

2-DIST

B.I.N.

05

9KM

## STRUCTURES INSPECTION FIELD REPORT

## ROUTINE INSPECTION

BR. DEPT. NO.

P-13-011

|  |   |  |                                   |  |
|--|---|--|-----------------------------------|--|
| CITY/TOWN<br><b>PLYMOUTH</b>                             | 8.-STRUCTURE NO.<br><b>P13011-9KM-MUN-BRI</b> | 11-Kilo. POINT<br><b>000.000</b>                   | 41-STATUS<br><b>P:POSTED</b>      | 90-ROUTINE INSP. DATE<br><b>AUG 10, 2020</b> |
| 07-FACILITY CARRIED<br><b>HWY BROOK RD</b>               | MEMORIAL NAME/LOCAL NAME                      | 27-YR BUILT<br><b>1850</b>                         | 106-YR REBUILT<br><b>1900</b>     | YR REHAB'D (NON 106)<br><b>0000</b>          |
| 06-FEATURES INTERSECTED<br><b>WATER BEAVER DAM BROOK</b> | 26-FUNCTIONAL CLASS<br><b>Urban Local</b>     | DIST. BRIDGE INSPECTION ENGINEER <b>G. Simpson</b> |                                   |  |
| 43-STRUCTURE TYPE<br><b>302 : Steel Stringer/Girder</b>  | 22-OWNER<br><b>Town Agency</b>                | 21-MAINTAINER<br><b>Town Agency</b>                | TEAM LEADER <b>M. Marshall</b>    |  |
| 107-DECK TYPE<br><b>1 : Concrete Cast-in-Place</b>       | WEATHER<br><b>Clear</b>                       | TEMP. (air)<br><b>32°C</b>                         | TEAM MEMBERS<br><b>A. DEPALMA</b> |  |

|  |          |            |  |          |  |                          |                       |            |
|--|----------|------------|--|----------|--|--------------------------|-----------------------|------------|
| <b>ITEM 58</b>                         | <b>6</b> | <b>DEF</b> | <b>ITEM 59</b>                             | <b>5</b> | <b>DEF</b>                                 | <b>ITEM 60</b>           | <b>6</b>              | <b>DEF</b> |
| <b>DECK</b>                            |          |            | <b>SUPERSTRUCTURE</b>                      |          |  | <b>SUBSTRUCTURE</b>      |                       |            |
| 1. Wearing surface                     | 6        | M-P        | 1. Stringers                               | N        | -  | 1. Abutments             | Dive                  | Cur        |
| 2. Deck Condition                      | 6        | M-P        | 2. Floorbeams                              | N        | -  | a. Pedestals             | N                     | N          |
| 3. Stay in Place Forms                 | N        | -          | 3. Floor System Bracing                    | N        | -  | b. Bridge Seats          | N                     | H          |
| 4. Curbs                               | N        | -          | 4. Girders or Beams                        | 5        | S-A  | c. Backwalls             | N                     | H          |
| 5. Median                              | N        | -          | 5. Trusses - General                       | N        | -  | d. Breastwalls           | N                     | 6          |
| 6. Sidewalks                           | N        | -          | a. Upper Chords                            | N        | -  | e. Wingwalls             | N                     | 6          |
| 7. Parapets                            | N        | -          | b. Lower Chords                            | N        | -  | f. Slope Paving/Rip-Rap  | N                     | N          |
| 8. Railing                             | 7        | M-P        | c. Web Members                             | N        | -  | g. Pointing              | N                     | 5          |
| 9. Anti Missile Fence                  | N        | -          | d. Lateral Bracing                         | N        | -  | h. Footings              | N                     | N          |
| 10. Drainage System                    | N        | -          | e. Sway Bracings                           | N        | -  | i. Piles                 | N                     | N          |
| 11. Lighting Standards                 | N        | -          | f. Portals                                 | N        | -  | j. Scour                 | N                     | 7          |
| 12. Utilities                          | 5        | S-A        | g. End Posts                               | N        | -  | k. Settlement            | N                     | 6          |
| 13. Deck Joints                        | N        | -          | 6. Pin & Hangers                           | N        | -  | l.                       | N                     | N          |
| 14.                                    | N        | -          | 7. Conn Plt's, Gussets & Angles            | N        | -  | m.                       | N                     | N          |
| 15.                                    | N        | -          | 8. Cover Plates                            | N        | -  | <b>2. Piers or Bents</b> |                       |            |
| 16.                                    | N        | -          | 9. Bearing Devices                         | N        | -  | a. Pedestals             | N                     | N          |
| <b>CURB REVEAL</b><br>(In millimeters) |          |            | 10. Diaphragms/Cross Frames                | N        | -  | b. Caps                  | N                     | N          |
| N S                                    |          |            | 11. Rivets & Bolts                         | N        | -  | c. Columns               | N                     | N          |
| N N                                    |          |            | 12. Welds                                  | N        | -  | d. Stems/Webs/Pierwalls  | N                     | N          |
| N N                                    |          |            | 13. Member Alignment                       | 7        | -  | e. Pointing              | N                     | N          |
| N N                                    |          |            | 14. Paint/Coating                          | N        | -  | f. Footing               | N                     | N          |
| N N                                    |          |            | 15.  | N        | -  | g. Piles                 | N                     | N          |
| N N                                    |          |            | Year Painted                               | N        |  | h. Scour                 | N                     | N          |
| N N                                    |          |            | COLLISION DAMAGE: <i>Please explain</i>    |          |  | i. Settlement            | N                     | N          |
| N N                                    |          |            | None (X) Minor ( ) Moderate ( ) Severe ( ) |          |  | j.                       | N                     | N          |
| N N                                    |          |            | LOAD DEFLECTION: <i>Please explain</i>     |          |  | k.                       | N                     | N          |
| N N                                    |          |            | None (X) Minor ( ) Moderate ( ) Severe ( ) |          |  | <b>3. Pile Bents</b>     |                       |            |
| N N                                    |          |            | LOAD VIBRATION: <i>Please explain</i>      |          |  | a. Pile Caps             | N                     | N          |
| N N                                    |          |            | None (X) Minor ( ) Moderate ( ) Severe ( ) |          |  | b. Piles                 | N                     | N          |
| N N                                    |          |            | Any Fracture Critical Member: (Y/N)        | N        |  | c. Diagonal Bracing      | N                     | N          |
| N N                                    |          |            | Any Cracks: (Y/N)                          | N        |  | d. Horizontal Bracing    | N                     | N          |
| N N                                    |          |            |  |          | e. Fasteners                               | N                        | N                     |            |
| N N                                    |          |            |  |          | UNDERMINING (Y/N) If YES please explain    |                          | N                     |            |
| N N                                    |          |            |  |          | COLLISION DAMAGE:                          |                          |                       |            |
| N N                                    |          |            |  |          | None (X) Minor ( ) Moderate ( ) Severe ( ) |                          |                       |            |
| N N                                    |          |            |  |          | SCOUR: <i>Please explain</i>               |                          |                       |            |
| N N                                    |          |            |  |          | None (X) Minor ( ) Moderate ( ) Severe ( ) |                          |                       |            |
| N N                                    |          |            |  |          | I-60 (Dive Report): N                      |                          | I-60 (This Report): 6 |            |
| N N                                    |          |            |  |          | 93B-U/W (DIVE) Insp                        |                          | 00/00/0000            |            |

