

The National Bridge Inventory contains data submitted by state transportation departments to the Federal Highway Administration in coded format.  
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**Basic Information**

|   |                           |   |                            |                                       |                              |
|---|---------------------------|---|----------------------------|---------------------------------------|------------------------------|
| Ohio [39]                                   | Lucas County [095]        | Toledo [77000]                              | E. OF ERAWA                | 41-36-23.37 =<br>41.606492            | 083-35-45.06<br>= -83.595850 |
| 4861035                                     | Highway agency district 2 | Owner City or Municipal Highway Agency [04] | Maintenance responsibility | City or Municipal Highway Agency [04] |                              |
| Route #Num!                                 | MARENGO STREET            | Toll On free road [3]                       | Features intersected       | RAVINE TO DELAWARE CREEK              |                              |
| Design - main                               | Steel [3]                 | Design - approach                           | Kilometerpoint             | 0 km = 0.0 mi                         |                              |
| 3   | Arch - Deck [11]          | 0 Other [00]                                | Year built                 | 1915                                  | Year reconstructed 1973      |
|   |                           |   | Skew angle                 | 0                                     | Structure Flared             |
|   |                           |   | Historical significance    | Bridge is eligible for the NRHP. [2]  |                              |
| Total length                                | 53.3 m = 174.9 ft         | Length of maximum span                      | 25.9 m = 85.0 ft           | Deck width, out-to-out                | 9.3 m = 30.5 ft              |
| Inventory Route, Total Horizontal Clearance | 6.2 m = 20.3 ft           | Curb or sidewalk width - left               | 0 m = 0.0 ft               | Curb or sidewalk width - right        | 0 m = 0.0 ft                 |
| Deck structure type                         | Corrugated Steel [6]      |   |                            |                                       |                              |
| Type of wearing surface                     | Bituminous [6]            |   |                            |                                       |                              |
| Deck protection                             |                           |   |                            |                                       |                              |
| Type of membrane/wearing surface            |                           |   |                            |                                       |                              |

**Weight Limits**

|                       |                                      |                          |                  |                             |
|-----------------------|--------------------------------------|--------------------------|------------------|-----------------------------|
| Bypass, detour length | Method to determine inventory rating | Allowable Stress(AS) [2] | Inventory rating | 11.3 metric ton = 12.4 tons |
| 0.2 km = 0.1 mi       | Method to determine operating rating | Allowable Stress(AS) [2] | Operating rating | 16.8 metric ton = 18.5 tons |
|                       | Bridge posting                       | 30.0 - 39.9 % below [1]  | Design Load      | M 9 / H 10 [1]              |

### Functional Details

Average Daily Traffic  Average daily truck traffi  % Year  Future average daily traffic  Year

Road classification  Lanes on structure  Approach roadway width

Type of service on bridge  Direction of traffic  Bridge median

Parallel structure designation

Type of service under bridge  Lanes under structure  Navigation control

Navigation vertical clearanc  Navigation horizontal clearance

Minimum navigation vertical clearance, vertical lift bridge  Minimum vertical clearance over bridge roadway

Minimum lateral underclearance reference feature

Minimum lateral underclearance on right  Minimum lateral underclearance on left

Minimum Vertical Underclearance  Minimum vertical underclearance reference feature

