WAGMAN
General Construction | Heavy Civil | Geotechnical

TODAY'S OVERLAYS

A NEWSLETTER PUBLISHED BY WAGMAN HEAVY CIVIL, INC.

SPRING 2017

CURRENT & RECENT PROJECTS

PENNSYLVANIA
Pocono Medical Center
Monroe Co. - 49 CY

SR 4061, Sec 001
Lancaster Co. - 115 CY

SR 65, Sec A53
Allegheny Co. - 190 CY

SR 83, Sec 72
Dauphin Co. - 18 CY

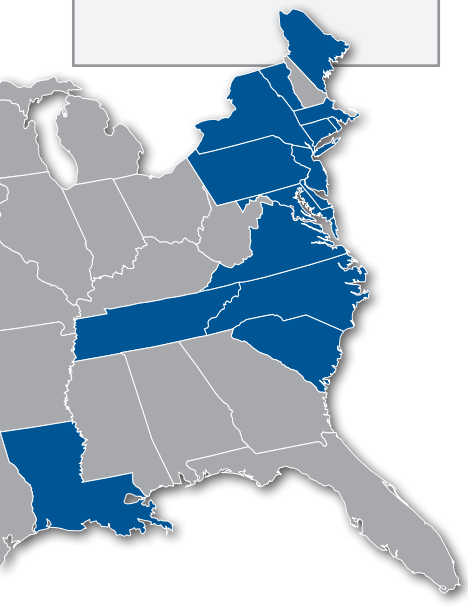
MARYLAND
Bridge Deck Sealing - MdTA
Baltimore - 13 CY

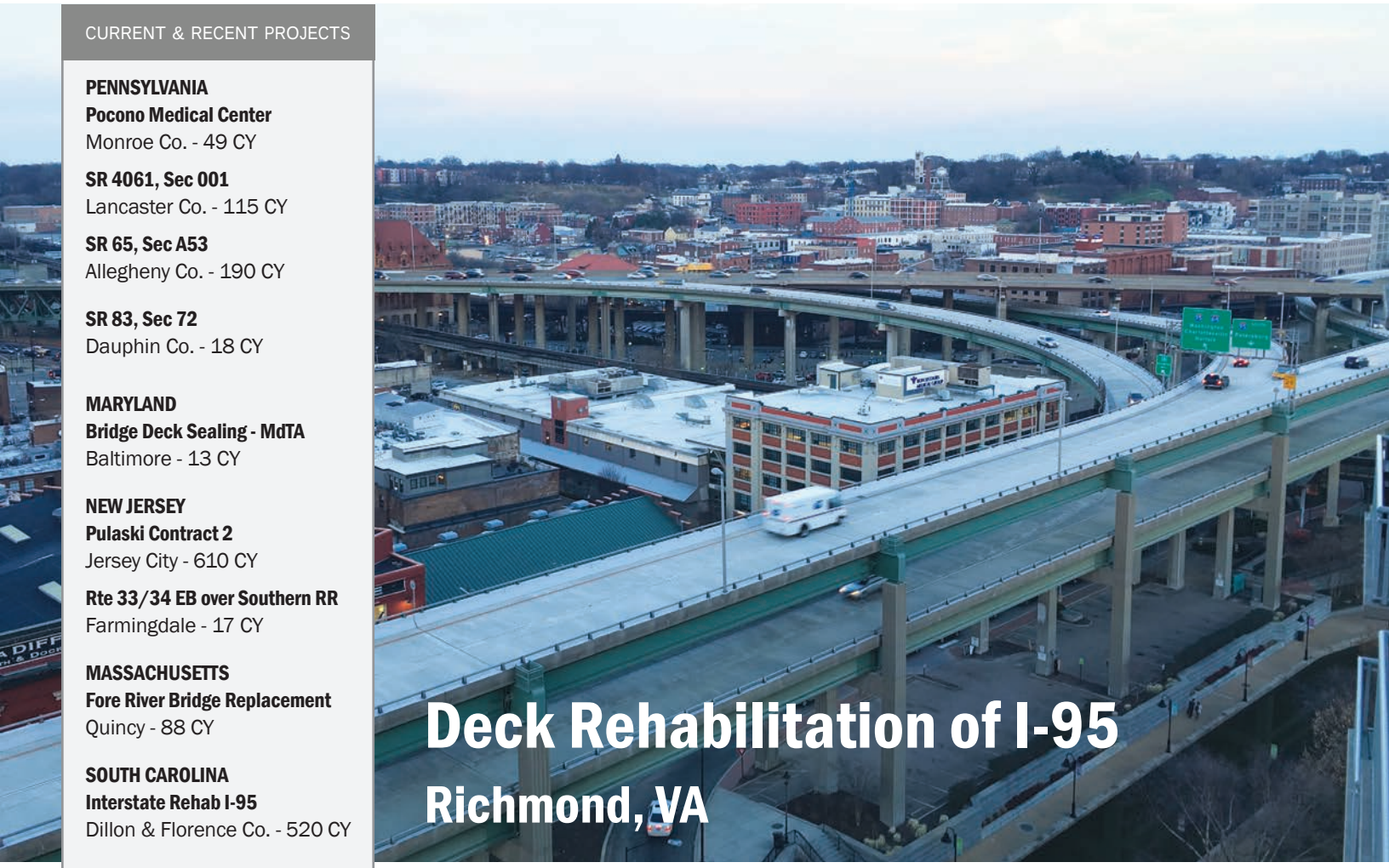
NEW JERSEY
Pulaski Contract 2
Jersey City - 610 CY