X=UNKNOWN

N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE

R=REMOVED

|  |             |                           |  |   |  |            |
|--|-------------|---------------------------|--|---|--|------------|
| CITY/TOWN<br><b>PLYMOUTH</b>   |             | B.I.N.<br><b>9KM</b>      | BR. DEPT. NO.<br><b>P-13-011</b>   | 8.-STRUCTURE NO.<br><b>P13011-9KM-MUN-BRI</b> | INSPECTION DATE<br><b>AUG 10, 2020</b> |            |
| <b>ITEM 61</b><br><b>CHANNEL &amp; CHANNEL PROTECTION</b>  |             | <b>7</b>                  | <b>ITEM 36 TRAFFIC SAFETY</b>  |   | <b>ACCESSIBILITY</b> (Y/N/P)           |            |
|  |             |                           | A. Bridge Railing  | 36 COND                                       | DEF                                    |            |
|  |             |                           | B. Transitions   | 0 N   | -                                      |            |
|  |             |                           | C. Approach Guardrail  | 0 N   | -                                      |            |
|  |             |                           | D. Approach Guardrail Ends   | 0 N   | -                                      |            |
|  |             |                           | <b>WEIGHT POSTING</b> <b>Not Applicable</b> <b>X</b>   |   |  |            |
|  |             |                           | Actual Posting   | H 03 3 05 3S2 08 Single                       | N                                      |            |
|  |             |                           | Recommended Posting  | N N N N                                       |  |            |
|  |             |                           | Waived Date:   | 00/00/0000                                    | EJDMT Date:                            | 00/00/0000 |
|  |             |                           | At bridge  | Other Advance                                 |  |            |
|  |             |                           | Signs In Place (Y=Yes, N=No, NR=Not Required)  | E 9 9 9 W 5                                   | E 9 9 9 W 9                            |            |
|  |             |                           | Legibility/Visibility  |   |  |            |
|  |             |                           | <b>CLEARANCE POSTING</b>   |   |  |            |
|  |             |                           | Not <b>X</b>   | N ft 0 in 0                                   | S ft 0 in 0 meter                      |            |
|  |             |                           | Actual Field Measurement   |   |  |            |
|  |             |                           | Posted Clearance   |   |  |            |
|  |             |                           | At bridge  | Advance                                       |  |            |
|  |             |                           | Signs In Place (Y=Yes, N=No, NR=Not Required)  | N S   | N S                                    |            |
|  |             |                           | Legibility/Visibility  |   |  |            |
|  |             |                           | <b>CONDITION RATING GUIDE</b> (For Items 58, 59, 60 and 61)  |   |  |            |
|  | <b>CODE</b> | <b>CONDITION</b>          | <b>DEFECTS</b>   |   |  |            |
|  | <b>N</b>    | <b>NOT APPLICABLE</b>     |  |   |  |            |
|  | <b>G 9</b>  | <b>EXCELLENT</b>          | Excellent condition.   |   |  |            |
|  | <b>G 8</b>  | <b>VERY GOOD</b>          | No problem noted.  |   |  |            |
|  | <b>G 7</b>  | <b>GOOD</b>               | Some minor problems.   |   |  |            |
|  | <b>F 6</b>  | <b>SATISFACTORY</b>       | Structural elements show some minor deterioration.   |   |  |            |
|  | <b>F 5</b>  | <b>FAIR</b>               | All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.  |   |  |            |
|  | <b>P 4</b>  | <b>POOR</b>               | Advanced section loss, deterioration, spalling or scour.   |   |  |            |
|  | <b>P 3</b>  | <b>SERIOUS</b>            | Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.  |   |  |            |
|  | <b>C 2</b>  | <b>CRITICAL</b>           | Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken. |   |  |            |
|  | <b>C 1</b>  | <b>"IMMINENT" FAILURE</b> | Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.                                  |   |  |            |
|  | <b>0</b>    | <b>FAILED</b>             | Out of service - beyond corrective action.   |   |  |            |
| <b>DEFICIENCY REPORTING GUIDE</b>  |             |                           |  |   |  |            |
| <b>DEFICIENCY:</b> A defect in a structure that requires corrective action.  |             |                           |  |   |  |            |
| <b>CATEGORIES OF DEFICIENCIES:</b>   |             |                           |  |   |  |            |
| <b>M= Minor Deficiency</b> - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion of steel, Minor scouring, Clogged drainage, etc.   |             |                           |  |   |  |            |
| <b>S= Severe/Major Deficiency</b> - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroded rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.                   |             |                           |  |   |  |            |
| <b>C-S= Critical Structural Deficiency</b> - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.   |             |                           |  |   |  |            |
| <b>C-H= Critical Hazard Deficiency</b> - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc. |             |                           |  |   |  |            |
| <b>URGENCY OF REPAIR:</b>  |             |                           |  |   |  |            |
| I = Immediate- [Inspector(s) immediately contact District Bridge Inspection Engineer (DBIE) to report the Deficiency and to receive further instruction from him/her].   |             |                           |  |   |  |            |
| A = ASAP- [Action/Repair should be initiated by District Maintenance Engineer or the Responsible Party (if not a State owned bridge) upon receipt of the Inspection Report].   |             |                           |  |   |  |            |
| P = Prioritize- [Shall be prioritized by District Maintenance Engineer or the Responsible Party (if not a State owned bridge) and repairs made when funds and/or manpower is available].   |             |                           |  |   |  |            |

