603-225-4600 X10 E-Mail: sales@ussilt.com Website: www.ussilt.com			CT3611213 0	CT36112130				
Willacoochee Industrial Fabrics PO Box 599 769 W Main Street Willacoochee, GA 31650 Website: www.winfabusa.com	WINFAB: 200W 400N 700N 800N 1000NE 2199	WINFAB: 600N 700N 800N 1000NE	WINFAB: 77SF	WINFAB: 105SF	WINFAB: 200W 315W 800N 1000NE 2199	WINFAB: 200W 315W 400N 600N 700N 800N 1000NE 2199	WINFAB: 315W 700N 800N 2x2HF 1000NE	WINFAB: 200W 315W 600N 700N 800N 2x2HF 1000NE

* Product is satisfactory only where the affected soil contains less than 50% material, by weight, passing the number 200 sieve.

[Table Last Revised 12/24/20]

Qualified Product Lists – Continued

Impact Attenuation Systems:

SPECIFICATION(s): January 2018 Supplements Section 18.02 SAND BARRELS

Standard Specification Form 817 Section 18.02 TYPE A – IMPACT ATTENUATION SYSTEM

PREAPPROVAL CRITERIA: Written approval from FHWA for use on National Highway System roads and Crash Tested in accordance with “National Cooperative Highway Research (NCHRP) Report 350 – Recommended Procedures for the Safety Performance Evaluation of Highway Features” Test Level 3 criteria; *or*, Crash tested in accordance with “AASHTO Manual for Assessing Safety Hardware (MASH)” Test Level 3 criteria.

Comments: For all attenuators, see the [ConnDOT Highway Design Manual](#) for guidance.

Sand Barrels **									
System	Manufacturer/Supplier	Energy Absorbing	Transition to Rigid System Required	Available Widths (Barrel Size)	Available Lengths	Deck Structure Required	Bi-Direct Capable	Redirect Capable	Comments
Big Sandy Barrels	Traffix Devices, Inc. Telephone: 949-361-5663 Extension 219	No	No	80” (36” Tall x 36” Dia.)	TL-1: approx. 14’ TL-3: approx. 29’	No	Yes	No	*Primarily used as a temporary barrier. System is fully gating.
CrashGard Barrels	Plastic Safety Systems, Inc. Telephone: 800-662-6338	No	No	6.5 to unlimited (48” Tall x 36” Dia.)	TL-3 : approx. 28’	No	Yes	No	*Primarily used as a temporary barrier. System is fully gating.
Energite III Barrels	TRANSPO Telephone: 800-321-7870	No	No	6.5 to unlimited (36” Tall x 36” Dia.)	TL-3: 18’ to 40’	No	Yes	No	*Primarily used as a temporary barrier. System is fully gating.

[Table Last Revised 12-24-20]

* Interchangeable with other approved sand barrel systems; however, this system must be installed in the back due to height.

** Publication of January 2018 Supplements changed Section 18.02 title from “TYPE A – IMPACT ATTENUATION SYSTEM” to “SAND BARRELS”

Continued on Next Page:

Qualified Product Lists – Continued




Impact Attenuation Systems - Continued:

Impact Attenuation Systems (Tangential)

SPECIFICATION(s): January 2018 Supplementals Section 18.03 IMPACT ATTENUATION SYSTEM
 CTDOT Special Provision Item #1803064A TYPE B IMPACT ATTENUATION
 SYSTEM (TANGENTIAL) REPLACEMENT PARTS
 CTDOT Special Provision Item #1803071A TYPE B IMPACT ATTENUATION
 SYSTEM (TANGENTIAL)

PREAPPROVAL CRITERIA: Crash Tested in accordance with “AASHTO Manual for Assessing Safety Hardware (MASH)” Test Level 3 criteria; or, crash tested in accordance with “National Cooperative Highway Research (NCHRP) Report 350 – Recommended Procedures for the Safety Performance Evaluation of Highway Features” Test Level 3 criteria.

Comments: For all attenuators, see the CTDOT Highway Design Manual for guidance.



Impact Attenuation Systems (Tangential)				
ROADWAY SAFETY HARDWARE	Manufacturer	Testing Criteria	Test Level	Approval Basis
SoftStop	Trinity Highway	MASH 2016	TL-3	CC-115*
	Related Documents			
	Hardware Drawing(s)			
	Installation Manual			
MSKT-SP	Road Systems, Inc.	MASH 2016	TL-3	CC-126*
	Related Documents			
	Hardware Drawing(s)			
	Installation Manual			
	MSKT - Components			
Max-Tension	Barrier Systems by Lindsey	MASH 2016	TL-3	CC-133
	Related Documents			
	Installation Manual			

Note: CC-####* is FHWA HARDWARE ELIGIBILITY LETTER
 [Table last revised on 3/20/20]

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Qualified Product Lists – Continued

Impact Attenuation Systems (Tangential) - Continued:

Impact Attenuation Systems (Tangential)				
ROADWAY SAFETY HARDWARE	Manufacturer	Testing Criteria	Test Level	Approval Basis
SKT-SP	Road Systems, Inc.	NCHRP 350	TL-3	CC-88*
	** FOR REPAIR ONLY UNLESS SPECIFIED **			
	ON CONTRACT DRAWINGS			
	Related Documents			
	Hardware Drawing(s)			
	Installation Manual			
BEAT-MT	Road Systems, Inc.	NCHRP 350	TL-3	CC-69*
				
	Related Documents			
	Hardware Drawing(s)			
	Installation Manual			

Note: CC-####* is FHWA HARDWARE ELIGIBILITY LETTER
[Table last revised on 3/20/20]

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Qualified Product Lists – Continued



Impact Attenuation Systems - Continued:

Impact Attenuation Systems (Flared)

SPECIFICATION(s): January 2018 Supplementals Section 18.03 IMPACT ATTENUATION SYSTEM
 CTDOT Special Provision Item #1803063A TYPE B IMPACT ATTENUATION
 SYSTEM (FLARED) REPLACEMENT PARTS
 CTDOT Special Provision Item #1803071A TYPE B IMPACT ATTENUATION
 SYSTEM (FLARED)

PREAPPROVAL CRITERIA: Crash Tested in accordance with “AASHTO Manual for Assessing Safety Hardware (MASH)” Test Level 3 criteria; or, crash tested in accordance with “National Cooperative Highway Research (NCHRP) Report 350 – Recommended Procedures for the Safety Performance Evaluation of Highway Features” Test Level 3 criteria.

Comments: For all attenuators, see the CTDOT Highway Design Manual for guidance.

