OGDENSBURG BRIDGE AND PORT AUTHORITY

FACILITIES COMMITTEE MEETING

MONDAY, SEPTEMBER 26, 2022 – 5:00 PM

A. Ogdensburg International Airport

1. Update on Contour Airlines Operations
2. Upstate Airport Economic Development and Revitalization Initiative

B. Commerce Park Campus

1. Childcare Initiative Discussion.

C. Ogdensburg Prescott International Bridge

1. 2022 Biennial Bridge Inspection
2. Border Station Pavement Evaluation Review

D. Other Such Matters

1. Executive Session: *for matters relating to section 105 1f of the open meetings law.*
   f. the medical, financial, credit or employment history of a particular person or corporation, or ***matters leading to the appointment****, employment, promotion, demotion, discipline, suspension, dismissal or removal of a* ***particular*** *person or* ***corporation****)*

Statement of Qualifications for Railroad Engineering Consultant

August 25, 2022

OGDENSBURG BRIDGE & PORT AUTHORITY

ERDMAN ANTHONY

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Ogdensburg Bridge and Port Authority

ERDMAN ANTHONY

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SECTION 1: FIRM INFORMATION

Firm Overview

Erdman, Anthony and Associates, Inc. (Erdman Anthony) is excited at the opportunity to provide Ogdensburg Bridge and Port Authority (OBPA) with railroad engineering consulting services. The Erdman Anthony team has provided similar services to industrial/economic development agencies and shortline and railroads and is committed to providing (OBPA) with the experienced staff and quality service that all our clients have come to expect.

Firm's Background: Erdman Anthony was established in 1954 to provide cost-effective infrastructure, engineering, and building systems solutions for government and private-sector clients. In 1991, the managers of Erdman Anthony were given the opportunity to acquire the company, which they did effective January 1, 1992. Since then the firm has been an employee-owned company (i.e. ESOP). Erdman Anthony employs approximately 250 people, including 66 professional engineers and licensed land surveyors, and is currently ranked by Engineering News Record as one of the top New York design firms in 2022.

We are a multi-disciplinary firm with five core businesses: Transportation, Facilities Engineering, Civil and Site Engineering, Geospatial Services, and Construction Inspection.

All work for this project will be led by the Rochester, NY headquarters, located 188 miles from Ogdensburg, NY. Additional project support will be provided by staff in the Buffalo and Albany, NY branch offices.

Philosophy: When you hire an engineering firm, you need one that is quality driven, effectively communicates and listens, meets schedules and budgets, and provides cost-beneficial solutions to your projects. Erdman Anthony provides its clients with the highest level of service and professionalism to address their engineering and management needs, while constantly striving to improve productivity by generating new ideas and innovative methods, which results in the most cost-effective and efficiently designed solutions.

In our 68 years of consulting engineering, we've learned that success demands understanding of every facet of your project: schedule requirements, budget constraints, community impacts, and more. Erdman Anthony is aware that your project's optimal results require support that goes beyond technical knowledge. Our staff work seamlessly with you, the public, the team and other governmental agencies to create designs that benefit all.

1 DEDICATED CLIENT MANAGER

Regardless of the number of projects concurrently in progress, our term clients have **a single point of contact**, thereby streamlining communication, invoicing, and project portfolio management.

2 ON TIME, ON BUDGET

Our Project Managers utilize **state-of-the-art schedule management software and cost estimating techniques** yielding high client satisfaction ratings.

3 VALUE-ADDED ENGINEERING SERVICES

The bottom-line value: by engineering systems prior to construction, our term clients **regularly save 10% of the engineering fees** during construction.

4 CUSTOMIZED TEAM COMPOSITION

Our depth of staff affords us the opportunity to compose a team that is customized to our client's projects. **Custom-fit project teams** improve project quality while reducing engineering costs.

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SECTION 2: QUALIFICATIONS

Rail Planning and Engineering Services

Transportation and site engineering have been mainstays of Erdman Anthony's service offerings for 68 years. Our firm has provided planning, engineering, and surveying services to railroads and rail-served industries for over five decades and has a long history of providing similar General Engineering Consulting services to railroads. Erdman Anthony held five consecutive GEC agreements with Conrail and successors. Work on those agreements included surveying, engineering, permitting, construction stakeout, calculation of quantities for force account payments, and construction inspection of Public Projects. Since then, the firm has held similar agreements or had preferred vendor status with the Genesee Valley Transportation family of railroads, Pan Am Railways, Finger Lakes Railway, Vermont Rail System, and St. Lawrence County IDA. The firm has also had three successive GEC Agreements for Category A-1 Line Structures with the Metro-North Railroad and Long Island Rail Road commuter systems.

Erdman Anthony holds similar railroad engineering agreements with the Genesee Valley Transportation family of railroads in NY and PA; Pan Am Railways in NY, ME, VT, CT, and MA; Finger Lakes Railway in NY and ME; and Vermont Rail System in NY, VT, and NH

Rail planning and engineering services include:

Condition Evaluation and Planning

- Track and right-of-way condition assessment
- Bridge inspection and load rating
- Emergency inspections
- Short- and long-term maintenance programming and cost estimating
- Track reactivation studies

Track and Bridge Design

- Sidetrack and yard construction
- Rack rehabilitation
- Bridge and culvert rehabilitation and replacement
- Drainage improvements, scour evaluation and washout repair
- Grade crossings and warning devices

Loading and Transfer Facilities

- Laydown areas and hardstands
- Bulk transfer facilities and Intermodal Terminals
- Barriers and security improvements

Maintenance Facilities

- Locomotive and car shops
- Inspection and repair pits
- Overhead cranes and support systems
- Yard air and power

Right-of-Way Structures

- Fences and noise barriers
- Retaining walls, tunnels and shafts
- Light mast, catenary, and sign foundations

Grant Writing and Administration

- Identification of potential funding sources
- Grant writing
- Benefit-Cost Analysis
- Project cost reimbursement forms and other documentation

Erdman Anthony was part of the engineering team for the NS Rutherford Intermodal Terminal Expansion in Rutherford, PA. The firm is currently advancing the design of a new intermodal terminal at the Port of Naugatuck, CT for Pan Am Southern and ConnDOT.

Geospatial/Survey Services

Surveying and mapping are critical to any design project, as they provide the basis for engineering analysis and design. Erdman Anthony has in-house expertise providing conventional and innovative survey and mapping services for a wide range of applications. To consistently produce accurate results with a high level of precision, Erdman Anthony uses only state-of-the-art equipment, including satellite-based global positioning system (GPS) and high-definition terrestrial laser scanning instruments.

Erdman Anthony has developed a strong reputation in the field of rail surveying through past projects with clients such as FGLK, Amtrak, PANYNJ, SEPTA, Norfolk Southern, CSX, CP Rail, and SFRTA; and have provided continuous on-call survey services to Conrail on sites throughout their system. 3-D laser scanning has recently been utilized along tunnels and routes with clearance restrictions, as well as busy commuter lines to minimize track curfews and flagging efforts.

Laser scanning was used at SEPTA Bridge 20.25 to capture detailed information for tall stone abutments that could not be accomplished otherwise.

Geospatial services include:

Engineering and Topographic Surveys

- Topographic and 3-D modeling
- Route survey mapping
- Post construction as-built surveys
- Construction stakeout
- Virtual Reference System GPS (RTK)
- Quantity surveys
- Clearance surveys

High-Definition Survey/Laser Scanning

- High-resolution laser imaging
- Horizontal and vertical mapping
- Direct-to-digital model of any scene
- Remote and non-intrusive operation
- Fast-data capture

Geodetic Control and Monumentation

- High-order horizontal and vertical control
- National control network renewal
- Photogrammetric control
- Primary project control
- Geodetic control/HARN densification

Right-of-Way and Boundary Surveys

- Right-of-way mapping
- Easement mapping
- Real property surveys
- ALTA/ACSM surveys

Right-of-Way Acquisition Services

- Property negotiation and claim settlements
- Appraisal analysis and review
- Relocation assistance and property management

Specialty Surveys

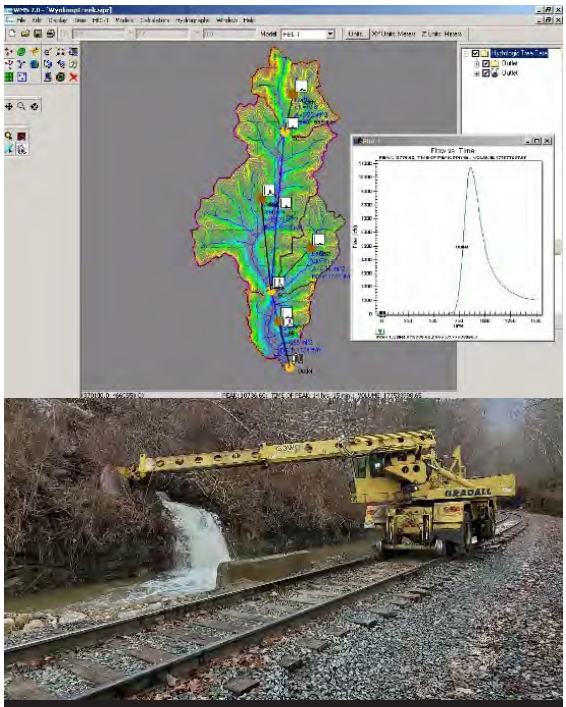
- Existing data troubleshooting
- Ground subsidence surveys
- Subsurface Utility Exploration (SUE)
- Hazardous waste site surveys
- Hydraulic (HEC-RAS) surveys
- Hydrographic surveys
- Aerial photogrammetry and mapping
- Tunnel surveys

Civil/Site Engineering Services

Our team offers extensive engineering experience with site development, right-of-way improvements, roadways, and utilities. Our team is familiar with a variety of engineering support services that may be required, including drainage improvements, slope stability issues, parking reconfiguration, and site security improvements.

In addition to our full range of site planning and land development services, Erdman Anthony has extensive experience in drainage analysis and design; including modeling of hydraulic profiles and velocities for the determination of freeboard and scour potential in conjunction with bridge, culvert, and retaining wall replacements. Our staff of engineers is experienced with these analyses and is equipped with the latest modeling tools, which allow for the accurate prediction of hydraulic profiles of streams under existing and proposed conditions. In addition, we are knowledgeable and well versed in FEMA's policies, procedures, and standards related to floodplain and floodway impacts.

Erdman Anthony's technical expertise in the area has earned the trust state and local agencies that we work with. Our staff frequently reviews work prepared by other consultants and conducts technical seminars and training sessions for government agencies and private organizations.



Erdman Anthony performed a comprehensive drainage study for the relocation or improvements to Tunnel Brook at the Hoosac Tunnel, MA.

The range of civil/site services includes:

Site Planning/Land Development

- Planning, zoning and special committee coordination
- Site grading
- Landscape architecture
- Visual assessments and renderings
- Permits and agency approvals

Drainage and Stormwater Management

- Hydrologic and hydraulic studies
- Floodplain analysis and map revision
- Erosion and sedimentation control
- Drainage structures
- Detention and retention facilities
- Pump stations

Utilities

- Conflict resolution and coordination
- Design of water, wastewater, steam, natural gas, communications, and electrical services
- Location and tracing of unknown facilities

Traffic and Transportation Planning

- Data collection and analysis
- Corridor inventory
- Traffic counts
- Planning and corridor studies
- Origin/destination studies
- Traffic signal analysis and design

Highways and Streets

- Pavement and subsurface considerations
- Horizontal and vertical alignments
- Interchanges
- Intersection improvements and safety enhancements
- Pedestrian facilities
- Cost estimating and analysis

Environmental

- Wetland delineation and permitting
- SHPO coordination
- NEPA/SEQR/CatEx Documentation
- Environmental Impact Studies

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Facilities Engineering Services

Erdman Anthony's team of facilities professionals has the experience and technical capability to address a variety of mechanical, electrical, and plumbing needs in support of rail infrastructure improvements. Staff expertise includes lighting and power for signal systems, communication systems, bridges, buildings, stations, parking lots, maintenance facilities, layover facilities, and grade crossings.

Our range of facilities engineering services includes:

Electrical Power and Distribution

- Exterior and interior lighting
- Building distribution systems
- Medium and high voltage systems
- Arc flash studies
- Emergency generation systems

Heating, Ventilation, and Air Conditioning

- Temperature and humidity controls
- Industrial ventilation
- Air filtration and emissions control
- Dust collection
- Central heating and cooling plants

Energy Consulting

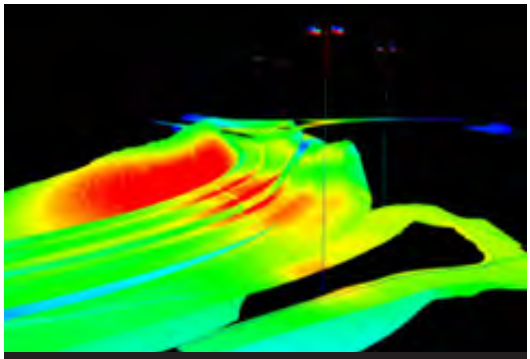
- Energy conservation measures
- Alternative energy sources
- Sustainable design
- LEED® certification consulting
- Commissioning

Process Piping and Plumbing Systems

- Compressed air plants and piping
- Building plumbing
- Bulk chemical storage
- Chemical delivery
- Steam and condensate systems

Fire Protection and Life Safety

- Analysis of building and fire codes
- Fire risk assessments/performance design



3-D light level and uniformity analysis for the design of a high-mast lighting system at an intermodal facility.

Our team designed a new state-of-the-art 14,400 SF locomotive maintenance facility for the Delaware-Lackawanna Railroad in Scranton, PA.

The facilities team provided all mechanical, electrical, plumbing, and fire protection design for the DLWR Batavia Transload Warehouse Expansion in Batavia, NY.

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Construction Inspection and Support Services

Erdman Anthony routinely supports design services by providing observation or support during construction. Depending on the desired level of support, services can consist of review of construction bid prices and contractor qualifications, review of shop drawings and submittals, attendance at preconstruction and progress meetings, review of contractor claims, assistance with value engineering change proposals, and preparing/reviewing design changes during construction due to unexpected site conditions.

Our commitment to quality and client satisfaction continues through construction of the project. We understand the time-sensitive nature of construction and partner with contractors to quickly respond to requests for information, contractor submittals, and suggestions for alternative materials or methods.

The DL Bridge 113.52 over Larsen Lake project involved underwater repair work performed by skilled divers.

Areas of expertise include:

Construction Engineering and Administration

- Design-build
- Project management
- Bidding assistance
- Shop drawing reviews
- Constructability reviews
- Operation and maintenance manuals development
- Cost estimates

Construction inspection for special trackwork for the reconstruction of Germantown Avenue outside of Philadelphia.

Construction Observation

- On-site observation
- Documentation of construction results relative to design plans and specifications
- Evaluation of work for acceptance
- Record drawings
- Job progress reporting
- Load testing/non-destructive testing

Rigging and Erection Procedures

- Bridge erection and demolition
- Crane layout and coordination
- Specialty rigging and lifting
- Fall arrest static lines
- Construction shielding
- Scaffolding and work platforms

Temporary Structures

- Bracing and shoring
- Sheet piling
- Soldier piles and lagging
- Braced and cellular cofferdams
- Tie-backs or rakers
- Crib walls
- Soil nailing
- Geosynthetic reinforced walls

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Regional Experience

Our project team has extensive railroad and highway project experience throughout New York and New England. The firm has performed work for NYSDOT since its inception in 1954 and has established good working relationships with staff in the Freight and Passenger Rail Bureau that may be involved in grant-funded projects.

Previous railroad clients include:

- Amtrak
- Conrail
- CSX Transportation
- CP Rail
- Delaware-Lackawanna Railroad
- Depew, Lancaster & Western Railroad
- Falls Road Railroad
- Finger Lakes Railway
- Lehigh Railway
- Luzerne and Susquehanna Railway
- Maryland & Pennsylvania Railroad
- Metro-North Railroad
- Middletown and Hummelstown Railroad
- Mohawk, Adirondack & Northern Railroad
- Norfolk Southern
- New York & Ogdensburg Railway
- Ontario Midland Railroad
- Owego and Harford Railway
- Pan Am Southern
- Rochester & Southern Railroad
- Springfield Terminal Railway
- Vermont Rail System
- Wheeling and Lake Erie Railway

Previous industrial clients include:

- American Alloy Steel
- American Axle
- American Packaging
- Benson Mines
- Best Bev
- Consol
- Dunn Paper
- Dupont Yerkes
- Eastman Kodak
- Franklin County IDA
- Griffiss Local Development Corp.
- Ingersoll-Rand
- ITT Industries
- Lonza/Arch Chemical
- Luvata/American Brass
- Niagara Sheets
- Ogdensburg Bridge & Port Authority
- Olin Chlor Alkali Products
- Orleans County EDA
- Orleans Land Restoration Corp.
- Rohm and Haas/Dow Chemical
- Scranton Transload
- St. Lawrence County IDA
- Tioga County IDA
- Waverly Trade Center
- Zotos International

Our team has been involved in 45 PFRAP projects and 5 CRISI projects in the last decade.

Project Experience

Our firm has provided planning, engineering, surveying, and construction phase services to railroads and rail-served industries for over five decades. Clients include transportation agencies; Class I, regional and shortline carriers; Amtrak and commuter lines, ports, museums, and industries. Erdman Anthony has also assisted IDAs throughout New York with planning and improvements to IDA-owned railroad facilities, private industrial sidetracks, and fixed plant expansions.