|                              |                      |                                  |   |  |
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|------------------------------|----------------------|----------------------------------|---|--|

## **REMARKS**

### **BRIDGE ORIENTATION**

Brook Road is a one lane road oriented east and west over Beaver Dam Brook which flows south to north in Plymouth, Massachusetts.

### **GENERAL REMARKS**

The structure is constructed of 8 concrete encased steel I-beams with a cast-in-place reinforced concrete deck on field stone masonry abutments with a concrete cap. The beams and bays are numbered from south to north. The previous inspection numbered the beams and bays from north to south. **Refer to Inventory Photos, Sketches 1-3 .**

### **ITEM 58 - DECK**

#### **Item 58.1 - Wearing surface**

The bituminous wearing surface has transverse hairline cracks. **Photo 1.**

#### **Item 58.2 - Deck Condition**

The reinforced concrete deck has areas of honeycomb up to 1/4" deep. **Photo 2.**

- The fascias of the concrete deck have areas of scale up to 1/4" deep.
- Beam 1 concrete encasement, north elevation, near the west abutment has a spall 4' long x 3" high x 1/2" deep. **Photo 3.**
- Beam 5 concrete encasement, south elevation, near east abutment was not observed this inspection.
- Beam 7 concrete encasement, south elevation, near east abutment has a spall 3' long x 2" high x 2 1/2" deep. **Photo 4.**
- Beam 7 concrete encasement, south elevation, near west abtment has a spall 1' long x 2" high x 2 1/2" deep. **Photo 5.**
- Bay 6 near the east abutment has a spall 4" long x 4" high x 1" deep with exposed rebar. **photo 6.**

#### **Item 58.8 - Railing**

The railing consists of steel W-beams guardrails with steel posts running continuously over the bridge and into the approaches. The railing is secured to the bridge with anchor rods that run vertically through the bridge.

- Both rails have minor collisions scrapes throughout. **Photo 7 for typical conditions.**

#### **Item 58.12 - Utilities**

The steel water pipe along the south side of the bridge is resting on concrete. The water pipe has no insulation. **The water pipe has a moisture stain. Photo 8.**

### **APPROACHES**

#### **Approaches a - Appr. pavement condition**

- The bituminous wearing surface has wheel ruts.
- The southwest has moderate vegetation growth that is starting to encroach toward the roadway. **Photo 9.**
- The east approach has sealed and unsealed cracking. **Photos 10 & 11.**

#### **Approaches b - Appr. Roadway Settlement**

The northeast approach roadway and the west approach roadway has settlement up to 1" deep.

|                              |                      |                                  |   |  |
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## **REMARKS**

### **ITEM 59 - SUPERSTRUCTURE**

#### **Item 59.4 - Girders or Beams**

The structure consists of 8 concrete encased I-beams with exposed bottom flanges. The beams are labeled 1-8 from south to north. The steel beams have light rust. Beams 1 through 7 are within the travel way. Refer to Item 58.2 - Deck for all concrete deficiencies.

- **Beam 1 bottom flange has heavy rust and areas of 100% section loss up to 1' long x full width.**

**Photos 12 & 13.**

- Beam 8 bottom flange has areas of pitting up to full length. **Photo 14.**

### **ITEM 60 - SUBSTRUCTURE**

#### **Item 60.1 - Abutments**

##### **Item 60.1.d - Breastwalls**

The breastwalls consists of stone masonry abutments with mortar and reinforced concrete caps. The reinforced concrete caps have areas of honeycomb up to 1/4" deep and up to full height vertical hairline cracks. The stone masonry has voids up to 10" deep, areas of crack mortar (+/-20% of total area) and areas of missing mortar (+/-20% of total area).