Impact Attenuation Systems (Flared)				
ROADWAY SAFETY HARDWARE	Manufacturer	Testing Criteria	Test Level	Approval Basis
Slotted Rail Terminal (SRT-31)	Trinity Highway	NCHRP 350	TL-3	CC-100*
	Related Documents			
	Hardware Drawing(s)			
	Installation Manual			
Fleat-SP	Road Systems, Inc.	NCHRP 350	TL-3	CC-88*
	Related Documents			
	Hardware Drawing(s)			
	Installation Manual			

Note: CC-####* is FHWA HARDWARE ELIGIBILITY LETTER
 [Table last revised on 3/20/20]

Impact Attenuation Systems - Continued:

Qualified Product Lists – Continued

Impact Attenuation Systems (Median/Gore) *

SPECIFICATION(s): January 2018 Supplementals Section 18.03 IMPACT ATTENUATION SYSTEM

CTDOT Special Provision Item #1803065A TYPE B IMPACT ATTENUATION SYSTEM (MEDIAN/GORE) REPLACEMENT PARTS




CTDOT Special Provision Item #1803072A TYPE B IMPACT ATTENUATION SYSTEM (MEDIAN/GORE)

CTDOT Special Provision Item #1807200A TEMPORARY IMPACT ATTENUATION SYSTEM TYPE B

CTDOT Special Provision Item #1807201A RELOCATION OF TEMPORARY IMPACT ATTENUATION SYSTEM TYPE B

PREAPPROVAL CRITERIA: Crash Tested in accordance with “AASHTO Manual for Assessing Safety Hardware (MASH)” Test Level 3 criteria; or, crash tested in accordance with “National Cooperative Highway Research (NCHRP) Report 350 – Recommended Procedures for the Safety Performance Evaluation of Highway Features” Test Level 3 criteria.

Comments: For all attenuators, see the CTDOT Highway Design Manual for guidance.

Impact Attenuation Systems (Median/Gore)				
ROADWAY SAFETY HARDWARE	Manufacturer	Testing Criteria	Test Level	Approval Basis
MAX-Tension Median	Barrier Systems by Lindsey	MASH 2016	TL-3	CC-141*
	Related Documents			
	Installation Manual			
CAT 350	Trinity Highway	NCHRP 350	TL-3	CC-33*
	Related Documents			
	Installation Manual			
BEAT-MT	Road Systems, Inc	NCHRP 350	TL-3	CC-69*
	***** FOR HW-910 10 BOX BEAM *****			
	Related Documents			
	Hardware Drawing			
	Installation Manual			

Note: CC-####* is FHWA HARDWARE ELIGIBILITY LETTER
[Table last revised on 3/20/20]

Impact Attenuation Systems - Continued:

Qualified Product Lists – Continued

Impact Attenuation Systems (Non-Gating)

SPECIFICATION(s): January 2018 Supplementals Section 18.03 IMPACT ATTENUATION SYSTEM
 CTDOT Special Provision Item #1803060A TYPE B IMPACT ATTENUATION SYSTEM (NON-GATING)
 CTDOT Special Provision Item #1803062A TYPE B IMPACT ATTENUATION SYSTEM (NON-GATING) REPLACEMENT PARTS

PREAPPROVAL CRITERIA: Crash Tested in accordance with “AASHTO Manual for Assessing Safety Hardware (MASH)” Test Level 3 criteria; or, crash tested in accordance with “National Cooperative Highway Research (NCHRP) Report 350 – Recommended Procedures for the Safety Performance Evaluation of Highway Features” Test Level 3 criteria.

Comments: For all attenuators, see the CTDOT Highway Design Manual for guidance.

Impact Attenuation Systems (Non-Gating)				
ROADWAY SAFETY HARDWARE	Manufacturer	Testing Criteria	Test Level	Approval Basis
NARROW IMPACT ATTENUATION SYSTEMS – SHIELDING LESS THAN 30” WIDE FIXED OBJECT				
QUADGUARD M10	Trinity Highway	MASH 2016	TL-3	CC-112*
	Shields fixed object max. 24” wide			
	Unit size is 22’-4” Long by 31” wide			
	New Installations on Concrete Pad Only			
	Related Document			
	Hardware Drawing(s)			
	Installation Manual			
TAU-M	Barrier Systems by Lindsey	MASH 2016	TL-3	CC-147*
	Shields fixed object max. 27” wide			
	Unit size is 23-11" Long by 34.5” wide			
	New Installations on Concrete Pad Only			
	Related Documents			
	Installation Manual			
SCI100GM	Hill & Smith Inc.	MASH 2016	TL-3	CC-128*
	Shields fixed object max. 24” wide			
	Unit size is 21’-6 1/8” Long by 37 7/16” wide			
	New Installations on Concrete Pad Only			
	Related Documents			
	Installation Manual			
	SCI Video Installation, Inspection & Repairs (4 min.)			
	SCI Video Resetting, Inspection & Repairs (8 min.)			

Note: CC-###* is FHWA HARDWARE ELIGIBILITY LETTER
 **For Concrete Pad size, refer to manufacturer’s drawings
 [Table last revised on 3/20/20]

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Qualified Product Lists – Continued

Impact Attenuation Systems (Non-Gating) - Continued:

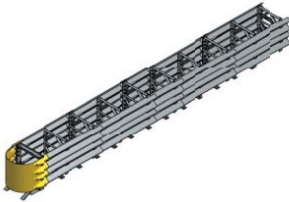


Impact Attenuation Systems (Non-Gating)					
ROADWAY SAFETY HARDWARE	Manufacturer	Testing Criteria	Test Level	Approval Basis	
WIDE IMPACT ATTENUATION SYSTEMS – SHIELDING 30” AND GREATER WIDE FIXED OBJECT **Note; All Widening Occurs within the Impact Attenuator**					
	QUADGUARD	Trinity Highway	NCHRP 350	TL-3	CC-35*
	Available System Shielding widths; 30,36,48,69,90,126 inches				
	REPAIR ONLY SYSTEM FOR 24” SHIELDING				
	Unit size ranges 19’-1” to 22’-1” Long by 31” to 135” wide				
	New Installations on Concrete Pad Only				
	Related Document				
	Installation Manual				
Concrete Foundation Requirements					
	QUADGUARD II	Trinity Highway	NCHRP 350	TL-3	CC-35*
	Available System Shielding widths; 30,36,48,69,90,126 inches				
	REPAIR ONLY SYSTEM FOR 24” SHIELDING				
	Unit size ranges 19’-1” to 22’-1” Long by 31” to 135” wide				
	New Installations on Concrete Pad Only				
	Related Document				
	Installation Manual				
	TAU-II	Barrier Systems by Lindsey	NCHRP 350	TL-3	CC-75*
	Available System Shielding widths; 30,36,42,48,60,66, 72,78,84,90,96,102 inches				
	REPAIR ONLY SYSTEM FOR 27” SHIELDING				
	Unit size ranges 23’-10” Long by 37” to 112” wide				
	New Installations on Concrete Pad Only				
	Related Documents				
	Installation Manual				
	TAU II-R	Barrier Systems by Lindsey	NCHRP 350	TL-3	CC-75*
	Available System Shielding widths; 30,36,42,48,60,66, 72,78,84,90,96,102 inches				
	REPAIR ONLY SYSTEM FOR 27” SHIELDING				
	Unit size ranges 23’-10” Long by 37” to 112” wide				
	New Installations on Concrete Pad Only				
	Related Documents				
	Installation Manual				