Some of Erdman Anthony's recent projects which are relevant to the services expected under this agreement include:

FGLK Geneva Engine Terminal Expansion

The project involves the realignment and expansion of tracks serving the FGLK Engine Terminal at Geneva Yard. The project is being funded by FGLK and does not currently have state or federal funding. At the west end of the project, the existing left-hand House Track turnout will be removed and a new right-hand turnout will be installed further west on the RIP Track in a more typical yard ladder configuration. The House Track will be extended to provide additional usable track capacity and eliminate the reverse curve at the existing turnout. At the east side of the project, the existing RIP Track turnout located at MP 50.29 will be straightrailed. The RIP Track will be extended easterly and a new RIP Track turnout will be installed in the Main at MP 50.21. The House Track would also be extended easterly to a new turnout in the RIP Track at MP 50.31. A new fall protection system will also be installed to increase safety for shop work crews.

The Erdman Anthony team performed topographic and boundary survey, preliminary engineering, final design, and construction stakeout services.

Location: Waterloo, NY
Owner: Finger Lakes Railway
Completion: 2021

DL Pocono Main Rehabilitation MP 114 to 134

The PennDOT-funded project rehabilitated spot curve locations on the Pocono Main and Scranton Running Track, extending from MP 114 at Lehigh Summit to MP 134 at Hyde Park in Scranton, PA. Erdman Anthony performed project scoping, construction cost estimating, track chart drafting, bid document preparation, and construction support.

Location: Lackawanna County, PA
Owner: PNRRA/Delaware-Lackawanna Railroad
Completion: 2021

The project segment is one of the busiest of the railroad. The main freight interchange with Norfolk Southern at Taylor Yard is accessed from the wye at Lincoln Park. The Steamtown National Historic Site is also located at MP 133, with excursion traffic traveling the Pocono Main to points east. Upon completion of the project in 2020, the critical track repairs will ensure the continued safe passage of passengers and critical link to the national freight rail network are maintained.

Key project features include:

- Replacement of 13,250 linear feet of jointed rail in 39-ft sticks with new 132RE rail in 80-ft stick to reduce joint maintenance.
- Replacement of 3,000 defective crossties in curves.
- Gaging of track at all rail replacement locations.

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FGLK Auburn Road Rail Terminal Expansion

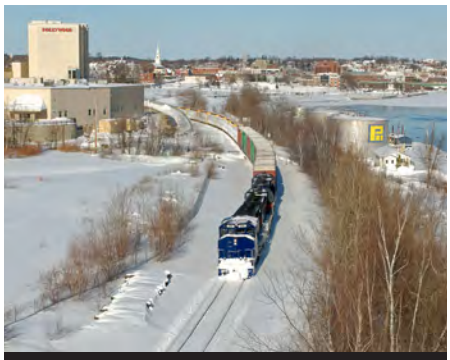
Location: Seneca Falls, NY
Owner: Finger Lakes Railway
Completion: 2020

The project involved preliminary engineering and final design for the expansion of the existing transload terminal. The terminal is expected to be used for loading\unloading of covered hoppers, centerbeams, flat cars, tank cars, and gondolas. Future uses may also include auto terminal, although that's not the primary source of anticipated traffic at present. The project was funded by FGLK and did not currently have state or federal funding.

Two conceptual alignments were prepared in the concept planning phase. Alternative 1 consisted of a new transload track entering the site from the West (trailing point West) and Alternative 2 consisted of a new track entering the site from the East (trailing point East). In either case, the intent was to provide 600 ft of level, tangent track that can be accessed from both sides. Track centers allowed for trucks to turn around between the tracks or that a crossing is provided at either end to allow for a turning WB-65 (53' trailer) design vehicle.

The Erdman Anthony team performed topographic and boundary survey, preliminary engineering, final design, and construction stakeout services.

PAR Pine Tree Corridor Project



Location: Mattawamkeag to Waterville, ME
Owner: Pan Am Railways
Completion: Ongoing

This project is needed to improve safety, capacity and reliability in the transportation system in Maine by making critical improvements to over 111 miles of Pan Am Railways (PAR) Freight Main Line between Mattawamkeag and Waterville, Maine. This rail corridor in rural Maine provides a critical gateway to the national rail system and global economy for Maine's vast forest product resources and re-emerging paper industry. Investment in the Pine Tree Corridor will improve the region's competitiveness at a time when the Maine forest products industry is at the tipping point of resurgence.

Erdman Anthony provided scoping and grantwriting services leading up to a successful FRA CRISI Grant application. The team is currently providing preliminary engineering and will perform final design, environmental reviews, permitting, bidding, and construction phase services.

Key project features include:

- Replacement of more than 75 miles of old, worn rail with new 115RE Continuous Welded Rail (CWR) and install 55,000 new cross ties. These investments will improve the state of good repair of this rail corridor while allowing significantly faster transit times.
- The project will address highway-rail safety concerns by upgrading 71 grade crossings across 19 municipalities.
- By strengthening five bridges, the project will substantially increase the permissible weight of railcars over the Pine Tree Corridor to accommodate modern 286,000-pound freight cars (286k), rather than the current maximum 263,000-pounds freight car weight. The increased capacity will provide railroad customers access to more efficient rail service.
- This project leverages significant planned and past investment made in the region's transportation system by PAR, the State of Maine, and the federal government through CRISI and TIGER Projects.

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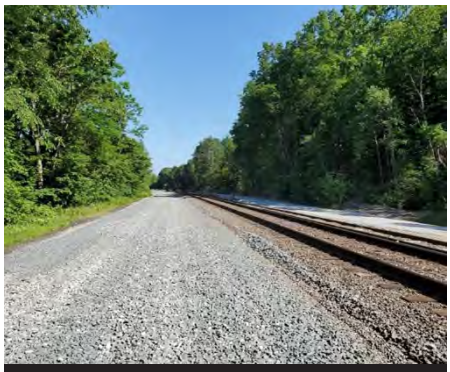
PAS/VTR Hoosick Junction Expansion

The $7 million NYSDOT-funded project provides expanded capacity and improved mobility through the main interchange point between Pan Am Southern and the Vermont Railway in Hoosick, NY. Erdman Anthony provided survey, design of track alignments, grading, drainage, and access road improvements, construction cost estimating, bidding document preparation, construction support and administration. The project is being constructed in two phases, with multiple construction contracts for clearing and grubbing, earthwork, and bridge work; along with material procurements for rail and switch packages, cross ties and switch ties, signal equipment, and ballast for work to be self-performed by PAS and VTR forces.

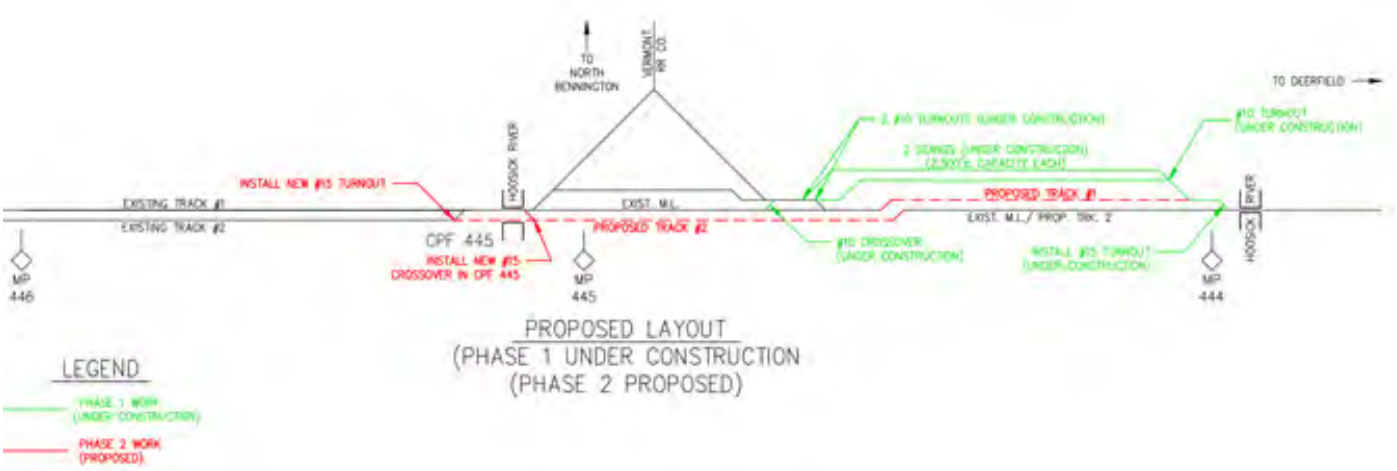


Location: Hoosick, NY
Owner: Pan Am Southern
Completion: Ongoing

Phase 1 of the project involves clearing and earthwork on 10 acres of land, construction of two new 2,500-ft interchange tracks, four #10 turnouts, one #15 turnout, one #10 crossover, trackwork for future CPF 444 interlocking, rehabilitation of CPF 445 signal appurtenances, installation of a yard air plant, and installation of a walkway on Bridge 163.99 over the Hoosick River.

Phase 2 involves widening of the existing mainline embankment, construction of 6,100-ft of new 2nd main track from CPF 444 to CPF 445, installation of a #15 universal crossover at CPF 445, one #15 turnout, signal buildout at CPF 444, and installation of a walkway on Bridge 165.18 over the Hoosick River.

The improvements will more than quadruple the capacity of the existing interchange and increase safety through the elimination of runaround moves on the main track and replacement of the antiquated signal system.



Schematic layout of Phase 1 (in green) and Phase 2 (in red) improvements.

MHWA Newton Falls Branch Rehabilitation MP 30.0 to 75.4

The project involves rehabilitation and reactivation of the 46.25-mile line in its entirety to provide rail service to three shippers in this economically-distressed area, which traverses three counties. The project is funded by a grant from NYSESD and is a North Country Regional Economic Development Council Priority Project. The project is being phased over several construction contracts, with two phases completed in 2019. Phase 3, consisting of the renewal of 36 grade crossings, is currently under construction.

The Erdman Anthony team performed project scoping, long-term planning, construction cost estimating, wetland delineation, permitting, diving inspection, bridge inspection, load rating, preparation of construction documents, bidding, project management and full-time construction observation.

Location: Jefferson, Lewis and St. Lawrence Counties, NY
Owner: MA&N Railroad/ St. Lawrence County IDA
Completion: 2018

Key project features include:

- Inspection and load rating of 37 bridges and prioritizing of repairs to allow the line to be reactivated.
- Rehabilitation of 17 bridges and replacement of 2 short span bridges with culverts.
- Lining and surfacing 46 miles of track.
- Replacement of 42,000 defective crossties and 10 sets of switch timbers.
- Renewal of 2 public and 28 private grade crossing surfaces.
- Rehabilitation and double-ending of an out of service siding to create a runaround with 25-car capacity.
- Repair of several significant roadbed washouts.
- Feasibility study to close Canal Street crossing in the Village of Carthage.

DL Carbondale Main Rehabilitation MP 0 to 19

The PennDOT-funded project rehabilitated the majority of the line leading to one of the Railroad's largest customers. The project extended from the Norfolk Southern interchange at MP 0 (Carbon) in the City of Scranton to MP 19 in the City of Carbondale, PA. Erdman Anthony performed project scoping, construction cost estimating, track and crossing design, bid document preparation, and construction support.

At the onset of the project, the majority of the line was Class 1 track, with a 4-mile segment of Excepted track. Derailments were common, with wide gage and poor surface leading to an average of one major derailment every two years. Upon completion of the project, the track repairs resulted in solid Class 1 and Class 2 track conditions which allowed for the safe operation of freight traffic (including hazmat) at 10 mph.

Location: Lackawanna County, PA
Owner: PNRRA/Delaware-Lackawanna Railroad
Completion: 2019

Key project features include:

- New ballast distribution, lining and surfacing 19 miles of main track and 21 turnouts with a 1-in average lift.
- Replacement of 5,040 defective crossties in curves.
- Spot gaging of track.
- Extension of the Yoder Siding by 774-ft and double-ending with a new #10 turnout in the main track.
- Private grade crossing reconstruction.

FRR Falls Branch Bridge Repairs

Erdman Anthony is providing the Falls Road Railroad with planning, preliminary engineering, final design, and construction inspection services for this phased NYSDOT PFRAP funded project.

The project involves the rehabilitation of five undergrade bridges crossing highways and preliminary engineering for the replacement of two additional bridges crossing NY Route 237 in Holley, NY and Route 19 in Brockport, NY. Both bridges slated for replacement have non-standard vertical clearance and are frequently hit by overheight vehicles.

Location: Monroe, Orleans and Niagara Counties, NY
Owner: Falls Road Railroad
Completion: Ongoing

Project highlights include:

- Rehabilitation work includes structural steel repairs and strengthening, bearing replacement, concrete substructure repairs, masonry repointing, timber deck replacement, and spot repainting.
- Options currently being evaluated for the replacement spans include ballasted or open deck through plate girders, precast adjacent box beams, precast concrete encased steel beams, and precast voided slabs.

DLWR Bridge 410.01 over Cedar Street

Erdman Anthony provided survey, preliminary engineering, final design, construction support, and construction inspection services for the state and federal aid project to provide standard vertical clearance at the DL&W undergrade Bridge 410.01 to eliminate frequent impacts by large trucks. The steel superstructure was constructed in 1916 and the stone masonry abutments date to approximately 1892.

Location: City of Batavia, NY
Owner: City of Batavia
Completion: 2013

Project highlights include:

- Evaluation of alternatives to raise the bridge or lower the roadway to obtain unrestricted vertical clearance while limiting impacts to rail and highway traffic, and utilities buried beneath the bridge.
- The lack of record drawing for the bridge necessitated extensive field measurements and documentation to create existing conditions drawings.
- Condition assessment of the cut stone masonry abutments, concrete bridge seat, and steel thru girder superstructure to determine degree of deterioration.
- Preparation of construction documents for structure work by contractor and working drawings for track work by railroad forces.

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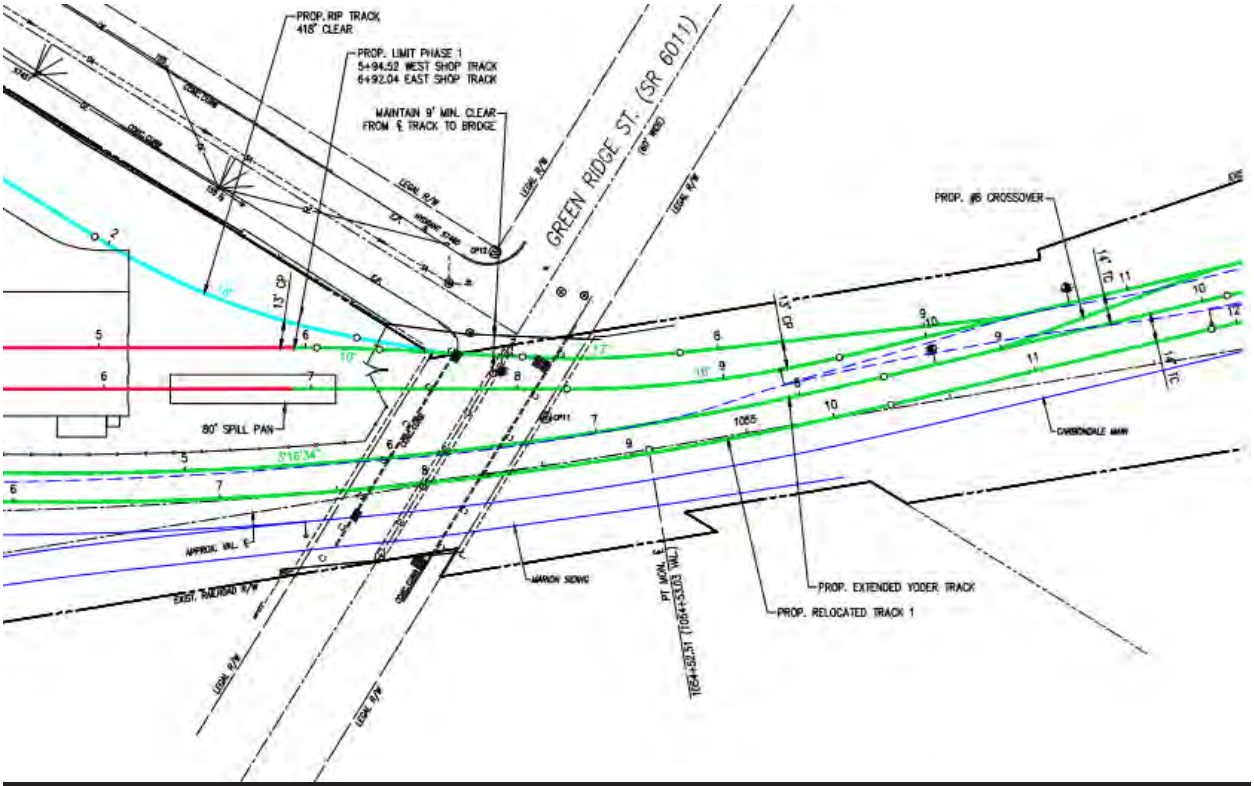
DL Greenridge Yard Track Reconfiguration

Location: Scranton, PA
Owner: PNRRA/Delaware-Lackawanna Railroad
Completion: Ongoing

The project involved the realignment and reconfiguration of track that had been poorly rationalized by Conrail in the 1970s, leaving heavily used sidings and yard tracks with abrupt jogs and sharp curvature. Greenridge Yard had originally consisted of 13 tracks in its heyday and had been reduced to two tracks with limited storage capacity. The project will address these geometric issues and expand storage and servicing tracks through a phased approach. Erdman Anthony provided survey, scoping, preliminary engineering, cost estimating, and grant management services. Phase 1 is currently under construction with Phase 2 and 3 scheduled for 2023.

Project highlights include:

- Completed in concert with the construction of a new, systemwide diesel locomotive service and inspection facility.
- Construction of 5,300 ft of new track, five new #8 and #10 turnouts, and one #8 crossover.
- Successful funding application for an FRA CRISI Grant to construct track improvements, provide security fencing, and paving of the access to the new shop.