Appraisal ratings - underclearances

### Repair and Replacement Plans

Type of work to be performed

Work done by

Bridge improvement cost  Roadway improvement cost

Length of structure improvement  Total project cost

Year of improvement cost estimate

Border bridge - state  Border bridge - percent responsibility of other state

Border bridge - structure number

## Inspection and Sufficiency

|   |  |                                       |  |
|---|--|---------------------------------------|--|
| Structure status                                  | Posted for load [P]  | Appraisal ratings - structural        | Meets minimum tolerable limits to be left in place as is [4]           |
| Condition ratings - superstructure                | Poor [4]   | Appraisal ratings - roadway alignment | Equal to present minimum criteria [6]                                  |
| Condition ratings - substructure                  | Poor [4]   | Appraisal ratings - deck geometry     | Basically intolerable requiring high priority of corrective action [3] |
| Condition ratings - deck                          | Poor [4]   |                                       |  |
| Scour   | Bridge foundations determined to be stable for the assessed or calculated scour condition. [8]   |                                       |  |
| Channel and channel protection                    | Bank protection is in need of minor repairs. River control devices and embankment protection have a little minor damage. Banks and/or channel have minor amounts of drift. [7] |                                       |  |
| Appraisal ratings - water adequacy                | Superior to present desirable criteria [9]   | Status evaluation                     | Structurally deficient [1]   |
| Pier or abutment protection                       |  | Sufficiency rating                    | 20.3   |
| Culverts  | Not applicable. Used if structure is not a culvert. [N]  |                                       |  |
| Traffic safety features - railings                |  |                                       |  |
| Traffic safety features - transitions             | Not applicable or a safety feature is not required. [N]  |                                       |  |
| Traffic safety features - approach guardrail      | Not applicable or a safety feature is not required. [N]  |                                       |  |
| Traffic safety features - approach guardrail ends | Not applicable or a safety feature is not required. [N]  |                                       |  |
| Inspection date                                   | October 2013 [1013]  | Designated inspection frequency       | 12 Months  |
| Underwater inspection                             | Not needed [N]   | Underwater inspection date            |  |
| Fracture critical inspection                      | Every year [Y12]   | Fracture critical inspection date     | January 2012 [0112]  |
| Other special inspection                          | Not needed [N]   | Other special inspection date         |  |

Structure File Number: 4861035

Inventory Bridge Number: LUC M0870 10500 N

BR. Type: STEEL/TRUSS/DECK

Sufficiency Rating: 022.0 SD

## ROUTE CARRIED "ON" THE STRUCTURE RAVINE TO DELAWARE CREEK

Date of Last Inventory Update:

