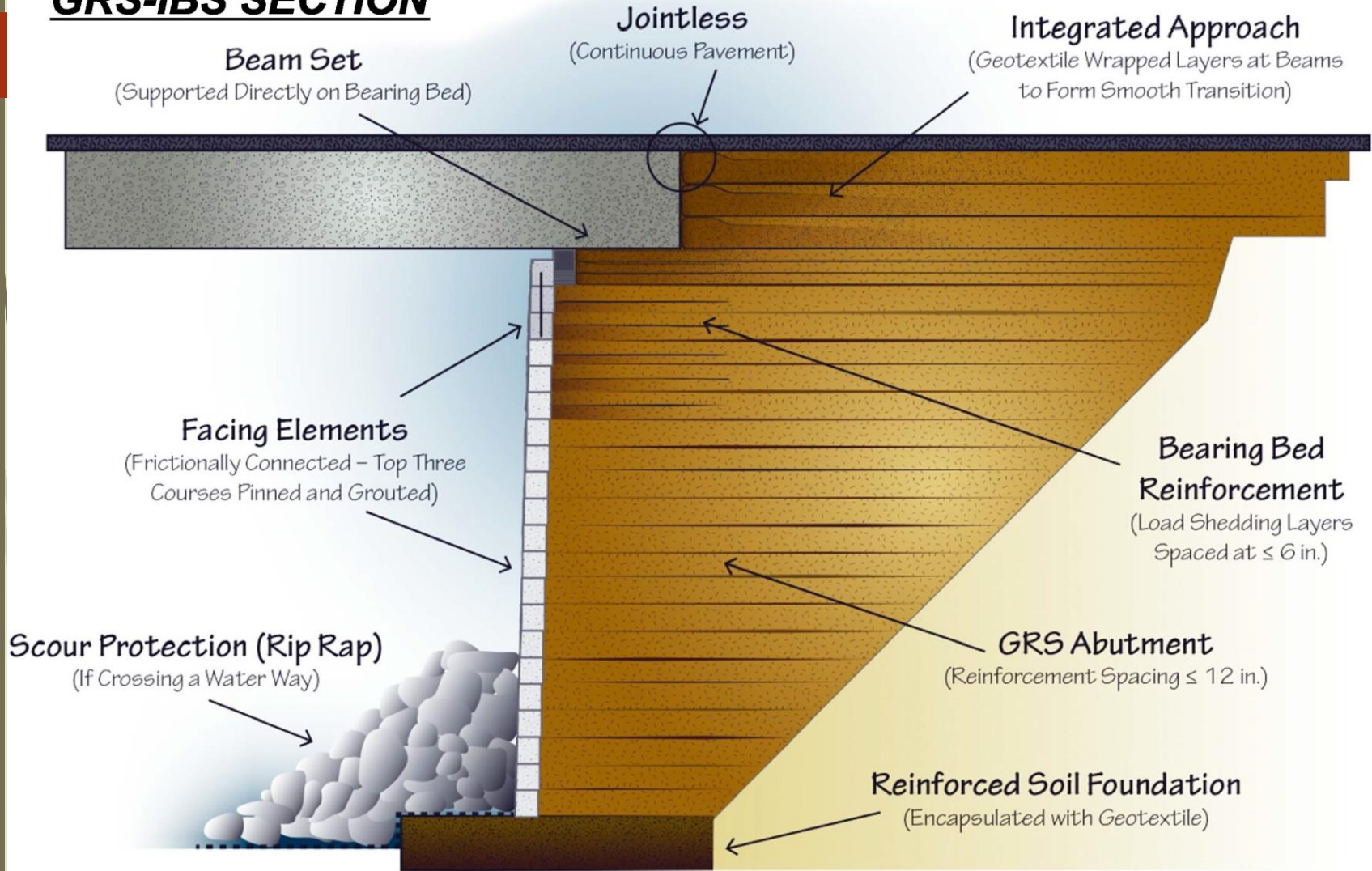


GRS-IBS SECTION



GRS-IBS
Structures
Midland
County
Road
Commission





Midland CRC

7 GRS-IBS bridges built – More planned

- 2016 Construction
 - West River at Black River
 - Jefferson at Herner Drain
 - Castor at NB Carroll Cr.
- 2017 Construction
 - Poseyville at Jo Drain
 - Shaffer at Bliss Cr.
 - 9 Mile at SB Carroll Cr.
 - 9 Mile at NB Carroll Cr.
- Future
 - 4 more bridges in various states of design, planned for next 2 years.

West River at Black Creek



25 mile
detour for
entire west
side of
Sanford Lake

West River at Black Creek



West River at Black Creek

4 weeks - closure to open, \$550,000 contractor built



Jefferson at Herner Drain



\$240,000 built
by MCRC
forces
(includes
labor,
materials,
and equip.
rental)