Portion of the Track Alignment Plans showing phasing of track work

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NS Waverly Trade Center Rail Transload/Private Auto Terminal

Erdman Anthony provided planning, preliminary engineering, and final design services for the redevelopment of the former Ingersol Rand castings foundry as a private auto terminal and general transload site.

The facility was served by an existing industrial spur, which had been disconnected from the national rail network circa 2002. The track was constructed in the early 1970s with lightweight rail, poor quality ballast, and curvature in excess of 16 degrees – hampering efforts to restore rail service at the pre-existing location.

Erdman Anthony provided scoping and preliminary engineering services to assist the owner with evaluation of site constraints, identify opportunities to attract potential rail shippers, and develop a long-term plan for staged implementation. The improvements allow the owner to better market the 35-ac-site and 150,000-sf building into a multimodal transload terminal.

Location: Waverly, NY
Owner: Waverly Trade Center LLC/State Line Auto Auction
Completion: 2019

Erdman Anthony also provided grantwriting services to assist the owner and the Tioga County Industrial Development Agency with two applications for funding under NYSDOT's Passenger and Freight Rail Assistance Program – both of which were successful.

Project highlights include:

- Thirteen alternative track alignments were studied to serve the facility from Norfolk Southern's Southern Tier Line while avoiding impacts to adjacent properties and meeting geometric criteria.
- Extensive coordination was required with Norfolk Southern, state, county, and local agencies to re-establish an unused grade crossing on a high-volume county road. A new signal with flashing lights and gates was required.
- The first phases of the project constructed 2,500 track feet of working tracks, paved ramp pads, and an automobile unloading ramp.
- Future phases will expand the transloading capability of the site by constructing an additional 1,200 track feet and laydown area for pipe and other breakbulk materials.

ERDMAN ANTHONY

MHWA Lyons Falls Branch Bridge Repairs

Erdman Anthony provided in-depth inspection, survey and mapping, design, construction support and construction inspection services for this NYSDOT PFRAP project to rehabilitate 3 historic bridges:

- ***Bridge 16.30 over Cincinnati Creek*** a 40' span stone masonry arch built in 1863.
- ***Bridge 16.62 over Poland Road*** a 16' span stone masonry arch built in 1863.
- ***Bridge 22.11 over Cincinnati Creek*** a 29' span ballasted steel trough supported by stone masonry abutments built circa 1892.

Structural improvements at all sites included cleaning and repointing of deteriorated masonry with historically appropriate mortar, repair of severely spalled masonry with reinforced shotcrete, and drilling of weepholes to address persistent leakage through the masonry backfill material, which exacerbated the mortar deterioration. Our team designed the repair of a significant washout on an 80' tall embankment at Bridge 16.30 with a geosynthetically reinforced soil system slope (GRSSS) to regain structural integrity of the roadbed. Significant repairs at 22.11 included rebuilding of a washed out wingwall and approach embankment, underpinning and jacketing of rotated abutments with reinforced concrete. These improvements removed a 5 mph speed restriction at the bridge.

Erdman Anthony prepared and obtained all environmental permits for the project. Permitting for the structural and channel improvements at Bridge 16.30 and 22.11 was complicated due to the designation of Cincinnati Creek as a trout stream and navigable waterway, as well as proximity to NYSDEC wetlands. In all, 6 NYSDEC permits for Excavation & Fill in Navigable Waters, Water Quality Certification, and Stream Disturbance; as well as 2 USACE Nationwide Permits were obtained.

Work was scheduled during the summer and early fall months when freight traffic and stream levels were at their lowest, but was complicated by the need to work around summer and fall foliage excursion traffic for the Adirondack Scenic Railroad, which has operating rights on the Lyons Falls Branch.

Location: Oneida County, NY
Owner: Mohawk, Adirondack & Northern Railroad
Completion: 2014

Two of the bridges required long-term diversion of a designated trout stream in order to complete the work.

Geosynthetic Reinforced Soil Slope washout repairs underway at the 80'-tall embankment fill at Bridge 16.30.

ERDMAN ANTHONY

LSX Rehabilitation of Seven Bridges

Erdman Anthony provided engineering support and permitting services for the state funded rehabilitation of 7 bridges on the L&S Railway. Repair work consisted of timber deck replacement, masonry repointing, bearing block repair, and replacement of missing or deteriorated stones at the following bridges:

- ***Bridge 5.57 over McAlpine Street*** a single span, open deck, steel through girder supported by stone masonry abutments
- ***Bridge 8.45 over Spring Brook*** a two span, open deck, steel plate girder and a single span, ballasted through girder superstructure supported by stone masonry abutments, a steel bent pier and a stone masonry pier.
- ***Bridge 143.19 over the Susquehanna River*** an 8-span open deck, steel through truss bridge supported by concrete encased, stone masonry piers and abutments.
- ***Bridge 145.95 over Abrahams Creek*** a two span, open deck, steel plate girder superstructure supported by concrete pier and abutments.
- ***Bridge 176B (176.30±) over Abandoned Roadbed*** an open deck, steel stringer span supported by stone masonry abutments.
- ***Bridge 176C (176.45±) over Scott Street*** a 3-span steel through girder superstructure supported by steel bent piers and stone masonry abutments.
- ***Bridge 177A (177.85±) over Gardner Creek*** a three span, open deck, steel plate girder superstructure supported by a stone masonry pier and abutments.

Pier and bearing stone repairs were performed on the 8-span, 1,170-foot-long Bridge 143.19.

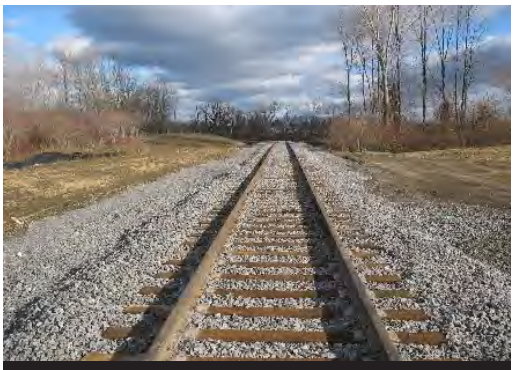
Work at Bridge 8.45 consisted of bearing repair, repointing the masonry piers and abutments, and repairs to deteriorated stones at one wingwall.

ERDMAN ANTHONY

CSX Niagara Sheets Site and Industrial Track

Erdman Anthony prepared preliminary and final site development plans for the $8M Shawnee Road Plant. The project involved retooling and expansion of a former cardboard corrugation facility including construction of a 33,200 square foot addition, new access road, concrete and gravel parking areas, utility relocations, and stormwater management facilities. Site drainage improvements were extensive due to the flat terrain and involved construction of a stormwater pumping station, open and closed drainage systems, and extended detention micropool basins for stormwater quality and quantity controls.

The facility was served by an industrial spur constructed in the 1930s, which consisted of lightweight materials and offered limited loading dock space. The plant expansion required a significant increase in both the size and quantity of roll stock received by the facility, resulting in additional track loading and a shortage of dock space. The existing spur was removed and a new single-track spur was constructed from CSX Transportation's Lockport Industrial Track, providing the capacity and flexibility required by the industry.



Location: Wheatfield, NY
Owner: Niagara Sheets, LLC

Key project features include:

- Evaluation of the existing track conditions and determination of components to be salvaged for reuse in a relocated spur.
- Evaluated single- and multiple-track alternatives for providing dock access for unloading up to 25 boxcars per week.
- Horizontal and vertical alignments for the 1,460-foot spur to avoid impacts to 3 wetland areas and meet geometric criteria required by CSX.
- Evaluation of soil conditions and track/roadbed structural design for 286K loading on very weak supporting soils.
- Specification of a railcar moving system to reposition loaded/empty cars.
- Plan and specification preparation to obtain a sidetrack agreement from CSX.
- Shop drawing review and construction support.

ERDMAN ANTHONY

FRR Route 63 (Main Street) Grade Crossing

Erdman Anthony provided engineering and construction inspection services for the improvements performed in conjunction with the Village of Medina's Main Street Reconstruction project. The existing timber and asphalt crossing had poor approach geometry that limited sight distance, and allowed for accelerated deterioration of the crossing surface.

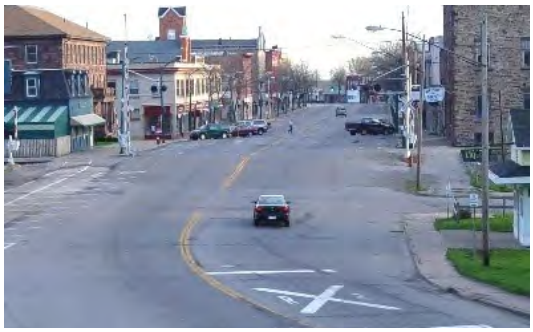
This locally-administered federal aid project addressed these deficiencies by narrowing the approach roadway width to increase warning device visibility and driver awareness, roadway profile improvements to reduce the effects of the humped crossing, and removal of driveways and on-street parking in close proximity to the crossing. The length of the roadway crossing between curbs was substantially reduced from 64 feet to 33 feet.

Key project features include:

Installation of an 84-foot modular precast concrete crossing with staged two-way construction to maintain roadway traffic.

- Installation of roadway & pedestrian gates, flashers, and audible warning devices.
- The crossing was staged half at a time to maintain two-way roadway traffic during construction.
- 115RE welded rail, tie & ballast replacement and surfacing of 500 track feet of approaches.
- Installation of roadway & pedestrian gates, flashers, and audible warning devices.
- Approach circuit improvements including modification of adjacent circuits to increase operating speed from 10 to 25 mph.

The project was awarded the Silver Award for Engineering Excellence by the American Council of Consulting Engineers as well as the Project of the Year Award, Transportation Category by the American Public Works Association, Genesee Valley Chapter



Location: Medina, NY
Owner: Falls Road Railroad

Grade crossing surface, signal, and curb delineation improvements were provided at the Main Street crossing.

CSX Regional Rail Feasibility Study

The Franklin County IDA owns three unconnected sites in the Town of Bombay, NY. The three parcels collectively contain approximately 89,000 square feet of buildings and a total land area of 34.82 acres. The properties have been vacant since 2007 and prospective tenants have noted the lack of transportation access as a significant barrier to redevelopment. The sites are located adjacent to CSX's Montreal Subdivision and several potential tenants have expressed interest in rail service.

Location: Bombay, NY
Owner: Franklin County Industrial Development Agency
Completion: 2017

Erdman Anthony provided planning, environmental review, and preliminary engineering services to assist the owner with evaluation of site constraints, identify opportunities to attract potential rail shippers, enhance marketability of the site, and develop a long-term plan for staged implementation for the redevelopment of several vacant rail-served properties.

Key project features include:

- A new 836-foot sidetrack will be constructed to access the westerly portion of the factory property.
- The mainline turnout was located to avoid conflicts with the signal circuits at two adjacent roads.
- The existing building will be used for warehouse or manufacturing space with the addition of a new rail dock.
- The existing asphalt and concrete parking lot will be converted for use an exterior transload for loading/ unloading of boxcars, lumber cars, hopper cars, or gondolas with the proper equipment.

PAS Inland Port of Naugatuck Intermodal Terminal

Erdman Anthony provided preliminary engineering services for the construction of a new container terminal for PAS in partnership with Connecticut DOT, Connecticut Port Authority, the Borough of Naugatuck, and Metro-North Railroad. Final design services will be performed as the construction funding is assembled.

Location: Naugatuck, CT
Owner: Pan Am Southern
Completion: Ongoing

The terminal site consists of an 80-acre brownfield that housed chemical manufacturing until 2002. The design includes two Intermodal Tracks, each with a capacity of 3,500-ft to be worked by reach stackers. A 25-foot-wide heavy duty concrete stacked pad will provide a stable platform along the west side of the Intermodal Tracks, and a 70-foot-wide asphalt access road immediately to the west of the concrete apron will provide for truck maneuverability. The northern end of the Intermodal Tracks will be accessed by a new 1,700-ft Lead Track, which in turn, connects to the MNR Waterbury Branch at MP 21.8 with a #10 left hand turnout. A 3,700-ft Tail Track will extend from the southern end of the Intermodal Tracks to a #10 crossover at approximately MP 20.5 to provide a runaround connection to the Waterbury Branch.

The plans include full buildout of the site including fencing, retaining walks, security, access roads, utilities, storm drainage, terminal facilities, support buildings, and high mast lighting. The deliverables for this phase of the project were a 30% Progress Plan and Estimate set. The plans will be used by PAS and other project partners as the basis for assembly of the funding for detailed design and construction.

Rendering of proposed intermodal terminal.

ERDMAN ANTHONY

DL Pocono Main and Carbondale Main Bridges

The project involved the rehabilitation of three undergrade bridges as part of a PennDOT-funded project. Erdman Anthony performed project survey, design, hydraulic analysis, permitting, construction cost estimating, construction support and observation.

The project involved the rehabilitation of Bridge 107.39 over Tobyhanna Creek on the Pocono Main. The bridge is a 43'-0" clear span segmental concrete arch constructed in 1916. Design plans were not available for the structure. Portions of the unreinforced arch ring were severely cracked and spalled up to 22" deep and nearing the point of failure. The abutments, wingwalls, and spandrel walls were also spalled and in need of repairs. After evaluating several repair and replacement options for the structure, it was determined that lining the arch with a grouted structural plate liner would meet the project goals at the lowest cost with no interruptions to train traffic. The abutment stems were repaired and widened with reinforced concrete in phases to support the liner. The galvanized steel structural plate liner was designed for Cooper E-80 and Alternate Live Loads to support the existing arch and backfill, assuming no capacity contribution from the existing structure. This assumption removed any uncertainty brought on by continued concrete deterioration after the liner installation. Quality control of the erection, jacking, and grouting operation were confirmed through carefully crafted specifications.

The project also included the replacement of the bridge ties at two structures on the Carbondale Main. Bridge 2.70 over Roaring Brook was constructed in 1935. The bridge consists of two open deck through plate girder spans with clear spans of 49'-4" and 49'-8". Bridge 18.30 over the Lackawanna River was constructed in 1904. The bridge consists of one open deck through truss with a clear span of 99'-6" and an overall length of 107'-3". The deck replacement work was completed in a single outage per structure without significant impacts to traffic.

Location: Monroe and Lackawanna Counties, PA
Owner: Delaware-Lackawanna Railroad
Completion: 2019

DLWR Batavia Transload Warehouse Expansion

Erdman Anthony provided planning, preliminary engineering, final design, construction administration and inspection services for this PFRAP project. The existing 30,000 square-foot warehouse was completed in 2010 and had quickly been outgrown. Demand for warehouse space for short-term storage of transloaded goods has outpaced the DLWR's ability to turn over the goods, meaning that the Railroad has been forced to turn away rail traffic. The new warehouse expansion consisted of a 12,160-square-foot building addition, modifications to the existing building, extension of fire protection and lighting, construction of a concrete truck apron and paved loading dock, paving and incidental site work.

Erdman Anthony provided scoping and preliminary engineering services to assist the owner with evaluation of site constraints and assisted with an application for funding under the 2015 PFRAP.

Location: Batavia, NY
Owner: Depew, Lancaster & Western Railroad
Completion: 2020

Project highlights include:

- The project increased cross dock and warehouse capacity by 40% without the added cost of track construction.
- The site was connected to the City storm sewer through a new drainage system crossing under four tracks.
- Additional paving and driveway widening will allow for trucks to be unloaded at either end of the building, increasing efficiency.

MHWA Route 26/46/49/69 Grade Crossings

Erdman Anthony provided engineering support for the three MHWA Rome Industrial Track crossings at the Routes 26/46/49/69 interchange in Rome, NY. Work was completed under a Section 130 project. The track alignment through the crossing is curved and spiraled. The project reconstructed the failed full depth rubber crossing with a new precast modular concrete system with elastomeric flangeway fillers, welded rail, sidewalk and sign improvements. The length of the three reconstructed precast full-depth modular surfaces is 64 ft, 40 ft, and 40 ft, from west to east.

Location: Rome, NY
Owner: Mohawk, Adirondack & Northern Railroad
Completion: 2017

The Route 26/46/49/69 is a unique, partial grade-separated, urban interchange of four state arterial highways. Phasing of the grade crossing work required extensive coordination with NYSDOT and the City of Rome. The crossing work was timed to coincide with ramp rehabilitation work at the interchange to minimize detour times and staging. The two shorter crossings were constructed in one short-term closure each, with detours to state and local roads. The longer crossing was constructed in two phases in order to maintain shifted highway traffic patterns through the crossing.

Aerial overview of three successive grade crossings at the interchange.

Safety Requirements

Our field crews are intimately familiar with the safety requirements for working within an active railroad. Our field staff have completed Roadway Worker Protection training in accordance with 49 CFR Part 214 and maintain current e-Railsafe certification. Any staff that do not have current RWP certification or require railroad specific training, will be coordinated as needed. Erdman Anthony also has an FRA-approved drug and alcohol testing program in place to meet federal requirements in 49 CFR Part 219 Compliance with these regulations for any consultant or contractor performing work in a railroad right-of-way.

Construction Phase Services

Erdman Anthony routinely supports design services by providing observation or support during construction. Depending on the desired level of support, services can consist of review of construction bid prices and contractor qualifications, review of shop drawings and submittals, attendance at preconstruction and progress meetings, review of contractor claims, assistance with value engineering change proposals, and preparing/reviewing design changes during construction due to unexpected site conditions. Our commitments to quality and client satisfaction continue through construction of the project. We understand the time-sensitive nature of construction and partner with contractors to quickly respond to requests for information, contractor submittals, and suggestions for alternative materials or methods.

Quality Management System

Since 2000, Erdman Anthony has had an ISO 9001-certified quality program that undergoes regular internal audits and annual third-party audits by a certified outside consultant.

Erdman Anthony's Quality Management System is certified to the ISO 9001:2015 standard, which reflects our ***continuous commitment to meeting quality standards and customers' expectations.*** The combination of quality assurance processes and procedures with quality control checklists and reviews has enabled us to maintain this certification. Combined with a core value of continual improvement, we have been able to produce consistent high-quality client service and deliverables, and strong customer satisfaction.

