BRM BRIDGE INSPECTION

POLICY & PROCEDURES MANUAL

FOR OKLAHOMA BRIDGE INSPECTIONS

OKLAHOMA DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

MAY 2024 EDITION

ODOT Oklahoma Department of Transportation

BrM AASHTOWare Bridge Management AASHTO

BrM Bridge Inspection Manual
For
Oklahoma Bridges

The BrM (formerly Pontis) Bridge Inspection Manual for Oklahoma is divided into three parts; a field manual, policy and procedures manual (Formerly the 'Office' manual) and user manual.

The field manual contains all information needed by a bridge inspection team leader to properly inspect a bridge per Oklahoma standards.

The information contained in the policy and procedures manual deals with functions normally performed in the office rather than in the field, such as creating plans of action, sufficiency rating, error checking, invoicing and data submittal, as well as Oklahoma policy regarding structural operations, inspection procedures, CFR, and SNBI requirements. However, the field manual will still be needed to supplement the policy and procedures manual for BrM data entry.

Single letter appendix references ('A') refer to appendices within the Field Manual, while double letter appendix references ('AA') refer to appendices within the Policy & Procedures Manual.

The User Manual describes the various features of BrM which are applicable to the basic user. It describes how to log in and navigate the various screens, how to manipulate the bridge lists with various filters and layouts, how to run reports, how to import and export bridges, etc.

FORWARD

THE CODE OF FEDERAL REGULATIONS (CFR)

OKLAHOMA BRIDGE INSPECTION AND LOAD RATING POLICY

The Code of Federal Regulations (CFR) requires each state to establish certain criteria for the structure and development of a bridge inspection organization. The policy and procedures section of this manual describes the general responsibilities ODOT has with respect to this Federal mandate.

§ 650.307 Bridge inspection organization responsibilities

- Each State transportation department must perform, or cause to be performed, the proper inspection and evaluation of all highway bridges that are fully or partially located within the State's boundaries, except for bridges that are owned by Federal agencies or Tribal governments
- Each State transportation department, Federal agency, and Tribal government must include a bridge inspection organization that is responsible for the following:
  - Developing and implementing written bridge inspection policies and procedures
  - Maintaining a registry of nationally certified bridge inspectors that are performing the duties of a team leader in their State
  - Documenting the criteria for inspection intervals for the inspection types identified in these standards
  - Documenting the roles and responsibilities of personnel involved in the bridge inspection program
  - Managing bridge inspection reports and files
  - Performing quality control and quality assurance activities
  - Preparing, maintaining, and reporting bridge inventory data
  - Producing valid load ratings and when required, implementing load posting or other restrictions
  - Managing the activities and corrective actions taken in response to a critical finding
  - Managing scour appraisals and scour plans of action

§ 650.309 Qualifications of personnel

For Oklahoma inspections, the qualifications for personnel involved with the inspection program are as follows:

Program Manager (Routine/Special/Initial Inspections)

- Registered professional engineer in the state of Oklahoma
- Completed the NHI 2-week course, or approved alternative
- Be current with required and approved refresher training
- Have a current and updated team leader form on file with Bridge Division
- Have 6 months of team leader experience, completing a quantifiable number of bridge inspections
- The program manager is responsible for all communication with bridge owners regarding inspection findings, load ratings, and subsequent follow-up.

PE Team Leader (Routine/Special/Initial Inspections)

- Registered professional engineer in the state of Oklahoma
- Completed the NHI 2-week course, or approved alternative
- Be current with required and approved refresher training
- Have a current and updated team leader form on file with Bridge Division
- Have 6 months of bridge inspection experience, assisting with a quantifiable number of bridge inspections
- The team leader must be present at the bridge site and actively participating in the inspection
- The team leader is responsible for the accuracy, applicability, and proper communication of inspection findings.

EIT Team Leader (Routine/Special/Initial Inspections)

- Have a bachelor degree in engineering from an ABET certified university, or equivalent
- Completed the NHI 2-week course, or approved alternative
- Be current with required and approved refresher training
- Have a current and updated team leader form on file with Bridge Division
- Have 2 years of bridge inspection experience, assisting with a quantifiable number of bridge inspections
- The team leader must be present at the bridge site and actively participating in the inspection
- The team leader is responsible for the accuracy, applicability, and proper communication of inspection findings.

Team Leader, Non-engineer (Routine/Special/Initial Inspections)

- Have 5 years of bridge inspection experience
  - Up to 2.5 years of this experience can be counted towards work in a transportation related field, upon approval of documentation
- Completed the NHI 2-week course
- Be current with required and approved refresher training
- Have a current and updated team leader form on file with Bridge Division
- Must have quantifiable documentation of bridge inspection experience
- The team leader is responsible for the accuracy, applicability, and proper communication of inspection findings.
- The team leader must be present at the bridge site and actively participating in the inspection

Program Manager (NSTM Inspections)

- All of the requirements listed for routine/special inspections pertaining to Program Managers
- Completion of the NHI NSTM training course
- Be current with required and approved NSTM refresher training

PE Team Leader (NSTM Inspections)

- All of the requirements listed for routine/special inspections pertaining to PEs
- Completion of the NHI NSTM training course
- Be current with required and approved NSTM refresher training

EIT Team Leader (NSTM Inspections)

- All of the requirements listed for routine/special inspections pertaining to EITs
- Completion of the NHI NSTM training course
- Be current with required and approved NSTM refresher training

PE Team Leader (Underwater Inspections)

- All of the requirements listed for routine/special inspections pertaining to PEs
- Completion of the NHI underwater bridge inspection course
- A certified and qualified commercial diver

EIT Team Leader (Underwater Inspections)

- All of the requirements listed for routine/special inspections pertaining to EITs
- Completion of the NHI underwater bridge inspection course
- A certified and qualified commercial diver

Team Leader (Damage Inspections)

- For ODOT owned bridges, damage inspections and assessments will be completed by Bridge Division PE team leaders
- For locally owned bridges, damage inspections and assessments will be completed by the Program Manager responsible for the local agency routine bridge inspections

Team Leader (In-depth Inspections)

- Qualifications for this type of inspection will be determined by Bridge Division based on the size, complexity, and needed information

Load Rating Engineer

- Registered professional engineer in the state of Oklahoma
  - Load ratings may be completed by an EIT working under the supervision of a registered Oklahoma PE provided they are reviewed and stamped by the supervising engineer
- Satisfactory completion of the ODOT load rating QCQA exam
- Load Rating Engineers work at the direction of the Program Manager

See Appendix QQ for further details regarding documenting of experience and qualifications.

THE CODE OF FEDERAL REGULATIONS (CFR)

OKLAHOMA BRIDGE INSPECTION AND LOAD RATING POLICY

§ 650.311 Inspection interval
For Oklahoma Inspections, the inspection intervals are as follows:

Routine Inspections
- All routine inspection intervals shall be assigned utilizing a simplified risk assessment (Method 1)
- Reduced frequency inspections are to be scheduled as detailed in Appendix EE
- Extended interval frequencies are not allowed for routine inspections. Routine inspection frequencies are to be scheduled no more than 24 months apart.

Underwater Inspections
- Underwater inspection frequencies are not to exceed 60 months
- Reduced frequency underwater inspections are to be scheduled at the direction of the ODOT Hydraulics Engineer based on guidance in § 650.311(b)(1)(ii)(B)
- Extended interval underwater inspection frequencies are not allowed for Oklahoma bridges.

NSTM Inspections
- All NSTM Inspections intervals shall be assigned utilizing a simplified risk assessment (Method 1)
- For locally owned NSTM structures, reduced frequency NSTM inspections are to be scheduled as per risk assessment spreadsheet maintained by Bridge Division
- For ODOT owned NSTM structures, reduced frequency NSTM inspections are to be scheduled at the direction of the ODOT Field Service Engineer based on guidance in § 650.311(c)(2)(ii)(A)(B)
- See Appendix EE for further discussion

Damage Inspections
- Damage inspections are to be completed on an as-needed basis
- Recommended repairs are to be made in a timeframe commiserate with the severity of the as-inspected damage or any required traffic restriction
- If the inspected damage is minimal, with no risk to traffic or public, the inspection notes, quantities, condition states, and subsequent elements will be updated to include this damage at the next routine inspection

Initial Inspections
- Initial inspections of new bridges are to be completed within 30 days of opening to traffic
- Initial inspections of reconstructed or rehabilitated bridges are to be completed within 30 days of opening to traffic
- Structures may be inspected multiple times within the same calendar year to bring them into cycle with other bridges within the same county or district

Special Inspections
- Special inspections are to be scheduled as per Appendix EE

Scour Monitoring Inspections
- Scour monitoring inspections are to be scheduled as per Appendix EE

Temporary Structures
- Temporary structures open to traffic longer than 24 months will need to inventoried and inspected as the structure configuration requires. See CFR § 650.315 (a)

In-Depth Inspections
- In-depth inspections are to be scheduled at the direction of Bridge Division

Inspection Interval Tolerance
- All inspections are to be completed within the month they are due

THE CODE OF FEDERAL REGULATIONS (CFR)

OKLAHOMA BRIDGE INSPECTION AND LOAD RATING POLICY

§ 650.313 Inspection procedures
For Oklahoma bridges, the inspection procedures are as follows:

General Inspection Procedures
- Spans, beams, stringers, floor beams, CGMPs, and RCB cells, are numbered west to east, south to north
- All structures are inspected according to guidance contained in the ODOT Field Manual, BIRM, and AASHTO Manual for Bridge Evaluation (MBE) 4.2.
- All inspection findings are to be recorded in the applicable bridge inspection report format
- All data is entered electronically into BrM
- All data for ODOT bridges are submitted electronically
- All data for locally owned bridges are submitted electronically as well as hard copy, unless otherwise directed by the local agency or ODOT Field District
- See Appendix GG for data submission requirements and formats for various inspection types

Initial Inspection Procedures
- See AASHTO MBE 4.2 for initial inspection procedures
- Initial and routine inspections will follow the same general procedures

Routine Inspection Procedures
- See AASHTO MBE 4.2 for routine inspection procedures
- Routine and SNBI inspections are to be completed simultaneously
- Routine inspections aren't necessarily required to be 'hands-on' inspections, but team leaders should make every effort to be thorough in their inspection and diligent in documentation and communication between the owner and ODOT
- Communication between the team leader, program manager, and bridge owner is crucial to ensure that critical findings are addressed in a timely manner as well as communicating maintenance needs and concerns. See Appendices E, F, and I of the ODOT Field Manual.

In-Depth Inspection Procedures
- See AASHTO MBE 4.2 for in-depth inspection procedures
- In-depth inspections will be scheduled at the direction of Bridge Division
- Reporting and documentation of in-depth inspections will be at the direction of Bridge Division

Underwater Inspection Procedures
- See AASHTO MBE 4.2 for underwater inspection procedures
- See the Oklahoma Field Manual for underwater inspection recording procedures

NSTM Inspection Procedures
- See AASHTO MBE 4.2 for NSTM inspection procedures
- NSTM, SNBI, and routine inspections are to be completed simultaneously

Special Inspection Procedures
- See AASHTO MBE 4.2 for special inspection procedures
- Special inspections under the SNBI replace 'Other Special' inspections under the NBIS
- See Appendix EE for further discussion

Scour Monitoring Inspection Procedures
- Scour monitoring inspections are scheduled in the same manner as a 'Special' inspection
- Scour monitoring inspections are scheduled for the purposes of monitoring a scour condition or issue with a structure that otherwise would be on a 24-month inspection frequency
- See Appendix EE for further discussion

THE CODE OF FEDERAL REGULATIONS (CFR)

OKLAHOMA BRIDGE INSPECTION AND LOAD RATING POLICY

Load Rating Procedures

- Load rate each structure according to its safe load capacity in accordance with the AASHTO MBE
- Bridges must be closed when the H20 Operating rating is less than 3 tons
- For LFR calculations, a gross reduction of capacity based on condition is not permissible
  - The load rating engineer is responsible to verify the limits and extents of losses
  - The load rating engineer is responsible to properly account for losses in the member capacity calculation
- For ODOT owned inventory:
  - Load ratings for new, reconstructed, or rehabilitated bridges will be load rated upon letting of the project, or submittal of the initial inspection
  - Load ratings will be updated as needed due to changes in bridge condition or changes in dead load conditions
  - Overloads will be assessed via Okiepros, or on an individual basis as the overload configuration and/or desired route requires
- For locally owned inventory:
  - ODOT will furnish load ratings for structures built according to ODOT County Bridge Standards
  - Load ratings for new, reconstructed, or rehabilitated bridges will be completed by the submission of the initial inspection
  - Load ratings will be updated as detailed in Appendix C of the ODOT Field Manual
  - Load ratings will be documented according to Appendix GG
  - ODOT will advise the local agencies on the routing and rating of overloads on the local system

Load Posting Procedures

- The ODOT owned inventory will be load posted as detailed in Appendix C and G of the ODOT Field Manual
- The locally owned inventory will be load posted as detailed in Appendix C
- See Appendix I of the ODOT Field Manual for time frames and procedures for placing or replacing load posting signs
- Bridges must be closed when the H20 Operating rating is less than 3 tons

Bridge Closing Procedures

- See appendix I of the ODOT Field Manual for the bridge closing procedures, documentation, and timeframe for actions

Bridge Files

- Bridge Division maintains the master file for all ODOT owned structures
- Bridge Division maintains a secondary file for locally owned NSTM structures
- ODOT Field Districts maintain the master file for all locally owned structures
  - Consultants and Circuit Engineering Districts are responsible for ensuring the Field Districts receive copies of all correspondence, inspections, photos, sketches, load ratings, and other relevant documentation
  - Consultants and Circuit Engineering Districts are responsible to ensure that the master bridge file is ‘synced’ with the working file at the beginning of each inspection cycle
  - The outgoing Consultant or Circuit Engineering District is responsible to turn over the working file for each bridge at the conclusion of each contract for the incoming Consultant or Circuit Engineering District. If the Consultant or Circuit Engineering District are retained, this step can be omitted, provided the incoming personnel verify all information in the Field District files.
- See appendix PP for further information regarding file contents

Scour

- Perform a scour appraisal for all bridges over water, and document the process and results in the bridge file. Re-appraise when necessary to reflect changing scour conditions. Scour appraisal procedures should be consistent with Hydraulic Engineering Circulars (HEC) 18 and 20. Guidance for scour evaluations is located in HEC 18 and 20, and guidance for scour assessment is located in HEC 20.
  - See Appendix NN

- For bridges which are determined to be scour critical or have unknown foundations, prepare and document a scour POA for deployment of scour countermeasures for known and potential deficiencies, and to address safety concerns. The plan must address a schedule for repairing or installing physical and/or hydraulic scour countermeasures, and/or the use of monitoring as a scour countermeasure. Scour plans of actions should be consistent with HEC 18 and 23.