Jefferson at Herner Drain



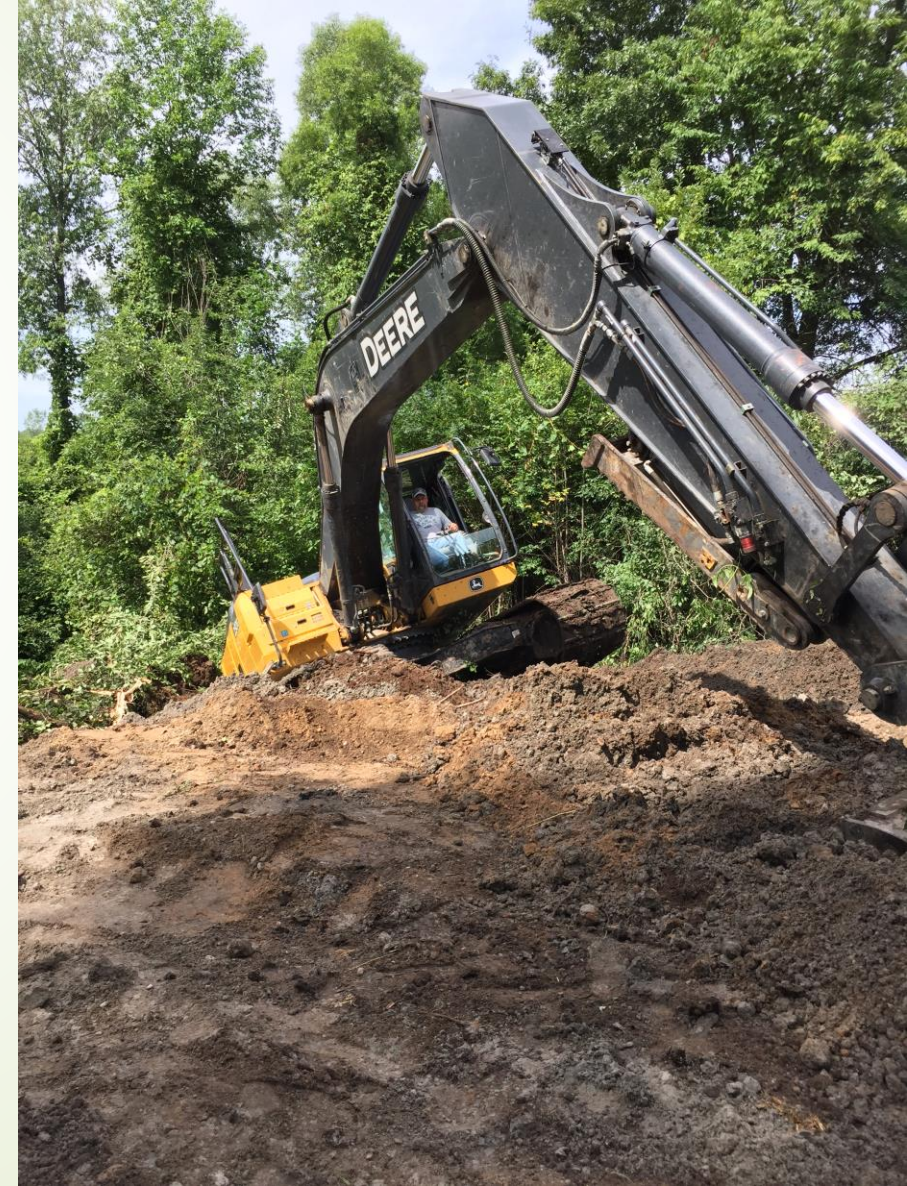
Jefferson at Herner Drain

Treated Glu-Lam
/Stress-Lam Timber
Superstructure



Castor at NB Carroll Creek

\$210,000 built by MCRC forces
(includes labor, materials, and
equip. rental)



Castor at NB Carroll Creek

DEQ
Golden Bridge



June 2017 Flood Event



Poseyville at Jo Drain



Poseyville at Jo Drain

\$440,000 - Contractor built in 4 weeks



9 Mile at SB Carroll Creek



9 Mile at SB Carroll Creek



Let the rains come again –
No impact to partially constructed abutments.

9 Mile at SB Carroll Creek

Water went down, back to work. Only loss was time.