The team will make it a priority to confirm that OBPA and other stakeholders are completely satisfied in the progression of the project. Ensuring this level of satisfaction will include:

- Quick return of phone calls and e-mails.
- Confirming all review comments are completely addressed.
- Maintaining communication through a single contact person.
- Verifying that all submissions are checked for completeness,
- Obtaining advance approval for tasks beyond the scope of work, and
- Establishing access to up-to-date information for all stakeholders.

The Erdman Anthony team will strive to give you the best possible product and simplify your efforts for the project.

Grant Requirements & Administration

By combining sound rail engineering expertise with grant writing and administration capabilities, our team can provide a single point of contact for all project funding and administrative needs.

Erdman Anthony has completed hundreds of projects in NY and is thoroughly familiar with agencies' policies and standards. Erdman Anthony routinely goes above and beyond the consulting engineering role by assisting clients with grant administration, progress reporting, reimbursement requests, and project closeout document preparation. Erdman Anthony will assist OBPA and project partners in every reasonable way to ensure that grant requirements are met and funding reimbursement is not jeopardized.

Our team also provides grant writing services, with a focus on rail and industrial development projects. In recent years, our team has prepared funding applications for rail and industrial projects under programs sponsored by the FRA, USDOT, PennDOT, NYSDOT, NYSESD, USDA, EDA, NBRC, ARC, and other state- and federal sources that have resulted in awards exceeding $100 million.

SECTION 3: REFERENCES

The following references are provided to assist OBPA with the evaluation of Erdman Anthony's qualifications. Pertinent projects are included with each reference.

Shortline/Regional Railroad Clients

Jeff Marshall, PE
Chief Engineer Capital Projects
Genesee Valley Transportation, Inc.
716.474.3647
jkm@gvtrail.com

Our team has continually provided engineering services to GVT Rail System since 2011.

- MHWA Newton Falls Branch Rehabilitation MP 30 to MP 75 (NY)
- MHWA Railroad Street Bridge Rehabilitation (NY)
- MHWA Bridge 0.83 over the Mohawk River Replacement (NY)
- MHWA Newton Falls Branch Grade Crossings (NY)
- MHWA Culvert 5.59 over Crane Creek (NY)
- MHWA Canal Street Grade Crossing Study (NY)
- MHWA Lyons Falls Branch Rehabilitation (NY)
- MHWA Rome IT Ellsworth Avenue Grade Crossing (NY)
- MHWA Rome IT Route 26/46/49/69 Grade Crossings (NY)
- FRR Falls Branch Bridge Repairs (NY)
- FRR Falls Road Industrial Access Project (NY)
- DLWR Batavia Transload Warehouse (NY)
- DLWR Enginehouse Track (NY)
- DL Pocono Main Bridge 78.66 over Brodhead Creek (PA)
- DL Pocono Main Bridge 113.52 over Larsen Lake (PA)
- DL Carbondale Main Rehabilitation MP 0 to MP 19 (PA)
- DL Pocono Main Bridge 107.39 over Tobyhanna Creek (PA)
- DL New Service & Inspection Facility (PA)

Ted Krug, PE
Chief Engineer Design & Construction
Pan Am Railways, Pan Am Southern, Springfield Terminal Railway
978.663.1108
tkrug@panamrailways.com

Recent work for Pan Am Railways includes the 111-mile Pine Tree Corridor project in central Maine.

- PAR Pine Tree Corridor Project (ME)
- PAS Freemans Bridge Road Grade Crossing (NY)
- PAS Hoosick Junction Expansion – Phase 1 (NY)
- PAS Hoosick Junction Expansion – Phase 2 (NY)
- PAS Naugatuck Intermodal Terminal (CT)
- PAS Rotterdam Branch Rehabilitation (NY)
- PAS Freight Main Line Bridge Rehabilitation (NY)
- PAS Patriot Corridor Project (MA)
- PAS Tunnel Creek Drainage Study (MA)
- ST ACSES II/ATC PTC System Implementation (NY/MA/CT/VT/ME)

ERDMAN ANTHONY

NYSDOT Representatives

Jeff Oswald, PE
Professional Engineer 1
NYSDOT Freight & Passenger Rail Bureau
518.457.8962
Jeffrey.Oswald@dot.ny.gov

- MHWA Newton Falls Branch Rehabilitation (NY)
- Waverly Trade Center Rail Transload (Phases 1 and 2) (NY)
- Benson Mines Rail Access (NY)
- Massena Industrial Park Rail Access
- ECIDA Lancaster IT Capacity & Safety Improvement (NY)
- Alcoa Track Rehabilitation and Grade Crossing Safety Improvements
- Dunn Paper Natural Dam IT Restoration (NY)
- NYOG Norfolk Branch Rehabilitation (NY)

Troy Samson
Regional Rail Coordinator
NYSDOT Region 4
585.272.4858
Troy.Samson@dot.ny.gov

- NYSDOT Quaker Road Grade Crossing at CSX Chicago Line
- FRR Lockport Yard Transload Improvements (NY)
- FRR Falls Branch Bridge Repairs (NY)
- FRR Falls Road Bridge and Culvert Improvements (NY)
- FRR Bates Road Grade Crossing (NY)
- DLWR Batavia Transload Warehouse (NY)
- DLWR Enginehouse Track (NY)
- OMID Sodus Bay Secondary Bridge Load Ratings (NY)

Industrial Clients

Rich Wiliams
Facilities Manager
St. Lawrence County IDA
315.379.9806 x105
rwilliams@slcida.com

- Alcoa Track Rehabilitation and Grade Crossing Safety Improvements (NY)
- Dunn Paper Natural Dam IT Restoration (NY)
- Benson Mines Rail Access (NY)
- Massena Industrial Park Rail Access (NY)
- MHWA Newton Falls Branch Rehabilitation (NY)
- MHWA Newton Falls Branch Grade Crossings (NY)

Our team has partnered with SCLIDA on eight rail projects across St. Lawrence County since 2010, including the 46-mile Newton Falls Branch Reactivation.

SECTION 4: STAFFING

The Erdman Anthony team has the experienced staff to address the anticipated needs and is uniquely qualified to provide the required services to OBPA. No subconsultants are proposed or anticipated to be required at this time.

Key Staff

The proposed key staff are available to assist with any assignments which may be required under the consulting agreement. Our current workload and capacity will provide the project stakeholders with a responsive team to complete the work within the proposed schedule. Key staff members and brief summaries of their expected contribution to the project follow below.


Elias

Dennis Elias, PE
Project/Program Manager

Dennis will be responsible for overall coordination of the project team, adherence to schedule and budget, communication with project stakeholders, and will lead the project engineering efforts. He has 22 years of experience and has managed over 75 projects involving railroads over the past several years, including over 45 projects funded under NYSDOT's PFRAP program and five projects funded under the FRA's CRISI program. He is experienced in the analysis and design of alignment improvements, track/roadbed structural support, yard design, bridge load rating and repair, bridge replacement, operational assessments, transload sites, intermodal terminals, cost estimates, permitting, and construction phase administration.


Madden

Jack Madden, PE
Senior Project Engineer

Jack will lead the Public Projects coordination effort for the agreement. He brings a unique background in planning, engineering, railroading, government, and the military that will be instrumental in tying together various disciplines and stakeholder interests. He served as a Team Leader in the NYSDOT Freight & Passenger Rail Bureau for 17 years, where he led a four-person team responsible for planning and management of over 25 State-funded multi-year railroad capital projects totaling about $113M for clearance, capacity and capability improvements with Class I, II, and III railroads in NYS. For 15 years prior to his tenure with NYSDOT, he served in a variety of operations, engineering, and risk management positions with Conrail.


Schiller

Robert Schiller, PE, PTOE
Project Engineer

Rob will be responsible for all site and civil design aspects of the agreement and will assist with permitting/environmental reviews, scoping of alternatives, and cost estimating. Rob has 13 years of experience and began his career in the development of major highway reconstruction projects before shifting course to focus on rail-related projects. He has been involved with a wide range of transportation projects including alignment design, transload terminals, sidetracks, grade crossings, interchange reconfiguration, utilities, and site development. Rob has also performed an extensive number of benefit-cost, life-cycle cost, and economic analyses in support of rail-related capital projects.


Lindaman

Jordan Lindaman, EIT
Project Engineer

Jordan will assist the licensed staff with site and civil design aspects of the agreement, alignment design, permitting/environmental reviews, scoping of alternatives, and cost estimating. Jordan has 4 years of experience with Erdman Anthony and has spent his time designing track alignments, bridge and culvert rehabilitation, grade crossing improvements, drainage, work zone traffic control, construction cost estimating, permit applications, and bidding document preparation for nearly two dozen railroad projects in NY, PA, and ME. He is proficient using AutoCAD, Microstation, Inroads, MathCAD, HydroCAD, and Excel design spreadsheets.


Zimmovan

Bernard Zimmovan, PE
Senior Structural Engineer

Bernie s a licensed professional engineer with over 40 years of varied structural engineering experience. He is experienced in the inspection, analysis, design, and rehabilitation of bridges, retaining walls, and other transportation related structures and is familiar with design standards of various Class 1 and shortline railroad companies, as well as the AREMA Manual for Railway Engineering. Bernie has recent experience in the evaluation of a historic pin-connected truss bridge over the Mahoning River for CSXT. He was the lead structural engineer for Norfolk Southern's Keystone Buildout project, which included the design of several new bridges, culverts, and retaining walls.


Wojtkowski

Kenneth Wojtkowski, PE
Senior Structural Engineer

Ken is a licensed professional engineer with over 36 years of varied experience. He has been involved exclusively over the past twenty years with leading the structural design effort for bridge replacements, rehabilitations, and other structural, highway, and railroad projects. His expertise includes design of multi-span, skewed/splayed replacement bridges, moveable dam rehabilitation, fiber-reinforced polymer (FRP) superstructures, consideration for staged construction, load ratings, diagnostic load testing, and structural rehabilitation design. He is familiar with the AREMA Manual for Railway Engineering, and NYSDOT design guidelines.


Wallmann

Bruce Wallmann, PE
Lead Electrical Engineer

Bruce has 35 years of professional engineering experience and has served as Principal in Charge, Project Manager, and/or Lead Electrical Engineer for hundreds of projects of various sizes. Many of the projects he is involved in have a construction values over $20 million. An experienced and licensed electrical engineer, Bruce has designed electrical systems for institutional, industrial, governmental, commercial, retail, and corporate clients. Wet and dry laboratories, office spaces, industrial processes, classrooms, manufacturing areas, transload warehouses, and locomotive maintenance facilities are samples of the projects managed and/or designed.


Bidell

Jeff Bidell, PE, CBCP
Lead Mechanical Engineer

Jeff has over 45 years of professional experience in mechanical, energy, plumbing and fire protection engineering, including operating mechanics, mechanical lift systems, hydraulic operators, level and position monitoring, pumping systems and controls for various waterway structures. Jeff is a certified building commissioning professional. He has extensive experience in mechanical engineering and energy services for industrial facilities and support of civil engineering projects. During his career he has also worked for contractors and on-site facilities engineering teams.


Standinger

David Standinger, PLS, PSM
Survey Manager

Dave has 34 years of experience in boundary and topographic surveys, the last eight of which have been leading Erdman Anthony's Northeast survey operations. He began his surveying career in 1981 as an Artillery Surveyor attached to the 101st Airborne Division (Air Assault). This experience coupled with education and steady and controlled professional growth has broadened his diversity of project successes. His wide-ranging background includes technical survey leadership and supervision/management for transportation projects, site development, and flood control projects. He has developed programs and procedures which integrate new technology into tasks to advance the speed, safety, and precision of the projects.

Detailed resumes of key Erdman Anthony staff showing their qualifications and relevant work experience follow this page. An expanded project resume is included for the proposed Project Manager, while other resumes have been abbreviated. Additional or expanded resumes can be provided upon request.

Good Faith Effort to Use Minority and Women Business Enterprise

Erdman Anthony is committed to Equal Employment Opportunity both in-house and with our subconsultants. Our team will explore opportunities to utilize MWBE subconsultants or subcontractors during the negotiation phase of each project. The lack of potential MWBE firms in the North Country, combined with the fact that even fewer firms have railroad expertise, an FRA-approved Part 219 Drug and Alcohol Testing Program and Part 214 Roadway Worker Safety training required for work within the railroad right-of-way, will make meaningful MWBE participation a challenge for OBPA rail and port projects. Likely candidates involve material testing, wetland delineation, geotechnical engineering, inspection rigging, shop inspection for precast concrete and bridge bearings, and equipment rental. Although the percentage of participation cannot be confirmed until the entire project is estimated in the proposal negotiation phase, we believe that the value of M/WBE participation will be on the order of one percent (1%) given experience with similar projects.

Dennis J. Elias, PE

Principal Associate
Project/Program Manager

Dennis is a licensed professional engineer with 22 years of varied experience in rail and transportation engineering and project management. He leads Erdman Anthony's company-wide rail services group and has managed over 75 projects involving railroads over the past several years. These projects have included state and federal aid bridge rehabilitation, bridge load ratings, grade crossings, track, permitting, and construction inspection. Dennis is familiar with the operational requirements and design standards of various Class 1, regional, and shortline carriers; AREMA, the FRA, and NYSDOT

LICENSES, CERTIFICATIONS

Professional Engineer NY/PA/ME/WV

e-Railsafe Contractor Safety Certification

Roadway Worker Safety Training CSX/NS

EDUCATION

BS, Civil Engineering Technology

PROFESSIONAL AFFILIATIONS

American Railway Engineering and Maintenance-of-Way Association (AREMA)

New York State Association of Transportation Engineers (NYSATE)

New England Railroad Club (NERRC)

Railroads of New York (RONY)

NYOG Norfolk Branch Rehabilitation, Norfolk, NY. ***Project Manager.*** The $2.1M NYSDOT-funded project will rehabilitate approximately 5 miles of the Norfolk Branch from MP N-25.0, the connection to the NYOG Ogdensburg Branch in the Village of Norwood to MP N-29.50, the connection to the lead track for the NYOG Enginehouse in the Town of Norfolk. Work includes the replacement of 3.9 miles of 100# relay rail, 2000 cross ties, and track panel replacement at five grade crossings in order to increase the FRA Track Class from Excepted to Class 1. Responsible for project scoping and preparation of application package.

NYOG 2023 Grade Crossing Improvements, St. Lawrence County, NY. ***Project Manager.*** The project involved scoping of improvements to five public grade crossings and preparation of applications for Section 130 funding. The project includes the reconstruction of five surfaces with modular precast systems, replacement of passive warning devices at three of the crossings, and installation of new active warning devices at two of the more highly traveled crossings at NY Route 56 and County Road 47. Responsible for preliminary engineering, cost estimating, preparation of application packages, and coordination with OBPA and NYSDOT.

OBPA Port of Ogdensburg Marine Terminal Improvements – Phase 1, Ogdensburg, NY. ***Project Manager.*** The $1.3M NYSDOT-funded project includes the reconstruction of the both the East and West Warf tracks at the terminal facility, as well as various improvements to Warehouse No. 2. The track reconstruction consists of saw cutting the existing asphalt and removing the existing 80# rail, ties, OTM and ballast, and constructing new track and one new turnout using 100# minimum Class 1 relay rail with welded joints. Rubber rail interface will be installed on all track within paved areas and repaved with asphalt. The warehouse improvements consist of the replacement of two overhead doors and the replacement of the existing metal roof that has reached the end of its useful life. Responsible for project scoping and preparation of application package.

MHWA Newton Falls Branch Grade Crossings, Jefferson & St. Lawrence County, NY. ***Project Manager.*** The FRA, NBRC, and ESD funded project consist of the rehabilitation of track and crossing surfaces at 10 public highway-rail grade crossings. Passive warning devices will be replaced 34 crossings and active warning devices will be replaced at one crossing under a separate Section 130 project. The scope of work is expected to include removal of the existing pavement, rail, ties, and fouled ballast material; minor drainage improvements; and replacement of the track and pavement in accordance with MA&N's current standards.

FGLK Geneva Yard Wye Track, Geneva, NY. ***Project Manager.*** The project involved topographic survey, boundary determination, engineering, and construction stakeout of this state-funded project. Responsibilities included development of horizontal and vertical alignments for the 1,904-foot wye track to avoid impacts to wetland areas, fit within the existing right-of-way, and meet geometric criteria required by the connecting railroad.

MHWA Newton Falls Branch Reactivation, Jefferson, Lewis & St. Lawrence County, NY. ***Project Manager.*** The project involved the $10M state-funded rehabilitation and reactivation of the 46-mile corridor. Erdman Anthony is providing engineering and construction services for the project. The project includes inspection, load rating, and repair design of 37 undergrade bridges ranging up to 553 feet in length. The project also includes reconstruction of 2 public and 28 grade crossings, washout repair, replacement of 42,000 cross ties and 10 sets of switch timbers, lining and surfacing of the entire corridor. Responsible for oversight of all evaluation, engineering, and construction phase services.

PAS Hoosick Junction Expansion, Hoosick, NY. ***Project Manager.*** The $7 million NYSDOT-funded project provides expanded capacity and improved mobility through the main interchange point between Pan Am Southern and the Vermont Railway. Phase 1 of the project is currently under construction and consists of two new 2,500-foot interchange tracks that will more than quadruple the storage capacity. Phase 2 of the project will construct nearly two miles of new mainline track and completely upgrade the signal system at the interchange to improve capacity and safety. Responsible for oversight of survey, design of track alignments, grading, drainage, and access road improvements, construction cost estimating, bidding document preparation, and construction support and administration.