West Abutment:

- Below Beam 3, at west abutment: The reinforced concrete cap has honeycombing.
- Below Beam 4, at west abutment: The reinforced concrete cap has full height diagonal crack up to 1/8" wide. **Photo 15.**
- Below Beam 3, at east abutment: The reinforced concrete cap has a full height vertical crack up to 1/8" wide. **Photo 16.**
- Below Beam 5: The reinforced concrete cap has areas of honeycomb up to 1/4" deep.
- The North End: The stone masonry and mortar has areas of missing stones up to 10" deep and areas of missing mortar. This portion has pulled away and the mortar has fallen out leaving a 2" vertical gap. **Photos 17 & 18.**
- The Northwest corner has multiple voids upto 22" deep. **Photo 19.**

##### **Item 60.1.e - Wingwalls**

The wingwalls consists of stone masonry and reinforced concrete caps. The northwest wingwall is leaning outward up to 3" over 2' high. **Photo 19.**

The wingwalls have moderate vegetation growth. **Photo 20.**

##### **Item 60.1.g - Pointing**

Along the waterline there is cracked and missing mortar.

##### **Item 60.1.k - Settlement**

Refer to Item 60.1.d - Breastwalls.

### **ITEM 61 - CHANNEL AND CHANNEL PROTECTION**

#### **Item 61.2 - Embankment Erosion**

The embankments have minor areas of undercutting. The southeast embankment has a paved drainage swale with minor erosion to the soil around it.

#### **Item 61.3 - Debris**

The downstream and upstream channel have an accumulation of timber debris.

|                              |                      |                                  |   |  |
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## REMARKS

### TRAFFIC SAFETY

#### Item 36a - Bridge Railing

Refer to Item 58.8- Railing. This is non-standard item.

#### Item 36c - Approach Guardrail

Refer to Item 58.8 - Railing. The approach W-beam guardrails have light rust. This is non-standard item.

#### Item 36d - Approach Guardrail Ends

Approach guardrail ends are boxing glove ends with light rust. This is non-standard item.

#### Sketch / Photo Log

Sketch 1 : Location Map.

Sketch 2 : Plan View.

Sketch 3 : Elevation Views.

Photo 1 : General wearing surface looking west

Photo 2 : General underside looking west.

Photo 3 : Beam 1 south elevation spall.

Photo 4 : Beam 7 south elevation near east abutment spall.

Photo 5 : Beam 7 near west abutment spall.

Photo 6 : Bay 6 at east abutment minor spall.

Photo 7 : South rail minor collision damage scrapes.

Photo 8 : South utility looking east.

Photo 9 : West approach, moderate vegetation growth.

Photo 10 : East approach sealed and unsealed cracking.

Photo 11 : East approach looking east sealed and unsealed longitudinal cracking.

Photo 12 : Beam 1 looking west from midspan, section loss.

Photo 13 : Beam 1 looking east from midspan, section loss.

Photo 14 : Beam 8 looking east pitting.

Photo 15 : West abutment below beam 3 & 4, honeycombing and cracking.

Photo 16 : East abutment below beam 3 hairline vertical crack.

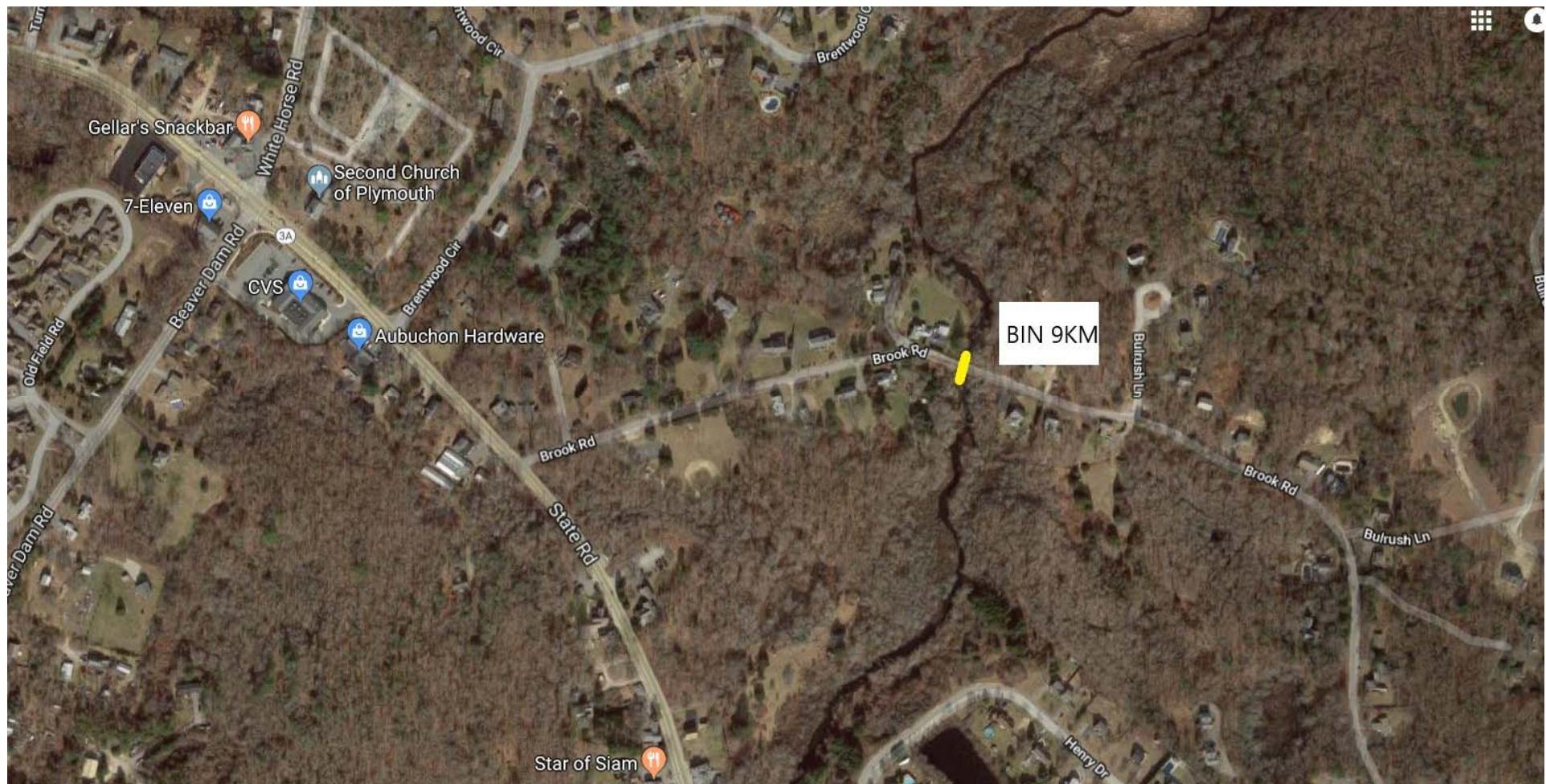
Photo 17 : East breastwall overview looking south.