Note: CC-###* is FHWA HARDWARE ELIGIBILITY LETTER
 **For Concrete Pad size, refer to manufacturer’s drawings
 [Table last revised on 3/20/20]

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Qualified Product Lists – Continued

Impact Attenuation Systems (Non-Gating) - Continued:

Impact Attenuation Systems (Non-Gating)				
ROADWAY SAFETY HARDWARE	Manufacturer	Testing Criteria	Test Level	Approval Basis
TRACC	Trinity Highway	NCHRP 350	TL-3	CC-54*
	Available System Shielding width of 30 inches			
	REPAIR ONLY SYSTEM FOR 24" SHIELDING			
	Unit size is 22'-4" Long by 31" wide			
	New Installations on Concrete Pad Only			
	Related Document			
	Installation Manual			
	Concrete Foundation Requirements			
WIDETRACC	Trinity Highway	NCHRP 350	TL-3	CC-54*
	Available System Shielding widths of 41 or 58 inches			
	Unit size is 23'-11" Long by 34.5" wide			
	New Installations on Concrete Pad Only			
	Related Documents			
	Installation Manual			
	Concrete Foundation Requirements			
FASTRACC	Trinity Highway	NCHRP 350	TL-3	CC-54*
	Available System Shielding width of 30 inches			
	Unit size is 21'-6 1/8" Long by 37 7/16" wide			
	New Installations on Concrete Pad Only			
	Related Documents			
	Installation Manual			
	Concrete Foundation Requirements			

Note: CC-###* is FHWA HARDWARE ELIGIBILITY LETTER

**For Concrete Pad size, refer to manufacturer's drawings

[Table last revised on 3/20/20]

Impact Attenuation Systems - Continued:


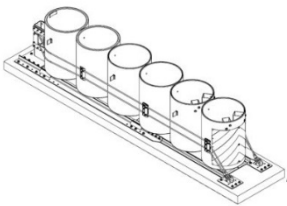

Qualified Product Lists – Continued

Impact Attenuation Systems (Non-Gating - High Incident)

SPECIFICATION(s): January 2018 Supplementals Section 18.03 IMPACT ATTENUATION SYSTEM
CTDOT Special Provision Item #1803066A TYPE B IMPACT ATTENUATION
SYSTEM (HIGH INCIDENT NON-GATING)

PREAPPROVAL CRITERIA: Crash Tested in accordance with “AASHTO Manual for Assessing Safety Hardware (MASH)” Test Level 3 criteria; or, crash tested in accordance with “National Cooperative Highway Research (NCHRP) Report 350 – Recommended Procedures for the Safety Performance Evaluation of Highway Features” Test Level 3 criteria.

Comments: For all attenuators, see the CTDOT Highway Design Manual for guidance.

Impact Attenuation Systems (Non-Gating High Incident)				
ROADWAY SAFETY HARDWARE	Manufacturer	Testing Criteria	Test Level	Approval Basis
SCI100GM	Hill & Smith Inc.	MASH 2016	TL-3	CC-128*
	Shields fixed object max. 24” wide			
	Unit size is 21’-6 1/8” Long by 37 7/16” wide			
	New Installations on Concrete Pad Only			
	Related Document			
	Installation Manual			
	SCI Video Installation, Inspection & Repairs (4 min.) SCI Video Resetting, Inspection & Repairs (8 min.)			
REACT 350	Trinity Highway	NCHRP 350	TL-3	CC-26*
	Shields fixed object ranging from 8” to 36” wide			
	Unit size is 19’- 5” to 30’- 3” long by 41.5” wide			
	New Installations on Concrete Pad Only			
	Related Documents			
	Product Manual (6 Barrel System)			
	Product Manual (9 Barrel System)			
REACT 350 WIDE	Concrete Foundation Requirement			
	Trinity Highway	NCHRP 350	TL-3	CC-73*
	Available System Shielding widths of 60,96 and 120 inches			
	Unit size is 30’- 7” to 30’- 10” long by 71” to 122” wide			
	New Installations on Concrete Pad Only			
	Related Documents			
	Product Manual			
	Product Installation Manual			

Note: CC-#### is FHWA HARDWARE ELIGIBILITY LETTER

**For Concrete Pad size, refer to manufacturer’s drawings

[Table last revised on 3/20/20]

Qualified Product Lists – Continued

Penetrating Sealer Protective Compound

SPECIFICATION:

Standard Specification, Article M.03.09;
Owned Special provision 0819002A – Penetrating Sealer Protective Compound

PREAPPROVAL CRITERIA:

Material Requirements:

- The penetrating sealer shall be a silicate solution that penetrates to a depth of at least ½” into the concrete. The sealer shall react with free calcium within the concrete to form a permanent barrier that is integral with the concrete to protect against water and chloride intrusion.
- The sealer shall be clear and cause no significant change in appearance or texture of the concrete surface.
- The sealer shall not cause loss of traction on sidewalks or bridge decks.

Test Requirements:

The concrete sealer, when applied in accordance with the manufacturer’s written application instructions shall:

- Reduce chloride ion penetration by at least 90% compared to control specimens when tested in accordance with AASHTO T 259 Standard Method of Test for Resistance of Concrete to Chloride Ion Penetration.
- Produce no visible cracking, spalling, or powdering in treated concrete after 300 cycles of testing in accordance with ASTM C666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.
- Be vapor permeable to allow for evacuation of moisture from the concrete. Moisture vapor transmission shall be tested in accordance with AASHTO T 384. The Drying Rate Coefficient (DRC) shall be at least 85%.
- Have a VOC content less than 100 grams/liter. The VOC content shall be calculated according to one of the following:
 - EPA Reference Method 24, 40 CFR 60, Appendix A, or
 - An alternative test method approved by the New York Department of Environmental Conservation and the Administrator pursuant to NYSDEC Regulations Part 205.6(c);

Continued on Next Page:

Qualified Product Lists – Continued

Penetrating Sealer Protective Compound - Continued:

APPROVAL:

Products shall meet the Material Requirements and Test Requirements above. A Materials Certificate and Certified Test Report shall be submitted in accordance with Article 1.06.07 indicating that the product meets the requirements above. The date of testing shall be within 5 years of application for approval.