  - See Appendix JJ

- Execute action in accordance with the plan

Quality Control Quality Assurance (QCQA)

- See Appendix OO

Critical Findings

- 'CX' findings are defined in the Oklahoma Bridge Inspection Manual, Appendix E
  - Proper follow-up and documentation are covered in the Oklahoma Bridge Inspection Manual, Appendix I
- The following criteria will be used to define critical findings as per FHWA:
  - An NSTM member rated '3' or less
  - Deck, superstructure, substructure, or culvert rated '2' or less
  - The channel and/or scour condition rated '2' or less
- Critical findings as defined by the FHWA will require submittal of an Action Summary Report
  - See Appendix KK for further details
- The Department will notify the FHWA of critical findings for State owned inventory within 24 hours of discovery

§ 650.315 Inventory

- Each State transportation department must prepare and maintain an inventory of all bridges
- Inventory data, as defined in § 650.305, must be collected, updated, and retained by the responsible State transportation department and submitted to FHWA on an annual basis or whenever requested
- In Oklahoma, inventory data includes elemental inspection for all structures regardless of NHS status
- For non NSTM inspections, data submittal timeframes are detailed in Appendix GG
- For NSTM inspections, data submittal timeframes are detailed in Appendix GG
- For changes in load restriction or closure, data is required within 30 days, see Oklahoma Bridge Inspection Manual, Appendix I

Appendices

Appendix AA - Coding Of Environments

Appendix BB - Sufficiency Rating Program

Appendix CC - County, City And Town Codes

Appendix DD - Bridge Inspection / Maintenance Responsibility

Appendix EE - Bridge Inspection Type and Frequency Determination

Appendix FF - Error Checking Requirements

Appendix GG - Data Submission Requirements

Appendix HH - Invoice Requirements

Appendix I I - Creating Signed PDF Format Inspection Reports

Appendix JJ - Creating Scour Plans Of Action

Appendix KK - Creating Action Summary Reports

Appendix LL - Federal Inspection Requirements - REVOKED

Appendix MM – Hydraulic Data Entry

Appendix NN – Bridge Scour Office Assessment Form

Appendix OO – QCQA

Appendix PP – Bridge File Data Requirements

Appendix QQ – Qualifications of Personnel

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APPENDIX AA
CODING OF ENVIRONMENTS

ASSIGNMENT OF ENVIRONMENTS

ON-SYSTEM

ENVIRONMENT	DIST 1,3,4,5,7,8	DIST 2	DIST 6
SEVERE	INTERSTATE / NHS	---	NHS / STP
BENIGN	STP	NHS / STP	---

OFF-SYSTEM

ENVIRONMENT	
SEVERE	ACOG (OKC METRO), INCOG TULSA METRO) or CITIES W/ POPULATION >= 15,000 *
BENIGN	CITIES W/POPULATION < 15,000 or REMAINDER OF ACCO

Salt usage on any bridge will automatically place the elements of that bridge in the severe category.

ENVIRONMENTAL STATES

The behavior of each bridge element over time is governed by its environment and random effects of traffic and age. To capture the environmental effects, each element of each bridge is placed in one of the following environmental categories:

1. Benign - Neither environmental factors nor operation practices are likely to significantly change the condition of the element over time or their effects have been mitigated by past non-maintenance actions or the presence of highly effective protective systems.

2. Severe - Environmental factors and/or operation practices contribute to the rapid decline in the condition of the element. Protective systems are not in place or are ineffective.

The environmental designation of a bridge can change over time, as it would if operation policies were changed to reduce the use of road salt. However, by definition the designation cannot change as the result of maintenance actions or deterioration.

* The following cities have populations greater than 15.000, as of the 2010 population census:

Ada	Claremore	Lawton	Owasso
Altus	Del City	McAlester	Ponca City
Ardmore	Duncan	Midwest City	Sand Springs
Bartlesville	Durant	Moore	Sapulpa
Bethany	Edmond	Muskogee	Shawnee
Bixby	El Reno	Mustang	Stillwater
Broken Arrow	Enid	Norman	Tahlequah
Chickasha	Jenks	Oklahoma City	Tulsa
			Yukon

APPENDIX AA
CODING OF ENVIRONMENTS

Example Environmental Factors:

Timber Elements – high moisture content, pest infestation, ice flow impacts

Steel Elements – distance from salt air, water wet/dry cycles, exposure to corrosive soils and liquids

Concrete Elements – freeze-thaw cycles, tire chain wear, deck salting

Petroleum Based – high temperatures

Joints and Bearings – extreme temperature ranges

Operating Practices – high traffic or truck volume, or both

APPENDIX BB
SUFFICIENCY RATING

The sufficiency rating is a method of evaluating data by calculating four separate factors (identified below) to obtain a numeric value which is indicative of a bridge's sufficiency to remain in service. These four factors are then subtracted from 100 to obtain a bridge's sufficiency rating. The result of this method is a percentage in which 100 percent would represent an entirely sufficient bridge and zero percent would represent an entirely insufficient or deficient bridge.

The following is a summary of the SNBI items evaluated by the sufficiency rating spreadsheet. For the complete formula and an example of its usage, refer to the FHWA Coding Guide and ODOT sufficiency rating spreadsheet.

1. Structural Adequacy and Safety (55% Max)

    Item B.C.02 - Superstructure Condition Rating
    Item B.C.03 - Substructure Condition Rating
    Item B.C.04 - Culvert Condition Rating
    Item B.LR.05 - Inventory Load Rating Factor

2. Serviceability and Functional Obsolescence (30% Max)

    Deck Condition
      Item B.C.01 – Deck Condition Rating
    Structural Evaluation
      Item B.H.01 - Functional Classification
      Item B.PS.01 - Load Posting Status
      Item B.LR.05 - Inventory Load Rating Factor
      Item B.H.09 - ADT
      Item B.C.02 - Superstructure Condition Rating
      Item B.C.03 - Substructure Condition Rating
      Item B.C.04 -Culvert Condition Rating
    Deck Geometry
      Item B.H.09 - ADT
      Item B.G.06 - Bridge Width curb-to-curb
      Item B.PS.01 - Load Posting Status
      Item B.G.02 - Total Bridge Length
      Item B.H.08 - Lanes on Highway
      Item B.RT.05 - Service Type
      Item B.H.01 - Functional Classification
      Item B.H.13 - Highway Minimum Vertical Clearance
      Item B.RT.03 - Route Direction
    Underclearances
      Item B.H.01 - Functional Classification
      Item B.H.13 - Highway Minimum Vertical Clearance
      Item B.RR.02 - Railroad Minimum Vertical Clearance
      Item B.RT.05 - Service Type
      Item B.H.14 - Highway Minimum Horizontal Clearance, Left
      Item B.H.15 - Highway Minimum Horizontal Clearance, Right
      Item B.RR.03 - Railroad Minimum Horizontal Offset
      Waterway Adequacy
      Item B.AP.02 - Overtopping Likelihood
      Item B.H.01 - Functional Classification
      Item B.PS.01 - Load Posting Status
      Item B.H.17 - Detour Length
    Approach Road Alignment
      Item B.AP.01 - Approach Roadway Alignment

Width of Roadway Insufficiency
Item B.H.08 - Lanes on Highway
Item B.H.09 - ADT
Item B.G.06 - Bridge Width curb-to-curb
Item B.G.09 - Approach Roadway Width
Item B.C.04 - Culvert Condition Rating
Item B.H.05 - Strahnet Designation
Item B.H.13 - Highway Minimum Vertical Clearance

3. Essentiality for Public Use (15% Max)
Item B.H.17 - Detour Length
Item B.H.09 - ADT
Item B.H.05 - Strahnet Designation

Categories 1, 2 and 3, together, can represent up to a 100% reduction in a bridge's sufficiency rating; however, there are additional reductions that can be taken. In no case will the total reduction be greater than 100%.

4. Special Reductions (13% Max)
Item B.H.17 - Detour Length
Item B.SP.06 - Span Type
Item B.RH.01 - Bridge Railing
Item B.RH.02 - Transitions

APPENDIX BB
SUFFICIENCY RATING

POOR (STRUCTURALLY DEFICIENT) BRIDGE DEFINITION

A bridge can be inadequate to carry legal loads, whether caused by obsolete design standards, structural deterioration, or waterway inadequacy. Structures in this category may include those posted to restrict load limits as well as those closed to all traffic. A structurally deficient bridge rating is determined from the results of field inspection findings where a SNBI condition rating of 4 or less is assigned to the deck (B.C.01), superstructure (B.C.02), substructure (B.C.03), or a culvert (B.C.04) or a rating of 2 or less is calculated for the structural evaluation or waterway adequacy using the ODOT sufficiency rating spreadsheet.

NOTE: Any bridge built or undergoing a major reconstruction within the last 10 years cannot be classified as Structurally Deficient.

SUMMARY:

POOR (STRUCTURALLY DEFICIENT) BRIDGE

A. If any of the following items < = 4:

Item B.C.01 (Deck)
Item B.C.02 (Superstructure)
Item B.C.03 (Substructure)
Item B.C.04 (Culvert and retaining walls)

Poor (Structurally Deficient, SD) Bridge Mitigation
If a field inspection results in a new SNBI rating as described in the preceding section, the inspector should notify the program manager. The program manager will take the following action:

- Notify the bridge owner of the inspection findings resulting in the poor rating
  - ODOT District Engineer, for ODOT owned inventory
  - ODOT Bridge Division, for ODOT owned inventory
  - County Commissioner, for county owned inventory
  - City/Town representative, if applicable
- For locally owned inventory, make recommendations for repair to mitigate the inspection findings resulting in the poor rating.
  - Ideally the local owner maintenance crews are able to effect recommended repairs
- For ODOT owned inventory, Bridge Division will make recommendations to the ODOT District Engineer for repair to mitigate the inspection findings resulting in the poor rating
  - Ideally the District bridge crew will be able to effect recommended repairs
- Ideally all repairs will be completed and documented prior to data submission
- If suitable repairs cannot be made prior to data submission, ensure that the proper inspection type and frequency are coded as per Appendix EE (Appendix K of the Field Manual)

NOTE: The former FO status bridge definition is now located under item 218 in the field manual.

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APPENDIX CC
COUNTY, CITY AND TOWN CODES

This information is for coding items B.L.02 (County Coad), B.L.03 (Place Code) and the first two digits of the structure name.

Item B.L.02 (County Code, SNBI Page 32) is a three-digit number to identify the county where the structure is located. The FHWA requires that the identification number be the Federal Information Processing Standards (FIPS) code scheme specified by the U.S. Census of Population and Housing. In BrM, the county name is always displayed in lieu of the 3 digit FIPS number, although the FIPS number is stored in the database.

Item B.L.03 (Place Code, SNBI Page 33) is a five-digit number to identify the city or town where the structure is located. The FHWA requires that the identification number be the FIPS Code scheme as noted above. If the structure is not within a city or town city limits, code all zeroes. In BrM, the city name is always displayed in lieu of the 5 digit FIPS number, although the FIPS number is stored in the database.

The structure name is a bridge identification number which identifies the bridge location. The first 2 digits of the structure name is the County Identification Number, but not the same number used in Item B.L.02 (County Code, SNBI Page 32). This is the 2 digit code number used by all Oklahoma State Agencies for county identification.