Photo 18 : West breastwall overview voids.

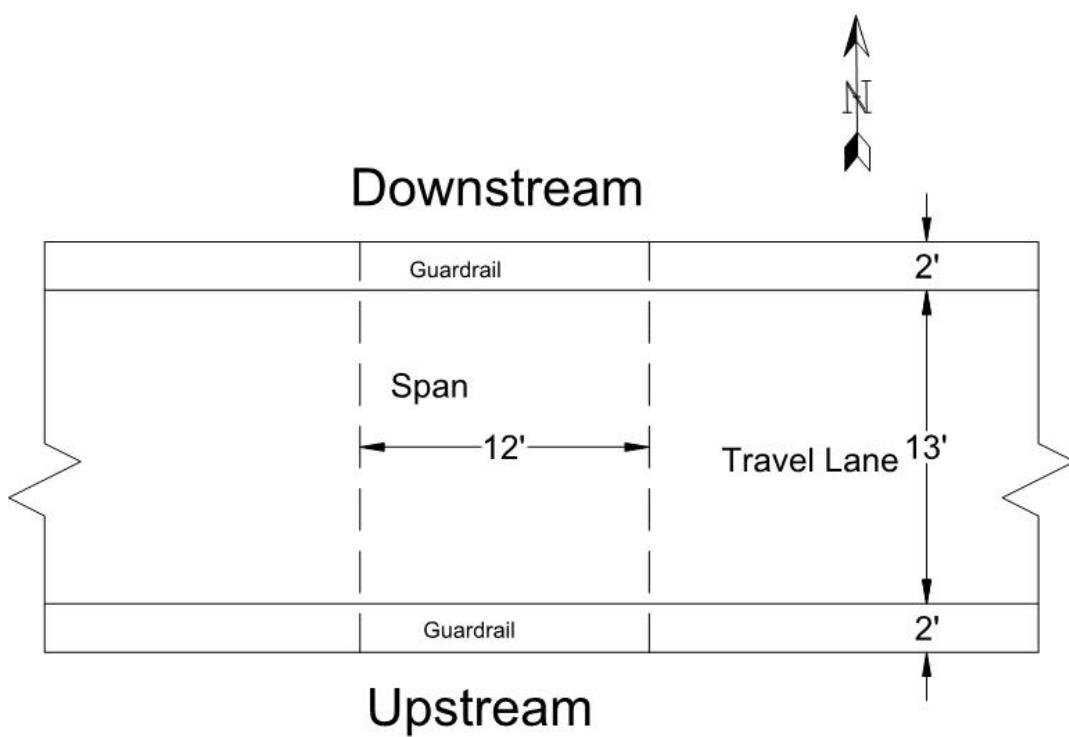
Photo 19 : Northwest wingwall leaning and voids in breastwall.

Photo 20 : North elevation, vegetation growth.

