Cantilever Sidewalk Project: Wilson-Burt Bridge. Niagara, NY.

Composite Advantage

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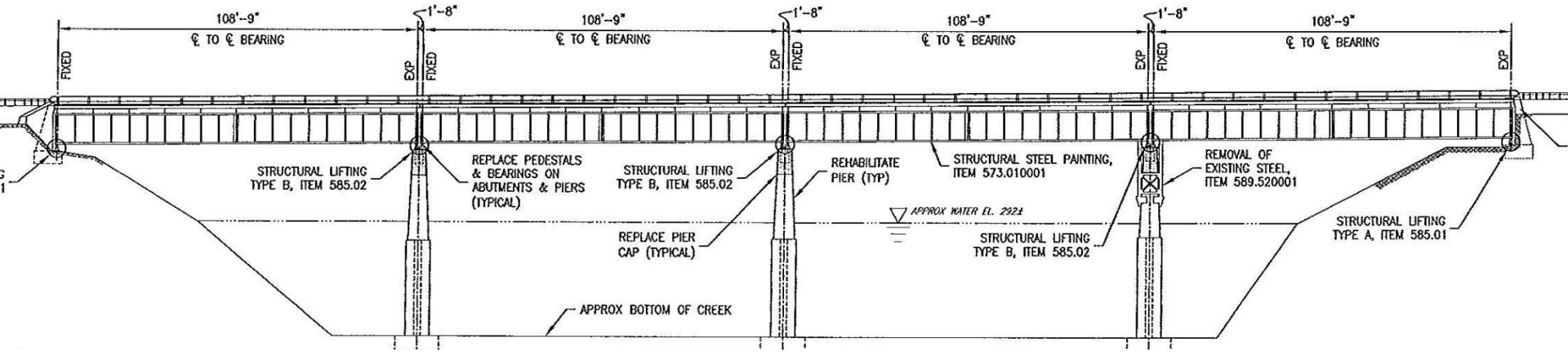
Dayton, Ohio 937-723-9031 www.compositeadvantage.com