PROVISIONS FOR CONTINUANCE ON QPL:

All testing shall have been performed no longer than 5 years prior to the product installation date. Testing showing conformance with the above noted performance requirements shall be submitted to the Department which shall establish the “Date of Test Compliance.” Products with a “Date of Test Compliance” greater than 5 years prior to the product installation date shall not be used.

Manufacturer/Supplier	Product Brand Name	Date of Test Compliance	Expiration Date
Wicktek Inc. 8097 Sacred Heart Lane Cincinnati, OH 45255 Website: www.wicktek.com	DensiCrete		June 1, 2023

[Table last revised on 7/24/21]

Qualified Product Lists – Continued

Retroreflective Sheeting:

Construction Barricade Sheeting

SPECIFICATION: 1) Standard Specification M.18.09

2) Material Certificate submission conforming to Standard Specification 1.06.07.

PREAPPROVAL CRITERIA: 1) Conformance to ASTM D4956

2) Participation in the National Transportation Product Evaluation Program (NTPEP) 1-Year Retroreflective Sheeting Test Deck.

Retroreflective Sheeting Type IV	
Manufacturer/Supplier	Product Brand Name
3M Company Transportation Safety Division 3M Center, Building 235-03W-052 St. Paul, MN 55144	3336 White/Orange
Avery Dennison Reflective Products Division 7542 Natchez Avenue Niles, IL 60714	W11144 White/Orange W11145 White/Orange

[Table last revised on 3/20/20]

Retroreflective Sheeting Type XI	
Manufacturer/Supplier	Product Brand Name
3M Company Transportation Safety Division 3M Center, Building 235-03W-052 St. Paul, MN 55144	446 White/Orange

[Table last revised on 3/20/20]

Qualified Product Lists – Continued

Retroreflective Sheeting:

Traffic Drums, 42” Traffic Cones, Opposing Traffic Lane Divider, Glare Screens and Posts and Tubular Markers (Flexible) Sheeting

SPECIFICATION: 1) Standard Specification M.18.09
2) Material Certificate submission conforming to Standard Specification 1.06.07.

PREAPPROVAL CRITERIA: 1) Conformance to ASTM D4956
2) Participation in the National Transportation Product Evaluation Program (NTPEP) 1-Year Retroreflective Sheeting Test Deck.

Retroreflective Sheeting Type IV	
Manufacturer/Supplier	Product Brand Name
3M Company Transportation Safety Division 3M Center, Building 235-03W-052 St. Paul, MN 55144	3310 - White
Avery Dennison Corp. 7542 N. Natchez Avenue Niles, Illinois, 60714	WR-7100 Reboundable White Prismatic WR-7114 Reboundable Fluorescent Orange Prismatic
ORAFOL Americas Inc. 120 Darling Drive Avon, Connecticut 06001	Resilience Channelizer – Fluorescent Orange

[Table last revised on 3/20/20]

Qualified Product Lists – Continued

Retroreflective Sheeting:

Traffic Cone Collar Sheeting

SPECIFICATION: 1) Standard Specification M.18.09
2) Material Certificate submission conforming to Standard Specification 1.06.07.

PREAPPROVAL CRITERIA: 1) Conformance to ASTM D4956

Retroreflective Sheeting Type VI	
Manufacturer/Supplier	Product Brand Name
ORAFOL Americas, Inc. 120 Darling Drive Avon, CT 06001	ORALITE: 2010 White Cone Collar
3M Company Transportation Safety Division 3M Center, Building 235-03W-052 St. Paul, MN 55144	3340 – Flexible Prismatic Cone Sheeting

[Table last revised on 3/20/20]

Qualified Product Lists – Continued

Retroreflective Sheeting:

Construction Roll-Up Sign Sheeting

SPECIFICATION: 1) Standard Specification M.18.09

2) Material Certificate submission conforming to Standard Specification 1.06.07.

PREAPPROVAL CRITERIA: 1) Conformance to ASTM D4956

2) Participation in the National Transportation Product Evaluation Program (NTPEP) 1-Year Retroreflective Sheeting Test Deck.

Retroreflective Sheeting Type VI	
Manufacturer/Supplier	Product Brand Name
Avery Dennison Corp. 7542 N. Natchez Avenue Niles, Illinois, 60714	WU-7000 White WU-7014 Fluorescent Orange
3M Company Transportation Safety Division 3M Center, Building 235-03W-052 St. Paul, MN 55144	RS60 - White RS64I – Fluorescent Orange RS20 - White RS24 – Fluorescent Orange RS33 – Fluorescent Pink
ORAFOL Americas, Inc. 120 Darling Drive Avon, CT 06001	ORALITE: Orange Roll Up Sign Fluorescent Orange Super Bright Roll Up Sign

[Table last revised on 7/27/21]

Qualified Product Lists – Continued

Retroreflective Sheeting:

Delineator Non-Adhesive Backing Type Sheeting

SPECIFICATION: 1) Standard Specification M.18.09

2) Material Certificate submission conforming to Standard Specification 1.06.07.

PREAPPROVAL CRITERIA: 1) Conformance to ASTM D4956

2) Participation in the National Transportation Product Evaluation Program (NTPEP) 3-Year Retroreflective Sheeting Test Deck.

Retroreflective Sheeting Type V	
Manufacturer/Supplier	Product Brand Name
ORAFOL Americas, Inc. 120 Darling Drive Avon, CT 06001	ORALITE: AP1000 Red AP1000 White AP1000 Yellow AR1000 White AR1000 Yellow

[Table last revised on 3/20/20]

Qualified Product Lists – Continued

Retroreflective Sheeting:

Sign and Delineator Sheeting

SPECIFICATION: 1) Standard Specification M.18.09

2) Material Certificate submission conforming to Standard Specification 1.06.07.

PREAPPROVAL CRITERIA: 1) Conformance to ASTM D4956

2) Participation in the National Transportation Product Evaluation Program (NTPEP) 3-Year Retroreflective Sheeting Test Deck.