DLWR Bridge 410.01 over Cedar Street, Batavia, NY. ***Project Engineer.*** Work included the evaluation of the structure and track design as part of the $2.6M NYSDOT and federal aid highway reconstruction project. Responsible for evaluation of alternatives to raise the superstructure and approach track or lower the roadway to obtain standard vertical clearance, assessment of impacts to rail and highway traffic, and utilities buried beneath the bridge, preparation of PS&E, and review of shop drawings. The track profile and superstructure were raised 12” to improve vertical roadway clearance and included new reinforced concrete bridge seats and backwalls.

PAS Inland Port of Naugatuck Intermodal Terminal, Naugatuck, CT. ***Project Manager.*** Erdman Anthony provided preliminary engineering services for the development of a new container terminal for PAS in partnership with various public agencies. The design includes two Intermodal Tracks, each with a capacity of 3,500 feet to be worked by reach stackers. The plans include full buildout of the site including fencing, retaining walks, security, access roads, utilities, storm drainage, terminal facilities, support buildings, and high mast lighting. Responsible for oversight of survey, design of track alignments, grading, drainage, terminal improvements, and construction cost estimating.

Waverly Trade Center Rail Transload, Tioga County IDA, Waverly, NY. ***Project Manager.*** This project involved preliminary engineering to provide rail access to a 35-acre site and 150,000-square foot building. Over 20 alternative alignments ranging up to 4,000 track feet were studied to obtain optimum configuration and multimodal accessibility. The site includes open areas for transloading of pipe and timber to trucks, an automobile unloading facility capable of staging up to 12 cars, and a new grade crossing of a county road with active warning devices.

MHWA Ellsworth Avenue Grade Crossing, Rome, NY. ***Project Manager.*** The project involved the reconstruction of a failed asphalt crossing with a new precast modular system and welded rail, sidewalk and sign improvements. The project was complicated by a tight 16-degree curve through the crossing that necessitated tapered panels. Responsible for crossing design tasks and review of work zone traffic control plan.

Benson Mines Rail Feasibility Study, Benson Mines, Inc., Star Lake, NY. ***Project Manager***. This project includes preliminary engineering to reestablish rail access to the 3,000-acre mine site. Three tracks totaling 5,921 TF were inspected to determine the repairs required to reinstate service in accordance with FRA standards for Class 1 track. Conceptual improvements were also provided for rationalization of the existing track and construction of a three-track yard to provide adequate storage capacity.

MHWA Lyons Falls Branch Bridge Repairs, Oneida County, NY. ***Project Manager.*** The NYSDOT PFRAP funded project involved the $0.525M rehabilitation of three stone masonry bridges constructed in the 19th century. Responsible for oversight of in-depth inspection, condition rating, rehabilitation design, preparation of estimates, contract plans and specifications, construction support, and inspection. Work included repointing of masonry, repair of deeply spalled masonry with shotcrete, jacketing and underpinning of abutment and wingwall footings, reconstruction of a failed wingwall, scour repair, stream channel and washout repairs.

CSX Massena Industrial Park Rail Access, Massena, NY. ***Project Manager.*** The NYSDOT, ESD, NBRC, and SLCIDA funded project to construct a 1,960-foot spur and track scale that serves five lots within the industrial park. The project will initially serve a wood pellet manufacturer, wood fiber producer, and public transload facility. Future phases will serve a soybean processing plant and expand the public transload. Responsible for all engineering, permitting, coordination with NYSDOT, CSX, and the industries, grant administration, and construction inspection.

OMID Sodus Secondary Load Ratings, Wayne County, NY. ***Project Manager.*** The NYSDOT PFRAP funded project involved the in-depth inspection and load rating of two bridges in accordance with AREMA guidelines. The structures included a 78'-6" ballasted concrete deck through girder over CSXT's Rochester Subdivision and a 140'-0" through truss over Mud Creek.

LSX Rehabilitation of 7 Bridges, Luzerne County, PA. ***Project Manager.*** PennDOT RFAP funded project for the engineering and permitting of repairs to 7 publicly-owned bridges on the Luzerne & Susquehanna Railway. Responsibilities included the preparation of drawings detailing the work, preparation of DEP and USACE permit applications, and railway coordination.

DL Bridge 78.66 over Brodhead Creek (Bells Bridge), Monroe County, PA. ***Project Manager.*** PennDOT RFAP funded project for the $0.96M rehabilitation of the 386'-6", 4-span open deck through girder bridge. Oversaw in-depth inspection, load rating, rehabilitation design, contract administration, and construction inspection. Various load case scenarios were analyzed due to the varied steam and diesel equipment carried by the structure.

LRWY Bridge 254.59 over the Susquehanna River (Towanda Bridge), Towanda, PA. ***Project Manager.*** PennDOT RFAP funded project for the engineering and permitting of repairs to the 14-span, open deck plate girder on concrete piers and abutments, with a total length of 1,898'. Responsible for preparation of drawings detailing the work, preparation of DEP, USACE, and USCG permit applications, and coordination with the railway and permitting agencies.

CSX Niagara Sheets Industrial Spur, Wheatfield, NY. ***Project Manager.*** Provided for the removal of an abandoned sidetrack and construction of a new spur to CSXT's Lockport Industrial Track. Responsibilities included evaluation of the existing track, development of alternatives for providing rail access, horizontal and vertical alignments for the 1,460-foot spur to avoid impacts to three wetland areas while meeting geometric criteria, track/roadbed structural design for weak supporting soils, and specification of a railcar puller.

CSX Hunts Point Distribution Center Redevelopment & Expansion, Bronx, NY. ***Rail Project Engineer.*** A portion of the proposed $750M project which will include extensive improvements to the site track. Responsible for evaluation of existing track layout, determination of length of storage tracks required, track structural design for poor supporting soils located on a former landfill, layout of 2-track team yard and 4-track yard for bulk flour transfer facility, and preliminary design for two, double-track, multi-span viaducts approaching half a mile in length. Also obtained concept approval from CSX for improvements.

FRR Falls Branch Bridge Repairs, Monroe to Niagara Counties, NY. ***Project Manager.*** The project involves the multi-phase rehabilitation of five undergrade railroad bridges crossing highways and preliminary engineering for the replacement of two additional bridges crossing State Routes 237 and 19. Rehabilitation work includes structural steel repairs and strengthening, concrete repairs, timber deck replacement, and spot repainting. Both bridges slated for replacement have non-standard vertical clearance and are frequently hit by overweight vehicles. Options currently being evaluated for the replacement spans include ballasted or open deck through plate girders, precast adjacent box beams, precast concrete encased steel beams, and precast voided slabs.

OHRY Systemwide Bridge Evaluation, Tioga County, NY. ***Project Manager.*** The project involved the inspection and load rating of 24 undergrade bridges in order to meet FRA Bridge Safety Standards. The project includes various types of bridge construction, including timber trestles, deck plate girders, thru plate girders, rolled I-beams, and masonry arches. Preliminary plans and cost estimates were prepared for the replacement of two open deck steel beam bridges over with inadequate load ratings. One of the bridges is critical to maintaining rail traffic to the railway's largest customer, so the design was progressed in a manner that the entire bridge could be replaced over three recurring weekend outages.

MHWA Lyons Falls Branch Bridge 0.83 Over the Mohawk River, Utica, NY. ***Project Manager.*** The NYSDOT PFRAP funded project involves preliminary engineering and final design for the three-span structure. Work includes the rehabilitation of the 124'-0" through truss span over the main river channel and evaluation of alternatives for the replacement of the 82'-0" and 41'-5" open deck through girders spans over the floodplain. Alternative include the replacement with similar superstructures on rehabilitated substructures, as well as removal of one or more of the spans and replacement of lost hydraulic capacity with multiple culverts.

FRR Route 63 (Main Street) Grade Crossing, Medina, NY. ***Project Engineer.*** This NYSDOT and federal aid project involved replacement of a timber and asphalt grade crossing with associated roadway and active warning device improvements on the Falls Road Railroad. A modular precast concrete grade crossing was constructed with staged construction to maintain vehicular traffic. The length of the crossing was substantially reduced by eliminating on street parking near the crossing and narrowing the roadway to increase driver visibility. Shop drawing review and construction support services were also provided, including review of railroad force account payment estimates.

DL Pocono Main Bridge 113.52 over Larsen Lake, Wayne and Lackawanna Counties, PA. ***Project Manager.*** PennDOT RFAP funded project for the $0.9M rehabilitation of the 24'-0" span open deck plate girder bridge in this remote location. The work included repairs to undermined abutments and wingwalls by installation of grout bag/riprap bulkheads and pressure grouting with Portland cement grout, placement of riprap, concrete repairs, superstructure jacking, and construction of a temporary shoofly to maintain traffic using staged construction. Responsible for oversight of all engineering activities, preparation of construction documents, and construction support.

LRWY Systemwide Bridge Evaluation, Bradford County, PA. ***Project Manager.*** The project involved the inspection and load rating of 18 undergrade bridges in order to meet FRA Bridge Safety Standards. The line is owned by Norfolk Southern and leased to the LRWY. The project includes various types of bridge construction, including deck plate girders, thru plate girders, rolled I-beams, concrete slabs, railtops, and masonry arches.

Railroad Crossing Quiet Zone Feasibility Study, Conrail Chester Secondary MP 5.8 to MP 7.4, Tinicum Township, PA. ***Project Manager.*** Erdman Anthony provided a study of four at-grade railroad crossings in Tinicum Township to determine the feasibility of implementing a railroad quiet zone. This included evaluating three alternatives for gate system improvements at the crossings, as well as compilation of data relating to highway and train traffic, existing pavement and track conditions, safety history, pedestrian and bicyclist facilities, and existing utilities in the proposed zone. The project involved extensive coordination with the PennDOT District 6-0 Grade Crossing/Utility Manager, PUC, Conrail, and local project stakeholders.

FRR Bates Road Grade Crossing, Shelby, NY. ***Project Engineer.*** This NYSDOT and federal aid project involved design to replace an existing crossing located adjacent to an intersection. The length of the crossing was increased substantially and a modular precast concrete crossing surface was utilized to counter the effects of heavy truck volumes. Welded rail, drainage, and active warning device improvements were also implemented.

CSX Massena 10,000' Siding, Massena, NY. ***Project Engineer.*** The project involved the construction of a new mainline for CSX Transportation's St. Lawrence Subdivision and conversion of the existing mainline to a 10,000-foot clear siding. The project was completed on a fast-tracked, 4-month construction schedule. Responsible for oversight of field survey, preparation of ALTA/ACSM Land Title Surveys, and stakeout for the acquisition of right-of-way from 13 parcels. Stakeout of the improvements was also performed during the construction phase.

CSX & Deferiet Paper Grade Crossing Improvements, Wilna, NY. ***Project Engineer.*** This NYSDOT and federal aid project involved replacing two existing timber and full-depth rubber grade crossings and associated roadway and warning device improvements. A modular precast concrete grade crossing was constructed at Deferiet Paper Company's yard lead and CR 37; and a timber, rubber rail seal, and asphalt surface was constructed at the CR 36 crossing with CSX's Carthage Sec.

DL Laurel Line Retaining Wall at Roaring Brook, Scranton, PA. ***Project Manager.*** This PennDOT project involved emergency inspection and repair of a retaining wall supporting the SR0011 interchange with Spruce Street and the Delaware-Lackawanna Railroad. Responsible for in-depth inspection, recommendations to maintain rail service while repairs were being performed, and acting as the railroad's liaison with PennDOT District 4-0 personnel.

CSX Boston Line Clearance Improvement Project, Pittsfield, MA. ***Project Manager.*** Construction engineering services for the lowering of the double-track section of CSX's Boston Line in order to provide double-stack intermodal clearance. Responsible for oversight of construction stakeout, design of foundation underpinning at an overhead bridge, oversight of a subconsultant responsible for monitoring of sensitive structures, and detailed design for reconstruction of the platform at the Pittsfield Intermodal Station.

Kodak Park Industrial Track Assessment, Rochester and Greece, NY. ***Project Engineer.*** The project evaluated the redevelopment of a 2-million-sf distribution center into a modern, inland port facility. Responsible for review of existing site track and 2-mile lead track; recommendation of portions of building most appropriate for rail service; and conceptual layout of unloading terminals. Alternatives for providing a dedicated connection to CSX were also studied, since the lead track serving the complex was owned by a captive industrial operation.

John V. "Jack" Madden, PE

Senior Project Engineer

ERDMAN ANTHONY

Jack has 43 years of experience in Class 1 Railroad industry and state government. He joined Erdman Anthony after his retirement as a Project Team Leader in NYSDOT's Freight & Passenger Rail Bureau in 2015, where he led a team responsible for planning and project management of approximately 25 State-funded multi-year railroad capital projects totaling about $113M for clearance, capacity and capability improvements with Class I, Class II and Class III railroads in New York State. Jack also evaluated, scored, and ranked project grant applications for each year's Passenger & Freight Rail Assistance Program. Prior to joining NYSDOT, Jack had a 15-year career with Conrail, where he completed his tenure as Auto Terminal Planning Manager and Transportation Quality Manager.

LICENSES, CERTIFICATIONS

Professional Engineer NY

e-Railsafe Contractor Safety Certification

CSX/NS Roadway Worker Safety Training

EDUCATION

BS, Industrial Engineering, 1973

MS, Transportation, 1977

MBA, Logistics, 1980

MS, Regional Planning, 2001

PROFESSIONAL AFFILIATIONS

American Planning Association (APA)

American Society of Civil Engineers (ASCE)

New York State Association of Transportation Engineers (NYSATE)

Transportation Research Board, Member of Committees AR020, AR010, & AT035 (TRB)

New England Railroad Club

Whitehall Wye Restoration, Clarendon and Pittsford Railroad, Whitehall, NY. ***Project Manager*** for new $1.2 Million of track work, new remote controlled turnouts, including signal work for a new Controlled Point in the CPR Canadian Main SD. Coordinated with the owner of fiber optic cables in the ROW as well as restoration of a private grade crossing to reach sewage treatment plant.

NYOG Norfolk Branch Rehabilitation, Norfolk, NY. ***Project Engineer.*** The $2.1M NYSDOT-funded project will rehabilitate approximately 5 miles of the Norfolk Branch from MP N-25.0, the connection to the NYOG Ogdensburg Branch in the Village of Norwood to MP N-29.50, the connection to the lead track for the NYOG Enginehouse in the Town of Norfolk. Work includes the replacement of 3.9 miles of 100# relay rail, 2000 cross ties, and track panel replacement at five grade crossings in order to increase the FRA Track Class from Excepted to Class 1. Responsible for project scoping and preparation of application package.

2009 New York State Rail Plan, NYSDOT, Albany, NY. ***Project Planner*** for the NYSDOT team which wrote the first New York State Rail Plan in 22 years. This plan was developed internally without consultant use and met the requirements of the Passenger Rail Investment & Improvement Act of 2008. As part of the Plan Development and Outreach Process, he participated at a facilitator in the Public meetings held beginning in June 2008 during the plan development, at Binghamton, Buffalo, and New York City. He supported the other outreach sessions including the December 2007 Plan Kickoff Meeting, the April 2008 Rail Industry Partners Workshop and the Transportation Planning Partners Workshop. Although he participated in the development of all Chapters and Appendices of the State Rail Plan, he was the lead writer for Chapter 4-Freight Rail. Using information obtained from freight or passenger railroad's Employee Timetables, as well as personal conversations with appropriate contacts at various railroads, he developed GIS-based maps of the Allowable Railcar Vertical Clearances and of the Rail Car Weight Limits for rail lines in NY State as of 2008. Also using GIS, he developed a table of Ownership and Operators of rail lines in NY State which supported the development of the GIS map entitled, "Taxable Status of Rail ROW" as of 2008.

2015 New York State Freight Plan, NYSDOT, Albany, NY. ***Project Planner*** selected by the NYSDOT's Contract Management Bureau to represent the Freight & Passenger Rail Bureau on the multi-disciplinary team which reviewed and evaluated the responses to the State's RFP for the Freight Plan Development, and which selected the winning consultant. He also continued to work on the internal NYSDOT Steering Committee in support of the development of the Plan, serving as the freight rail resource, until his retirement from NYSDOT. Similar to the procedure he used during the development of the 2009 State Rail Plan, he updated the GIS-based maps of the Allowable Railcar Vertical Clearances and of the Rail Car Weight Limits for rail lines in NY State as of 2015, to reflect the capital investments made in clearance improvements since 2008. He assisted in the development of the State Freight Plan Atlas and the Preliminary Statewide Core Freight Network.

Schenectady County Grade Crossing Elimination Project, NYSDOT, Schenectady County, NY. ***Project Manager*** for the study for improvement in the efficiency of the passenger and freight rail network in New York's Capital District by reduction in passenger and freight train conflicts in Schenectady County and improvement in passenger train running times from the Schenectady Amtrak Station northbound to Montreal, QC and Rutland, VT; improvement in safety by eliminating highway/railroad grade crossings; elimination of vertical and horizontal restrictions to highway vehicle traffic flow by removal of railroad bridges having substandard highway clearances; and providing additional developable property through the abandonment of 2.5 miles of CPR main and 1 mile of the PAR Rotterdam Branch.

LV Yard Freight & Passenger Use Planning Study, NYSDOT, Niagara Falls, NY. ***Project Planner*** who represented the Freight & Passenger Rail Bureau of NYSDOT on the Lehigh Valley Yard Stakeholder's Group for the purpose of examining the best use of the State-owned Lehigh Valley Yard, totaling approximately 68 acres. Jack was responsible for conceptual design for a new dedicated passenger main track, wye track for turning Amtrak trains, new Niagara Falls passenger station, and a new layover facility for Amtrak modeled after the Brunswick layover facility.

Utica Branch Rehabilitation, Chenango County IDA, Chenango County, NY. ***Project Manager*** for the rehabilitation of the flood-damaged Utica Branch between MP 209.0 and MP 253.51 within Chenango County. The scope of work included repair of washouts; rebuilding of railroad embankments and damaged track; tie replacement and surfacing; repair/replacement of culverts; repair of headwalls and bridge rehabilitation; restoration of river to its proper channel; and significant brush clearing.

