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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Culvert Hydraulic Report** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STRUCTURE NO. | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | INSP. DATE: | | | | | |  | | | | | | |
| COUNTY: | | | |  | | | | | | | | | | | SECTION: | | | | | | | | |  | | | | | |  | | TOWNSHIP: | | | | | | |  | | |  | | | | RANGE: | | |  | | | | | | |
|  | | | |  | | | | | | | |  | | |  | | | | | | | | |  | | | | | |  | |  | | | | | | |  | | |  | | | |  | | |  | | | | | | |
| 359A | | TYPE OF CULVERT: | | | | | | | | | BOX | | |  | | | PIPE | | | | | |  | | | |  | | 359B | | | | | NUMBER OF BARRELS | | | | | | | | | | |  | | |  | | | | | | | |
| 359C | | SPAN | | |  | ft | | |  | | | | 359D | | | RISE | | |  | | | | ft | | | | |  | 359E | | | | | | FILL | |  | | | ft (TOP OF CULVERT TO CL GRADE) Y N | | | | | | | | | | | | | | | |
| 061 | | CHANNEL and CHANNEL PROT. | | | | | | | | | | | | | | | | |  | | | | (0-9) | | | | | 346 | | | | | STREAM BED DEGRADATION | | | | | | | | | | | | | | | | | |  | | |  |  |
| 062 | | OVERALL CULVERT CONDITION | | | | | | | | | | | | | | | | |  | | | | (0-9) | | | | | 347 | | | | | NOTICEABLE CONTRACTION OF STREAM | | | | | | | | | | | | | | | | | |  | | |  |  |
| 071 | | WATERWAY ADEQUACY | | | | | | | | | | | | | | | | |  | | | | (0-9) | | | | | 350 | | | | | STREAM SHIFTED FROM CENTER | | | | | | | | | | | | | | | | |  |  | | |  |  |
| 326 | | EMBANKMENT EROSION | | | | | | | | | | | | | | | | |  | | | | (0-9) | | | | | 353 | | | | | POTENTIAL DEBRIS UPSTREAM | | | | | | | | | | | | | | | | |  |  | | |  |  |
| 328 | | FLOWLINE DROP AT INLET | | | | | | | | | | | | | | | | |  | | | | ft | | | | | 355 | | | | | STRUCTURE ALIGNMENT WITH FLOW | | | | | | | | | | | | | | | | |  |  | | | (0-9) |  |
| 329 | | FLOWLINE DROP AT OUTLET | | | | | | | | | | | | | | | | |  | | | | ft | | | | | 358 | | | | | IS THERE A SCOUR PROBLEM | | | | | | | | | | | | | | | | |  |  | | |  |  |
| 330 | | SILT IN BARREL | | | | | | | | | | | | | | | | |  | | | | ft | | | | | 358C | | | | | SCOUR PLAN OF ACTION EFFECTIVE DATE | | | | | | | | | | | | | | | | |  | | | | |  |
|  | |  | | | | | | | | | | | | | | | | | | |  | |  | | | | |  | | | | |  | | | | | | | | | | | | | | | | |  |  | | |  |  |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | |
| **113 SCOUR CRITICAL RATING** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | |
|  | 9 | | FOUNDATIONS SAFELY ABOVE FLOODWATER | | | | | | | | | | | | | | | | | | |  | | | 4 | ACTION REQUIRED | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | |
|  | 8 | | STABLE, FOUNDATIONS RESIST SCOUR | | | | | | | | | | | | | | | | | | |  | | | 3 | UNSTABLE FOUNDATION | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | |
|  | 7 | | SCOUR PROBLEM MITIGATED | | | | | | | | | | | | | | | | | | |  | | | 2 | UNSTABLE, EXTENSIVE SCOUR | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | |
|  | 5 | | LOW RISK | | | | | | | | | | | | | | | | | | |  | | | 1 | FAILURE IMMINENT, CLOSED | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | |
| JUSTIFICATION*:* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | |
| **SOIL TYPE** | | | | | | |  | | |  | | | | | | | |  | |  | | | | | | | |  | | |  | | | | |  | |  | | |  | | |  | | | (PE Seal) | | | | |  |  | | |
| CHANNEL BANK: | | | | | | |  | | | SAND & GRAVEL | | | | | | | |  | | SANDY SILT | | | | | | | |  | | | SILT | | | | |  | | SILTY-CLAY | | |  | | | CLAY | | |  | | SHALE | | |  | ROCK | | |
| CHANNEL BED: | | | | | | |  | | | SAND & GRAVEL | | | | | | | |  | | SANDY SILT | | | | | | | |  | | | SILT | | | | |  | | SILTY-CLAY | | |  | | | CLAY | | |  | | SHALE | | |  | ROCK | | |

**CHANNEL EVOLUTION**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **STAGE** | |  | |  | | | | | | |  | | | | |  | | | | | |  | | | |  | | | |  | | | |  | | | | | |  | | | | | |  |
|  | PREMODIFIED |  | CONSTRUCTED | | | | | | |  | | | | | DEGRADATION | | | | | |  | | THRESHOLD | | | | | |  | | AGGRADATION | | | | | | | |  | | | | | | | RESTABILIZATION |
| **CHARACTERISTICS** | |  | | | |  | | |  | | | | |  | | | | | |  | | | | |  | | | | | | | |  | | |  | | | | | |  | |  | | |
|  | HEAD-CUTTING |  | | | STEEP BANKS | | |  | | | | | BANK SEEPAGE | | | | | |  | | | | | ALTERNATE BARS | | | | | | | |  | | | MEANDERING | | | | | |  | | | | VEGETATED BANKS | |
| BANK FAILURE DUE TO: | | | | |  | | ROTATION |  | | | | POPOUT | | | | |  | SLAB MOVEMENT | | | | | | | | |  | SLOUGHING | | | | | | | | |  | OTHER: | | | | |  | | | |

**BANK BUFFER ZONE**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| LEFT BANK: |  | ft (width) |  |  | TREE LINED |  | GRASSED |  | CULTIVATED |  | OTHER: |  |
| RIGHT BANK: |  | ft (width) |  |  | TREE LINED |  | GRASSED |  | CULTIVATED |  | OTHER: |  |

**STRUCTURAL HYDRAULIC ASSESSMENT**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| HYDRAULIC STABILITY CATEGORY: |  | STABLE |  | LOW RISK |  | SCOUR SUSCEPTIBLE |  | SCOUR VULNERABLE |  | SCOUR CRITICAL |

**CULVERT** **INFORMATION**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| INLET ELEVATION : | |  | ft |  | OUTLET ELEVATION: |  | ft | | ROAD GRADE ELEV.: |  | ft |
| Q100 BASE FLOOD: | |  | cfs |  | HW DEPTH (US END): |  | ft | | WATERWAY AREA: |  | ft2 |
| Q100 BRIDGE BASE FLOOD: | |  | cfs |  | OVERTOPPING FLOOD: |  | cfs | | OVERTOPPING FREQ.: |  | yr |
| FLOWLINE ELEV.: | |  | ft |  | HIGH BANK ELEV.: |  | ft | | LOW ROAD ELEV.: |  | ft |
| CHANNEL BOTTOM WIDTH: | |  | ft |  | INLET CREST ELEV.: |  | ft | | OUTLET APRON ELEV.: |  | ft |
| STREAM: |  | | | | |  |  | | DRAINAGE AREA: |  | mi2 |
|  | |  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| WRITTEN BY: | | QC BY: | | QA BY: | |
| DATE: |  | DATE: |  | DATE: |  |