Retroreflective Sheeting Type IV	
Manufacturer/Supplier	Product Brand Name
3M Company Transportation Safety Division 3M Center, Building 235-03W-052 St. Paul, MN 55144	3930 – White 3931 – Yellow 3932 – Red 3935 – Blue 3937 – Green 3939 – Brown
Avery Dennison Corp. 7542 N. Natchez Avenue Niles, Illinois, 60714	T-6500 – White T-6501 – Yellow T-6505 – Blue T-6507 – Green T-6508 – Red T-6509 – Brown
Nippon Carbide Industries 12981 E. Florence Avenue Santa Fe Springs, CA 90670	94802 – White 94804 – Yellow 94805 – Red 94806 – Blue 94807 – Orange 94808 – Green
ORAFOL Americas, Inc. 120 Darling Drive Avon, CT 06001	5900-010 – White 5900-020 – Yellow 5900-030 – Red 5900-050 – Blue 5900-060 – Green 5900-080 – Brown

[Table last revised on 3/20/20]

Qualified Product Lists – Continued

Retroreflective Sheeting:

Sign and Delineator Sheeting – Continued

Retroreflective Sheeting Type VIII	
Manufacturer/Supplier	Product Brand Name
3M Company Transportation Safety Division 3M Center, Building 235-03W-052 St. Paul, MN 55144	3924S Fluorescent Orange
Avery Dennison Corp. 7542 N. Natchez Avenue Niles, Illinois, 60714	W7514 Fluorescent Orange
Nippon Carbide Industries, Inc. 3136 East Victoria Street Rancho Dominguez, CA 90221	Nikkalite: 92847 Fluorescent Orange
ORAFOL Americas, Inc. 120 Darling Drive Avon, CT 06001	Oralite®: 5930-038 Fluorescent Orange

[Table last revised on 3/20/20]

Retroreflective Sheeting Type IX	
Manufacturer/Supplier	Product Brand Name
3M Company Transportation Safety Division 3M Center, Building 235-03W-052 St. Paul, MN 55144	3910 – White 3914 – Fluorescent Orange 3981 – Fluorescent Yellow 3983 – Fluorescent Yellow/Green 3990 – White 3991 – Yellow 3992 – Red 3995 – Blue 3997 – Green 4091 – Yellow 4092 – Red 4095 – Blue 4097 – Green 4081 – Fluorescent Yellow 4083 – Fluorescent Yellow-Green 4084 – Fluorescent Orange

Continued on Next Page:

Qualified Product Lists – Continued

Sign and Delineator Sheeting Type IX – Continued

Retroreflective Sheeting Type IX	
Manufacturer/Supplier	Product Brand Name
Avery Dennison Corp. 7542 N. Natchez Avenue Niles, Illinois, 60714	T-9500 – White T-9501 – Yellow T-9505 – Blue T-9507 – Green T-9508 – Red T-9513 – Fluorescent Yellow/Green W-9514 – Fluorescent Orange T-11500 – White T-11501 – Yellow T-11505 – Blue T-11507 – Green T-11508 – Red T-11511 – Fluorescent Yellow T-11513 – Fluorescent Yellow/Green W-11514 – Fluorescent Orange
ORAFOL Americas, Inc. 120 Darling Drive Avon, CT 06001	7900-010 – White 7900-020 – Yellow 7900-050 – Blue 7900-060 – Green 7900-029 – Fluorescent Yellow-Green 7900-037 – Fluorescent Yellow 5930-038 – Fluorescent Orange

[Table last revised on 3/20/20]

Retroreflective Sheeting:

Qualified Product Lists – Continued

Sign and Delineator Sheeting – Continued

Retroreflective Sheeting Type XI	
Manufacturer/Supplier	Product Brand Name
3M Company Transportation Safety Division 3M Center, Building 235-03W-052 St. Paul, MN 55144	4090 – White 4091 – Yellow 4092 – Red 4095 – Blue 4097 – Green 4099 – Brown 4081 – Fluorescent Yellow 4083 – Fluorescent Yellow-Green
Avery Dennison Corp. 7542 N. Natchez Avenue Niles, Illinois, 60714	T-11500 – White T-11501 – Yellow T-11505 – Blue T-11507 – Green T-11508 – Red T-11509 – Brown T-11511 – Fluorescent Yellow T-11513 – Fluorescent Yellow-Green

[Table last revised on 1/7/21]

Qualified Product Lists – Continued

Spray-Applied Membrane Waterproofing System:

SPECIFICATION: Item No. 0707009A – Membrane Waterproofing (Cold Liquid Elastomeric)

PRE-APPROVAL CRITERIA:

A) Material requirements:

1. Primer: The primer shall be a 100% reactive, acrylic based, two component, spray applied resin capable of full cure in 40 minutes at 68°F (20°C).
2. Membrane: The membrane shall be 100% solvent free reactive, acrylic based, two component, spray applied material.
3. Aggregate: The aggregate shall be a nonfriable, durable #8 aggregate stone.

B) Test Requirements:

The membrane, when tested as an 80 mil layer alone or as an 80mil layer plus 40mil topping with aggregate system, shall meet or exceed the following performance requirements:

Water Vapor Transmission	ASTM E96	0.3 Perms or less
Adhesion (Concrete)	ASTM D4541	150 psi (1.0 MPa) or failure in concrete.
Adhesion (Steel)	ASTM D4541	300 psi (2.1 MPa)
Minimum Tensile Strength	ASTM D638, Method A, Die C	940 psi (6.4 MPa)
Minimum Elongation at Break	ASTM D638, Method A, Die C	80%
Crack Bridging	ASTM 1305	Pass @ 10 cycles, 0.125 in. (3.2mm) -15°F (-26°C)
Resistance to Heat Aging	ASTM C1522	Pass

APPROVAL:

Submitted products will be reviewed for approval pending results of a one-year long test trial.

Continued on Next Page:

Qualified Product Lists – Continued

Spray-Applied Membrane Waterproofing System - Continued:

PROVISIONS FOR CONTINUANCE ON QPL:

All testing shall have been performed no longer than 5 years prior to the product installation date. Testing showing conformance with the above noted performance requirements shall be submitted to the Department who shall establish the “Date of Test Compliance”. Products with a “Date of Test Compliance” greater than 5 years prior to the product installation date shall not allowed to be used.

Manufacturer/Supplier	Product Brand Name	Date of Test Compliance	Expiration Date
Bridge Preservation, LLC 87 Shawnee Avenue Kansas City, KS 66105 Telephone: 913-321-9006	Bridge Deck Membrane System	May 1, 2019	May 1, 2024
GCP Applied Technologies Inc. 62 Whittemore Ave. Cambridge, MA 02140 Telephone: 617-498-4816	Eliminator	March 1, 2015	Feb. 29, 2020 ** See Note 1 **
PIM Corporation 201 Circle Drive North, Suite 105 Piscataway, NJ 08854 Telephone: 732-469-6224	PmB Blue Shield	November 29, 2017	November 28, 2022
Wasser Coatings Inc. 4118 B Place NW Suite B Auburn, WA 98001	Wasser Polyflex Bridge Deck System	November 7, 2018	November 7, 2023

Note 1: Products remain “**Qualified**” while test data is under review.