|   |  |   |   |
|---|--|---|---|
| District: 02  | County: LUCAS                            | (101) Location: E. OF ERAWA                       | (102) Facility Carried: MARENGO STREET                  |
| (2) FIPS Code: LUC-M-77000-TOLEDO   |  | (103) Route On Bridge: MUNICIPAL                  | (104) Route Under Bridge: NON HIGHWAY TRAFFIC ON BRIDGE |
| (9) Direction of Traffic: 2-WAY TRAFFIC   | (10) Temporary:                          | (11) Truck Network: N                             | (12) Parallel: N  |
|   |  | (100) Type Serv: (On): HIGHWAY                    | (Under): WATERWAY                                       |
| <b>Inventory Route Data</b>   |  |   |   |
| (3) Route On/Under: ROUTE CARRIED "ON" THE STR Hwy Sys: MUNICIPAL STREET (I.E. VILL |  | (63) Main Spans Number: 3                         | Type: STEEL/TRUSS/DECK                                  |
| Route No: M0870   | Dir: NOT APPLICABLE                      | Des: MAINLINE                                     | Pref: N   |
| (4) Feature Intersected: RAVINE TO DELAWARE CREEK                                   |  | Approach Spans Number: 0                          | Type: NONE/NONE/NONE                                    |
| (5) County: TOL   | Mileage: 10500                           | Special Desig: N                                  |   |
| (6) Avg. Daily Traffic(ADT): 500  |  | (7) ADT Year: 1997                                |   |
| (8) Truck Traf: 10  | (14) NHS: NON-NHS BRIDG                  | (15) Corridor: N                                  |   |
| (16) Functional Class: URBAN - LOCAL  | (19) Strahnt: NOT STRAHNET               |   |   |
| <b>Intersected Route Data</b>   |  |   |   |
| (22) Route On/Under:  | Hwy Sys:                                 | No of Piers Predominate:                          |   |
| Route No:   | Dir:                                     | Des:  | Pref:   |
| (23) Feature Intersected:   |  | Other:  |   |
| (24) County:  | Mileage: 0000                            | Special Desig:                                    |   |
| (25) Avg. Daily Traffic(ADT):   |  | (26) ADT Year:                                    |   |
| (27) Truck Traf:  | (28) NHS: -                              | (29) Corridor: N                                  |   |
| (30) Functional Class:  | (36) Strahnt:                            |   |   |
| <b>Clearance On the Bridge</b>  |  |   |   |
| (154) Min. Hriz on Bridge:  | NC: 0.0                                  | Card: 20.1 Ft                                     |   |
| (155) Prac Max Vert On Brq:   | 9999.9 Ft                                |   |   |
| (67) Min Vrt Clr On Brq:  | NC: 0.0                                  | Card: 9999.9 Ft                                   |   |
| (80) Min Latl Clr:  | NC: 0.0/0.0 Ft                           | Card: 0.0/0.0 Ft                                  |   |
| (81) Vrt Clr Lft:   | 0.0 Ft                                   |   |   |
| <b>Structure Information</b>  |  |   |   |
| (38) Bypass Length: 01 Miles  |  |   |   |
| (39) Latitude: 41 Deg 36 Min 23.43 Sec  | Longitude: 83 Deg 35 Min 44.99 Sec       |   |   |
| (40) Toll: ON FREE ROAD, THE STRUCTU  |  |   |   |
| (41) Date Built: 7/1/1915   | (42) Major Rehabilitation: 1/1/1973      |   |   |
| (43) No. Lanes On: 2  | No. Lanes Under: 0                       |   |   |
| (44) Horiz Curve:   | (45) Skew: 0 Deg                         |   |   |
| (49) App. Rdw Width: 22 Ft  | (50) Brg. Rdw Width: 22.0 Ft             |   |   |
| (51) Deck Width: 22.0 Ft  | Deck Area: 3850 Sq. Ft                   |   |   |
| (52) Median Type: NONE/NON BARRIER/NO JOINT   |  |   |   |
| (53) Bridge Median: NO MEDIAN   |  |   |   |
| (54) Sidewalks:   | (left) 0.0 Ft                            | (right) 0.0 Ft                                    |   |
| (55) Type Curb or Sidewalks:  |  |   |   |
| (Left) Matl: NONE   | Type: NONE OR N/A (RR, PEDESTRIAN, ETC.) |   |   |
| (Right) Matl: NONE  | Type: NONE OR N/A (RR, PEDESTRIAN, ETC.) |   |   |
| (56) Flared: 0  | (57) Composite: N - NON_COMPOSITE        |   |   |
| (58) Railing: STEEL GUARDRAIL ON STEEL, CONCRETE OR TI                              |  |   |   |
| (59) Deck Drainage: SCUPPERS AND DOWNSPOUTS   |  |   |   |
| (60) Deck Type: CORRUGATED STEEL  |  |   |   |
| (61) Deck Protection: External: NOT APPLICABLE (ONLY FOR BRIDGES FOR NO             |  |   |   |
| Internal: NOT APPLICABLE (APPLIES ONLY TO BRIDGES                                   |  |   |   |
| (62) Wearing Surface: BITUMINOUS (ASPHALTIC CONCRETE) - OVERLA                      |  |   |   |
| Thickness: 1.0 in   | (119) Date of Wearing Surface:           |   |   |
| Slope Protection: RIP RAP (DUMPED ROCK OR ROCK CHANNEL PRO                          |  |   |   |
|   |  | (63) Main Spans Number: 3                         | Type: STEEL/TRUSS/DECK                                  |
|   |  | Approach Spans Number: 0                          | Type: NONE/NONE/NONE                                    |
|   |  | Total Spans: 3                                    | (65) Max Span: 85 Ft                                    |
|   |  | (70) Substructure                                 | (71) Foundation and Scour Information                   |
| Abut-Rear   | Matl: CONCRETE A                         | Type: GRAVITY                                     | Fnd: SPREAD FOOTING                                     |
| Abut-Fwd  | Matl: CONCRETE A                         | Type: GRAVITY                                     | Fnd: SPREAD FOOTING                                     |
| Pier-Pred   | Matl: CONCRETE A                         | Type: OPEN COLUMN                                 | Fnd: SPREAD FOOTING                                     |
| Pier-Other  | Matl: NONE                               | Type: NONE  | Fnd: NONE (SUCH AS MOST CULVERTS)                       |
| Pier-Other  | Matl: NONE                               | Type: NONE  | Fnd: NONE (SUCH AS MOST CULVERTS)                       |
|   |  | Other:  | Other:  |
|   |  | (86) Stream Velocity: 00000                       | (74) Scour: BRIDGE FOUNDATIONS DETERMINED TO BE STAB    |
|   |  | (189) Dive: N Freq: 0                             | Probe: Y Freq: 0  |
|   |  | (189) Date of last Dive Insp:                     | (152) Drainage Area: UUU Sq Mi                          |
| <b>Clearance Under the Bridge</b>   |  |   |   |
| (156) Min. Horiz Under Clear:   | NC: 0.0 Ft                               | Card: 0.0 Ft                                      |   |
| (157) Prac Max Vrt Under Clear:   | 0.0 Ft                                   |   |   |
| (77) Min Vert Under Clear:  | NC: 0.0 Ft                               | Card: 0.0 Ft                                      |   |
| (78) Min Lat Under Clear:   | NC: 0.0/0.0 Ft                           | Card: 0.0/0.0 Ft                                  |   |
| <b>Load Rating Information</b>  |  |   |   |
| (48) Design Load: H10   |  | (88) Waterway Adequacy: 9                         |   |
| Opr Rat Fact: 0.520 LD:   |  | (89) Approach Alignment: 6                        |   |
| Inv Rat Fact: 0.350 LD:   |  | Calc Gen Appraisal: 3                             |   |
| (83) Ohio Percent of Legal Load: 10   |  | Calc Deck Geometry: 4                             |   |
| Year of Rating: 2015  |  | Calc Underclearance: N                            |   |
| (84) Analysis: FIELD EVALUATION AND DOCUMENTED ENGINEER                             |  |   |   |
| (85) Rate Soft: ASSIGNED RATING (NO CALCULATIONS WERE DO                            |  |   |   |
| Analysis on Bars: NOT ON BARS [DEFAULT]   |  |   |   |
| PE#: 66937 BENJAMIN RUSSELL   |  |   |   |
| <b>Approach Information</b>   |  |   |   |
| (109) Approach Guardrail: NONE  |  |   |   |
| (110) Approach Pavement: BITUMINOUS   |  | (111) Grade: FAIR                                 |   |
| <b>Culvert Information</b>  |  |   |   |
| (131) Culvert Type: NOT A CULVERT OR RIGID FRAME                                    |  | (127) Length: 0.0 Ft                              |   |
| (129) Depth of Fill: 0.0 Ft   |  | (130) Headwalls: NONE OR NOT APPLICABLE (NOT A CU |   |
| <b>General Information</b>  |  |   |   |
| (121) Main Member: ROLLED STEEL   |  | (122) Moment Plate: NO MOMENT PLATES              |   |
| (169) Expansion Joint: NONE   |  |   |   |
| (124) Bearing Devices: SLIDING (BRONZE)   |  |   |   |
| (126) Navigation: Control-0   | Vert Clr: 0.0 Ft                         | Horiz Clear: 0.0 Ft                               |   |
| (193) Spec Insp: N  | Freq: 0                                  | Date:   |   |
| (188) Fracture Critical Insp: Y   | Freq: 24                                 | Date: 11/5/2014                                   |   |
| (138) Long Member: OTHER  |  | (135) Hinges: NOT APPLICABLE (STRUCTURES WITH NO  |   |
| (141) Structural Steel Memb: UNKNOWN  |  | (139) Framing: NONE OR NOT APPLICABLE             |   |
|   |  | Railing: U  |   |
| Pay Wt: 0 pounds  | Prime Loc: UNKNOWN                       | Paint: OTHER PAINT                                |   |
| Bridge Dedicated Name:  |  |   |   |