APPENDIX CC
COUNTY, CITY AND TOWN CODES

COUNTY	COUNTY CODE	COUNTY FIPS	DISTRICT	CITY NAME	CITY CODE
ADAIR	01	001	1	STILWELL	02305
				WATTS	02585
				WESTVILLE	02640
ALFALFA	02	003	6	ALINE	00050
				AMORITA	00075
				BURLINGTON	00320
				BRYON	00340
				CARMEN	00405
				CHEROKEE	00475
				DRIFTWOOD	00710
				GOLTRY	00960
				HELENA	01100
				INGERSOLL	01220
				JET	01250
				LAMBERT	01380
ATOKA	03	005	2	ATOKA	00125
				CANEY	00385
				STRINGTOWN	02325
BEAVER	04	007	6	BEAVER	00150
				FORGAN	00855
				GATE	00925
				KNOWLES	01345
BECKHAM	05	009	5	CARTER	00420
				ELK CITY	00770
				ERICK	00795
				SAYRE	02150
				TEXOLA	02420
BLAINE	06	011	5	CANTON	00390
				GEARY	00930
				GREENFIELD	01010
				HITCHCOCK	01140
				HYDRO	01200
				LONGDALE	01460
				OKEENE	01805
				WATONGA	02580
BRYAN	07	013	2	ACHILLE	00005
				BENNINGTON	00160
				BOKCHITO	00230
				CADDO	00350
				CALERA	00355
				COLBERT	00530
				DURANT	00730
				HENDRIX	01103
				KEMP	01275
				KENEFICK	01290
				MEAD	01597
				SAND POINT	02123
				SILO	02203
CADDO	08	015	7	ANADARKO	00080
				APACHE	00090
				BINGER	00190
				BRIDGEPORT	00275
				CARNEGIE	00410
				CEMENT	00440
				CYRIL	00625
				EAKLEY	00740
				FORT COBB	00860
				GRACEMONT	00985
				HINTON	01135
				HYDRO	01200
				LOOKEBA	01465

APPENDIX CC
COUNTY, CITY AND TOWN CODES

COUNTY	COUNTY CODE	COUNTY FIPS	DISTRICT	CITY NAME	CITY CODE
CANADIAN	09	017	4	CALUMET	00360
				EL RENO	00785
				GEARY	00930
				MUSTANG	01705
				OKARCHE	01795
				OKLAHOMA CITY	01815
				PIEDMONT	01925
				UNION CITY	02485
				YUKON	02720
CARTER	10	019	7	ARDMORE	00100
				DICKSON	00687
				GENE AUTRY	00935
				HEALDTON	01090
				LONE GROVE	01452
				RATLIFF CITY	02017
				SPRINGER	02275
				TATUMS	02393
				WILSON	02670
CHEROKEE	11	021	1	HULBERT	01192
				TAHLEQUAH	02370
CHOCTAW	12	023	2	BOSWELL	00245
				FT. TOWSON	00875
				HUGO	01190
				SOPER	02235
CIMARRON	13	025	6	BOISE CITY	00225
				KEYES	01305
CLEVELAND	14	027	3	HALL PARK	01037
				LEXINGTON	01430
				MOORE	01655
				NOBLE	01750
				NORMAN	01755
				OKLAHOMA CITY	01815
				RANCHWOOD MNR.	02012
				SLAUGHTERVILLE	02212
COAL	15	029	3	BROMIDE	00300
				CENTRAHOMA	00445
				COALGATE	00525
				LEHIGH	01415
				PHILLIPS	01915
				TUPELO	02470
COMANCHE	16	031	7	CACHE	00345
				CHATTANOOGA	00460
				ELGIN	00765
				FAXON	00835
				FLETCHER	00840
				GERONIMO	00940
				INDIAHOMA	01210
				LAWTON	01405
				MEDICINE PARK	01603
				STERLING	02285
COTTON	17	033	7	DEVOL	00670
				RANDLETT	02015
				TEMPLE	02400
				WALTERS	02540
CRAIG	18	035	8	BIG CABIN	00180
				BLUE JACKET	00220
				KETCHUM	01300
				VINITA	02520
				WELCH	02625

APPENDIX CC
COUNTY, CITY AND TOWN CODES

COUNTY	COUNTY CODE	COUNTY FIPS	DISTRICT	CITY NAME	CITY CODE
CREEK	19	037	8	BRISTOW	00285
				DEPEW	00665
				DRUMRIGHT	00720
				KELLYVILLE	01270
				KIEFER	01315
				MANNFORD	01540
				MOUNDS	01675
				OILTON	01790
				SAPULPA	02135
				SHAMROCK	02180
				SLICK	02215
				STROUD	02335
				TULSA	02465
CUSTER	20	039	5	ARAPAHO	00095
				BUTLER	00330
				CLINTON	00520
				CUSTER CITY	00620
				HAMMON	01040
				THOMAS	02435
				WEATHERFORD	02610
DELAWARE	21	041	8	BERNICE	00165
				COLCORD	00535
				GROVE	01015
				JAY	01230
				KANSAS	01257
				OAKS	01777
				W. SILOAM SPRINGS	02638
DEWEY	22	043	5	CAMARGO	00370
				LEEDY	01410
				OAKWOOD	01780
				PUTNAM	01980
				SEILING	02160
				TALOGA	02385
				VICI	02515
ELLIS	23	045	6	ARNETT	00110
				FARGO	00830
				GAGE	00905
				SHATTUCK	02190
GARFIELD	24	047	4	BRECKENRIDGE	00270
				CARRIER	00417
				COVINGTON	00580
				DOUGLAS	00705
				DRUMMOND	00715
				ENID	00790
				FAIRMONT	00820
				GARBER	00915
				HILLSDALE	01130
				HUNTER	01195
				KREMLIN	01360
				LAHOMA	01365
				N. ENID	01760
				WAUKOMIS	02590
GARVIN	25	049	3	ELMORE CITY	00780
				LINDSAY	01435
				MAYSVILLE	01595
				PAOLI	01870
				PAULS VALLEY	01875
				STRATFORD	02320
				WYNNEWOOD	02700

APPENDIX CC
COUNTY, CITY AND TOWN CODES

COUNTY	COUNTY CODE	COUNTY FIPS	DISTRICT	CITY NAME	CITY CODE
GRADY	26	051	7	ALEX	00045
				AMBER	00067
				BRADLEY	00255
				CHICKASHA	00485
				MINCO	01645
				NINNEKAH	01748
				NORGE	01752
				RUSH SPRINGS	02100
				TUTTLE	02475
				VERDEN	02505
GRANT	27	053	4	DEER CREEK	00650
				JEFFERSON	01235
				LAMONT	01385
				MANCHESTER	01525
				MEDFORD	01600
				NASH	01720
				POND CREEK	01940
				RENFROW	02040
				WAKITA	02535
GREER	28	055	5	BRINKMAN	00280
				GRANITE	01000
				MANGUM	01530
				WILLOW	02665
HARMON	29	057	5	GOULD	00980
				HOLLIS	01165
HARPER	30	059	6	BUFFALO	00310
				LAVERNE	01400
				MAY	01590
				ROSSTON	02095
HASKELL	31	061	1	KEOTA	01295
				KINTA	01335
				MCCURTAIN	01500
				STIGLER	02295
				TAMAHA	02390
				WHITEFIELD	02653
HUGHES	32	063	3	ALLEN	00055
				CALVIN	00365
				DUSTIN	00735
				GERTY	00945
				HOLDENVILLE	01160
				LAMAR	01375
				STUART	02340
				WETUMKA	02645
				YEAGER	02715
JACKSON	33	065	5	ALTUS	00060
				BLAIR	00210
				DUKE	00723
				ELDORADO	00760
				ELMER	00775
				HEADRICK	01085
				MARTHA	01580
				OLUSTEE	01830
JEFFERSON	34	067	7	ADDINGTON	00020
				CORNISH	00570
				HASTINGS	01075
				RINGLING	02055
				RYAN	02105
				SUGDEN	02345
				TERRAL	02410
				WAURIKA	02595

APPENDIX CC
COUNTY, CITY AND TOWN CODES

COUNTY	COUNTY CODE	COUNTY FIPS	DISTRICT	CITY NAME	CITY CODE
JOHNSTON	35	069	3	BROMIDE	00300
				MANNSVILLE	01545
				MILBURN	01635
				MILL CREEK	01640
				RAVIA	02020
				TISHOMINGO	02445
				WAPANUCKA	02555
KAY	36	071	4	BLACKWELL	00205
				BRAMAN	00265
				HARDY	01055
				KAW CITY	01265
				KILDARE	01320
				NARDIN	01715
				NEWKIRK	01735
				PONCA CITY	01935
				TONKAWA	02450
KINGFISHER	37	073	4	CASHION	00425
				DOVER	00707
				HENNESSEY	01105
				KINGFISHER	01325
				LOYAL	01480
				OKARCHE	01795
				PIEDMONT	01925
KIOWA	38	075	5	COOPERTON	00555
				GOTEBO	00975
				HOBART	01150
				LONE WOLF	01455
				MT. PARK	01680
				MT. VIEW	01685
				ROOSEVELT	02085
				SNYDER	02230
LATIMER	39	077	2	RED OAK	02030
				TALIHINA	02380
				WILBURTON	02655
LEFLORE	40	079	2	ARKOMA	00105
				BOKOSHE	00235
				CAMERON	00375
				COWLINGTON	00590
				FANSHAWE	00827
				HEAVENER	01095
				HOWE	01185
				LEFLORE	01413
				PANAMA	01865
				POCOLA	01933
				POTEAU	01955
				SHADY POINT	02175
				SPIRO	02270
				TALIHINA	02380
				WISTER	02675
LINCOLN	41	081	3	AGRA	00030
				CARNEY	00415
				CHANDLER	00455
				DAVENPORT	00635
				FALLIS	00825
				KENDRICK	01285
				MEEKER	01605
				PRAGUE	01960
				SPARKS	02250
				STROUD	02335
				TRYON	02455
				WARWICK	02567
				WELLSTON	02635

APPENDIX CC
COUNTY, CITY AND TOWN CODES

COUNTY	NTY CODE	COUNTY FIPS	DISTRICT	CITY NAME	CITY CODE
LOGAN	42	083	4	CASHION	00425
				COYLE	00595
				CRESCENT	00600
				GUTHRIE	01020
				LANGSTON	01395
				LOVELL	01475
				MARSHALL	01575
				MERIDIAN	01615
				MULHALL	01695
				ORLANDO	01845
LOVE	43	085	7	LEON	01425
				MARIETTA	01560
				THACKERVILLE	02425
MCCLAIN	44	087	3	BLANCHARD	00215
				BYARS	00335
				COLE	00537
				DIBBLE	00685
				GOLDSBY	00958
				NEWCASTLE	01728
				OKLAHOMA CITY	01815
				PURCELL	01975
				ROSEDALE	02090
				WASHINGTON	02570
				WAYNE	02600
MCCURTAIN	45	089	2	BROKEN BOW	00295
				GARVIN	00920
				HARRIS	01062
				HAWORTH	01080
				IDABEL	01205
				MILLERTON	01642
				SMITHVILLE	02225
				VALLIANT	02495
				WRIGHT CITY	02689
MCINTOSH	46	091	1	CHECOTAH	00465
				EUFALA	00800
				HANNA	01045
				HITCHITA	01145
				RENTIESVILLE	02045
				STIDHAM	02290
MAJOR	47	093	6	AMES	00070
				CLEO SPRINGS	00510
				FAIRVIEW	00820
				MENO	01610
				RINGWOOD	02060
MARSHALL	48	095	2	KINGSTON	01330
				LITTLE CITY	01440
				MADILL	01520
				MCBRIDE	01495
				OAKLAND	01775
				WOODVILLE	02683

APPENDIX CC
COUNTY, CITY AND TOWN CODES

COUNTY	COUNTY CODE	COUNTY FIPS	DISTRICT	CITY NAME	CITY CODE
MAYES	49	097	8	ADAIR	00015
				CHOUTEAU	00495
				DISNEY	00695
				GRAND LAKE TOWNE	00997
				HOOT OWL	01182
				LANGLEY	01390
				LOCUST GROVE	01450
				PENSACOLA	01895
				PRYOR	01970
				SALINA	02115
				SPAVINAW	02255
				SPORTSMAN ACRES	02273
				STRANG	02315
MURRAY	50	099	7	DAVIS	00645
				DOUGHERTY	00700
				HICKORY	01120
				SCULLIN	02155
				SULPHUR	02350
MUSKOKEE	51	101	1	BOYNTON	00250
				BRAGGS	00260
				COUNCIL HILL	00575
				FT. GIBSON	00865
				HASKELL	01070
				MUSKOGEE	01700
				OKTAHA	01825
				PORUM	01950
				TAFT	02365
				WAINWRIGHT	02530
				WARNER	02560
				WEBBERS FALLS	02620
NOBLE	52	103	4	BILLINGS	00185
				MARLAND	01565
				MORRISON	01670
				PERRY	01910
				RED ROCK	02035
				SUMNER	02355
NOWATA	53	105	8	DELAWARE	00655
				LENAPAH	01420
				NEW ALLUWE	01727
				NOWATA	01770
				S. COFFEYVILLE	02245
				WANN	02550
OKFUSKEE	54	107	3	BOLEY	00240
				CASTLE	00430
				OKEMAH	01810
				PADEN	01860
				WELEETKA	02630

APPENDIX CC
COUNTY, CITY AND TOWN CODES

COUNTY	COUNTY CODE	COUNTY FIPS	DISTRICT	CITY NAME	CITY CODE
OKLAHOMA	55	109	4	ARCADIA	00097
				BETHANY	00175
				CHOCTAW	00490
				DEL CITY	00660
				EDMOND	00755
				FOREST PARK	00850
				HARRAH	01060
				JONES	01255
				LAKE ALUMA	01370
				LUTHER	01485
				MIDWEST CITY	01630
				NICHOLS HILLS	01745
				NICOMA PARK	01746
				OKLAHOMA CITY	01815
				SMITH VILLAGE	02220
				SPENCER	02260
				SPRINGLAKE PARK	02280
				THE VILLAGE	02430
				VALLEY BROOK	02490
				WARR ACRES	02565
				WOODLAWN PARK	02680
OKMULGEE	56	111	1	BEGGS	00155
				BRYANT	00305
				DEWAR	00675
				GRAYSON	01007
				HENRYETTA	01110
				MORRIS	01665
				OKMULGEE	01820
				WINCHESTER	02672
OSAGE	57	113	8	AVANT	00130
				BARNSDALL	00140
				BARTLESVILLE	00145
				BURBANK	00315
				FAIRFAX	00805
				FORAKER	00845
				GRAINOLA	00990
				HOMINY	01175
				OSAGE	01850
				PAWHUSKA	01880
				PRUE	01966
				SAND SPRINGS	02125
				SHIDLER	02200
				SKIATOOK	02210
				TULSA	02465
				WEBB CITY	02615
				WYNONA	02705
OTTAWA	58	115	8	AFTON	00025
				COMMERCE	00550
				FAIRLAND	00810
				MIAMI	01620
				N. MIAMI	01765
				PEORIA	01900
				PICHER	01920
				QUAPAW	01985
				WYANDOTTE	02695