[Table last revised on 8/17/21]

Qualified Product Lists – Continued

Walls: Embankment Walls:

SPECIFICATION: ConnDOT Special Provision:

1. ITEM #0601445A - #0601449A (SITE NO. 1 thru 5)
2. ITEM #0601490A - #0601495A (SITE NO. 6 thru 11)

PREAPPROVAL CRITERIA: LRFD Bridge Design Specification

SUPPLIER/LOCATION	PRODUCT BRAND NAME
Connecticut Precast Corp. 555 Fan Hill Road Monroe, CT 06468 Telephone: 203-268-8688 Fax: 203-452-1007 Website: www.ctprecast.com	Recon Retaining Wall
Keystone Retaining Wall Systems 4444 West 78 th Street Bloomington, MN 55435 Telephone: 952-897-1040 E-Mail: jfriederichs@keystonewalls.com Website: www.keystonewalls.com	KeySystem I Retaining Wall
Redi-Rock Walls - CT Division 68A South Canal Street Plainville, CT 06062 Telephone: 860-793-6805	Redi-Rock Retaining Wall-Cobblestone Face Mold
TENSAR Earth Technology, Inc. 227 Ritter Road Sewickley, PA 15143 Telephone: 412-749-9190	MESA Retaining Wall System
The Reinforced Earth Company 133 Park Street North Reading, MA 01864 Telephone: 978-664-2830 E-Mail: PAnderson@reinforcedearth.com Website: www.reinforcedearth.com	Pyramid Modular Blockwall
VERSA-LOK of New England 5 Northern Boulevard, Unit 15 Amherst, NH 03031 Telephone: 603-883-3042 E-Mail: Sales@wallsthatwork.com Website: www.versa-Lok.com	VERSA-LOK Retaining Wall

[Table last revised on 3/20/20]

Qualified Product Lists – Continued

Walls: Retaining Walls - Mechanically Stabilized Earth (MSE) Walls:

SPECIFICATION: ConnDOT Special Provision: Item #'s 0601651A, 0601665A, 0601678A & 0601687A RETAINING WALL

PREAPPROVAL CRITERIA: LRFD Bridge Design Specification

SUPPLIER/LOCATION	PRODUCT BRAND NAME
Big R Bridge Corporate P.O. Box 1290 Greeley, CO 80632 Telephone: 207-232-3228	Vist-A-Wall Systems
Inventure Civil LLC P.O. Box 1781 Wake Forest, NC 27588 Telephone: (919) 453-2011	SINE WALL
TEG Engineering, LLC 1505 44th Street Wyoming, MI 49509	Tricon Retained Soil Wall System
The Reinforced Earth Company 133 Park Street North Reading, MA 01864 Telephone: 978-664-2830	Reinforced Earth Walls
The Reinforced Earth Company 1372 Oldbridge Road, Suite 101 Woodbridge, VA 22192 Telephone: 703-499-9818	Retained Earth

[Table last revised on 3/20/20]

Walls: Retaining Walls - Prefabricated Modular Walls:

SPECIFICATION: ConnDOT Special Provision: Item #'s 0601651A, 0601665A, 0601678A & 0601687A RETAINING WALL

PREAPPROVAL CRITERIA: LRFD Bridge Design Specification

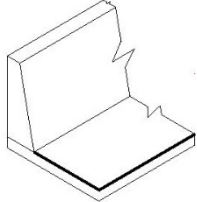
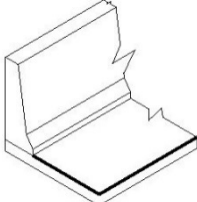
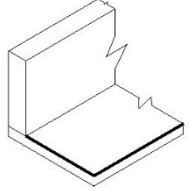
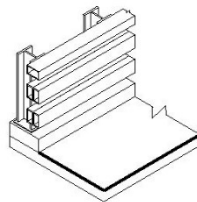
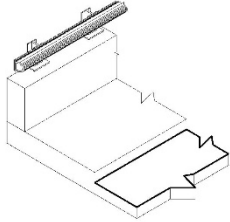
SUPPLIER/LOCATION	PRODUCT BRAND NAME
Doublewal Corporation 7 West Main Street Plainville, CT 06062 Telephone: 860-793-0295	Doublewal-Standard Module
Earth Wall Products 1349 Old 41 Highway NW. Suite 135 Marietta, GA 30060	GRAVIX DOT Precast Wall System
The Neel Company 8328-D Traford Lane Springfield, VA 22152 Telephone: 703-913-7858	T-Wall Retaining Wall System

[Table last revised on 1/12/21]

Qualified Product(s): Non - Proprietary Roadside Safety Hardware


Connecticut Department of Transportation
Non-Proprietary Roadside Safety Hardware

Qualified Product(s): Non - Proprietary Roadside Safety Hardware

Parapets and Railing Designs for Bridges and Retaining Walls			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
42" SINGLE SLOPE CONCRETE PARAPET	MASH 2016	TL-4	Eng. Analysis
	Related Documents		
	42" SINGLE SLOPE CONCRETE PARAPET DRAWINGS		
42" F-SHAPE CONCRETE PARAPET	MASH 2016	TL-4	Eng. Analysis
	Related Documents		
	42" F-SHAPE CONCRETE PARAPET DRAWINGS		
42" VERTICAL CONCRETE PARAPET	MASH 2016	TL-4	Eng. Analysis
	Related Documents		
	42" VERTICAL CONCRETE PARAPET		
42" CURB MOUNTED BRIDGE RAILING	MASH 2016	TL-4	Eng. Analysis
	Related Documents		
	*** PENDING APPROVAL ***		
36" VERTICAL CONCRETE PARAPET WITH SIDEWALK	MASH 2016	TL-3	Eng. Analysis
	Related Documents		
	36" VERTICAL CONCRETE PARAPET WITH SIDEWALK		



[Table last revised on 3/20/20]

Qualified Product(s): Non - Proprietary Roadside Safety Hardware

Cable Barriers			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
THREE CABLE GUIDERAIL (I-BEAM POSTS)	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing Details HW-918 01a		

NOTE; ** Device approved prior to implementation of MASH – Compliant Determination Process

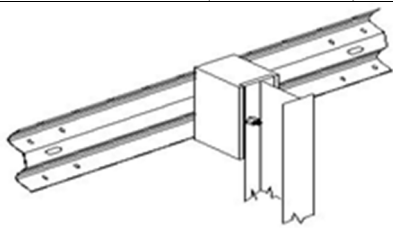
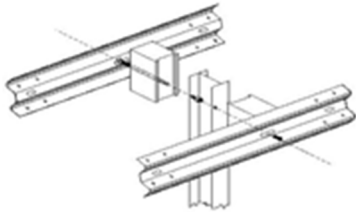
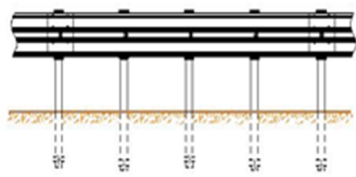
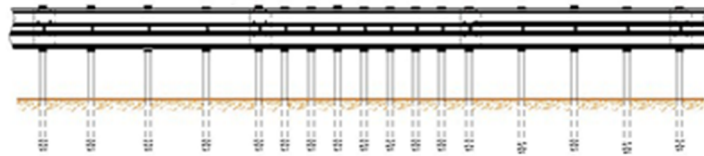
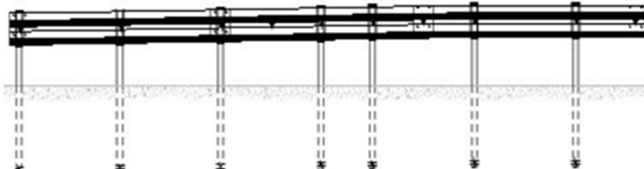
[Table last revised on 3/20/ 20]