Rte 33/34 EB over Southern RR
Farmingdale - 17 CY

MASSACHUSETTS
Fore River Bridge Replacement
Quincy - 88 CY

SOUTH CAROLINA
Interstate Rehab I-95
Dillon & Florence Co. - 520 CY





Deck Rehabilitation of I-95
Richmond, VA

In 2016, Wagman successfully completed the Deck rehabilitation of the I-95 Ramps on time and under budget. This project was awarded by Richmond Metropolitan Transportation Authority (RMTA) and included limited opportunities for work involving lane closures due to high traffic volumes in the greater Richmond area. The work schedule only allowed for nightly, weekday lane closures or weekend closures up to 56 hours of continuous work. Wagman's schedule of weekend closures was limited to accommodate the many events held in downtown Richmond. RMTA chose the ideal overlay material to resurface the decks by specifying the use of Rapid Set Latex Modified Concrete (RSLMC). By choosing RSLMC, RMTA was able to maintain traffic flow on seven ramps that are vital to ingress and egress of traffic into the city. The project was completed in fewer weekends than expected and included overlaying 22,903 SY of deck surface with 1,323 CY of RSLMC. While the weekend work focused on the removal and replacement of the overlays, weeknight lane closures were used for joint rehabilitation and parapet wall coating. Wagman also used its own crews and equipment to complete the bridge deck grooving. The time and effort dedicated by Wagman employees to work nights and weekends throughout the summer allowed Wagman to deliver another successful RSLMC overlay project.

Latex Modified Concrete: Why We Use it

Tests conducted by Trinseo have proven that the use of curing blankets to maintain curing temperature during cold weather has no effect on long range results for compressive strengths and permeability characteristics of a Latex Modified Concrete (LMC) overlay.

TRINSEO™

Low Temperature Curing of Latex Modified Concrete

Typical concrete curing conditions for freshly installed LMC overlays are two days of wet cure followed by two to three days of air drying at a minimum temperature of 50°F prior to opening to traffic. This study examines the effect of various low temperature cure conditions on compressive strength and permeability resistance to chloride ion.

PROJECT SCOPE: LMC was prepared using a 7-sack cement mix design targeting a slump of 5-6 inches and air content of 4%. This is typical for LMC overlays. This mix was used to prepare test cylinders that were cured under various temperature profiles described in Table 1.