9 Mile at SB Carroll Creek



\$435,000 -
Contractor
built in 5
weeks

9 Mile at NB Carroll Creek

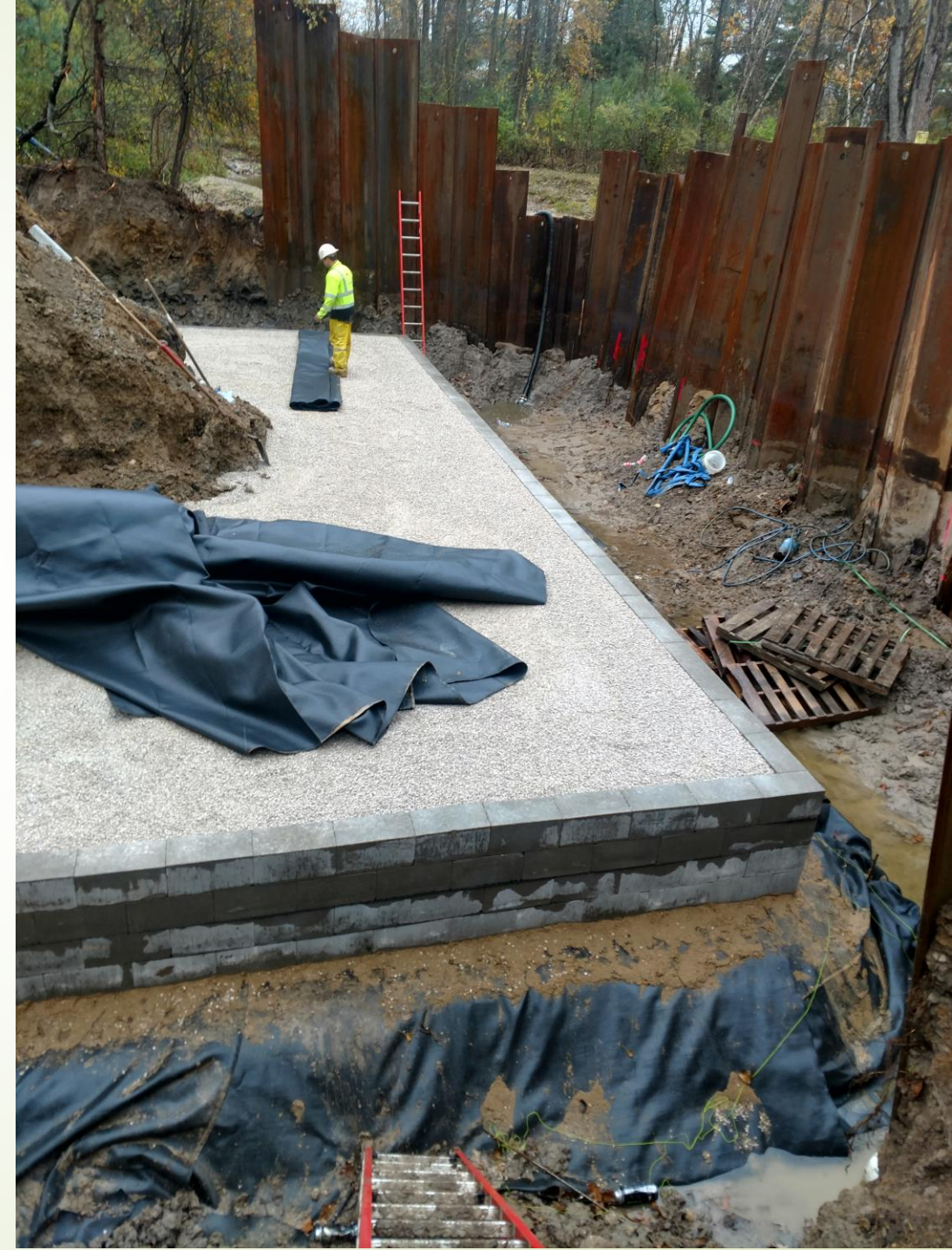


9 Mile at NB Carroll Creek



\$435,000 -
Contractor
built in 4
weeks

Shaffer at Bliss Creek



Shaffer at Bliss Creek

Note – added floating debris protection

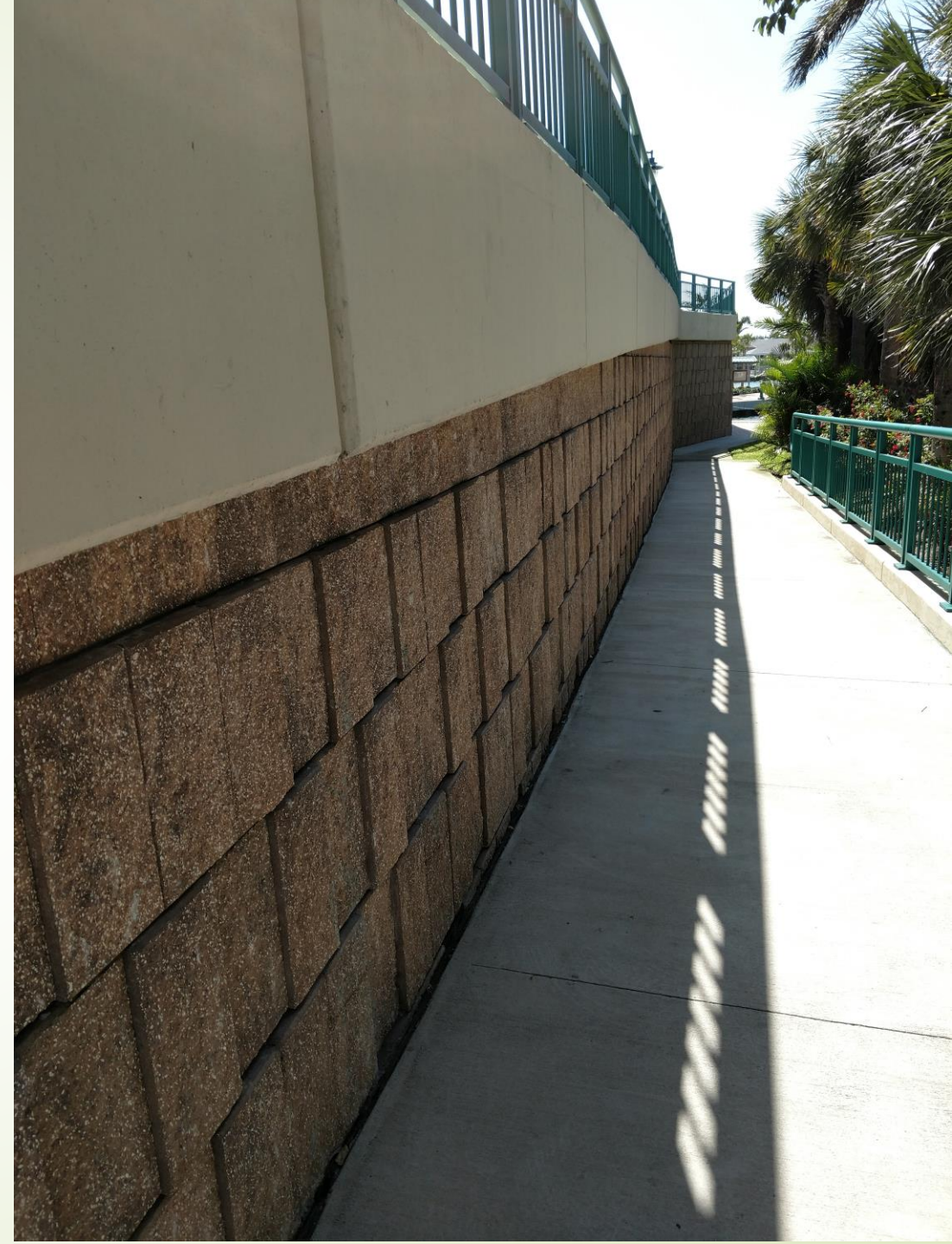