|                              |                      |                                  |   |  |
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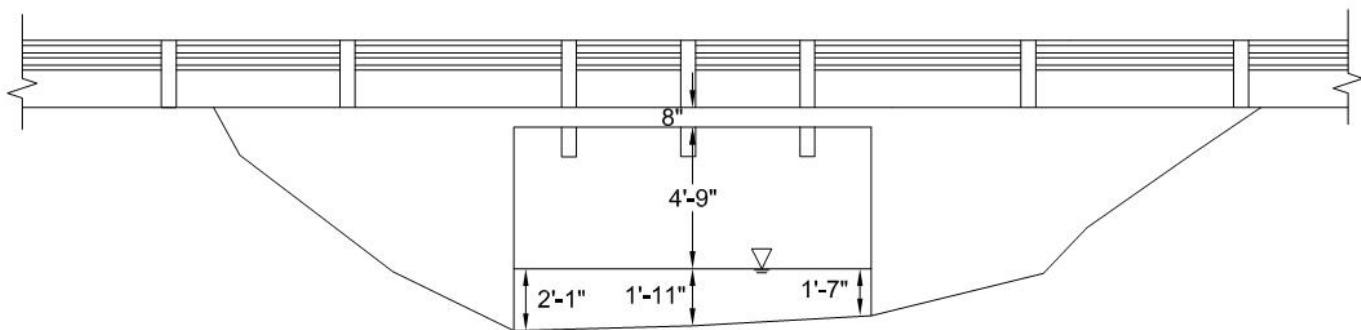
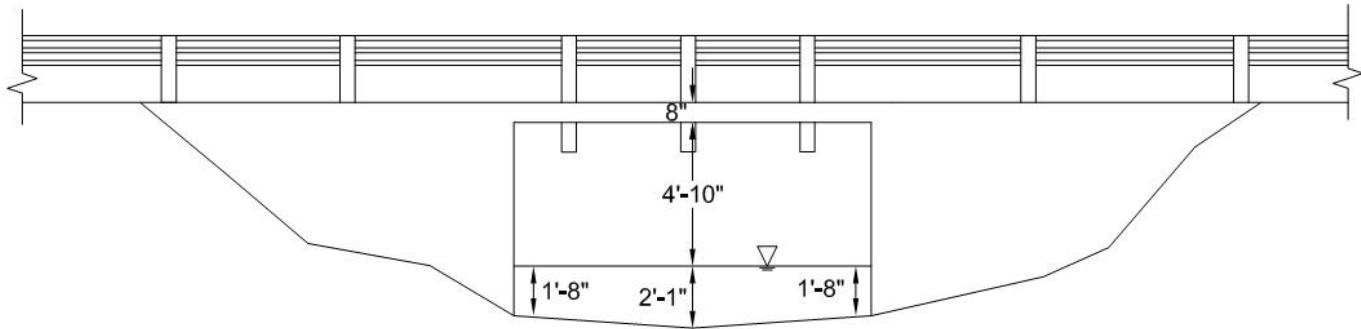
**SKETCHES****Sketch 1: Location Map.**

|                              |                      |                                  |   |  |
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**SKETCHES****Sketch 2: Plan View.**

CITY/TOWN  
**PLYMOUTH**B.I.N.  
**9KM**BR. DEPT. NO.  
**P-13-011**

8.-STRUCTURE NO.

**P13011-9KM-MUN-BRI**INSPECTION DATE  
**AUG 10, 2020****SKETCHES**South Elevation  
(Upstream)North Elevation  
(Downstream)**Sketch 3: Elevation Views.**

|                              |                      |                                  |   |  |
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**PHOTOS**

**Photo 1: General wearing surface looking west**



**Photo 2: General underside looking west.**

|                              |                      |                                  |   |  |
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**PHOTOS**

**Photo 3: Beam 1 south elevation spall.**



**Photo 4: Beam 7 south elevation near east abutment spall.**

|                              |                      |                                  |   |  |
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**PHOTOS**

**Photo 5: Beam 7 near west abutment spall.**



**Photo 6: Bay 6 at east abutment minor spall.**

|                              |                      |                                  |   |  |
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**PHOTOS**

**Photo 7: South rail minor collision damage scrapes.**



**Photo 8: South utility looking east.**

|                              |                      |                                  |   |  |
|------------------------------|----------------------|----------------------------------|---|--|
| CITY/TOWN<br><b>PLYMOUTH</b> | B.I.N.<br><b>9KM</b> | BR. DEPT. NO.<br><b>P-13-011</b> | 8. STRUCTURE NO.<br><b>P13011-9KM-MUN-BRI</b> | INSPECTION DATE<br><b>AUG 10, 2020</b> |
|------------------------------|----------------------|----------------------------------|---|--|

**PHOTOS**

**Photo 9:** West approach, moderate vegetation growth.



**Photo 10:** East approach sealed and unsealed cracking.

|                              |                      |                                  |   |  |
|------------------------------|----------------------|----------------------------------|---|--|
| CITY/TOWN<br><b>PLYMOUTH</b> | B.I.N.<br><b>9KM</b> | BR. DEPT. NO.<br><b>P-13-011</b> | 8. STRUCTURE NO.<br><b>P13011-9KM-MUN-BRI</b> | INSPECTION DATE<br><b>AUG 10, 2020</b> |
|------------------------------|----------------------|----------------------------------|---|--|

**PHOTOS**

**Photo 11:** East approach looking east sealed and unsealed longitudinal cracking.



**Photo 12:** Beam 1 looking west from midspan, section loss.

|                              |                      |                                  |   |  |
|------------------------------|----------------------|----------------------------------|---|--|
| CITY/TOWN<br><b>PLYMOUTH</b> | B.I.N.<br><b>9KM</b> | BR. DEPT. NO.<br><b>P-13-011</b> | 8.-STRUCTURE NO.<br><b>P13011-9KM-MUN-BRI</b> | INSPECTION DATE<br><b>AUG 10, 2020</b> |
|------------------------------|----------------------|----------------------------------|---|--|