Track Rehabilitation, Ontario Midland Railroad, Sodus, NY. ***Project Manager*** for a rehabilitation project that included tie and surfacing, turnout renewal, and a crossing renewal in order to achieve consistent operation of 286,000 pound gross weight railcars.

Portageville Bridge Replacement, Norfolk Southern Railway, Letchworth, NY. ***Project Manager*** for replacement of the former Erie Railroad's 1876 cast-iron viaduct, the Portage Bridge, over the Genesee River in Letchworth State Park located approximately at MP 366 on the NS Southern Tier Line. Responsible for review of scoping and the alternative analysis process for two TIGER grant applications. Also participated in public outreach during the early design stages of the project.

Cortland Transload Terminal, New York Susquehanna & Western Railway, Cortland, NY. ***Project Manager*** for the construction of a $1 Million rail-truck transload facility on a remediated EPA brownfield site.

Waverly Trade Center Rail Transload, Tioga County IDA, Waverly, NY. ***Project Administrator*** for the $800,000 replacement of an existing turnout in Norfolk Southern Railway's Southern Tier Line which included the reconstruction of a previously out-of-service grade crossing across Broad Street extension to reach the Waverly Trade Center facility and new construction of two unloading tracks in the Waverly Trade Center.

Dansville & Mount Morris Subdivision Rehabilitation, Rochester & Southern Railroad, Caledonia, NY. ***Project Manager*** for replacement of two turnouts in Caledonia Yard, rehabilitation of eight grade crossing surfaces between Caledonia Yard and Mount Morris, as well as tie replacement and surfacing at various locations. An additional grant funded bridge timber replacements on bridges between Mount Morris and Dansville; the bridge timber replacement were performed concurrently with the track rehabilitation.

Robert Schiller, PE, PTOE

Project Engineer

ERDMAN ANTHONY

Mr. Schiller has 13 years of civil and traffic engineering experience. He has worked on a wide range of transportation projects including rail transload trerminals, sidetracks, grade crossings, complex interchanges and highways. His duties for rail projects include development of plans and specifications, horizontal and vertical alignments, drainage and utilites, earthwork, grading, cost estimates, and traffic engineering studies. Rob has also performed an extensive number of benefit-cost, life-cycle cost, and economic analyses in support of rail-related capital projects.

LICENSES, CERTIFICATIONS

Professional Engineer, NY, FL

e-Railsafe Contractor Safety Certification

CSX/NS Roadway Worker Safety Training

EDUCATION

MS, Civil Engineering, 2009

BS, Civil Engineering, 2008

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (ASCE)

New York State Association of Transportation Engineers (NYSATE)

DLWR Batavia Transload Warehouse, DL&W Railroad, Batavia, NY. ***Project Engineer*** for phased improvements to the railroad-owned transload site. The original facility consists of a 26,362-sf building with indoor track space for 5 cars. Erdman Anthony completed design and construction administration for the addition of a track to the engine house and paving of 2 acres with asphalt. The current phase consists of an 11,840-sf pre-engineered metal building addition, concrete truck ramp, truck docks, and site paving. Rob's responsibilities include site grading and drainage design, cost estimating, and SEQR review.

CSXT Regional Rail Feasibility Study, Franklin County IDA, Bombay, NY. ***Project Engineer.*** This project provides rail access to 3 publicly-owned sites for the development of a regional transload terminal. Sites ranged from 5-16 acres and included 3 buildings ranging up to 61,000 sf. Alternative alignments ranging up to 1,236 track feet were studied to obtain optimum configuration and mutimodal accessibility. The study provided an outline for IDA staff to pursue private partnerships, attract users, and fund improvements once traffic develops. Rob was responsible for traffic data collection, analysis, and detailed traffic simulation modeling.

NS Waverly Trade Center Rail Transload, Tioga County IDA/Waverly Trade Center LLC, Waverly, NY. ***Project Engineer*** for the redevelopment of an abandoned 35-acre-site and 150,000-sf building into a multimodal transload terminal. Over 20 alternative alignments ranging up to 4,000 track feet were studied to obtain optimum configuration and mutimodal accessibility. The site includes an unloading pit, sand storage silos, open areas for transloading of pipe and timber to trucks, and an automobile unloading facility capable of staging up to 12 cars. A new grade crossing of a county road required extensive coordination with NYSDOT.

NS Sidetracks to Serve Ohio Gratings, Ohio Gratings, Inc., Canton, OH. ***Project Engineer*** for the rehabilitation of an existing 1,661-foot lead track to NS Fort Wayne Line and construction of a new 427-foot spur for transloading of inbound steel coil and outbound fabricated steel. Rob's responsibilities included horizontal and vertical alignments to avoid impacts to buried utilities and building clearances, cross sections, grading, and design of a stabilized transload pad and other site improvements.

CSX Sidetracks to Serve American Packaging, APC, Chili, NY. ***Project Engineer*** for the design of a double-track resin pellet transload totaling 1,997 feet. Rob's responsibilities included development of alternatives for improving rail access, horizontal and vertical alignments to avoid impacts to wetlands and overhead electric transmission lines, drainage design, cost estimating, cross sections, and grading design.

MHWA Newton Falls Branch Reactivation, SLCIDA, Jefferson, Lewis & St. Lawrence County, NY. ***Project Engineer*** for the $10M state-funded reactivation of the 47-mile corridor operated by the MA&N Railroad. The project includes inspection, load rating, and repair design of 37 undergrade bridges ranging up to 553 feet in length. Also included is reconstruction of 7 public and 28 grade crossings, washout repair, replacement of 40,000 ties, lining and surfacing of the entire corridor. Rob is responsible for cost estimating, permitting, environmental clearance, and assisted with construction phase services.

Jordan Lindaman, EIT

Project Engineer

ERDMAN ANTHONY

Mr. Lindaman is a Design Engineer with 4 years of experience. He has spent his time designing track alignments, bridge and culvert rehabilitation, grade crossing improvements, drainage, work zone traffic control, construction cost estimating, permit applications, and bidding document preparation for various railroad projects. He is proficient using AutoCAD, Microstation, Inroads, MathCAD, HydroCAD, and Excel design spreadsheets.

EDUCATION

BS, Civil Engineering Technology, Rochester Institute of Technology, 2020

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (ASCE)

Hoosick Junction Expansion, Pan Am Southern, Hoosick, NY. ***Design Engineer.*** The $7 million NYSDOT-funded project provides expanded capacity and improved mobility through the main interchange point between Pan Am Southern and the Vermont Railway. Phase 1 of the project is currently under construction and consists of two new 2,500-foot interchange tracks that will more than quadruple the storage capacity. Phase 2 of the project will construct nearly two miles of new mainline track and completely upgrade the signal system at the interchange to improve capacity and safety. Assisted with design of track alignments, grading, drainage, and access road improvements, construction cost estimating, bidding document preparation, and construction support.

Inland Port of Naugatuck Intermodal Terminal, Pan Am Southern, Naugatuck, CT. ***Design Engineer.*** Erdman Anthony provided preliminary engineering services for the development of a new $25 million container terminal for PAS in partnership with various public agencies. The design includes two Intermodal Tracks, each with a capacity of 3,500-ft to be worked by reach stackers. The plans include full buildout of the site including fencing, retaining walks, security, access roads, utilities, storm drainage, terminal facilities, support buildings, and high mast lighting. Assisted with preparation of survey, design of track alignments, grading, drainage, terminal improvements, and construction cost estimating.

DL Greenridge Yard Track Reconfiguration, Delaware-Lackawanna Railroad, Scranton, PA. ***Design Engineer.*** The project involved the realignment and reconfiguration of track that had been poorly rationalized by Conrail in the 1970s, leaving heavily used sidings and yard tracks with abrupt jogs and sharp curvature. The project will address these geometric issues and expand storage and servicing tracks through a phased approach. Assisted with preparation of plans and quantity takeoffs.

Newton Falls Branch Grade Crossings – Phase 3, MHWA, Jefferson & St. Lawrence County, NY. ***Design Engineer.*** The state- and federal aid project involves the reconstruction of 10 public grade crossings and replacement of passive warning devices at 35 other public grade crossings over a 46-mile corridor. The reconstruction consists of new ballast base, underdrains, ties, and welded rail throughout the crossing and approaches. Nine of the surfaces were full timber with asphalt approaches, while the remaining street was in an urban setting with sidewalks and required a more pedestrian and truck friendly concrete surface. Responsible for preparation of workzone traffic control plans, plan preparation, and bid document preparation.

Ellsworth Avenue Grade Crossing, MHWA, Rome, NY. ***Design Engineer.*** The project involved the reconstruction of a failed asphalt crossing with a new precast modular system and welded rail, sidewalk and sign improvements. The project was complicated by a very tight 16-degree curve through the crossing that necessitated tapered panels. Assisted with crossing design tasks and review of work zone traffic control plan.

Pocono Main Bridge 113.52 over Larsen Lake, Delaware-Lackawanna Railroad, Gouldsboro, PA. ***Design Engineer.*** PennDOT RFAP funded project for the $0.9M rehabilitation of the 24'-0" span open deck plate girder bridge in this remote location. The work included repairs to undermined abutments and wingwalls by installation of grout bag/riprap bulkheads and pressure grouting with Portland cement grout, placement of riprap, concrete repairs, superstructure jacking, and construction of a temporary shoofly to maintain traffic using staged construction. Assisted with preparation of repair plans, permit applications, preparation of construction documents, and construction support.

FRR Falls Branch Bridge Repairs, Monroe to Niagara Counties, NY. ***Design Engineer.*** The NYSDOT-funded project involves the multi-phase rehabilitation of five undergrade railroad bridges crossing highways and preliminary engineering for the replacement of two additional bridges crossing State Routes 237 and 19. Rehabilitation work includes structural steel repairs and strengthening, concrete repairs, timber deck replacement, and spot repainting. Both bridges slated for replacement have non-standard vertical clearance and are frequently hit by overweight vehicles. Options currently being evaluated for the replacement spans include ballasted or open deck through plate girders, precast adjacent box beams, precast concrete encased steel beams, and precast voided slabs.

MHWA Lyons Falls Branch Bridge 0.83 Over the Mohawk River, Mohawk, Adirondack & Northern Railroad, Utica, NY. ***Design Engineer.*** The NYSDOT-funded project involves preliminary engineering and final design for the three-span structure. Work includes the rehabilitation of the 124'-0" through truss span over the main river channel and evaluation of alternatives for the replacement of the 82'-0" and 41'-5" open deck through girders spans over the floodplain. Alternative include the replacement with similar superstructures on rehabilitated substructures, as well as removal of one or more of the spans and replacement of lost hydraulic capacity with multiple culverts. Responsible for plan preparation and hydraulic analysis.

DL New Service & Inspection Facility, Delaware-Lackawanna Railroad, Scranton, PA. ***Design Engineer.*** The project involves the construction of a new 12,437-square-foot locomotive maintenance facility. Erdman Anthony is provided planning, preliminary engineering, final design, and construction management services for this project. Responsible for foundation design, detailing, plan preparation, quantity estimates, preparation of bidding documents, and shop drawing review.

MHWA Utica Enginehouse Expansion, Mohawk, Adirondack & Northern Railroad, Utica, NY. ***Design Engineer.*** The project involves the construction of a new 3,200-square-foot addition to the existing locomotive maintenance facility. Erdman Anthony is provided planning, preliminary engineering, final design, and construction management services for this project. Responsible for track alignment design, foundation design, detailing, plan preparation, quantity estimates, preparation of bidding documents, and coordination with mechanical and electrical engineering work.

Bernard G. Zimmovan, PE

Senior Associate/Structural Engineer

ERDMAN ANTHONY

Bernie Zimmovan is a licensed professional engineer with 38 years of varied structural engineering experience. He has provided and managed structural design for a wide range of transportation projects, including both highway and railroad bridges. Mr. Zimmovan has worked with a majority of PennDOT's Districts and with all of PennDOT's western Districts on various projects, and currently leads the design staff at Erdman Anthony's Pittsburgh office. He is experienced in the inspection, analysis, design, and rehabilitation of bridges, retaining walls, and other transportation related structures and is familiar with design standards of various Class 1 and shortline railroad companies, the AREMA Manual for Railway Engineering, and PennDOT.

LICENSES, CERTIFICATIONS

Professional Engineer PA/MD/VA/FL/ME

EDUCATION

BS, Civil Engineering, 1980

MS, Civil Engineering, 1984

PROFESSIONAL AFFILIATIONS

American Railway Engineering and Maintenance-of-Way Association (AREMA)

Association for Bridge Construction and Design (ABCD)

American Society of Civil Engineers (ASCE)

NS Keystone Buildout, Norfolk Southern Railway, Indiana County, PA. ***Lead Bridge Engineer.*** The project involved the design of a new, $30M, 5.3-mile single-track lead to a power plant. This project included two multi-span ballasted steel deck girder bridges with total lengths of 225 (spanning SR 3007 and Marshall Run) and 430 feet (spanning SR 0286 and Blacklegs Creek). The substructure consisted of hammerhead piers varying from 20' to 35' high and cantilever abutments supported on pile foundations. The project also included two precast concrete twin cell box culverts and one precast concrete triple cell box culvert; two metal arch culverts; and two soil nail retaining walls with lengths of 230 and 400 feet.

CSX Bridge 16 (MP 74.6) over Mahoning River, CSX Transportation, Youngstown, OH. ***Lead Bridge Engineer.*** Work included the inspection and retrofit recommendations for a number of joint pins moving freely within the worn bearing area of the chords under live load. The bridge is a 4-span structure consisting of 3 simple-span through trusses and a multi-girder approach span constructed in 1906. Each truss span is 136'-6" long. A report was prepared documenting the inspection, the bridge condition, and recommendations for rehabilitation.

Stage II LRT Reconstruction of Overbrook Line, PAAC, Pittsburgh, PA. ***Lead Bridge Engineer.*** The project involved the design of a 665-foot, curved welded steel plate girder bridge carrying light rail traffic over the South Busway, consisting of three 2-span continuous units. The alignment included a reverse horizontal curve with both spirals and circular curves for dual tracks. The substructure consisted of reinforced concrete hammerhead type piers varying from 25' to 40' high and reinforced concrete cantilever abutments supported on drilled shaft foundations.

Stage II LRT Reconstruction of Library End of Line, PAAC, Pittsburgh, PA. ***Lead Bridge Engineer.*** The project involved the design of three stream crossings. Two of these structures carry vehicle traffic and one carries light rail traffic. Pleasant Street bridge was resized to a single span spread box beam structure carrying two lanes of traffic and span 55 feet. Another structure was resized to a two-span ballasted deck spread box beam structure spanning 69 feet. The third structure is a single span spread box beam structure carrying two lanes of traffic and span 53 feet. All structures are supported on spread footing foundations.

Upper Black Eddy-Milford Bridge, Delaware River JTBC, Upper Black Eddy, PA. ***Lead Bridge Engineer.*** The project consisted of the rehabilitation of a 3-span steel through truss bridge with spans ranging from 204' to 228' long. An in-depth, hands-on inspection was performed to document and determine the extent of rehabilitation required. Analysis and rehabilitation design includes load rating, check of riveted gusset plates, replacement of floor system with new galvanized steel stringers and floorbeams, deck replacement with new concrete half-filled steel grid deck, replacement of existing rocker bearing with elastomeric bearings, replacement of deteriorated steel members and fasteners, painting of structural steel, and repairs to stone masonry substructure.

Platt Memorial Bridge over Schuylkill River, PennDOT District 6-0, Philadelphia, PA. ***Sr. Bridge Engineer.*** Oversight for the structural analysis of three steel arch truss spans ranging from 340' to 680' to determine the adequacy of the bridge to support the cleaning/repainting containment system. The analysis included the entire truss system as well as floorbeams and stringers for the specified containment loadings.

SR 0208/B02 over McKees Run, PennDOT District 1-0, Venango County, PA. ***Structures Team Leader.*** Provided preliminary and final design services for the replacement of a bridge carrying SR 0208 over McKees Run. The replacement structure is a 14.5' x 5.5' precast reinforced concrete box culvert that is approximately 36 feet long. Due to the close proximity of an existing upstream dam, the structure incorporated U-Wings consisting of a combination of GRS and precast concrete elements. Bernie supervised the development of the preliminary and final design for all culvert structural elements, as well as performing detailed checking of design calculations, drawings, special provisions, and cost estimates.

SR 0019/B11 over Tributary to Otter Creek, PennDOT District 1-0, Mercer County, PA. ***Structures Team Leader.*** Provided preliminary engineering, final design, and services during construction for the replacement of a 40-foot steel stringer bridge superstructure carrying Babcock Boulevard over Girty's Run (SR 4009/A11). The replacement superstructure was made of four prefabricated modules that facilitated accelerated bridge construction using a five-day detour. In addition to serving as project manager, Bernie served as team leader for bridge design.

SR 0119/465 Homer City Group Bridges, PennDOT District 1-0, Indiana County, PA. ***Structures Team Leader.*** Provided preliminary engineering for five (5) bridges carrying SR 0119. Scope of work ranged from bridge elimination to bridge preservation and superstructure replacement. Engineering services included review of existing bridge inspection reports and plans, performance of cursory field inspection of the bridges, identification of bridge elements for replacement/repair, and preparation of Preliminary TS&L Reports. Mr. Zimmovan supervised the development of the preliminary design, which included performing detailed checking of design calculations, drawings, constructability evaluation, and construction cost estimates

Kenneth M. Wojtkowski, PE

Senior Associate/Structural Engineer

ERDMAN ANTHONY

Mr. Wojtkowski is a licensed professional engineer with 35 years of varied structural engineering experience. He has provided and managed structural design for a wide range of transportation projects, including both highway and railroad bridges. He has been involved exclusively over the past twenty years with leading the structural design effort for bridge replacements, rehabilitations, and other structural, highway, and railroad projects. His expertise includes design of multi-span, skewed/splayed replacement bridges, moveable dam rehabilitation, fiber-reinforced polymer (FRP) superstructures, consideration for staged construction, load ratings, diagnostic load testing, and structural rehabilitation design. He is familiar with the AREMA Manual for Railway Engineering and NYSDOT design guidelines.