APPENDIX CC
COUNTY, CITY AND TOWN CODES

COUNTY	COUNTY CODE	COUNTY FIPS	DISTRICT	CITY NAME	CITY CODE
PAWNEE	59	117	8	BAUGH	01147
				BLACKBURN	00200
				CALIDA	00357
				CEDAR RIDGE	00438
				CLEVELAND	00515
				CURCHECE	00613
				EMPY	00788
				HALLETT	01035
				JENNINGS	01245
				JUBY'S	01256
				LEANDER	01480
				LEROY	01428
				MARAMEC	01550
				MULE BARN	01692
				OAK GROVE	01773
				PAWNEE	01885
				PETERMAN RIDGE	01912
				QUAY	01990
				RABORNVILLE	02003
				RALSTON	02005
				RIGSBY	02053
				SHA-TO-SHE	02189
				SHADY GROVE	02174
				SKEDEE	02205
				TERLTON	02405
				TIMBERLANE	02438
				WES	02636
				WESTPORT	02637
PAYNE	60	119	4	CUSHING	00615
				DRUMRIGHT	00720
				GLENCOE	00950
				PERKINS	01905
				QUAY	01990
				RIPLEY	02065
				STILLWATER	02300
				YALE	02710
PITTSBURG	61	121	2	ALDERSON	00040
				ASHLAND	00120
				CANADIAN	00380
				CROWDER	00610
				HAILEYVILLE	01030
				HARTSHORNE	01065
				INDIANOLA	01215
				KIOWA	01340
				KREBS	01355
				MCALESTER	01490
				PITTSBURG	01930
				QUINTON	02000
				SAVANA	02145
PONTOTOC	62	123	3	ADA	00010
				ALLEN	00055
				BYNG	00337
				FRANCIS	00890
				ROFF	02075
				STONEWALL	02310

APPENDIX CC
COUNTY, CITY AND TOWN CODES

COUNTY	COUNTY CODE	COUNTY FIPS	DISTRICT	CITY NAME	CITY CODE
POTTAWATOMIE	63	125	3	ASHER	00115
				BETHEL ACRES	00177
				BROOKSVILLE	00302
				EARLSBORO	00745
				MACOMB	01515
				MAUD	01585
				MCLOUD	01510
				OKLAHOMA CITY	01815
				PINK	01927
				SHAWNEE	02195
				ST. LOUIS	02110
				TECUMSEH	02395
				TRIBBEY	02453
				WANETTE	02545
PUSHMATAHA	64	127	2	ALBION	00035
				ANTLERS	00085
				CLAYTON	00505
				RATTAN	02018
ROGER MILLS	65	129	5	CHEYENNE	00480
				HAMMON	01040
				REYDON	02050
				STRONG CITY	02330
ROGERS	66	131	8	CATOOSA	00435
				CHELSEA	00470
				CLAREMORE	00500
				COLLINSVILLE	00540
				FOYIL	00885
				INOLA	01225
				JAMESTOWN	01228
				OOLOGAH	01835
				TALALA	02375
				TULSA	02465
				VALLEY PARK	02492
SEMINOLE	67	133	3	BOWLEGS	00249
				CROMWELL	00605
				KONAWA	01350
				LIMA	01432
				MAUD	02585
				SASAKWA	02140
				SEMINOLE	02165
				WEWOKA	02650
SEQUOYAH	68	135	1	GANS	00910
				GORE	00970
				MARBLE CITY	01555
				MOFFETT	01650
				MULDROW	01690
				PARADISE HILLS	01872
				ROLAND	02080
				SALLISAW	02120
				VIAN	02510
STEPHENS	69	137	7	BRAY	00267
				COMANCHE	00545
				DUNCAN	00725
				EMPIRE CITY	00787
				LOCO	01445
				MARLOW	01570
				VELMA	02497

APPENDIX CC
COUNTY, CITY AND TOWN CODES

COUNTY	COUNTY CODE	COUNTY FIPS	DISTRICT	CITY NAME	CITY CODE
TEXAS	70	139	6	GOODWELL GUYMON HARDESTY OPTIMA TEXHOMA TYRONE	00965 01025 01050 01840 02415 02480
TILLMAN	71	141	5	DAVIDSON FREDERICK GRANDFIELD HOLLISTER LOVELAND MANITOU TIPTON	00640 00895 00995 01170 01470 01535 02440
TULSA	72	143	8	BIXBY BROKEN ARROW COLLINSVILLE GLENPOOL JENKS LIBERTY LOTSEE OWASSO SAND SPRINGS SKIATOOK SPERRY TULSA	00195 00290 00540 00955 01240 01431 01468 01855 02125 02210 02265 02465
WAGONER	73	145	8	BIXBY BROKEN ARROW COWETA FAIR OAKS NEW TULSA OKAY PORTER REDBIRD TULLAHASSEE TULSA WAGONER	00195 00290 00585 00818 01738 01800 01945 02025 02460 02465 02525
WASHINGTON	74	147	8	BARTLESVILLE COPAN DEWEY OCHELATA RAMONA VERA	00145 00560 00680 01785 02010 02500
WASHITA	75	149	5	BESSIE BURNS FLAT CANUTE COLONY CORDELL CORN DILL CITY ROCKY SENTINEL	00170 00325 00395 00543 01730 00565 00690 02070 02170
WOODS	76	151	6	ALVA AVARD CAPRON FREEDOM WAYNOKA	00065 00135 00400 00900 02605
WOODWARD	77	153	6	FT. SUPPLY MOORELAND MUTUAL SHARON WOODWARD	00870 01660 01710 02185 02685

APPENDIX DD
BRIDGE INSPECTION / MAINTENANCE RESPONSIBILITY

BRIDGE INSPECTION RESPONSIBILITY

The owner of a route is responsible for inspection of all structures (highway, waterway, R.R., utility, pedestrian, etc.) along that route. However, conflicts arise from intersecting or concurrent routes in determining which agency is responsible for some structures. In these cases, the following definitions describe which agency will have inspection responsibility.

Intersecting Routes (Bridges at grade separations)

In general, when a highway or turnpike is on a structure which intersects a county road or city street, then O.D.O.T. or the OTA will maintain the entire structure. When a highway or turnpike is under a structure which carries a county road or city street, the deck is maintained by the appropriate county or city while the superstructure and the substructure are maintained by O.D.O.T. or the OTA.

Intersecting Oklahoma Dept. of Transportation and Oklahoma Transportation Authority Bridges

O.D.O.T. and the OTA signed an agreement in April 2010 regarding inspection and maintenance of intersecting highways and turnpikes. In summary of this agreement, O.D.O.T. is responsible for structures where a U.S. or State Highway crosses over a turnpike and the OTA is responsible for structures where the turnpike crosses over a U.S. or State Highway. Specific bridges have been identified and a copy of the agreement has been placed in the maintenance folder for each of these bridges. This agreement identifies the following responsibilities:

A. The Authority/Department shall maintain the full structure, including the slope walls, of its responsible bridges.

B. The Authority/Department shall be responsible for the mowing and maintenance of fences, drainage structures, utilities and miscellaneous items within the right of way owned by the Authority/Department for its responsible bridges.

C. The Authority/Department shall be solely responsible for snow and ice removal on all bridges and roadways leading to and traveling from its responsible bridges.

D. The Authority/Department shall be responsible for any signage owned by the Authority/Department and needed to direct traffic to and across the bridges being maintained by the Authority/Department. The Authority/Department shall be responsible for maintaining clearance signs on bridges crossing over their roads and for maintaining object clearance signs on its roads.

E. The Authority/Department shall be responsible for bridge inspections on its responsible bridges.

F. The Authority/Department shall be responsible for the rehabilitation and/or replacement of its responsible bridges.

Also, the Authority/Department reserves the right to inspect and maintain bridges maintained by the other agency. This agreement does not prohibit the Authority and the Department from cooperating to share in the cost of maintenance, rehabilitation and/or replacement of any of their responsible bridges.

Concurrent Routes (More than one route on a bridge)

When 2 or more **routes are concurrent**, the owner of the route with the higher priority will inspect and maintain the bridges on the route except in the case where one of the concurrent routes is a toll route. In this case the toll collection agency will inspect the entire structure.

State Highways Within City Limits

On state highways within city limits, the state maintains the structure while the city maintains everything beyond the curbs

APPENDIX DD
BRIDGE INSPECTION / MAINTENANCE RESPONSIBILITY

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APPENDIX EE
BRIDGE INSPECTION TYPE AND FREQUENCY DETERMINATION

CFR § 650.307(e)(3) – Inspection Frequency Determination
The Department is required to establish inspection frequencies for the structures in Oklahoma. The following procedures and criteria are to be used to establish inspection frequencies as well as inspection types. This section is also contained in the Field Manual Appendix K. The frequencies and inspection types are also defined in the SNBI as well as other places in CFR 650.

SNBI vs. Elemental Inspections (Routine)
Even though BrM distinguishes between SNBI and Elemental inspections, Oklahoma makes no distinction between the two types. SNBI and Elemental inspection types are always performed together, therefore the two check boxes are always both checked or both unchecked. The inspection frequency and next inspection date for an elemental inspection is always the same as for the SNBI inspection. The SNBI and elemental inspections are referred to 'Routine' inspections.

Nonredundant Steel Tension Member (NSTM) Inspections
NSTM inspections, if required, are always scheduled and performed concurrent with SNBI and elemental inspections. The inspection frequency for locally owned NSTM inspections are determined via spreadsheet developed by ODOT Bridge Division based on research on simplified risk assessment of NSTM structures.

Special (S) Inspections
Special (Code 'S' for SNBI Item B.IE.01, Inspection Type, Page 223) inspections, if required, are always scheduled at the midpoint between two routine inspections.

The reason for the 'S' inspection is to be specified under the Structure Notes on the Notes tab. This is so subsequent inspectors and Bridge Division may know the reason for the 'S' inspection.

Do not change the routine inspection frequency or reschedule a routine inspection based on an 'S' inspection. An 'S' inspection may be rescheduled based on a routine inspection. This is done primarily to keep the 'S' at the midpoint between two routine inspections.

If an 'S' is performed one time only or the need for an 'S' inspection no longer exists, then create the 'S' inspection in BrM but only mark the primary type of inspection as 'Special - Other'. Do not check the boxes indicating an 'S' was performed or is required, or enter any last inspection or next inspection dates.

For an 'S' inspection, the SNBI and Elemental Type of Inspection Performed check boxes are unchecked. This removes the elements from the Condition tab. (They are restored for the next inspection where the SNBI and Elemental check boxes are checked.) The conditions noted during the 'S' inspection are to be recorded under the Inspection Notes on the Notes tab.

Scour Monitoring (SM) Inspections
If the Scour Condition Rating (SNBI Item B.C.11, Page 263) is the determining cause of the more frequent inspection (The Sub can be rated no higher than the Scour rating for a span structure, a Culvert can be rated no higher than the Scour rating when the Scour rating is '4', or less), then the 'SM' inspection should be completed in lieu of the 'S' inspection. If there are multiple items requiring more frequent inspection, then the 'S' inspection should be completed.

APPENDIX EE
BRIDGE INSPECTION TYPE AND FREQUENCY DETERMINATION

SNBI/Elemental/'S'/'SM' Inspection Frequency Determination
The only SNBI/elemental (and NSTM) inspection frequencies recognized in Oklahoma are 24 and 12 months. Through the proper application of 24 and 12-month inspection intervals, as noted in the table below, a bridge site may be visited at 24, 12, or 6-month intervals. Underwater inspections are scheduled for 60 months only.

ROUTINE	'S'/'SM'	FREQUENCY OF SITE VISIT	COMMENTS
24	N/A	24 Months	Bridge is in good to fair condition ('5' or better) for all SNBI Items*. **Judgement should be exercised if one SNBI Item* rating is rated '4'**.
24	24	12 Months	Multiple SNBI Items* are rated '4' or less, or one SNBI Item* is rated '3'.
12	N/A	12 Months	Multiple SNBI items* are rated '3' or less. **Judgement should be used if the structure is load posted 5 tons, or less, as well**.
12	12	6 months	Multiple SNBI items* are rated '3' or less and the structure is load posted 5 tons or less.
6	N/A	6 Months	Bridge has a CX repair recommendation. At the 6 month inspection for a CX recomendation, the bridge must be closed if repairs are not made or the bridge reverts to the previous scheduling if repairs have been made.

**** - SNBI Items are the Deck, Superstructure, Substructure, or Culvert rating.***

If there is question about any inspection frequency, or bridge condition, contact Bridge Division.

Annual Inspection Scheduling
There is a federal requirement that Oklahoma submit bridge data to the FHWA annually. To meet this requirement, ODOT requires all bridge inspections for the calendar year to be submitted by the annual database shutdown date. The date for this shutdown is determined by Bridge Division. To help accomplish this goal, ODOT requires all inspection field work to be completed by November 30 each year. Data entry and submission is to be completed by December 31. This ensures a reasonable time frame for data validation, correction, and submission to the FHWA.