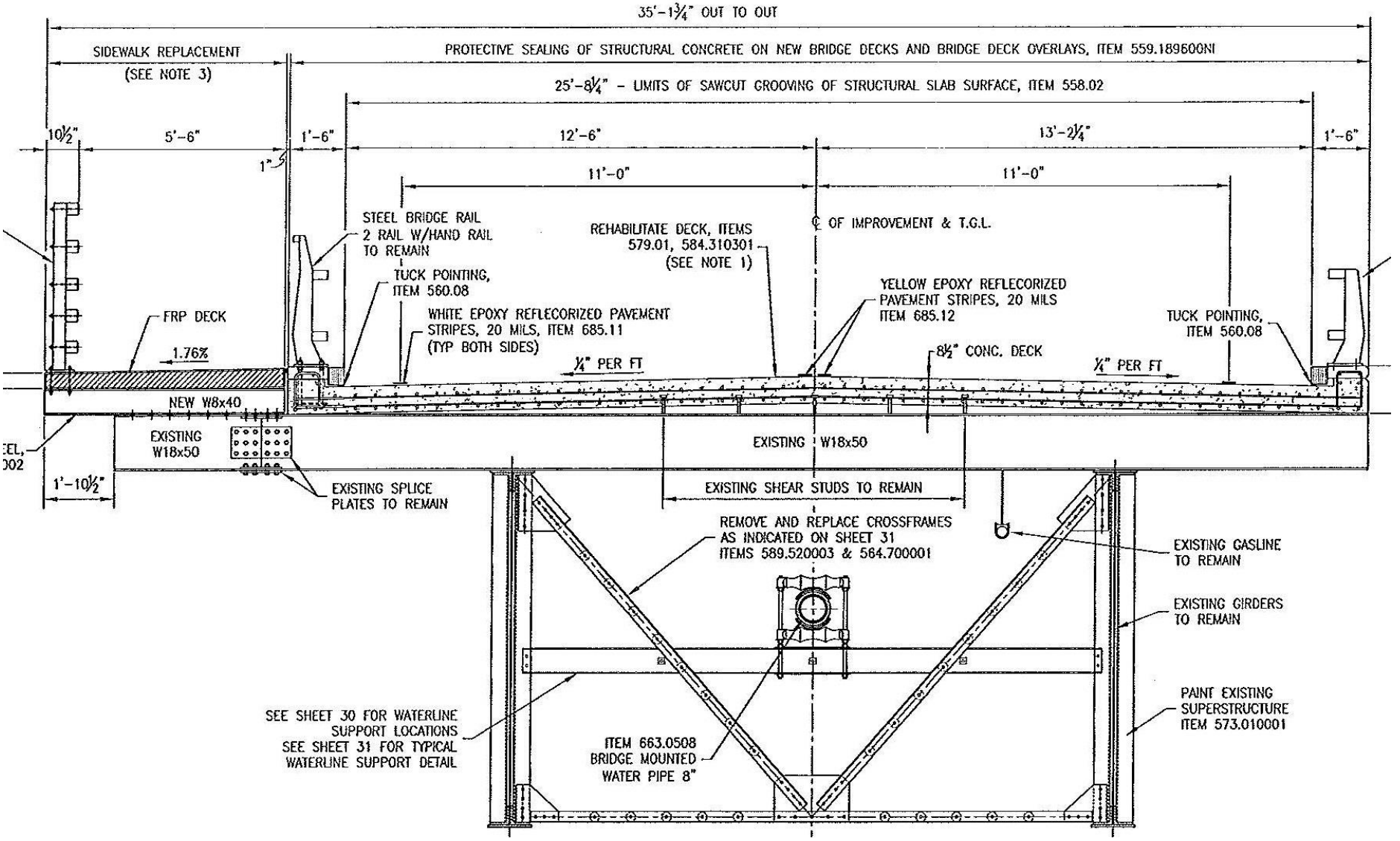
Cantilever Example: Niagara, NY

Wilson-Burt Bridge

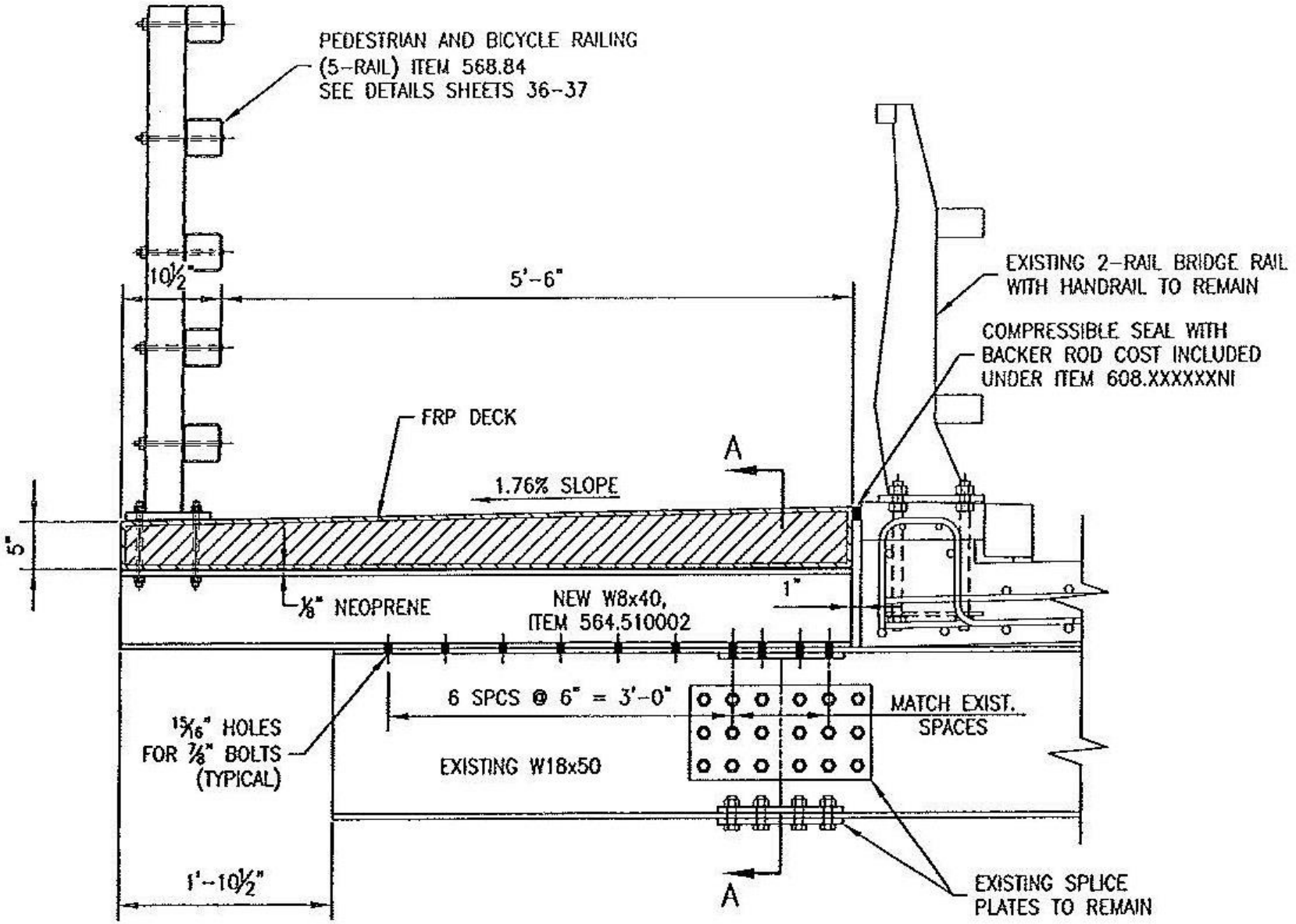
- Owner: Niagara County, NY
- Designer: GPI, Buffalo
- Bridge length of 441 ft
- Sidewalk width of 6 ft - 4 in