STATE OF OHIO DEPARTMENT OF TRANSPORTATION  
BRIDGE INSPECTION REPORT

STRUCTURE FILE NUMBER: 4861035

LUC  
CO

M0870  
Route

10500  
SLM

LUC-M-77000-TOLEDO  
FIPS

DATE BUILT 07/01/1915 - 1973

District 02 STEEL/TRUSSDECK

Type of Service 1 15 RAVINE TO DELAWARE CREEK

N  
SD LUC

**DECK**

|                                |   |   |                    |  |   |
|--------------------------------|---|---|--------------------|--|---|
| 1. Floor                       | Out/Out 22.0<br>6-CORRUGATED STEEL            | 3 | 2. Wearing Surface | THCK= 1.0<br>6-BITUMINOUS (ASPHALTIC CONCRETE) - | 2 |
| 3. Curbs, Sidewalks & Walkways | N-NONE<br>N-NONE                              |   | 4. Median          | W.S. Date =<br>N-NO MEDIAN                       |   |
| 5. Railing                     | 7-STEEL GUARDRAIL ON STEEL, CONCRETE OR<br>TI | 1 | 6. Drainage        | 3-SCUPPERS AND DOWNSPOUTS                        | 2 |
| 7. Expansion Joints            | N-NONE  |   | 8. SUMMARY         | Deck Area: 3,850                                 | 4 |