LICENSES, CERTIFICATIONS

Professional Engineer PA/NY

EDUCATION

BT, Civil Engineering Technology, 1984

ME, Civil Engineering, 1989

PROFESSIONAL AFFILIATIONS

American Railway Engineering and Maintenance-of-Way Association (AREMA)

Association for Bridge Construction and Design (ABCD)

American Society of Civil Engineers (ASCE)

New York State Association of Transportation Engineers (NYSATE)

LAL Bridge over Spring Street Superstructure Replacement, Livonia, Avon and Lakeville Railroad, Avon, NY. ***Project Manager.*** The project involved the design of a replacement superstructure for the existing railroad bridge in the Village of Avon. The bridge carried a single track over Spring Street via a wrought-iron, through-girder bridge with an open deck. Due to the age, material type, load capacity, and non-standard under-clearance of the superstructure, this project advanced with the understanding that the superstructure would be removed and replaced with a new superstructure. After comparing alternatives, a weathering steel, through-girder superstructure with a ballasted deck was selected. The under-clearance was increased by approximately nine inches to a minimum 14'-6". The stone abutments were retained, with minor rehabilitation to accept the new superstructure that was set approximately 1'-9" higher than the existing. Ken was responsible for all aspects of the project's design and construction, including providing construction administration and observation services.

LAL Bridge JC 379.78 over Red Creek Substructure Rehabilitation, Livonia, Avon and Lakeville Railroad, Henrietta, NY. ***Project Manager.*** The project involved the design of the rehabilitation of both stone abutments. The existing abutment backwalls were removed and replaced with new precast concrete backwall sections that were anchored to the stone underneath. The wingwalls were built up with cast-in-place extensions to retain the stone ballast. The stone abutment joints were filled and sealed with shotcrete. Other components of the project included installation of a cofferdam and placement of stone fill at each quadrant for slope protection. All work was performed without disrupting rail traffic, except for two 72-hour windows to install the new precast concrete backwalls. Ken was responsible for all aspects of the project's design and construction, including providing construction administration and observation services.

Humphrey Road Bridge Replacement, Cattaraugus County DPW, Great Valley, NY. ***Project Engineer.*** Responsible for overseeing the design services for the replacement of County Road 18 (Humphrey Road) over Wrights Creek. For this Locally Administered Federally Funded Project, Ken was responsible for overseeing preparation of a Scope Summary Memorandum/Final Design Report, Preliminary Engineering and Detailed Engineering. The existing single-span girder/floorbeam structure was replaced with a 92' prestressed concrete box beam bridge.

Gusset Plate and Misc. Steel Repairs, South and North Grand Island Bridges, Grand Island, NY. ***Project Manager.*** Responsible for coordinating the reviewing of repair details for gusset plates, bottom chords, truss diagonals, bottom lateral bracing, pier sway bracing, and sidewalk bracing. Contract preparation included permanent repair and temporary support design calculations, and the development of all necessary technical specifications for all special items in the contract.

Replacement of Ridge Road Bridge over various Railroads BIN 2255729, City of Lackawanna, Lackawanna, NY. ***Project Manager.*** The project involved the Construction Support/Construction Inspection activities for the replacement of the existing 950-foot Ridge Road Bridge over CSX, Norfolk Southern, Buffalo Southern and South Buffalo Railroads, including reconstruction of bridge approaches along with guiderail and drainage improvements. Project involved extensive coordination between affected utilities and railroads. Duties included coordination between Project Designer, City, NYSDOT, utilities, and railroads. Also responsible for oversight of project financial performance including invoice review, payment processing, and reimbursement in accordance with NYSDOT and FHWA policies.

Gasport Lift Bridge over Erie Barge Canal, Royalton, NY. ***Project Engineer.*** The project consisted of the rehabilitation of the lifting system components for the bridge. Design elements included the rehabilitation of the lifting frame members, rehabilitation of counterweight components (ropes, brackets, machinery beams, anchors, sheave bearings, sheave realignment, etc.), control components (bearings, sheaves, brackets, ropes, rods, anchors, etc.), pit covers, electrical components, and hydraulic components. Responsible for the QA/QC of the structural components of the contract documents including plans, specifications, and cost estimate.

Rehabilitation of Ashford Bridge #37, Cattaraugus and Erie Counties, NY. ***Senior Structural Engineer.*** The project consisted of the replacement of the previous superstructure with a new three-span, four-girder bridge with a concrete deck. Ken provided construction administration services and addressed issues that came up during construction of the project. He also reviewed contractor submittals and test reports of bridge components.

Moveable Dams Over the Erie Canal, NYSTA, Various Locations in NY. ***Senior Structural Engineer.*** The project involved programming for the rehabilitation of nine moveable dam structures crossing the Mohawk River, all of which contain either through-Pratt or modified camel-back truss structures. Two of the structures have roadways crossing them, with one of them being a state highway. Coordinated the on-site field inspection and the subsequent preparation of reports for each of the nine structures. Responsible for preparing three sets of contract documents, concrete apron foundation retrofit, rehabilitation of the dam gate/mechanical system, concrete substructure rehabilitation, preparation of two Level 1 Load Ratings for the roadway bridges, diagnostic load testing of one structure, Non-Destructive Testing (utilizing Ground Penetration Radar), construction cost estimates for each of the structures, and special specifications. Construction cost was $27 million for the three rehabilitation contracts.

Bruce R. Wallmann, PE

Principal Associate/Lead Electrical Engineer

Bruce has 35 years of professional engineering experience. Bruce has served as Principal in Charge, Project Manager, and/or Lead Electrical Engineer for hundreds of projects of various sizes. Many of the projects he is involved in have a construction values over $20 million. An experienced and licensed electrical engineer, Bruce has designed electrical systems for institutional, industrial, governmental, commercial, retail, and corporate clients. Wet and dry laboratories, office spaces, industrial processes, classrooms, and manufacturing areas are samples of the projects managed and/or designed for the various clients noted.

LICENSES, CERTIFICATIONS

Professional Engineer PA/NY/NJ/OH/MI/VA /MD/MA/CT/AZ/VT/ NC/FL

EDUCATION

MS, Electrical Engineering, 1988

PROFESSIONAL AFFILIATIONS

National Society of Professional Engineers (NSPE)

Chairperson for the local chapter (MPES) Scholarship Committee

MHWA Utica Enginehouse Expansion, Utica, NY. ***Lead Electrical Engineer*** for the renovation and expansion of the existing shop to accommodate one additional locomotive. The project included oil-fired forced air heat, general ventilation improvements to meet code, and custom diesel exhaust hoods located to match the stack location of the current locomotive roster.

DL Diesel Shop Expansion, Scranton, PA. ***Lead Electrical Engineer*** for the renovation and expansion of the existing shop to accommodate two additional locomotives. The project included new gas-fired radiant heat, makeup air units, new inspection pit exhaust, new electric service, lighting, and general ventilation improvements to meet code.

DLWR Batavia Transload Warehouse Expansion, Batavia, NY. ***Lead Electrical Engineer*** for the expansion of the existing 30,000 SF warehouse with a 12,160 SF pre-engineered metal building. The project included an extension of the existing mechanical, electrical, and fire protection systems. Responsible for design of all power and lighting systems to ensure that code requirements are met.

New Substation, Rochester Institute of Technology, Rochester, NY. ***Lead Electrical Engineer*** for a new, double ended, 34.5 kV primary substation which services the entire Campus. Design included acting as the Campus's technical liaison to the electrical utility provider and included civil, environmental, structural design elements. Project design included a means to install and energize the new system with minimal impact on Campus' ongoing operations.

Genesee County Sheriff's Facility and 911 Center, Batavia, NY. ***Lead Electrical Engineer.*** Provided electrical design services for the $4.68 million renovation to the 17,000 sq ft Genesee County Sheriff's Facility and 911 Operations Center. The building and site are considered a secure facility and have access-limiting features, security systems, and CCTV. The 911 Center has a dedicated uninterrupted power supply (UPS) and is served by an emergency generator. The building is covered by a full fire alarm system.

Waste Management Cogeneration, Various Locations in NY, PA & IL. ***Principal Electrical Engineer*** who served as the technical agent/liaison between the Owner and the electric utility company to negotiate the connection of Owner's generators to the utility grid to allow the Owner to operate under State and Federal regulations as an independent supplier of electrical power. Also, served as the lead Electrical and Controls Engineer for projects, which include engineering design and construction support services for the installation and utility interconnection of landfill gas to electric generating for four sites, which ranged from 8MW to 16MW of generating capacity. Design included the comprehensive design of substations, distribution and transmission class overhead and underground lines, relaying and protection schemes, and evaluating utility construction and design standards.

Emergency Generators Replacement, City of Rochester, Rochester, NY. ***Lead Electrical Engineer*** for the design of gas-fired, emergency backup generator sets for fourteen fire stations and various municipal and administration buildings. During the conceptual phase, evaluated each site to determine the most cost-effective method of providing emergency power.

Chiller Replacement, JP Morgan Chase, Rochester, NY. ***Principal Electrical and Controls Engineer*** for the design and replacement of the chillers for its facility. The first phase of the project involved the completion of a study that investigated the existing operations of the 3 primary chillers (550-ton chiller located on the "service level" and the 680-ton and 750-ton chillers located on the 27th floor) serving this complex. The second phase of the project resulted in the design of the selected option and support during the construction execution phase.

Electrical Site Distribution Upgrade, SUNY Geneseo, Geneseo, NY. ***Lead Electrical Engineer*** for the upgrade of Loop Circuit #4/14 of the Campus 4.16kV MV site distribution system. The design included a thorough site investigation to obtain an optimum new route, which would not only minimize Campus interruptions and minimize the impact on existing landscaping/hardscaping but also segregating the pathway such that no part of the loop overlaps at any point. Project phasing included a means to install and energizer the new system with minimal impact on Campus' ongoing operations. The new loop segment was designed to accommodate the Campus' future plans to convert the site distribution from 4.16 kV to 13.8 kV at some future time.

Lab Consolidation, NYCDEP, Kingston, NY. ***Lead Electrical Engineer*** in charge of design team for 80,000 sq ft of lab space including BSL-2 areas for the consolidation of existing laboratories into one facility.

CSX Hunts Point Distribution Center, Hunts Point Terminal Co-op, Bronx, NY. ***Lead Electrical and Controls Engineer*** for the project involving schematic level MEP, building and bridge structural, civil/site, and security design services for a 500,000 sq ft refrigerated produce warehouse.

Renaissance Square Transportation Center, City of Rochester, Rochester, NY. ***Lead Electrical Engineer*** for Renaissance Square, a $230 million, multi-service facility housing a public transit station, a college campus, and a performing arts center. Provided electrical engineering team leadership and design services.

Jeffrey C. Bidell, PE, CBCP

Senior Associate/Lead Mechanical Engineer

As manager of Erdman Anthony's Mechanical Engineering Department, Jeff has over 44 years of professional experience in mechanical, energy, plumbing and fire protection engineering, including operating mechanics, mechanical lift systems, hydraulic operators, level and position monitoring, pumping systems and controls for various waterway structures. Jeff is a certified building commissioning professional. He has extensive experience in mechanical engineering and energy services for industrial facilities and support of civil engineering projects. During his career he also worked for contractors and on-site facilities engineering teams. .

LICENSES, CERTIFICATIONS

Professional Engineer PA/NY/AZ

AEE Certified Building Commissioning Professional (CBCP)

EDUCATION

Mechanical Engineering Science, 1980

PROFESSIONAL AFFILIATIONS

American Society of Heating Refrigeration & Air-Conditioning Engineers (ASHRAE)

Association for Facilities Engineering (AFE)

Building Commissioning Association (BCA)

MHWA Utica Enginehouse Expansion, Utica, NY. ***Senior Mechanical Engineer*** for the renovation and expansion of the existing shop to accommodate one additional locomotive. The project included oil-fired forced air heat, general ventilation improvements to meet code, and custom diesel exhaust hoods located to match the stack location of the current locomotive roster.

DL Diesel Shop Expansion, Scranton, PA. ***Senior Mechanical Engineer*** for the renovation and expansion of the existing shop to accommodate two additional locomotives. The project included new gas-fired radiant heat, makeup air units, new inspection pit exhaust, and general ventilation improvements to meet code.

DLWR Batavia Transload Warehouse Expansion, Batavia, NY. ***Senior Mechanical Engineer*** for the expansion of the existing 30,000 SF warehouse with a 12,160 SF pre-engineered metal building. The project included an extension of the existing mechanical, electrical, and fire protection systems. Responsible for all mechanical systems to ensure that code requirements are met.

Gulf Oil Refinery Storm Water Pumping, Philadelphia, PA. ***Senior Mechanical Engineer.*** Designed mechanical, plumbing, and electrical systems for storm water control pumps in various locations on the site, including Class 1, Division 2, Group D areas.

Jones Chemical Ton Fill Area System, Leroy, NY. ***Project Engineer*** for the study of a PVC ducted, under floor exhaust system. Liquid chlorine is transferred into cylinders that hold 2,000 pounds of the material. The system was designed to exhaust small spills and potential leaks of the poisonous chlorine gas, which is heavier than air, down and away from the operators during the fill operation.

Troy Lock and Dam Rehabilitation, NYS Barge Canal, Troy, NY. ***Senior Engineer*** for a study of electrical power and control systems. Proposed new microprocessor control system to reduce wiring, cut operating costs, and monitor and control the position of the hydraulic lock gates.

Heidelberg Digital Corp, Utility Upgrade Feasibility Study, Rochester, NY. ***Senior Engineer.*** Study with present value cost analysis for a new High-Pressure Steam Plant, Chilled Water and Compressed air Plant and a seven megawatt Primary Power Service double ended switchgear with tie-breaker.

Bill Smith Creek Pump Station, Corning Bypass, NYSDOT, Corning, NY. ***Senior Engineer.*** Designed relocation of three 36-inch diameter, vertical turbine pumps driven by diesel engines with right angle gear drives. This 36,000 GPM system included engine drives, pumps and ventilation system.

Warner Dam Replacement, NYSDEC, Jamestown, NY. ***Senior Engineer.*** Designed and detailed the Dam Gate lift mechanism for a new 27-foot gravity dam on the Chadakoin River. The project included worm gear speed reducers and cable take-ups for 3 spillways with radial arm Tainter gates. The 16,000 pound gates were electronically controlled and powered by 1/2 HP motors with positioning indicators.

Hemlock Reservoir Gatehouse, City of Rochester, NY. ***Senior Engineer.*** Designed modifications to the chlorination system and upgrades to the building heating and ventilation. The Hemlock Lake Gatehouse controls flow from Hemlock Lake to the Cobbs Hill Reservoir for City of Rochester drinking water.

The Harris Lake Substation, Newcomb, NY. ***Senior Engineer.*** A two megawatt, diesel fired power generator plant provides secondary power in the event of feeder interruption. Study proposed tank replacement options including a 400 gal day tank and a direct piped 15,000 gal primary tank.

Lee Rd Plant Renovations for New Process, LiDestri Foods, Rochester, NY. ***Project Engineer*** for the complete renovation of building HVAC, Plumbing and Fire Protection systems for 400,000 sq,ft, FDA Approved Manufacturing.

Hydrogen Emissions Control System, Exelis Geospatial, Rochester, NY. ***Senior Project Surveyor*** responsible for professional design services to develop systems and controls to reduce the possibility of the accumulation of ignitable concentrations of hydrogen gas; considering leak prevention, leak detection, ventilation, and automatic process shutdown.

Teflon Fume Exhaust, Garlock Sealing Technologies, Palmyra, NY. ***Project Engineer*** for design of a detailed solvent exhaust system with custom designed hoods to fit special equipment. Included welded steel, high velocity ductwork and explosion proof fan. Design included explosion proof exhaust fan and class 1 division 2 electrical systems.

Monroe County Iola Power Plant – High Pressure Steam & Condensate Replacement, Rochester, NY. ***Project Engineer*** for the design of new main high pressure steam and condensate piping supplying the County Hospital. Above ground piping and expansion loops allowed maximum access for inspection and service with one section crossing under a service drive and into the building. The project was phased to maintain continuous active service to the hospital during the construction of the new piping.

David Standinger, PSM, PLS

Senior Surveyor/Manager

ERDMAN ANTHONY

Mr. Standinger began his surveying career in 1981 as an Artillery Surveyor attached to the 101st Airborne Division (Air Assault). This experience coupled with education and Steady and controlled professional growth has broadened his diversity of project successes. His wide-ranging background includes technical survey leadership and supervision/management for transportation projects, site development, and flood control projects. He has developed programs and procedures which integrate new technology into tasks to advance the speed, safety, and precision of the projects.

LICENSES, CERTIFICATIONS

Professional Land Surveyor, NY/PA/SC/NH

Professional Surveyor and Mapper, FL

CSX Roadway Worker Safety Training

e-Railsafe Contractor Safety Certification

EDUCATION

AAS, Survey Technology
SUNY Alfred, 1986

PROFESSIONAL AFFILIATIONS

New York State Association of Professional Land Surveyors (NYSAPLS)

Genesee Valley Land Surveyors Association (GVLSA)

Juniata Yard, Norfolk-Southern Railway Company, Altoona, PA. Survey Manager. Erdman Anthony was contracted to perform site surveying and scanning services of the existing turntable. This turntable facility was put in service roughly one-hundred years ago. As the first component of the rehabilitation of the turntable, the team performed GPS, conventional (robotic), and high-definition laser scanning services in and around the turntable pit. More than 20 tracks lead in/out of the structure. The final deliverable to the designers was a DTM and point cloud of the turntable, depicting all visible structures, rail lines, utilities and the like. In discussions with the design engineer, one critical element of the survey deliverable was the center-point of the axis of rotation. To achieve this, multiple scans were performed with the turntable in various positions of the rotation and analyzed the data to determine the axis location.