Revising Inspection Frequencies
When bridge conditions require the inspection frequency be changed, check frequencies for other types of inspections to ensure an overdue bridge inspection situation isn't created. Do not change the routine inspection frequency based on an 'other special', but an 'other special' inspection frequency may be changed on a routine inspection.

APPENDIX FF
ERROR CHECKING REQUIREMENTS

The master copy of all bridge data resides in the BrM master database at Bridge Division. This database is used for high level connectivity with other state agency databases. It is accessible by only a few individuals. The working database is accessible to all inspectors and other users. Inspection data entered into the working database is moved to the master database only after a sequence of reviews and approvals has occurred. This will help ensure the appropriate people have seen and reviewed the entered inspection data for the most accurate possible database. Figure FF-1 illustrates the data entry, review and approval process during the inspection cycle.

On site bridge inspection

The bridge inspector should verify all information available on the bridge being inspected. Don't assume that the existing information is correct and don't check just a few basic entries. Also check for any data fields with missing information (often displayed as '-1', '_', 'N/A' or 'Unknown'). Inspection data may be entered at the bridge site via one of two options:

1) if internet access is available, enter inspection data via the BrM Enterprise internet database connection, or
2) if using the BrM Workstation version installed on a laptop, export bridge data from the working database into the laptop, update bridge information as appropriate, then import the bridge data back into the working database.

Team Leader Review prior to submitting data to Program Manager

The team leader should verify all BrM bridge data against the inspection results. Once all inspection data has been entered into the working database, there are numerous error check reports and processes available in BrM that should be run against the entered inspection data. These reports can be run against a single bridge or against a group of bridges. These reports are further defined below.

Program manager review prior to submitting data to District headquarters

The Program Manager is responsible for reviewing and approving the entire package of bridge information before it is submitted to the appropriate District Headquarters. Of significant importance are the Load Rating entries; including rater initials, rating date, rating method and H and HS Operating and Inventory Ratings.

District Headquarters review prior to submitting data to Bridge Division

The District Bridge Coordinator should run the BrM error check reports and any other checks required by District policy to ensure the data is accurate before passing it on to Bridge Division. Errors can be fixed after contacting the inspector, if necessary.

Bridge Division review prior to uploading new inspection data to the master database

Bridge Division personnel will run all BrM error checks plus a few more that are not available through BrM before approving the inspection data for promotion to the master database. Errors will be fixed after contacting the District Bridge Coordinator and/or inspector, if applicable.

Working Database data promotion to the Master Database

On a nightly basis, any data changes to the working database which have received all the necessary approvals will be promoted to the master database, where the change will become official.

APPENDIX FF
ERROR CHECKING REQUIREMENTS

Error Check Reports

There are numerous error check reports available in BrM which should be run against the entered bridge inspection data. It is intended that the checks be run against the bridge data and that any errors detected are corrected before the bridge data is passed to the next level of approval. These reports are all contained in the list of reports under the 'REPORTS > GENERATE' subtask and begin with 'OK9XX_EC . . .' where the XX refers to a two digit number which is used to help identify a particular report. These reports are frequently changed, added or deleted based on the needs of the time and their effectiveness. Some of the error check reports are designed to detect a specific condition and only display bridges which meet that condition. Reports of this nature have been grouped together into a single report in BrM which will help expedite the error checking process. Other reports display all bridges meeting a filtered criterion, but the user must visually scan down the report for any bridges displaying a specified criterion. The wording at the top of the report will identify the intent of the report and any required user action.

Validation

In addition to the error check reports, there is a 'Validate' function available under the BRIDGES > VALIDATE subtask of BrM. All bridges should be validated before approval and any detected errors corrected. After correction, the validate function should be run again until there are no errors present. The errors detected by the validate function are the same errors that are of concern to the FHWA and they will insist that they be corrected in the annual submittal. Occasionally a validate error will be displayed which cannot be corrected by the bridge inspector. In this case, contact the Bridge Maintenance Office for further direction.

Sufficiency Rating

Once the error check reports and the validate function are run and all errors corrected, the bridge should be sufficiency rated utilizing the ODOT Sufficiency Rating Spreadsheet. Do not sufficiency rate a bridge until all error check are run and the errors corrected. Any subsequent data changes made may affect the sufficiency rating and cause it to change. Even the bridge's deficiency status (SD/FO) could be affected.

The following types of bridges should not be sufficiency rated:

1. Bridges with no route on the structure (R.R., utility or pedestrian bridges).
2. Closed or temporary bridges. These have the load ratings set to '0', which the sufficiency rating spreadsheet views as missing data.

APPENDIX GG

DATA SUBMISSION REQUIREMENTS

This appendix identifies all minimum data that is required for submission and submission timeframes* for all inspections (Includes On, Off-system and NSTM Inspections) to either ODOT Bridge Division or the appropriate ODOT Field District. Any deviation from these items or submission time frames must be coordinated with ODOT Bridge Division and the appropriate ODOT Field District. (* - *Unless directed otherwise by contract or agreement*)

On-System Routine Bridge Inspection

Following is a list of items that must be submitted for each bridge per inspection. This list is the minimum requirements and subject to addition.

1. Enter bridge inspection data online in BrM.
2. Six (Minimum) properly labeled color photos submitted in a combined PDF format saved using the appropriate naming convention. This requires one bridge centerline view, one bridge upstream profile view, one bridge downstream profile view, one upstream channel view, and one downstream channel view. The channel pictures must be taken on the top of deck/roadway from the center of the bridge for consistency. A Google Earth Aerial from the most current year that shows the bridge and stream.

   Depending on the software available to the inspector, photos will be acceptable in two common formats. The preferred method is shown in figure GG-1, where photo editing software allows the individual photos to be labeled. The alternative method is shown in figure GG-2 where photo editing software is not available, but a word processing program was used to combine the photos in a document file and the label placed as text adjacent to the photos. (See Pages GG-12 and 13 for file naming and photo label conventions) Photo labeling must also include the inspection date by either including it in the photo labeling or using a time stamp. (See examples in this Appendix, Figures GG-1 and GG-2)
3. Signed PDF BrM inspection report in the appropriate naming convention, identified in this Appendix.
4. Completed Action Summary Report, hard copy plus digital copy in PDF format. (If applicable, see the example in Appendix KK)
5. In addition to the above items, check for any applicable documents identified on reports in Appendix HH.
6. Data submission is required within 30 days of inspection completion.

Off-System Routine Bridge Inspection

Following is a list of items that must be submitted for each bridge per inspection. This list is the minimum requirements and subject to addition.

1. Enter bridge inspection data online in BrM.
2. Six (Minimum) properly labeled color photos submitted in a combined PDF format saved using the appropriate naming convention. This requires one bridge centerline view, one bridge upstream profile view, one bridge downstream profile view, one upstream channel view, and one downstream channel view. The channel pictures must be taken on the top of deck/roadway from the center of the bridge for consistency. A Google Earth Aerial from the most current year that shows the bridge and stream.

   Depending on the software available to the inspector, photos will be acceptable in two common formats. The preferred method is shown in figure GG-1, where photo editing software allows the individual photos to be labeled. The alternative method is shown in figure GG-2 where photo editing software is not available, but a word processing program was used to combine the photos in a document file and the label placed as text adjacent to the photos. (See Pages GG-12 and 13 for file naming and photo label conventions) Photo labeling must also include the inspection date by either including it in the photo labeling or using a time stamp. (See examples in this Appendix, Figures GG-1 and GG-2)
3. Signed PDF BrM inspection report in the appropriate naming convention, identified in this Appendix.
4. Properly completed scour evaluation for each bridge, PDF. (If applicable and only if one has not already been completed)
5. Completed scour POA, PDF. (If applicable and one does not already exist, see example in Appendix JJ)
6. Load rating summary sheet, PDF. (If a new load rating has been performed, see Figure GG-3
7. Load rating data file, .DAT. (If a new load rating has been performed with load rating software)

8. Complete/Accurate bridge plans/sketch of superstructure and substructure, PDF.
   (If plans/sketches do not already exist or if changes have been made to the structure)
9. Completed Action Summary Report, PDF digital copy. (See example Appendix KK if applicable)
10. In addition to the above items, check for any applicable documents found in Appendix HH.
11. Any documents required by contract task order, in the format specified in the contract.
12. BrM data submission is required within 30 days of inspection completion*.
13. Full data submission to the Department is required within 60 days of inspection completion*.
14. Local owner meeting is required within 90 days of inspection completion*.

Consultant NSTM Inspection

Following is a list of items that must be submitted for each NSTM bridge per inspection, in addition to the routine bridge inspection requirements listed above (unless directed otherwise). This list is the minimum requirements and subject to revision.

A. Executive summary, which contains the following information:
   - Date of inspection
   - Personnel comprising inspection team
   - Type of equipment used for inspection
   - Summary of SNBI ratings for the Deck, Superstructure, Substructure, Channel Condition, and sufficiency ratings for the current inspection and previous inspection in tabular form
   - Summary of recommended action in order of importance (CX including documentation of owner contact, PX, FX)
   - NSTM Inspection Frequency Determination Spreadsheet (Off-system only)
   - NSTM Inspection Summary Sheet

B. Narrative of inspection and significant findings that includes a summary of the following items:
   1. SNBI Item B.C.05 – Bridge Railing
   2. SNBI Item B.C.01 – Deck – Includes details, descriptions, and SNBI ratings for the following components:
      a. Driving Surface
      b. Soffit
      c. Joints – SNBI Item B.C.08
   3. SNBI Item B.C.02 - Superstructure - Include details, descriptions, and SNBI ratings for the following applicable elements:
      a. Beams
      b. Stringers
      c. Floor Beams
      d. Pier Beams
      e. Floor Bracing System
      f. Truss Upper Chord
      g. Truss Lower Chord
      h. Truss Web Members
      I. Truss End Posts
      j. Truss Bracing
      k. Member Alignment
      l. Paint/Coating
      m. Load Deflection
      n. NSTM Inspection Condition - SNBI B.C.14
   4. SNBI Item B.C.03 - Substructure - Include details, descriptions, and NBI ratings for the following applicable items:
      a. Abutments
      b. Piers
      c. Bearings – SNBI Item B.C.07

5. SNBI Item B.C.09 – Channel Condition - Include details, descriptions, and NBI ratings for the following applicable items:
    a. Channel Scour
    b. Embankment Erosion
6. SNBI Item B.C.10 – Channel Protection Condition – Includes details, descriptions, and NBI ratings for the following applicable items:
    a. Vegetation
    b. Debris
    c. Scour Countermeasures, if applicable
7. SNBI Item B.AP.01 - Approach Roadway Alignment - Include details, descriptions and NBI ratings for the following applicable items:
    a. Approach Roadway Condition
    b. Approach Roadway Settlement
8. SNBI Item B.C.11 - Scour Rating - Existing versus proposed changes

C. Two (Minimum) properly labeled color photos. (See Figures GG-1 and GG-2)

D. Signed SI&A Sheet

E. All applicable field sketches and notes

F. CAD Drawings (Include CAD drawings only if they provide information not provided for in any other aspect of the inspection report or bridge plans).

For off-system NSTM structures, full data submission to the Department is required within 60 days of inspection
For on-system NSTM structures, full data submission to the Department is required within 30 days of inspection

APPENDIX GG
DATA SUBMISSION REQUIREMENTS

Underwater Bridge Inspection

Following is a list of items that must be submitted for each bridge requiring underwater inspections per inspection. This list is the minimum requirements and subject to addition.

1. Enter bridge inspection data online in BrM.
2. List of personnel inspecting the structure with corresponding titles and/or qualifications
    a. Licensed Professional Engineer
    b. Certified Bridge Inspector
    c. Certified Diver (if necessary)
3. All pertinent bridge data (e.g. – NBI #, Feature Name, Location, etc.)
    a. Structure #
    b. NBI #
    c. Location
    d. Year Built
    e. Bridge Description
    f. Feature Crossed
4. Weather conditions
5. Stream depth anomalies
    a. Downstream from a dam
    b. Obstructions or debris at bridge opening
    c. Recent major weather event
6. Maximum depth of substructure elements to be inspected
    a. <5’ – underwater inspection does not apply
7. Channel Velocity
8. Visibility in the stream
9. Description of elements to be inspected
    a. Foundation Type – include Pier Protection (if applicable)
    b. Pier Type
    c. Elevations
10. Level at which elements will be inspected
    a. Level I – Visually inspected from above water
    b. Level II – Inspection limited to deteriorated or damaged area
    c. Level III – In-depth inspection of entire element
11. Description of findings for each element inspected
    a. Effective scour around foundation
    b. Several measurements should be taken around
12. Existing and Recommended (new) SNBI Ratings for:
    a. Substructure
    b. Channel
    c. Channel Protection
    d. Scour Condition
    e. Substructure Navigation Protection
13. Recommendations
    a. Inspection Frequency
    b. Countermeasures for Scour Critical Bridges
14. Additional comments concerning bridge and/or stream
    a. Note degradation, aggradation, apparent or possible channel shift, bank erosion, etc.
15. Location Map
16. Acoustic Imaging of Substructure and Pier Protection Systems
    a. Profile View
    b. Cross-Section View
17. As built plan(s) sheet with current stream bed profile plotted to scale
18. Sketches of structure and elements inspected with cross section of stream bed plotted to scale
19. Plot cross sections taken 100’ upstream and 100’ downstream to scale.

Centerline view

Profile view

Figure GG-1 Sample of properly individually labeled photos as a JPG. (Minimum of 2 per inspection) This labeling method is preferred. Both JPG photos are to be combined into a single PDF.