**PHOTOS**

**Photo 13:** Beam 1 looking east from midspan, section loss.



**Photo 14:** Beam 8 looking east pitting.

|                              |                      |                                  |   |  |
|------------------------------|----------------------|----------------------------------|---|--|
| CITY/TOWN<br><b>PLYMOUTH</b> | B.I.N.<br><b>9KM</b> | BR. DEPT. NO.<br><b>P-13-011</b> | 8. STRUCTURE NO.<br><b>P13011-9KM-MUN-BRI</b> | INSPECTION DATE<br><b>AUG 10, 2020</b> |
|------------------------------|----------------------|----------------------------------|---|--|

**PHOTOS**

**Photo 15: West abutment below beam 3 & 4, honeycombing and cracking.**



**Photo 16: East abutment below beam 3 hairline vertical crack.**

|                              |                      |                                  |   |  |
|------------------------------|----------------------|----------------------------------|---|--|
| CITY/TOWN<br><b>PLYMOUTH</b> | B.I.N.<br><b>9KM</b> | BR. DEPT. NO.<br><b>P-13-011</b> | 8.-STRUCTURE NO.<br><b>P13011-9KM-MUN-BRI</b> | INSPECTION DATE<br><b>AUG 10, 2020</b> |
|------------------------------|----------------------|----------------------------------|---|--|

**PHOTOS**

**Photo 17: East breastwall overview looking south.**



**Photo 18: West breastwall overview voids.**

|                              |                      |                                  |   |  |
|------------------------------|----------------------|----------------------------------|---|--|
| CITY/TOWN<br><b>PLYMOUTH</b> | B.I.N.<br><b>9KM</b> | BR. DEPT. NO.<br><b>P-13-011</b> | 8. STRUCTURE NO.<br><b>P13011-9KM-MUN-BRI</b> | INSPECTION DATE<br><b>AUG 10, 2020</b> |
|------------------------------|----------------------|----------------------------------|---|--|