**SUPERSTRUCTURE**

|                                 |                               |   |                                     |   |   |
|---------------------------------|-------------------------------|---|-------------------------------------|---|---|
| 9. Alignment of Members         | MAX.SPAN.LENGTH = 85          | 1 | 10. Beams/Girders/Slab              | 1-ROLLED STEEL                          | 3 |
| 11. Diaphragms or Cross Frames  | TOT.LGTH = 175                | 3 | 12. Joist/Stringers                 |   | 2 |
| 13. Floorbeams                  |                               | 3 | 14. Floorbeam Connections           |   |   |
| 15. Verticals                   |                               | 3 | 16. Diagonals                       |   | 3 |
| 17. End posts                   |                               |   | 18. Upper Chord                     |   | 3 |
| 19. Lower Chord                 |                               | 3 | 20. Gusset Plates                   |   | 3 |
| 21. Lateral Bracing             |                               | 2 | 22. Sway Bracing                    |   | 3 |
| 23. Portals                     |                               |   | 24. Bearing Devices                 | 3-SLIDING (BRONZE)<br>N-NONE            |   |
| 25. Arch                        |                               | 2 | 26. Arch Columns or Hangers         |   | 3 |
| 27. Spandrel Walls              |                               |   | 28. Protective Coating System (PCS) | TYPE: 0OTHER PAINT<br>DATE = 01/01/1973 | 3 |
| 29. Pins/Hangers/Hinges         | ADT: 500 TRUCK: 10 YEAR: 1997 |   | 30. Fatigue Prone Detail (E & E')   |   |   |
| 31. Live Load Response (E or S) |                               |   | 32. SUMMARY                         |   | 4 |

**SUBSTRUCTURE**

|                          |   |   |                                 |   |   |
|--------------------------|---|---|---------------------------------|---|---|
| 33. Abutments            | 3-CONCRETE AND STONE<br>3-CONCRETE AND STONE  | 3 | 34. Abutment Seats              | PIERS= # OF SPANS=3                             | 2 |
| 35. Piers                | TYPE = 3-CONCRETE AND STONE                   | 2 | 36. Pier Seats                  |   | 2 |
| 37. Backwalls            |   | 2 | 38. Wingwalls                   | ABUTMENT:=SPREAD FOOTING/SPREAD FOOTING         |   |
| 39. Fenders and Dolphins |   |   | 40. Scour (Insp Type - 1, 2, 3) | 8-BRIDGE FOUNDATIONS DETERMINED<br>TO BE STAB 1 | 1 |
| 41. Slope Protection     | 3-RIP RAP (DUMPED ROCK OR ROCK CHANNEL<br>PRO | 3 | 42. SUMMARY                     | DIVE DT= N/A                                    | 4 |

**CULVERTS**

|                           |  |  |                                 |  |   |
|---------------------------|--|--|---------------------------------|--|---|
| 43. General               |  |  | 44. Alignment                   |  |   |
| 45. Shape                 |  |  | 46. Seams                       |  |   |
| 47. Headwalls or Endwalls |  |  | 48. Scour (Insp Type - 1, 2, 3) |  |   |
| 49. Abutments             |  |  | 50. SUMMARY                     |  | N |

**CHANNEL**

|                       |  |   |                |                                |   |
|-----------------------|--|---|----------------|--------------------------------|---|
| 51. Alignment         |  | 1 | 52. Protection | 0-OTHER (GRASS, BUSHES, TREES) | 1 |
| 53. Hydraulic Opening |  | 1 | 54. SUMMARY    |                                | 7 |

**APPROACHES**

|                |                 |   |                    |               |   |
|----------------|-----------------|---|--------------------|---------------|---|
| 55. Pavement   | 2-BITUMINOUS    | 2 | 56. Approach Slabs |               |   |
| 57. Guardrail  | N-NONE          |   | 58. Relief Joint   |               |   |
| 59. Embankment | BRDG.WIDTH=22.0 | 2 | 60. SUMMARY        | PCT.LEGAL= 10 | 7 |

**GENERAL**

|   |                      |  |  |  |     |
|---|----------------------|--|--|--|-----|
| 61. Navigation Lights                   |                      |  | 62. Warning Signs                          | ROUTINE.RESP: 4-CITY OR OTHER LOCAL AGENCY<br>MAINT.RESP: 4-CITY OR OTHER LOCAL AGENCY |     |
| 63. Sign Supports                       | MVC ON=9999 UND=0000 |  | 64. Utilities                              |  |     |
| 65. Vertical Clearance (1, 2-change, N) |                      |  | 66. General Appraisal & Operational Status |  | 4 P |

**67. INSPECTED BY**

**68. REVIEWED BY**

Print First & Last Name  
Inspected Date: 7/27/2015

65.576  
PE Number

KC  
Initial  
0 N N N

Print First & Last Name  
Reviewed Date: 10/30/2015

65.576  
PE Number

KC  
Initial

69. Survey (1, 0, N)