\$500,000 -
Contractor
built in 4
weeks



Marco Island, Florida



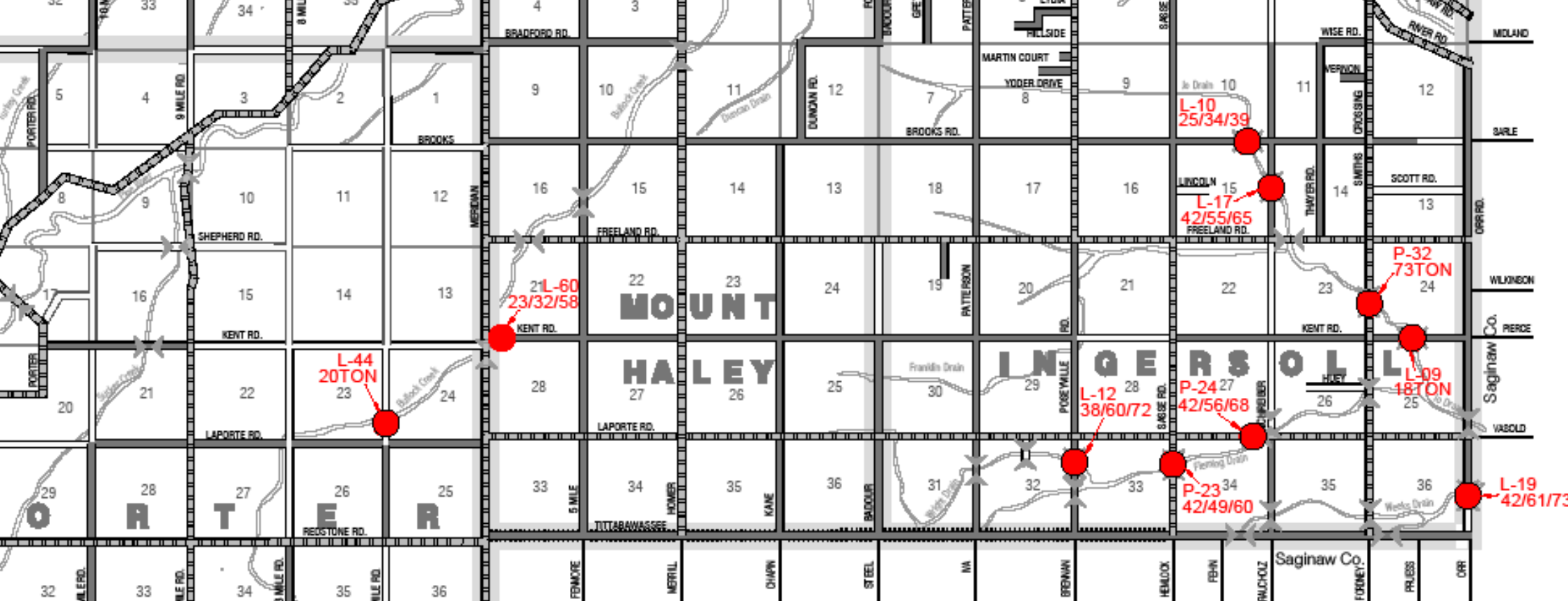
Hurricane Tested



Lifespan Technology

- Grant Soy Bean Assoc. \$10,000
- Peak Strain Gage
- Manual Reset





HIGHWAY MARKERS

- State Trunkline
- U.S. Routes
- State Routes
- Bridges