Full Bridge Cross Section



New Sidewalk Section



Design Requirements

- Loads
  - Live load of 85 psf
  - Deflection limits of L/500 between supports
  - Uplift load of 30 psf
  - Temperature differential of 100ºF
- Geometry
  - Floor beam spacing of 10 ft – 10 in
  - Cross slope of 1.76%
  - Rail posts through-bolted to floor beams
  - Expansion plates at bridge ends

First panel installed on Wilson-Burt Bridge cantilever sidewalk

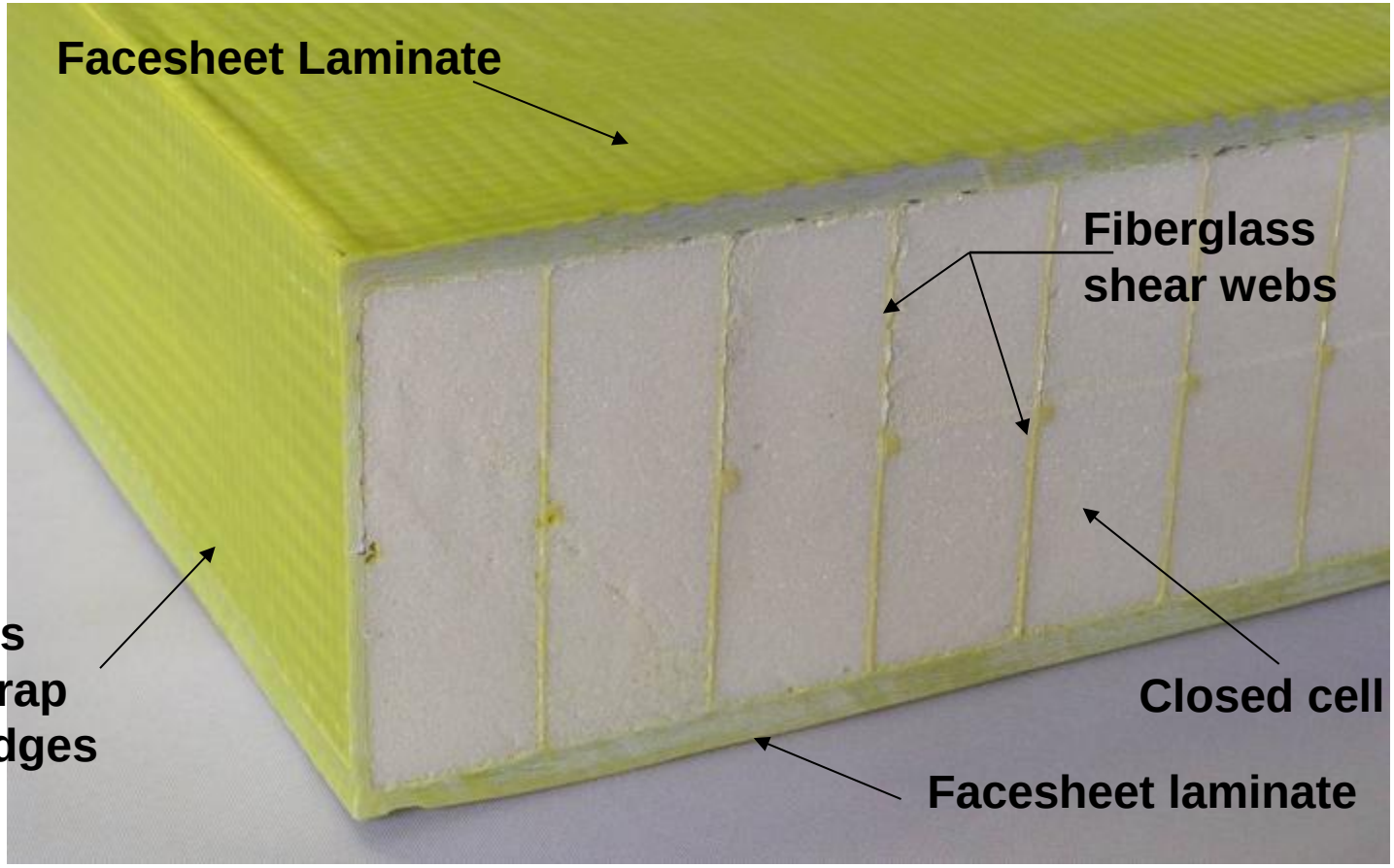
FRP Deck Panels

- Length of 21 ft - 8 in
- Width of 76 in
- Depth of 6.375 in sloping to 5
- Non-slip wear surface
- Weight is 7.9 psf
- Numbered for

easy assembly

FRP Composite Sandwich Construction

- Facing skins on fiberglass webs in foam core
- Allows for design flexibility (stiffness, strength, size)
- Embedded steel for concentrated loads and attachments



Deck Connection: Clips

- Mechanical connection
- Clips to capture any type of beam
- Provides vertical constraint; allows for longitudinal thermal expansion
- Bolted into embedded steel that is drilled and tapped

Cantilever Bridge Weight

- Sidewalk Width 6.375 ft
- Deck Weight 7.9 psf
- Deck Weight 50.4 lb/ft
- Railing Weight 54.0 lb/ft
- Steel Weight 54.0 lb/ft

- Total Dead Load 158 lb/ft
- Total Live Load (5.5 ft usable width) 467 lb/ft
- Total Structural Load 626 lb/ft

- For 440 ft length,
  - Dead Load 69,680 lb
  - Structural Load 275,380 lb

Final panel placement for Wilson-Burt Bridge cantilever sidewalk

FRP is a Good Market Fit for Pedestrian Bridges

- Benefits are overcoming barrier of slightly higher FRP material cost
  - Lightweight; customizable design features
  - Construction cost reductions
  - Superstructure cost reductions

- Cantilever sidewalk
  - Addresses current need for pedestrian and bicycle access
  - Can be the most cost effective solution
  - Cost and weight estimates to support design evaluations

Additional Information

For **design and price estimates**, send us your requirements, or contact us anytime with questions.

- Email info@compositeadvantage.com
- Submit a web form at www.compositeadvantage.com/contact
- Call (937) 723-9031

Our FRP bridge products are **manufactured in Dayton, Ohio** using domestic source materials.

For **installation** photos and videos, visit

- www.compositeadvantage.com
- www.youtube.com/CompositeAdvantage

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