NBI #: 24137
Structure #: 60E0730N3510009
County: Payne

Facility Carried: E0730 - Eseco Feature
Intersected: Cottonwood Creek
Date Inspected: 2/8/2017

Photo 1-Bridge From East Approach With 9T Posting Sign

Photo 2-South Elevation

Combined View

Figure GG-2 Sample of properly labeled combined photos.

The entire document page is then saved as a PDF.
(Minimum of 2 per inspection)

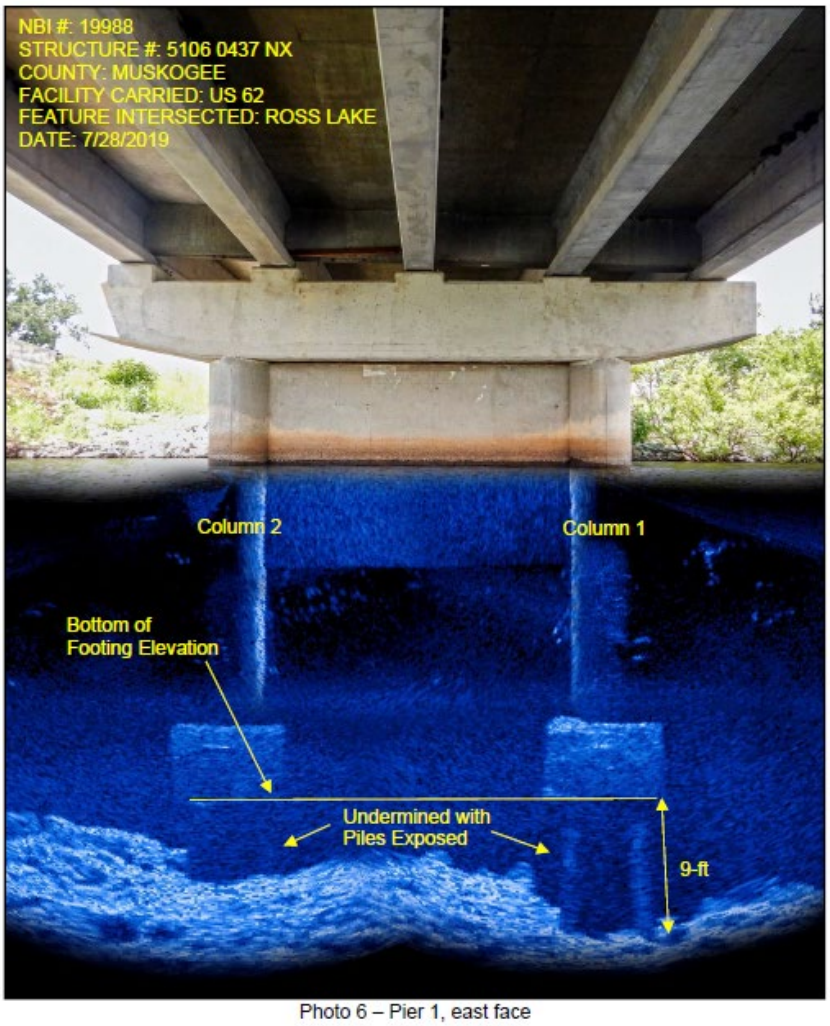

Photo 6 – Pier 1, east face

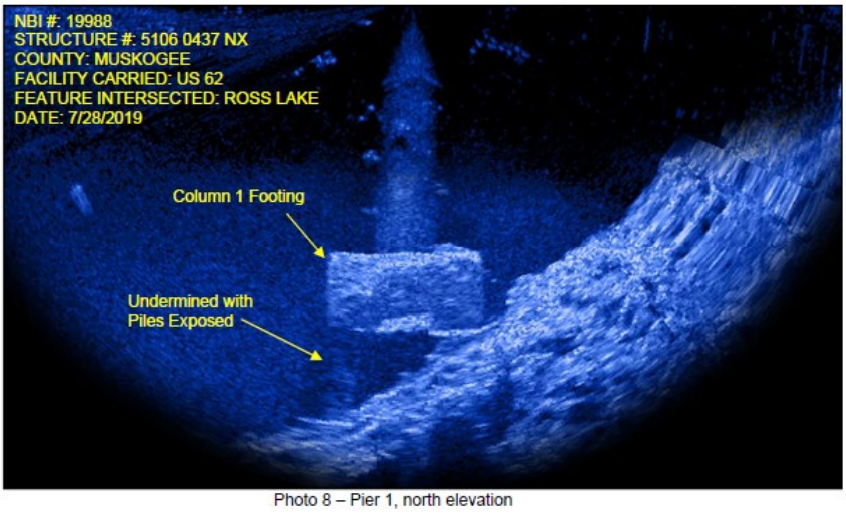

Photo 8 – Pier 1, north elevation

Figure GG-3 Sample of Acoustic Imaging

LOAD RATING SUMMARY SHEET

NBI No.:	**Struct. No.:**		**Local No.:**
Year Built:	**Year Reconst.:**	**Span Type:**	
Type of Overlay:		**Overlay Depth:**	

Load Rater : _____ Date Rated : _____

Checked By : _____ Date Checked : _____

Load Rating Method : _____

Load Rating Software : _____

Data File Location : _____

Reason for Load Rating : _____

Assumptions : _____

_____

_____

_____

_____

Controlling Span : _____ Controlling Member : _____ Controlling Force : _____

Inventory Rating : H : _____ HS : _____ 3-3 : _____ EV3 : _____ SHV : _____

Operating Rating : H : _____ HS : _____ 3-3 : _____ EV3 : _____ SHV : _____

Load Rating Engineer's Seal :

Load Rating Engineer's Signature : _____

APPENDIX GG
DATA SUBMISSION REQUIREMENTS

Creating and Naming Documents
All files submitted for inclusion in the digital Oklahoma Bridge Maintenance File system (OKBMF) are to be named and submitted to Bridge Division in accordance with the following requirements.

NOTE:
The submittal requirements for photos are different from all other document types due to the photo labeling requirements we have implemented. However, the naming convention for photos is the same as for all other types of documents.

A typical file name will look like this: **12345(2018-12-25)BP.pdf**
The components of the name are derived as follows:

1. The first component will be the applicable bridge NBI number '**(12345)**'. **Must hold five places**.

2. The second component will be the origination date of the plans, photos, reports, etc. in the format '**(YYYY-MM-DD)**', e.g., '**(2018-08-15)**'. The parentheses are included, and month and date **must hold 2 places**

3. The third component will consist of one of the following codes, according to the type of document:

OKBMF File Naming Conventions

TYPE OF DOCUMENT	CODE
Bridge Plans	BP
Channel Profiles	CP
Documents	DC
Final Inspections	DC
Foundations	FD
Fracture Critical Reports	FC
Hydraulic Information	HY
Inspection Reports	IR
Load Ratings	LR
Load Rating Data Set*	LR
Materials Reports	MR
Special Inspection Report	SI
Photos	PH
Pier Sway Survey Reports	PS
Rail Road Bridges	RR
Repairs	RE
Roadway Plans	RP
Scour Documents	SD
Scour Photos	SP
Scour Reports	SR
Scour Monitoring Inspection	SM
Shop Drawings	SH
Underwater Reports	UW

***** - A load rating data set will typically be a BAR7 data set, which is a .DAT file format.

4. In the event the first three conventions do not produce a unique file name, include '01', '02', '03', etc. to uniquely identify the file. Whenever possible, combine multiple images into a single file.

EXAMPLES
00134(2015-12-23)BP.pdf
12345(2016-02-14)DC01.pdf
12345(2016-02-14)DC02.pdf
26333(2015-10-30)SR.pdf
16873(2016-06-06)IR.pdf

Bridge Photo Labeling
Inspectors are required to take a minimum of two color digital photos of the on-system and off-system bridges. One photo down the roadway showing the bridge and any load posting or other signs and the other photo a side view of the bridge. (See Figure GG-1) Any defects in the bridge should also be photographed, labeled, and submitted.

All photo images will be submitted in a single combined PDF in the following format:

Each photo must be labeled with the following information, using Paint Shop Pro or other photo editing software: NBI Number, Structure Number, County, Facility Carried, Feature Intersected, and Date.

For Example:
NBI 12225
Structure No. 7104 2761x
County Tillman
Facility Carried U.S. 123
Featured intersected Muddy Creek
10/02/2018

NOTE: Additional notes may be placed on any photo that further explains what that photo is showing.

The label should be placed in an area on the photograph which does not obscure the view of the bridge or the problem the photo emphasizes. Labeling should also be of a color which contrasts with the background over which it is placed **(black or white text preferred)**.

Submitting Documents
All files, including photos and inspections are to be submitted in PDF format. Adobe Acrobat or any of several utilities available for download from the internet may be used to create a PDF file. If it is necessary to submit paper documents, then when they are received by Bridge Division they will be scanned for digital conversion.

Typical inspection photos may be submitted on a CD, emailed (see 'email' size below) or put on the 'U' drive server. Submitting combined PDF'd photos (PH) and matching PDF'd inspection reports (IR) on a CD **is the preferred method of submittal.** This allows for backup storage of all documents off the OKBMF server.

Photos may also be labeled and stored as combined PDF files on the U:\ drive under the u:\bridge\bridgephotos folder and the #DIV-1 through #DIV-9 subfolders, as appropriate. See below for using the U drive:

To connect to the Division 9 'U' drive server:
1) Go to 'My Network Places'; Select the 'Tools' icon.
2) Click on 'Map Network' Drive. (Do not put anything in the Drive window.)
3) In the Folder window enter '**\\filesrv2\shared**'.

Proceed to place the photos on the U:\ drive at the following address:
U:\bridge\bridgephotos\#DIV 1 thru 9 (as appropriate).

APPENDIX GG
DATA SUBMISSION REQUIREMENTS

When submitting files by email they must be emailed to: **okbmf@odot.org**

This is a special email account which has been set up to receive all documents submitted for the digital filing system. When emailing photos and documents to the okbmf account; please be alert to the total file size. Emails larger than 20M will not go through the email system. Please to limit email size to less than 20M. If emailing a large number of files is necessary, then there is the option of then splitting the files into 2 or more emails, instead of one large email.

Once received, we will then verify that the photos (PH) are correctly named and labeled. The combined PDF'd photos (PH) and the matching PDF'd inspection report (IR) will then be moved to the OKBMF file system.

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APPENDIX HH
INVOICE REQUIREMENTS

Bridge inspection costs for consultant and CED inspectors are paid by invoice. This appendix identifies the reports required to be submitted to Bridge Division as part of the TOPS invoice package. If the data is entered incorrectly or the reports are not submitted with the required signatures, the invoice approval will be delayed until the data is corrected or the missing item is received. If missing information is not submitted in a timely manner, the TOPS invoice will be rejected. All reports, except the Bridge Inventory Invoice spreadsheet, are printed by BrM with all applicable bridge information automatically filled in.
For best results, the bridge inspection data should be submitted and confirmation received from the Bridge Maintenance office that the data has been accepted and imported into the oracle database before submitting the TOPS invoice. Failure to do so is the most common reason for invoice payment delays.

BRIDGE INSPECTION INVOICE BrM DATA ENTRY

The following items are located under the ODOT INSPECTION > INSPECTOR ITEMS > INVOICE subtask and must be entered for every bridge in the invoice. They are important for database queries in regard to ensuring all bridge inspections reported to be in an invoice are actually present in the database.

Billing Date - Enter the date to appear on the invoice as the date the invoice is submitted for payment.

Invoice No. - Enter the invoice number used for inspection data submittal and claim for payment.

BrM INSPECTION REPORTS

The following reports are required to be included with every TOPS invoice in order for the invoice to be approved by Bridge Division for payment.

1. Bridge Inspection Invoice spreadsheet (See figure HH-1)
   This form must be manually completed and will be signed by the program manager. A file for printing this form can be found at the Oklahoma BrM download website. The address is:
   http://www.okladot.state.ok.us/pontis_files/
   The file name to download and print is: Inspection Invoice.xlsx

   The following information will be entered directly on the inspection invoice spreadsheet:
   - Bridge inspection contract (EC no.)
   - Invoice number
   - Date of Invoice/Date of last Invoice
   - Number of bridges Inspected this invoice
   - County/City
   - Professional services (from – to) dates
   - Reason for invoice (checkbox)
   - Snooper costs
   - Approved misc. expenses (attach travel receipts)
   - Employee costs
   - Load rating costs
   - Travel Expenses: Mileage/Lodging/Per Diem
   - Average time per bridge (provide a brief explanation if over 4 hours)
   - Average cost per bridge
   - Total due this invoice.

2. Report of Conference between Bridge Owner and Bridge Inspection Consultant (See figure HH-2)
   (Use BrM report named 'OK401 invoice_bridge-owner-signature-form') This report will be signed by the bridge owner and program manager.

3. List of Bridges Included in the Invoice (See figure HH-3)
   (Use BrM report named 'OK402 invoice_bridge-listing') This report will be signed by the program manager.

   The following report is to be submitted with the invoice only when there are bridges which require posting, but are not currently posted or are not posted correctly. This report is used by Bridge Division to ensure that bridges requiring posting are posted within the time frame requirements established by the Federal Government.

4. List of Bridges Requiring Load Posting (See figure HH-4)
   (Use BrM report named 'OK403 invoice_bridges_req_load_posting') This report will be signed by the bridge owner only after all listed bridges have been properly posted.