LEGEND ± MIDLAND COUNTY MAP

COUNTY PRIMARY ROADS

- Hard Surface
- Gravel
- Private Drives

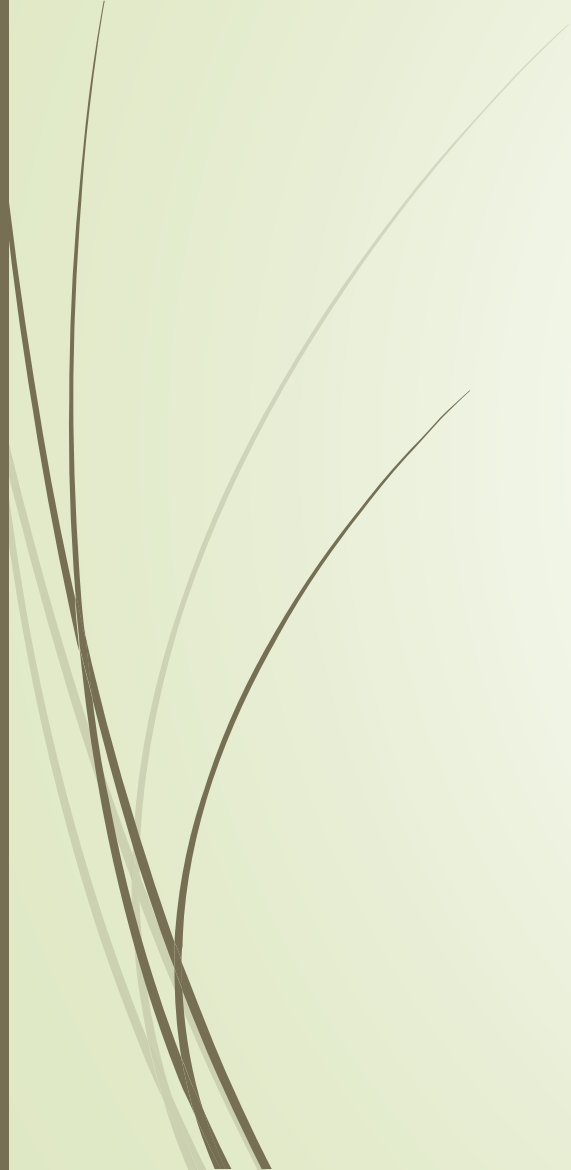
COUNTY LOCAL ROADS

- Paved
- Gravel
- Earth

Midland County Map Published by Midland County Road Commission, Sanford, MI 48657, 1999

BRIDGE - LOAD RESTRICTION





Load Testing



Data Collection

- Known Truck Data w/ Actual Strain Data vs. AASHTO Calc'd Strain
- Refines Distribution Factors that can be applied to Standard Trucks



Findings

- 3 Bridges Analyzed in 2017
- In all cases: Actual Data allowed for increase or elimination of Limits
- Significant improvement to System
- More options for Farmers and Trucking