Metro-North Stations, Metropolitan Transportation Authority, White Plains and Harlem, NY. Survey Manager. Erdman Anthony was contracted to perform site surveying and scanning services of the existing stations as part of a multi-station improvements program. As these facilities were required to be running 24/7 for commuter traffic, the team was deployed to gather existing conditions of the platforms, the stations (inside and out) and the track location. This scan data was "tied" to the conventional survey work being performed simultaneously on site. Additional scan data was collected on the underside of the railroad bridges above the surface streets. The final deliverable to the designers was a scrubbed, registered point-cloud of the scan data. As this data was all geospatially related to the ground survey, the designers were able to use the data to construct a 3d design file of the facilities.

Hoosick Junction Expansion, Pan Am Southern, Hoosick, NY. Survey Manager. The $7 million NYSDOT-funded project provides expanded capacity and improved mobility through the main interchange point between Pan Am Southern and the Vermont Railway. Phase 1 of the project is currently under construction and consists of two new 2,500-ft interchange tracks that will more than quadruple the storage capacity. Phase 2 of the project will construct nearly two miles of new mainline track and completely upgrade the signal system at the interchange to improve capacity and safety. Responsible for oversight of field work, boundary research, and preparation of mapping and DTM for the 1.5-mile corridor.

Inland Port of Naugatuck Intermodal Terminal, Pan Am Southern, Naugatuck, CT. Survey Manager. Erdman Anthony provided preliminary engineering services for the development of a new container terminal for PAS in partnership with various public agencies. The design includes two Intermodal Tracks, each with a capacity of 3,500 feet to be worked by reach stackers. The plans include full buildout of the site including fencing, retaining walks, security, access roads, utilities, storm drainage, terminal facilities, support buildings, and high mast lighting. Responsible for coordination with Metro-North Railroad, oversight of field work, compilation of LiDAR data, and preparation of mapping and DTM for improvements over a 2-mile right-of-way corridor and adjacent 10-acre parcel.

Newton Falls Branch Rehabilitation, MHWA, Jefferson, Lewis & St. Lawrence County, NY. ***Survey Manager.*** This $11.1 million state- and federal-aid project involved the reactivation of a 46.25-mile corridor operated by the Mohawk, Adirondack & Northern Railroad. The corridor had been out of service for 16 years and was reactivated to provide rail access to a mill site and aggregate processor. The project included inspection, load rating, and repair design of 37 undergrade bridges, reconstruction of 2 public and 28 private grade crossings, washout repair, replacement of 45,000 ties, lining, and surfacing of the entire corridor. Responsible for oversight of project scoping, rehabilitation planning, engineering, and construction phase services. Responsible for oversight of field work, boundary research, and preparation of mapping and DTMs for improvements at one grade crossing and 14 bridge and culvert sites.

Massena Industrial Park Rail Access, Massena BDC, Massena, NY. ***Survey Manager.*** This state- and federal-aid project constructed a 1,960-foot spur and track scale to serve five lots within the industrial park. The project will initially serve a wood pellet manufacturer, wood fiber producer, and public transload facility. Future phases will serve a soybean processing plant and expand the public transload. Responsible for all engineering, permitting, coordination with NYSDOT, CSX, and the industries, grant writing and administration, and construction inspection and support. Responsible for oversight of field work, boundary research, preparation of mapping and DTM, and stakeout of improvements for construction.

Waverly Trade Center Rail Transload, Tioga County IDA, Waverly, NY. ***Survey Manager.*** This project involved preliminary engineering to provide rail access to a 35-acre site and 150,000-square-foot building. Over 20 alternative alignments ranging up to 4,000 track feet were studied to obtain optimum configuration and multimodal accessibility. The site includes open areas for transloading of pipe and timber to trucks, and an automobile unloading facility capable of staging up to 12 cars, and a new grade crossing of a county road with active warning devices. Responsible for oversight of field work, boundary research, preparation of mapping and DTM, and stakeout of improvements for construction.

Newton Falls Branch Grade Crossings – Phase 3, MHWA, Jefferson & St. Lawrence County, NY. ***Survey Manager.*** The state- and federal aid project involves the reconstruction of 10 public grade crossings and replacement of passive warning devices at 35 other public grade crossings over a 46.25-mile corridor. The reconstruction consists of new ballast base, underdrains, ties, and welded rail throughout the crossing and approaches. Responsible for oversight of field work, research, and preparation of mapping and DTM.

Prospect Street Grade Crossing, MHWA, Remsen, NY. ***Survey Manager.*** The project involves the reconstruction of a failed rubber crossing with a new precast modular system and welded rail, sidewalk and sign improvements. A closed drainage system from the state highway will also be reconstructed and outlet to a new location. Responsible for oversight of field work, research, and preparation of mapping and DTM.

Benson Mines Rail Access, Benson Mines, Inc., Star Lake, NY. ***Survey Manager.*** This project includes preliminary engineering to reestablish rail access to the 3,000 acre mine site. Three tracks totaling 5,921 TF were inspected to determine the repairs required to reinstate service in accordance with FRA standards for Class 1 track. Conceptual improvements were also provided for rationalization of the existing track and construction of a three-track yard to provide adequate storage capacity. Responsible for oversight of field work, research, and preparation of mapping and DTM.

Massena Siding, CSX Real Property/RailWorks, St. Lawrence County, NY. ***Survey Manager.*** The project involves construction of a new mainline for CSX Transportation's St. Lawrence Subdivision and conversion of the existing mainline to a 10,000-foot clear siding. Work included field survey, preparation of ALTA/ACSM Land Title Surveys, and stakeout for the acquisition of right-of-way from 13 parcels. Stakeout of
the improvements was also performed during construction. The project was completed on a fast-tracked, 4-month schedule.

Tisdel Associates
CONSULTING ENGINEERS

August 22, 2022

Ogdensburg Bridge and Port Authority
1 Bridge Plaza
Ogdensburg, New York 13669

ATTN: Mr. Steve Lawrence
Executive Director

RE: Ogdensburg Bridge and Port Authority
Ogdensburg, New York
Border Station Pavement Re-surfacing

Mr. Lawrence:

Tisdel Associates was requested to evaluate the condition of the existing asphalt pavement from the toll booth to the bridge at the Ogdensburg Border Station. This letter will describe our findings and provide a budgetary cost estimate for our recommended improvements.

On Wednesday August 3, 2022 Darren LeBlanc and I met with you and your staff to review the existing site. On August 16, 2022 Darren LeBlanc conducted a further review of the condition of the existing pavement. The existing asphalt surface is in generally poor condition with widespread cracking throughout. The cracks range in width/ depth but mainly occur in the top 1" of the pavement. The existing asphalt pavement system generally consists of 1 1/2"of NYSDOT Type 6 top, 2" of NYSDOT Type 3 binder, 3" of NYSDOT Type 1 base, 12" of NYSDOT 2" minus crushed stone, and a nonwoven geotextile. There are several locations where the asphalt has deteriorated significantly more than the rest of the site as evidenced by large cracks and potholes. Additionally we observed that the pavement leading up to the border station booths and the exit path out of the VACIS building are heavily deteriorated as evidenced by cracks and depressions with depths greater than 3" in some locations. It is our understanding that lane 1 experiences significantly more traffic than the other lanes. The exit path for the VACIS building requires the trucks to make sharp turns on the pavement which causes additional wear on the asphalt.

It is our recommendation that area 1 (208,400 SF, see plans) be resurfaced. This would involve milling the existing asphalt down approximately 2", applying an asphalt emulsion tack coat to the milled surface and resurfacing with a 2" layer of new NYSDOT type 6 asphalt. There are a few locations (area 2, 11,550 SF) as shown on the plan that will require a complete pavement replacement. This would involve removing the existing three-layer pavement system and replacing it with a new pavement system that consists of 1 1/2"of NYSDOT type 6 top, 2" of NYSDOT type 3 binder, and 3" of NYSDOT type 1 base. Due to the additional wear and tear on area No. 3 (24,550 SF), we believe it is appropriate that the existing asphalt pavement be removed and replaced with concrete pavement (see detail on sheet S-4).

Founder
Joseph E. Tisdel, P.E. & L.S.
(1930 - 2002)

Principals
Michael J. Christy, P.E.
Aaron B. Jarvis, P.E.

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We have requested Budget pricing from a local contractor (J.E Sheehan Contracting Corp.) and they have provided us with the following estimates:

Area No.	Description	Area (SF)	Unit Cost	Total
1	Pavement Resurface	208,400	$3.00	$625,200
2	Asphalt Pavement Replacement	11,550	$8.00	$92,400
3	New Concrete Pavement	24,550	$50.00	$1,227,500
			Total Estimated Cost	**$1,945,100**

The estimates provided are based on August 2022 prices and does not include any indirect costs associated with design, bidding, and construction. It is difficult to judge how the market will look in the future so it should be expected that these prices will vary over time.

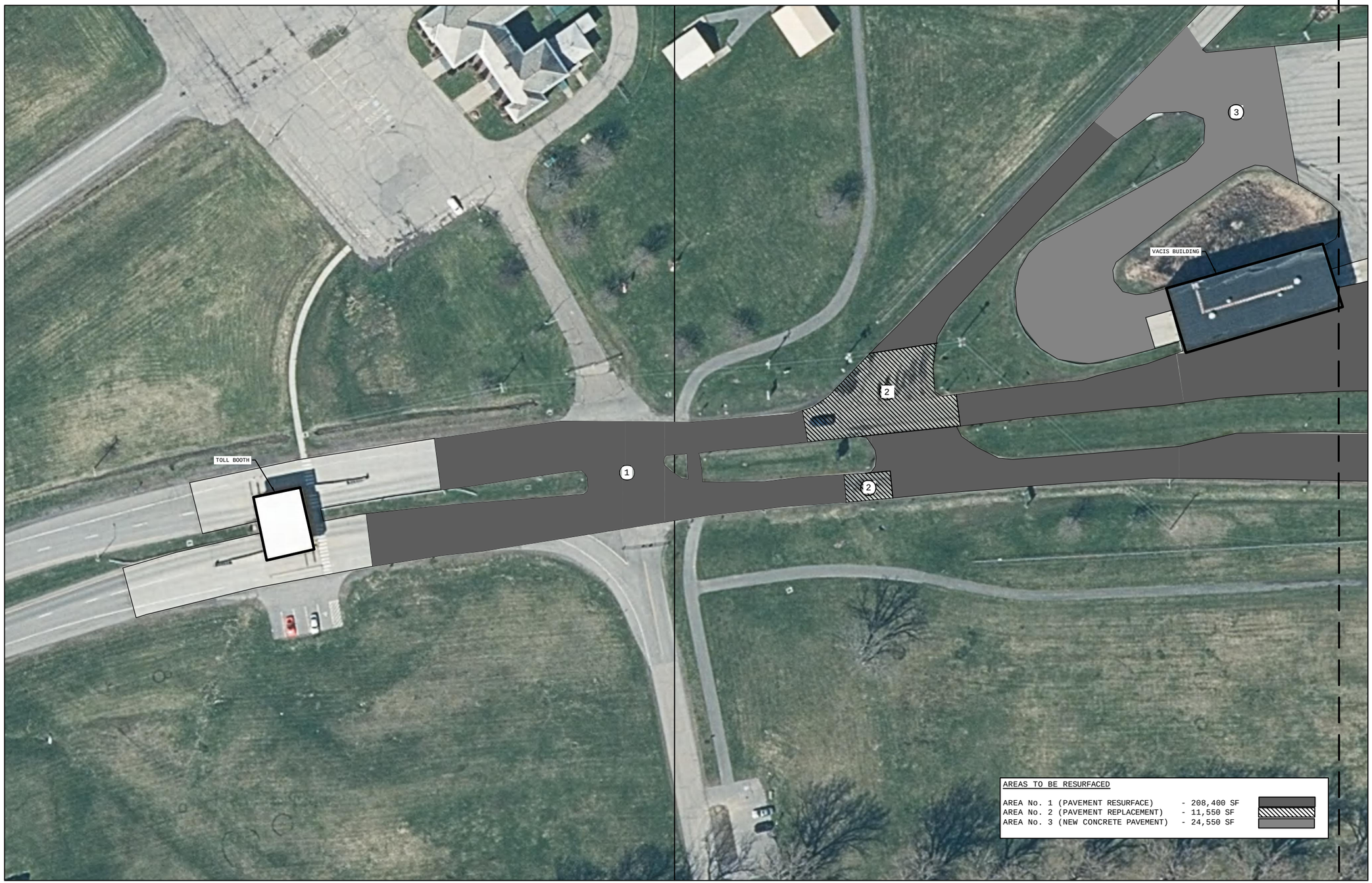
The cost of the Portland Cement Concrete (PCC) pavement for the area leaving the VACIS building is significant, but we feel this would provide the best pavement longevity given the extreme wear caused by the sharp turns required by the heavy truck traffic. Alternately, you could utilize a full depth pavement replacement. This would greatly reduce the cost but will significantly reduce the longevity of the pavement. We anticipate the PCC pavement life to be 2-3 times that of the asphalt system.

Please feel free to contact the undersigned at 315-386-8542 or ajarvis@tisdelassociates.com if you have any additional questions or comments.

Respectfully submitted
TISDEL ASSOCIATES

ABJarvis

Aaron B. Jarvis, P.E.
Principal Engineer



AREAS TO BE RESURFACED

AREA No. 1 (PAVEMENT RESURFACE)	-	208,400 SF
AREA No. 2 (PAVEMENT REPLACEMENT)	-	11,550 SF
AREA No. 3 (NEW CONCRETE PAVEMENT)	-	24,550 SF

40 0 40 80 120

SCALE IN FEET

S-2

Tisdel Associates
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REV	DATE	DESCRIPTION

DRAWN	DML
CHECKED	xxx
DATE	August 2022
PROJECT	22-54

OGDENSBURG PORT AUTHORITY

OGDENSBURG NEW YORK

AERIAL PLAN

SHEET
S-1
1 OF 4

40 0 40 80 120

SCALE IN FEET

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AERIAL PLAN

SHEET

S-2

S-2

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SCALE IN FEET

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AERIAL PLAN

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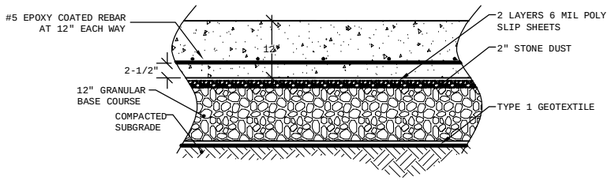
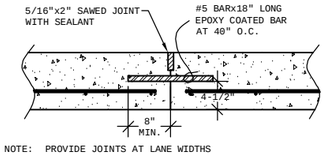
S-3



NOTE: PROVIDE TRANSVERSE TINED FINISH IN ACCORDANCE WITH NYSDOT SPECIFICATIONS.

TYPICAL PORTLAND CEMENT CONCRETE PAVEMENT SECTION

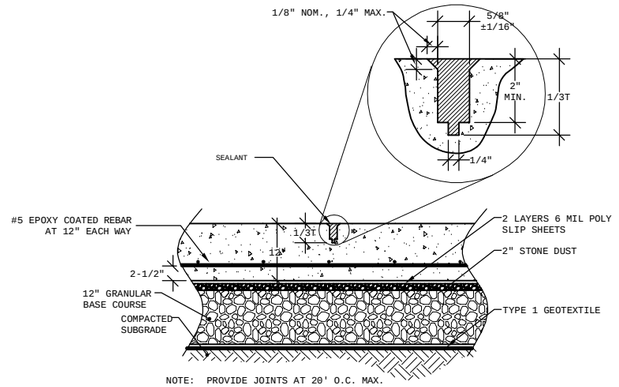
N.T.S.



NOTE: PROVIDE JOINTS AT LANE WIDTHS

PORTLAND CEMENT CONCRETE LONGITUDINAL CONSTRUCTION JOINT

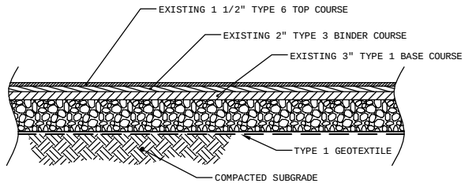
N.T.S.



NOTE: PROVIDE JOINTS AT 20' O.C. MAX.

PORTLAND CEMENT CONCRETE TRANSVERSE CONTRACTION JOINT

N.T.S.



NOTES:

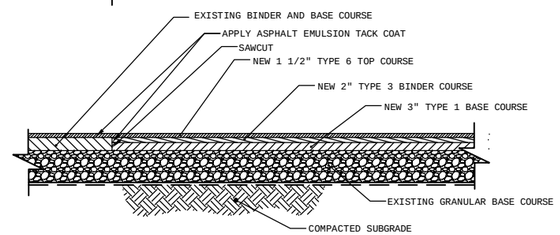
1. THE EXISTING ASPHALT PAVEMENT SHALL BE MILLED TO A DEPTH OF 2" ± AND REPLACED TO MATCH THE EXISTING PROFILE WITH NEW NYSDOT TYPE 6 HOT MIX ASPHALT TOP COURSE.

2. APPLY ASPHALT EMULSION TACK COAT ON THE MILLED SURFACE.

PAVEMENT RESURFACING DETAIL

N.T.S.

RESURFACED PAVEMENT SECTION | PAVEMENT REPLACEMENT SECTION



PAVEMENT REPLACEMENT DETAIL

N.T.S.

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PAVEMENT DETAILS
AND NOTES

SHEET

S-4

4 OF 4