TABLE 1: Curing Profile Descriptions

	Description	Details
Mix 1	control	Standard cure profile: 2 days wet cure + 3 days air dry at 50°F, extended air dry at 72°F
Mix 2	control + freezing	2 days wet cure + 3 days air dry at 50°F; then 2 days below freezing (20°F); extended air dry at 72°F
Mix 3	extended wet cure	5 days wet cure at 50°F; extended air dry at 72°F
Mix 4	extended wet cure + freezing	5 days wet cure at 50°F + 2 days below freezing (20°F) ; extended air dry at 72°F
Mix 5	control with extended low temp	2 days wet cure at 50°F; extended air dry at 50°F
Mix 6	seasonal fall profile	2 days wet cure at 50°F; extended decreasing temperatures
Mix 7	seasonal spring profile	2 days wet cure at 50°F; extended increasing temperatures

TABLE 2: ASTM C39 Compressive Strength, psi

Age Tested, Days (Average of 3 Cylinders)	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5	Mix 6	Mix 7
2	3270						
3	3890						
4	4710						
5	4920		5650	5650		4870	
7	4540	6140	5560	6430	5150	5140	
28	6670	6260	8180	7000	7270	7470	6540
90	7550	7790			7600	7450	7480

TABLE 3: AASHTO T 277 Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration

	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5	Mix 6	Mix 7
Age Tested (Average of 2 Cylinders)			Adjusted Readings, Coulombs				
28 days	2507	2639	1921	2437	3677	2803	2700
90 days	1229	1124	1002	1247	1401	1433	1137
6 months	821	831	692	793	801	795	788

Results and Summary

Results of compression strength and chloride ion penetration resistance are given in Tables 2 and 3, respectively. The findings of this study include:

- **Compression strength development is excellent under all cure conditions.** In fact, LMC cured under longer wet cure conditions and/or lower temperatures exhibit increased compression strength at 28 days.
- **Chloride ion penetration resistance is largely unaffected by cure condition.** However, Mix 3 (extended wet cure) exhibited the best chloride ion penetration resistance at each test interval, and Mix 5 (extended low temperature air dry) developed chloride ion resistance slower than the other systems.

I-95 Latex Overlay Receives Project Recognition

The I-95 Deck Rehabilitation and Joint Modification Project in Baltimore, MD recently won ENR's 2016 Best Specialty Contracting Project in the Mid-Atlantic Region! Wagman's contract required the rehabilitation of 236,734 SY of existing bridge decks along I- 95 through Baltimore. Deck rehabilitations using hydro-demolition followed by Latex Modified Concrete (LMC) overlay and expansion joint modifications were performed on 28 bridges along I-95 between I-695 and the Fort McHenry Tunnel.

The project also won the following awards at the 2017 MdQI Awards of Excellence Dinner at the annual MdQI Conference:

- 2017 MdQI Partnering Construction Gold Award
- 2017 MdQI Modal Award Over $5 Million
- 2017 MdQI Project of the Year Over $5 Million

Congratulations to the entire project team and our partners, Maryland Transportation Authority (MDTA) and Wallace Montgomery!

I-64 Latex

Wagman will be working as a subcontractor to Shirley Contracting to install an LMC overlay on four bridges located on I-64 near Newport News, VA. Work will include, milling, hydro-demolition, latex overlay and deck slab extension, joint reconstruction, and grooving.

GROOVING & GRINDING

Wagman also offers Grinding & Grooving services. For more information, please contact:

Ken Walker, Grooving & Grinding Manager

Phone: 717.767.8285

Mobile: 717.472.2571

Email: kdwalker@wagman.com

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3290 N. Susquehanna Trail
York, PA 17406

For more information about Bonded Concrete Overlay products and services, please contact us.

Wagman has been working with modified concretes for over 40 years. Please contact me to discuss the advantages of different concrete products and determine which one offers the most benefits based on your project goals.

Meet up with Brandon at the following events:

VTCA Conference
April 5 - 7, 2017
Hampton, VA

APC/PennDOT Fall Seminar
November 2017
Hershey, PA

Brandon Zerilla
Concrete Group Manager, Wagman Concrete Group
3290 N. Susquehanna Trail | York, PA 17406-9754

Phone: 717.767.8281 | Mobile: 717.577.8497 | bpzerilla@wagman.com

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