APPENDIX HH
INVOICE REQUIREMENTS

BRIDGE INSPECTION INVOICE - CED & CONSULTANT (Revised 6/20/18)

BRIDGE INSPECTION CONTRACT (EC No.):	XXXX
CONSULTANT INVOICE NO.	XXXX
DATE OF INVOICE	1/1/1901
DATE OF LAST INVOICE	1/1/1901
NO. OF BRIDGES INSPECTED THIS INVOICE:	13
COUNTY	Muskogee
CITY	N/A

FOR PROFESSIONAL SERVICES FROM 1/1/1901 TO 1/1/1901

REASON FOR INVOICE (CHECK ALL THAT APPLY)

X	ROUTINE INSPECTION	X	LOAD RATING
	FRACTURE CRITICAL		SEISMIC OR FLOOD
	OTHER SPECIAL		RAILROAD
	UNDERWATER		OVERHEIGHT IMPACT

SNOOPER COSTS ONLY WHEN APPROVED BY BRIDGE DIVISION:	$ 950.00
APPROVED MISC EXPENSES (ATTACH RECEIPTS):	$ 15.00

LABOR COSTS	HOURS		APPROVED HOURLY RATE	
Engineer	5.00	HOURS X PER HOUR	$ 50.00	$ 250.00
Inspector	6.00	HOURS X PER HOUR	$ 60.00	$ 360.00
Helper	7.00	HOURS X PER HOUR	$ 70.00	$ 490.00
Place Holder	8.00	HOURS X PER HOUR	$ 80.00	$ 640.00
Place Holder	9.00	HOURS X PER HOUR	$ 90.00	$ 810.00
Place Holder	10.00	HOURS X PER HOUR	$ 100.00	$ 1,000.00
LOAD RATING				
Structural Eng	11.00	HOURS X PER HOUR	$ 110.00	$ 1,210.00
Engineer	12.00	HOURS X PER HOUR	$ 120.00	$ 1,440.00

TRAVEL EXPENSES (RATES SUBJECT TO YEARLY CHANGES)		(*Receipts Required)		
MILEAGE :	888.00	MILES X COST PER MILE	$ 0.47	$ 417.36
LODGING:				
STANDARD RATE:	4.00	DAYS @ $91 + *TAX	$ 91.00	$ 364.00
OKC RATE:	5.00	DAYS @ $97 + *TAX	$ 105.78	$ 528.90
ENID RATE:	6.00	DAYS @ $103 + *TAX	$ 113.71	$ 682.26
PER DIEM:				
STANDARD RATE:	7.00	DAYS X PERDIEM RATE	$ 51.00	$ 357.00
OKC & ENID	8.00	DAYS X PERDIEM RATE	$ 59.00	$ 472.00

AVERAGE TIME PER BRIDGE	5.23	AVERAGE COST PER BRIDGE (W/O MIL., SNOOPER, LODGING & PER DIEM)	$ 476.92

REASON FOR MORE THAN 5 HOURS PER BRIDGE

Additional time required for POA and ASR, meetings with owner.

TOTAL AMOUNT DUE THIS INVOICE $ 9,986.52

CED OR CONSULTING ENGINEER

AUTHORIZED REPRESENTATIVE

APPENDIX HH
INVOICE REQUIREMENTS

Figure HH-1 Sample Bridge Inspection Invoice

Report of Conference between Bridge Owner and Bridge Inspection Consultant or Circuit Engineering District

for

Invoice No.: 2502

County Owner : GARVIN

City Owner : Unknown

ODOT Owner : Division 3

The undersigned do certify that I/we have met with the bridge inspection consultant or circuit engineering district following inspection of bridges within my jurisdiction. We have discussed to my satisfaction the following topics, as applicable:

- Bridges requiring load posting.
- Bridges requiring closing.
- Bridges with a CX or PX repair recommendation along with recommended actions to take and the possible consequences of failure to timely perform the recommended actions.
- Recommendations for bridge maintenance to prevent further deterioration.

Additionally, I/we have received a copy of all bridge inspection reports and have been instructed how to interpret the information contained therein. Details of individual bridge requirements and recommendations are provided on a separate sheet.

Bridge Owner(s)	**Date**
_____	_____
_____	_____
_____	_____

Bridge Inspection Consultant or Circuit Engineering District

The bridges under the subject invoice number have been discussed with the appropriate bridge owner and repair and/or maintenance actions recommended.

Authorized Representative	**Date**
_____	_____

Include this form as an attachment to TOPS invoice submittal.

Figure HH-2 Sample Report of Conference between Bridge Owner and Bridge Inspection Consultant

Bridges Included In Invoice : 111111
Bridge Inspection Contract :
COUNTY : BLAINE

1/13/2012

Structure	NBI Number
06E0695N2590005	30336
20E1010N2220003	30168
20E1010N2340000	30178
22N2200E0630004	30177
75E1230N2270000	29836

No. of Bridges This Invoice : 5

Bridge Maintenance
CONSULTING ENGINEER

BY : _____

AUTHORIZED REPRESENTATIVE

Figure HH-3 Sample List of Bridges Included in Invoice

OKLAHOMA **COUNTY**

BRIDGES REQUIRING LOAD POSTING 1/13/2012

Local ID.	Struct. No.	Agency Bridge Id :	Location	Rec. Max. Posting	Actual Posting	Date Posted	Initials of Poster
O-175	55E0950N3240008	08938	.8E OF TRIPLE XXX	18			
E-031	55N3190E0910003	11985	0.3S of COFFEE CREEK RD	3			
E-015	55E0930N3150009	21066	200' W of DOUGLAS	3			
E-008A	55E0910N3160001	26954	.5E OF DOUGLAS ON COFFE	3			
190	55N3280E1090007	19394	.3N OF SE 44	10			

We the undersigned certify that the bridges listed above have been posted for the weight limits specified.

County Commissioner, District 1 Date

County Commissioner, District 2 Date

County Commissioner, District 3 Date

cc: ODOT Field Division Office
ODOT Bridge Division

Figure HH-4 Sample Bridges Requiring Load Posting

APPENDIX II

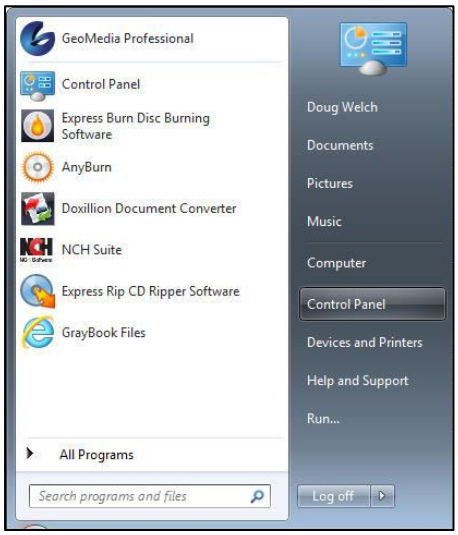
Creating Signed PDF Inspection Reports

Bridge Division has converted to a paperless bridge record filing system to facilitate easy access to all bridge data from any ODOT computer on a read-only basis. On-System bridges are to be submitted in electronic format as described in this document in lieu of paper reports.

One big consideration has been the necessity of creating an electronic bridge inspection report that can be digitally signed, thus replicating a signed paper inspection report. The electronic bridge inspection report must be created and digitally signed by the inspector just as the paper inspection report would have been printed and signed. This way the electronic inspection report can be used as a legal document. The digitally signed report can be distinguished from any other bridge inspection report that may be printed from BrM at a later date. Plus, the digitally signed inspection report can certify whether or not the file has been modified since the time it was originally created. One software program which accomplishes this goal and has been acquired by ODOT for use on ODOT computers is Adobe Acrobat. This software has been installed on various Bridge Division and Division Bridge Coordinator computers. State bridge inspecting consultants will need to purchase this software if they do not already own a copy. Once the signed bridge inspection report is created, it can be viewed using any PDF file reader. Adobe Acrobat Reader is available as a free download from the internet at Adobe.com.

These instructions are for creating a signed PDF Bridge Inspection Report in Adobe Acrobat. They are written for Adobe Acrobat 2018 Pro DC using Windows 7 operating system. These are the versions currently installed on Bridge Division computers. If a different version is used, the procedures will be different than described herein.

SET THE DEFAULT PROGRAM TO OPEN PDF FILES (IF REQUIRED)



If your computer has Adobe Acrobat Reader DC already installed when Adobe Acrobat 2018 Pro DC was installed, then you will need to change the default program for opening PDF files. Otherwise, Adobe Acrobat Reader will open your PDF files and you will not be able to utilize the digital signature feature of Adobe Acrobat Pro DC.

To change the default program for opening PDF files:

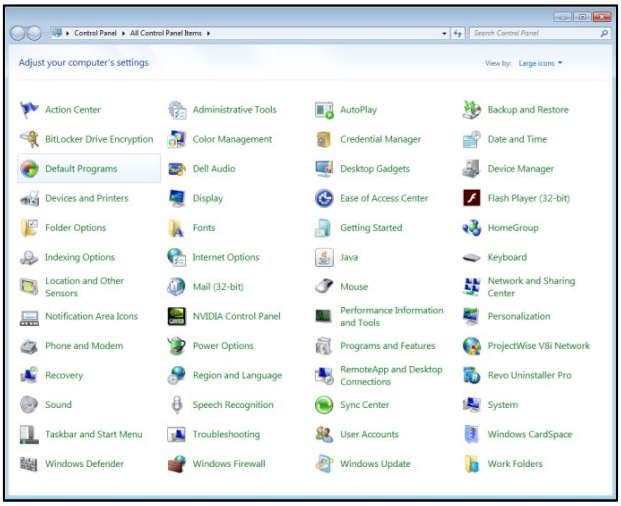
1. Open the 'Start' menu button from your Windows taskbar in the lower left hand corner of your monitor.

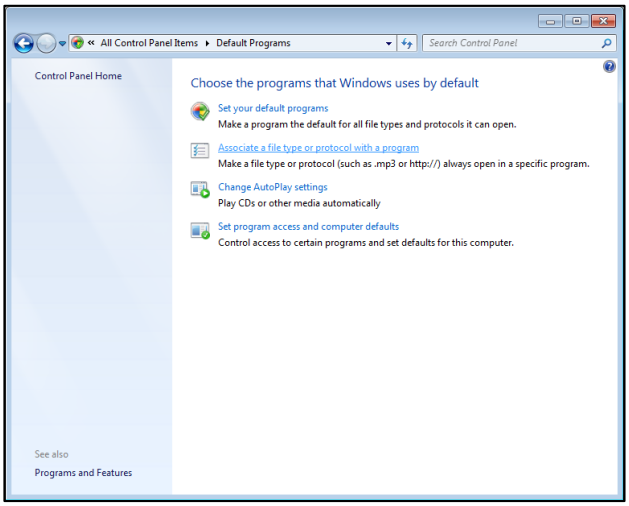
2. Select the 'Control Panel' from the list of options; and the 'Control Panel' window will open up.

3. Then select the 'Default Programs' from the list of options, and the 'Default Programs' window will open up.

4. Pick 'Associate a file type or protocol with a program' from the list.

5. Next, the 'Associate a file type or protocol with a program' window will open. Scroll down the list to find the '.pdf' file extension from the 'Name' list and click on it. This will show which program is associated with PDF files. If the window does not show Adobe Acrobat DC as the default program to open PDF files; but rather shows Adobe Acrobat Reader DC, then click on the 'Change Program' button.



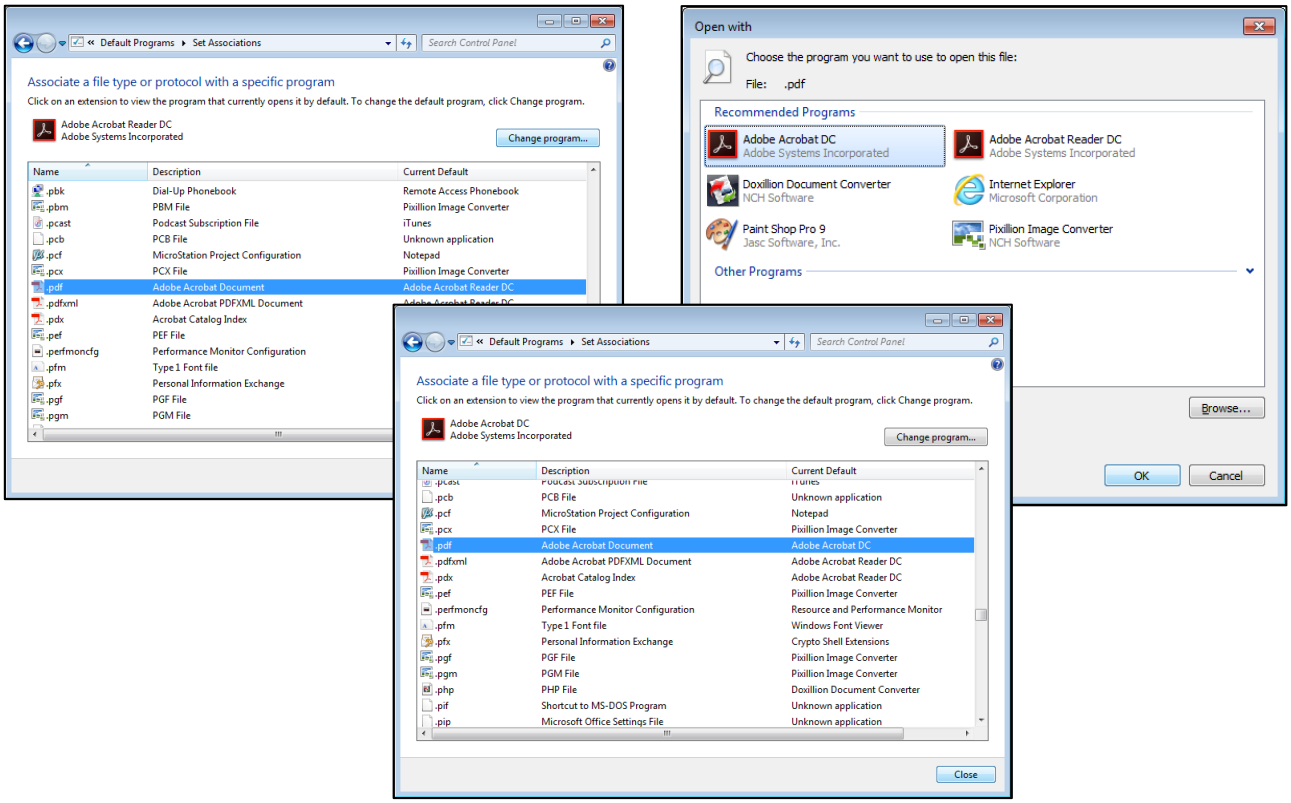


APPENDIX II
Creating Signed PDF Inspection Reports

6. The ‘Open With’ window opens. Pick Adobe Acrobat DC from the ‘Recommended Programs’ list and then click the ‘OK button’.