**PHOTOS**

**Photo 19: Northwest wingwall leaning and voids in breastwall.**



**Photo 20: North elevation, vegetation growth.**

Report Date: August 26, 2020

## State Information

| BDEPT#  |  | P13011                 |  | Agency Br.No.                   |  | Classification                         |  | Code                  |
|---|--|------------------------|--|---------------------------------|--|--|--|-----------------------|
| Town= Plymouth  |  |                        |  | L.O.                            |  | (112) NBIS Bridge Length               |  | N                     |
| B.I.N= 9KM  |  |                        |  | AASHTO= 023.9                   |  | (104) Highway System                   |  | N                     |
| RANK= 0 H.I.= NA  |  | Identification         |  | FHWA Select List= N (6/21/2017) |  | (26) Functional Class -                |  | 19                    |
| (8) Structure Number  |  |                        |  | P130119KMMUNBRI                 |  | (100) Defense Highway                  |  | 0                     |
| (5) Inventory Route   |  |                        |  | 151000000                       |  | (101) Parallel Structure               |  | N                     |
| (2) State Highway Department District                       |  |                        |  | 05                              |  | (102) Direction of Traffic -           |  | 3                     |
| (3) County Code 023 (4) Place code                          |  |                        |  | 54310                           |  | (103) Temporary Structure              |  | N                     |
| (6) Features Intersected                                    |  |                        |  | WATER BEAVER DAM BROOK          |  | (105) Federal Lands Highways           |  | 0                     |
| (7) Facility Carried  |  |                        |  | HWY BROOK RD                    |  | (110) Designated National Network      |  | N                     |
| (9) Location  |  |                        |  | 0.2 MI. EAST OF ST 3A           |  | (20) Toll -                            |  | 3                     |
| (11) Kilometerpoint   |  |                        |  | 0000.000                        |  | (21) Maintain -                        |  | 03                    |
| (12) Base Highway Network                                   |  |                        |  | 000000000000                    |  | (22) Owner -                           |  | 03                    |
| (13) LRS Inventory Route & Subroute                         |  |                        |  | N                               |  | (37) Historical Significance           |  | undetermined          |
| (16) Latitude   |  | 41 DEG 55 MIN          |  | 22.55 SEC                       |  | Condition                              |  | Code                  |
| (17) Longitude  |  | 70 DEG 33 MIN          |  | 46.17 SEC                       |  | (58) Deck                              |  | 6                     |
| (98) Border Bridge State Code                               |  |                        |  | Share                           |  | (59) Superstructure                    |  | 5                     |
| (99) Border Bridge Structure No. #                          |  |                        |  | %                               |  | (60) Substructure                      |  | 6                     |
|   |  |                        |  |                                 |  | (61) Channel & Channel Protection      |  | 7                     |
|   |  |                        |  |                                 |  | (62) Culverts                          |  | N                     |
| Structure Type and Material                                 |  |                        |  |                                 |  |  |  |                       |
| (43) Structure Type Main: Steel                             |  |                        |  | Code                            |  | Load Rating and Posting                |  | Code                  |
| Stringer/Girder   |  | Jointless bridge type: |  | Not applicable                  |  | (31) Design Load -                     |  | 0                     |
| (44) Structure Type Appr:                                   |  |                        |  |                                 |  | (63) Operating Rating Method -         |  | 2                     |
| Other   |  |                        |  | Code                            |  | (64) Operating Rating                  |  | 00.0                  |
| (45) Number of spans in main unit                           |  |                        |  | 000                             |  | (65) Inventory Rating Method -         |  | 2                     |
| (46) Number of approach spans                               |  |                        |  | 0000                            |  | (66) Inventory Rating                  |  | 00.0                  |
| (107) Deck Structure Type - Concrete Cast-in-Place          |  |                        |  | Code                            |  | (70) Bridge Posting                    |  | 0                     |
| (108) Wearing Surface / Protective System:                  |  |                        |  |                                 |  | (41) Structure -                       |  | P                     |
| A) Type of wearing surface - Bituminous                     |  |                        |  | Code                            |  | Posted for load                        |  |                       |
| B) Type of membrane - Unknown                               |  |                        |  | Code                            |  | (67) Structural Evaluation             |  | 2                     |
| C) Type of deck protection - Unknown                        |  |                        |  | Code                            |  | (68) Deck Geometry                     |  | N                     |
|   |  |                        |  |                                 |  | (69) Underclearances, vert. and horiz. |  | N                     |
|   |  |                        |  |                                 |  | (71) Waterway adequacy                 |  | 4                     |
|   |  |                        |  |                                 |  | (72) Approach Roadway Alignment        |  | 7                     |
| (27) Year Built   |  |                        |  | 1850                            |  | (36) Traffic Safety Features           |  | 0 N 0 0               |
| (106) Year Reconstructed                                    |  |                        |  | 1900                            |  | (113) Scour Critical Bridges           |  | 6                     |
| Age and Service   |  |                        |  |                                 |  |  |  |                       |
| (42) Type of Service: On - Highway                          |  |                        |  |                                 |  | Inspections                            |  |                       |
| Under - Waterway  |  |                        |  | Code                            |  | (90) Inspection Date                   |  | 24 MO                 |
| (28) Lanes: On Structure                                    |  | 02                     |  | Under structure                 |  | (91) Frequency                         |  |                       |
| (29) Average Daily Traffic                                  |  |                        |  | 000129                          |  | (92) Critical Feature Inspection:      |  | (93) CFI DATE         |
| (30) Year of ADT 2020                                       |  | (109) Truck ADT        |  | 00 %                            |  | (A) Fracture Critical Detail           |  | 00/00/00              |
| (19) Bypass, detour length                                  |  |                        |  | 002 KM                          |  | (B) Underwater Inspection              |  | 00/00/00              |
|   |  |                        |  |                                 |  | (C) Other Special Inspection           |  | 00/00/00              |
|   |  |                        |  |                                 |  | (*) Other Inspection ()                |  | 00/00/00              |
|   |  |                        |  |                                 |  | (*) Closed Bridge                      |  | 00/00/00              |
|   |  |                        |  |                                 |  | (*) UW Special Inspection              |  | 00/00/00              |
|   |  |                        |  |                                 |  | (*) Damage Inspection                  |  | 00/00/00              |
| Geometric Data  |  |                        |  |                                 |  |  |  |                       |
| (48) Length of maximum span                                 |  |                        |  | 0003.7 M                        |  | Rating Loads                           |  |                       |
| (49) Structure Length                                       |  |                        |  | 00004.7 M                       |  | Report Date                            |  | H20                   |
| (50) Curb or sidewalk: Left                                 |  | 00.0 M                 |  | Right                           |  | 00/00/00                               |  | Type 3                |
| (51) Bridge Roadway Width Curb to Curb                      |  |                        |  | 004.0 M                         |  | 0.0                                    |  | Type 3S2              |
| (52) Deck Width Out to Out                                  |  |                        |  | 005.2 M                         |  | 0.0                                    |  | Type HS               |
| (32) Approach Roadway Width (w/shoulders)                   |  |                        |  | 004.0 M                         |  | Inventory                              |  | 0.0                   |
| (33) Bridge Median - No median                              |  |                        |  | Code                            |  | Field Posting                          |  |                       |
| (34) Skew 00 DEG  |  | (35) Structure Flared  |  | N                               |  | Status                                 |  | Posting Date 00/00/00 |
| (10) Inventory Route MIN Vert Clear                         |  |                        |  | 99.99 M                         |  | 2 Axle                                 |  | Single                |
| (47) Inventory Route Total Horiz Clear                      |  |                        |  | 04.0 M                          |  | 3 Axle                                 |  |                       |
| (53) Min Vert Clear Over Bridge Rdwy                        |  |                        |  | 99.99 M                         |  | 5 Axle                                 |  |                       |
| (54) Min Vert Underclear ref N                              |  |                        |  | 00.00 M                         |  | 08                                     |  |                       |
| (55) Min Lat Underclear RT ref N                            |  |                        |  | 00.0 M                          |  | Missing Signs N                        |  | Misc.                 |
| (56) Min Lat Underclear LT ref N                            |  |                        |  | 00.0 M                          |  | Bridge Name                            |  |                       |
| Navigation Data   |  |                        |  |                                 |  |  |  |                       |
| (38) Navigation Control - No navigation control on waterway |  |                        |  | Code 0                          |  | N Anti-missile fence                   |  | N Acrow Panel         |
| (111) Pier Protection                                       |  |                        |  | Code                            |  | N / N Liftbucket                       |  | N / N Rigging         |
| (39) Navigation Vertical Clearance                          |  |                        |  | 000.0 M                         |  | N / N Ladder                           |  | N / N Staging         |
| (116) Vert-lift Bridge Nav Min Vert Clear                   |  |                        |  | M                               |  | N / N Boat                             |  | N / N Traffic Control |
| (40) Navigation Horizontal Clearance                        |  |                        |  | 0000.0 M                        |  | Y / Y Wader                            |  | N / N RR Flagperson   |
|   |  |                        |  |                                 |  | N / N Inspector 50                     |  | N / N Police          |
|   |  |                        |  |                                 |  |  |  | Inspection Hours: 016 |