Cable Barriers Terminal Ends			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
THREE CABLE END ANCHOR TYPE I	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing Details HW-918 01b & 01c		
THREE CABLE TRAILING END ATTACHMENT			**
			
	Related Documents		
	Hardware Drawing Details HW-918 01b		

NOTE; ** Device approved prior to implementation of MASH – Compliant Determination Process


[Table last revised on 3/20/ 20]

Qualified Product(s): Non - Proprietary Roadside Safety Hardware

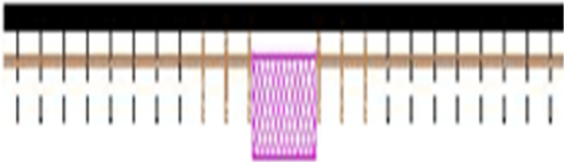
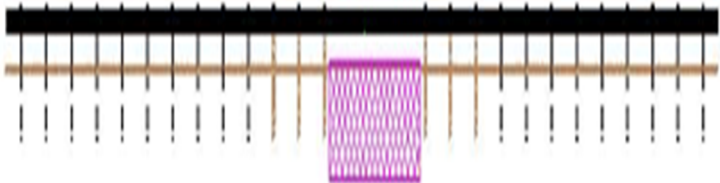
METAL BEAM RAIL (TYPE)			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
METAL BEAM RAIL (R-B MASH) GUIDERAIL	MASH 2016	TL-3	Eng. Analysis
	Related Documents		
	Hardware Drawing Details HW-910_21		
METAL BEAM RAIL (MD-MASH) GUIDERAIL	MASH 2016	TL-3	Eng. Analysis
	Related Documents		
	Hardware Drawing Details HW-910_22		
METAL BEAM RAIL (R-B MASH) HALF – POST SPACING	MASH 2016	TL-3	Eng. Analysis
	Related Documents		
	Hardware Drawing Details HW-910_23		
METAL BEAM RAIL (R-B MASH) QUARTER POST SPACING	MASH 2016	TL-3	Eng. Analysis
	Related Documents		
	Hardware Drawing HW-910_23		
METAL BEAM RAIL TRANSITION 350 TO MASH	NCHRP 350	TL-3	**
	Related Documents		
	Hardware Drawing HW-910_25		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]

Qualified Product(s): Non - Proprietary Roadside Safety Hardware

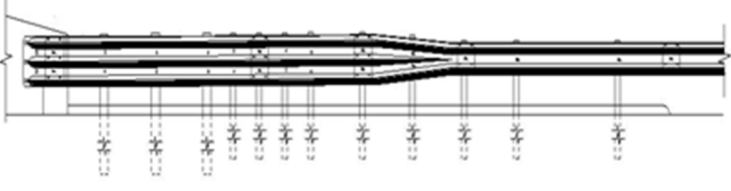




METAL BEAM RAIL (TYPE)			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
METAL BEAM RAIL 8" x 6" BOX BEAM	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-910_10		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]

METAL BEAM RAIL SPAN SECTION (TYPE II OR III)			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
METAL BEAM RAIL SPAN SECTION TYPE II	MASH 2016	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-910_24		
METAL BEAM RAIL SPAN SECTION TYPE III	MASH 2016	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-910_24		

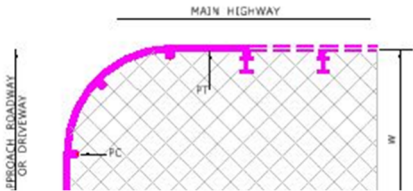
Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]

Qualified Product(s): Non - Proprietary Roadside Safety Hardware


(TYPE) ATTACHMENTS			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
THRIE-BEAM ATTACHMENT	MASH 2016	TL-34	Eng. Analysis
			
	Related Documents		
	Hardware Drawing HW-910_27		
R-B 350 BRIDGE ATTACHMENT SAFETY SHAPE PARAPET	NCHRP 350	TL-3	**
			
	* FOR REPAIR ONLY UNLESS SPECIFIED ON CONTRACT DRAWING*		
	Related Documents		
	Hardware Drawing HW-910_06		
R-B 350 BRIDGE ATTACHMENT VERTICAL SHAPE PARAPET	NCHRP 350	TL-3	**
			
	* FOR REPAIR ONLY UNLESS SPECIFIED ON CONTRACT DRAWING*		
	Related Documents		
	Hardware Drawing HW-910_07		
MD-350 MEDIAN BARRIER SAFETY SHAPE ATTACHMENT TYPE I	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-910_15		
MD-350 MEDIAN BARRIER SAFETY SHAPE ATTACHMENT TYPE II	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-910_16		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]


Qualified Product(s): Non - Proprietary Roadside Safety Hardware

(TYPE) CURVED GUIDE RAIL TREATMENT			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
CURVED GUIDERAIL TREATMENT	NCHRP 230	TL-2	**
	Related Documents		
	Hardware Drawing HW-910_11		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]


R-B TERMINAL SECTION			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
R-B TERMINAL SECTION	NCHRP 350	TL-2	**
	Related Documents		
	Hardware Drawing HW-910_17		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 8/17/21]


(TYPE) END ANCHORAGE TYPE I			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
R-B END ANCHORAGE TYPE I			**
	* NOT CRASHWORTHY *		
	LOCATE OUTSIDE CLEAR ZONE		
	Related Documents		
	Hardware Drawing HW-911_01		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]



Qualified Product(s): Non - Proprietary Roadside Safety Hardware

(TYPE) END ANCHORAGE TYPE II			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
R-B END ANCHORAGE TYPE II			**
	* NOT CRASHWORTHY *		
	LOCATE OUTSIDE CLEAR ZONE		
	Related Documents		
	Hardware Drawing HW-911_01		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]

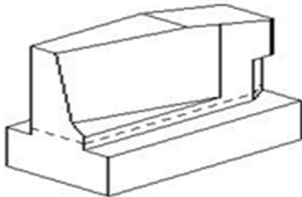
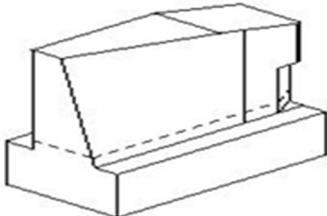
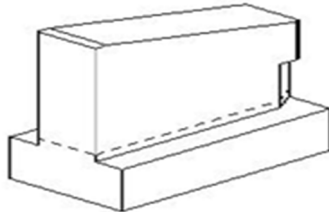
(TYPE) END ANCHORAGE			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
BOX BEAM END ASSEMBLY	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-910_10		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]

ANCHOR IN (TYPE) SLOPE			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
ANCHOR IN ROCK CUT SLOPE			**
			
	Related Documents		
	Hardware Drawing HW-911_03		
ANCHOR IN EARTH CUT SLOPE	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-911_03		


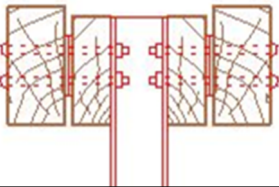


Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]

Qualified Product(s): Non - Proprietary Roadside Safety Hardware

PRECAST CONCRETE BARRIER CURB			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
F-SHAPE PRECAST CONCRETE BARRIER CURB FOR THRIE-BEAM ATTACHMENT			
	MASH 2016	TL-4	Eng. Analysis
	Related Documents		
	Hardware Drawing HW-821_08a & 08b		
SINGLE SLOPE PRECAST CONCRETE BARRIER CURB FOR THRIE-BEAM ATTACHMENT			
	MASH 2016	TL-4	Eng. Analysis
	Related Documents		
	Hardware Drawing HW-821_09a & 09b		
VERTICAL PRECAST CONCRETE BARRIER CURB FOR THRIE-BEAM ATTACHMENT			
	MASH 2016	TL-4	Eng. Analysis
	Related Documents		
	Hardware Drawing HW-821_10a & 10b		



[Table last revised on 3/20/ 20]

Qualified Product(s): Non - Proprietary Roadside Safety Hardware



MERRITT PARKWAY RAIL TYPE			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
MERRITT PARKWAY GUIDERAIL	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-910 12a&b		
MERRITT PARKWAY MEDIAN GUIDERAIL	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-910 12d		
MERRITT PARKWAY GUIDERAIL SYSTEMS 2	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-910 12a		
MERRITT PARKWAY GUIDERAIL SYSTEMS 3	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-910 12a		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]

Qualified Product(s): Non - Proprietary Roadside Safety Hardware




MERRITT PARKWAY RAIL TYPE			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
MERRITT PARKWAY MEDIAN CONCRETE BARRIER	NCHRP 350	TL-3	Eng. Analysis
			
	Related Documents		
	Hardware Drawing HW-821_04b		
MERRITT PARKWAY NARROW CONCRETE BARRIER	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-821_04a		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]


MERRITT PARKWAY (TYPE) ATTACHMENT			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
MERRITT PARKWAY GUIDERAIL LEADING END ATTACHMENT	NCHRP 350	TL-3	**
			
	Related Documents		
	Hardware Drawing HW-910_12a		
MERRITT PARKWAY GUIDERAIL TRAILING END ATTACHMENT			**
			
	Related Documents		
	Hardware Drawing HW-910_12c		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]

Qualified Product(s): Non - Proprietary Roadside Safety Hardware


MERRITT PARKWAY END ANCHORAGE (TYPE)			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
MERRITT PARKWAY GUIDERAIL END ANCHOR TYPE I			**
	* NOT CRASHWORTHY *		
	LOCATE OUTSIDE CLEAR ZONE		
	Related Documents		
	Hardware Drawing HW-911_05		
MERRITT PARKWAY GUIDERAIL END ANCHOR TYPE II			**
	* NOT CRASHWORTHY *		
	LOCATE OUTSIDE CLEAR ZONE		
	Related Documents		
	Hardware Drawing HW-911_05		
MERRITT PARKWAY GUIDERAIL END ANCHOR TYPE III	NCHRP 350	TL-3	Eng. Analysis
			
	Related Documents		
	Hardware Drawing HW-911_05		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]

MERRITT PARKWAY MEDIAN GUIDERAIL END ANCHORAGE			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
MERRITT PARKWAY MEDIAN GUIDERAIL END ANCHORAGE			**
	* NOT CRASHWORTHY *		
	LOCATE OUTSIDE CLEAR ZONE		
	Related Documents		
	Hardware Drawing HW-910_12d		

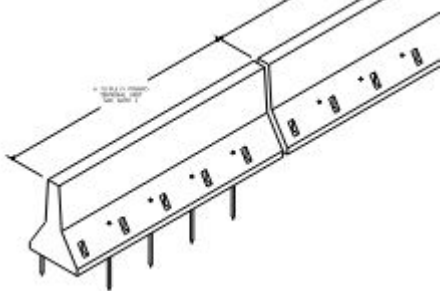
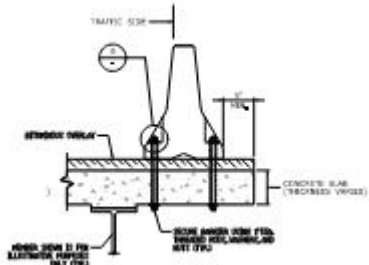

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]

Qualified Product(s): Non - Proprietary Roadside Safety Hardware

SIGN SUPPORT			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
METAL SIGN POSTS	NCHRP 350	TL-3	**
			
	Related Documents		
	Sign Post Hardware Drawing TR-1208 02		
BREAKAWAY SIGN SUPPORT	NCHRP 350	TL-3	**
			
	Related Documents		
	Breakaway Sign Supports Hardware		
BREAKAWAY LUMINAIRE TRANSFORMER BASE	NCHRP 350	TL-3	**
			
	Related Documents		
	Light Standard Hardware		
PEDESTAL BASE	NCHRP 350	TL-3	**
			
	Related Documents		
	Pedestal Base TR-1102 01		
	Traffic Control Foundation Pedestal - Type I - Precast TR-1002 01		

Note: ** Device approved prior to implementation of MASH-Compliant Determination Process [Table last revised on 3/20/ 20]

Qualified Product(s): Non - Proprietary Roadside Safety Hardware

TEMPORARY WORKZONE DEVICES			
ROADSIDE SAFETY HARDWARE	Testing Criteria	Test Level	Approval Basis
Temporary Traffic Barrier	MASH 2016	TL-3	Eng. Analysis
Temporary Traffic Barrier (Pinned)	MASH 2016	TL-3	Eng. Analysis
	Related Documents		
	Hardware Drawing No. HW-822_02c		
Temporary Traffic Barrier (Bolted)	MASH 2016	TL-3	Eng. Analysis
	Related Documents		
	Hardware Drawing No. HW-822_02b		
Temporary Precast Concrete Barrier Curb	NCHRP 350	TL-3	***
	Related Documents		
	Hardware Drawing HW-822_01		

[Table last revised on 8/6/21]

Note: *** Any Temporary Work zone device manufactured on or before December 31,2019 and successfully tested to NCHRP Report 350 or the 2009 Edition of MASH, may be used throughout their normal service life.