7. The ‘Associate a file type or protocol with a program’ window should now show Adobe Acrobat DC as your default program to open PDF files.

8. Select the ‘Close’ button to close the ‘Associate a file type or protocol with a program’ window. Then close the ‘Default Programs’ by clicking on the ‘X’ button.

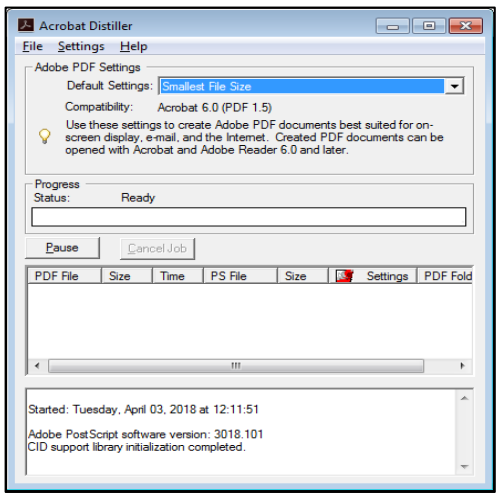


SETTING ADOBE ACROBAT DISTILLER PROGRAM SETTINGS

1. Before the Bridge Inspection Report is created in BrM and made into a PDF, a setting in Adobe Acrobat Distiller DC program must be set. First open the ‘Start’ menu button from your Windows taskbar in the lower left hand corner of your monitor.

2. Select the ‘Adobe Acrobat Distiller DC’ from the list of Programs; and the ‘Adobe Distiller’ window will open up.

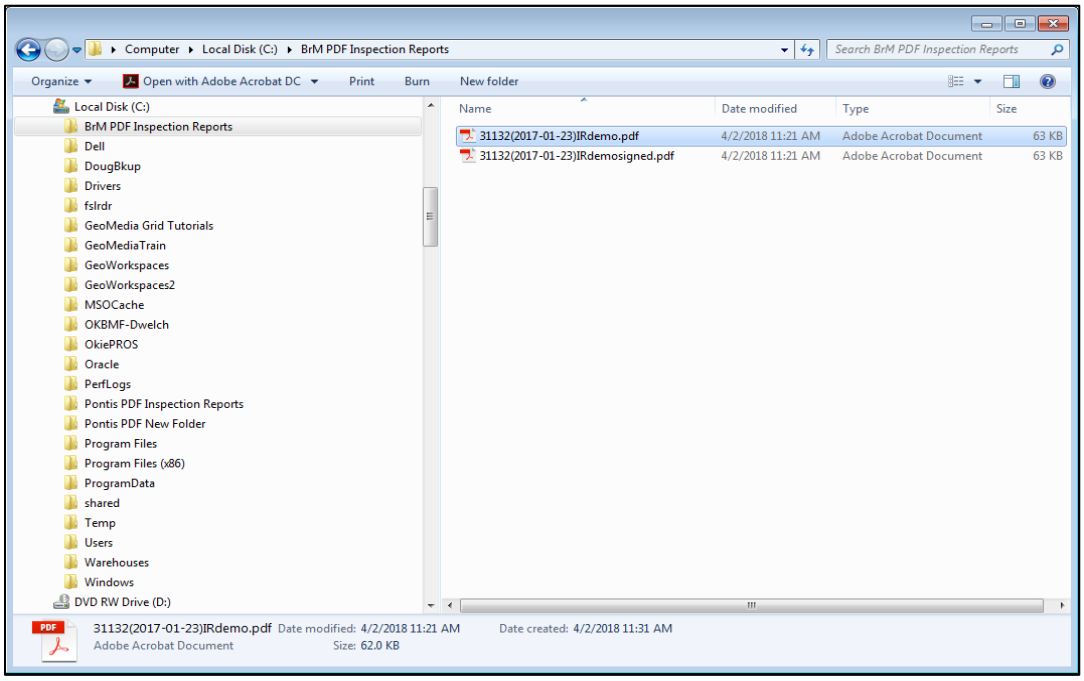
3. In the top most field ‘Default Settings’, select ‘Smallest File Size’. Next close Acrobat Distiller.



APPENDIX II
Creating Signed PDF Inspection Reports

SETTING UP A LOCATION ON YOUR COMPUTER TO STORE PDF INSPECTION REPORTS

A location on your computer hard drive to store your PDF formatted inspection reports needs to be created on the main computer hard drive 'Local Disk (C):' (i.e. 'C Drive'). Using the 'Computer' window add a new 'Folder' on the 'C Drive' under 'Local Disk (C):' A recommended name for the folder is 'BrM PDF Inspection Reports'.

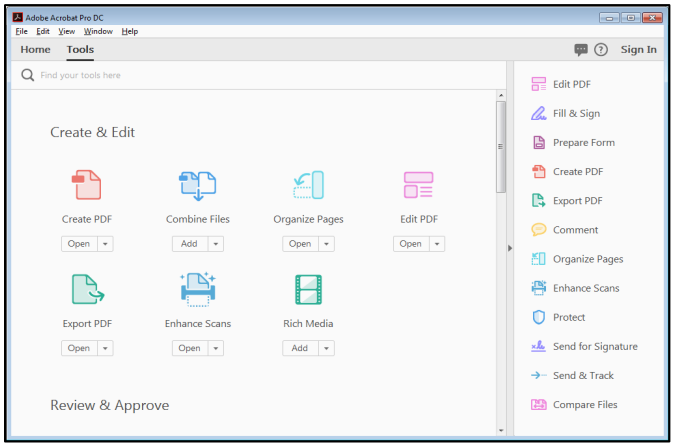


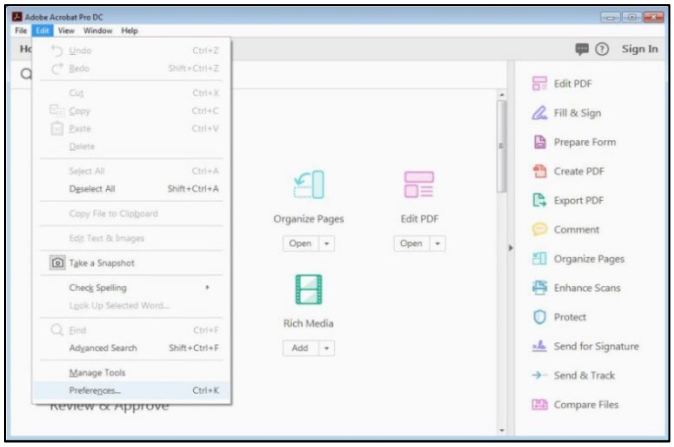
CREATING YOUR DIGITAL SIGNATURES

A signature file must first be created which contains the inspector's 'digital signature' before a document can be digitally signed. The signature should be created in the format described below. Additional features are not desired. There is information embedded in the signature which is used to detect whether the document was modified after the electronic document was digitally signed. The signature file is password encoded to prevent unauthorized usage. To create a PDF format digital signature, the following procedure will be followed:

1. To begin you must first setup the preferences for your digital signatures. The following options shown below are required and you may add other options displayed needed.

2. Open the Adobe Acrobat Pro DC program. From the Adobe Acrobat menu bar, select 'Edit', then 'Preferences'.

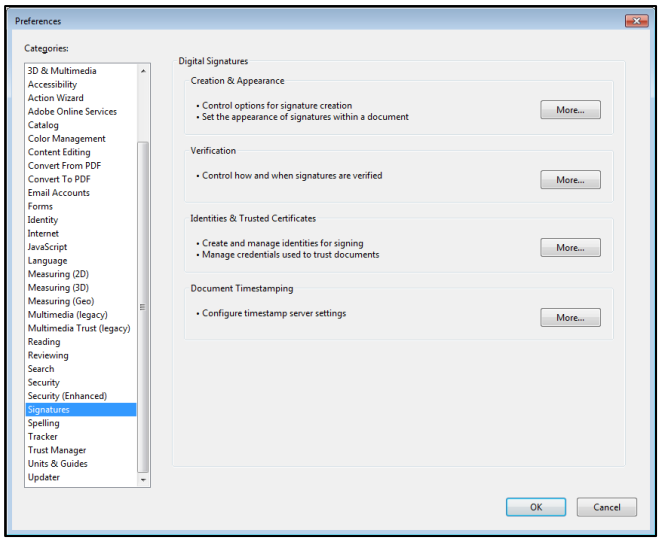


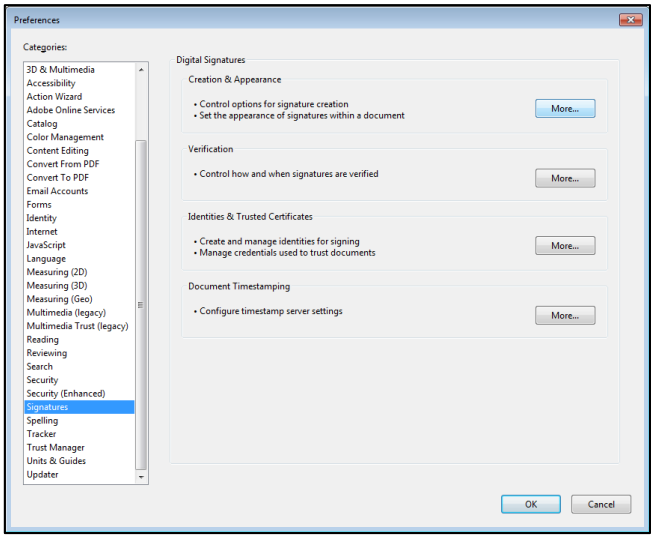


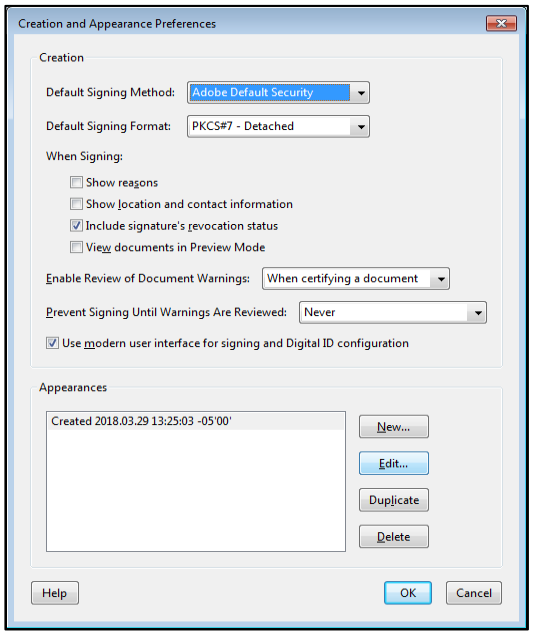
3. The 'Preferences' window opens up. In the 'Categories' list, select the 'Signatures' option.

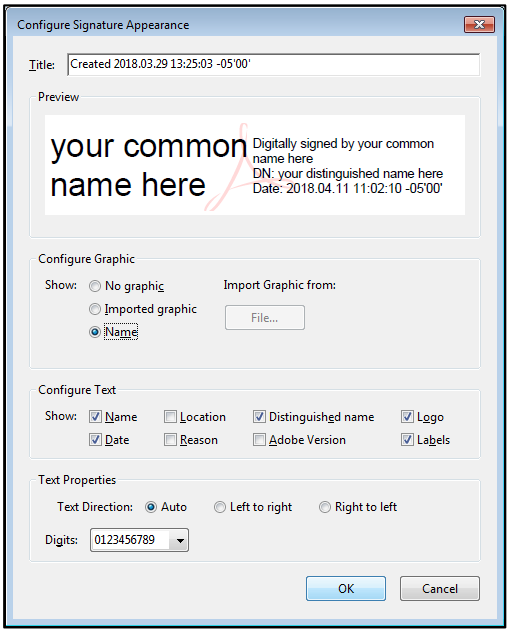
4. In the ‘Digital Signatures’ pane, select the ‘More’ button from the ‘Creation & Appearance’ option.

5. The ‘Creation and Appearance Preferences’ window will open up. Pick the ‘Edit’ button at bottom right.









6. The ‘Configure Signature Appearance’ window will open up next. Setup the preferences for your digital signatures. The following options shown above are required and you may add other options displayed needed.

7. Click the ‘OK’ button to close ‘Configure Signature Appearance’ window. Click the ‘OK’ button to close ‘Preferences’ window.

DIGITAL SIGNATURE CREATION

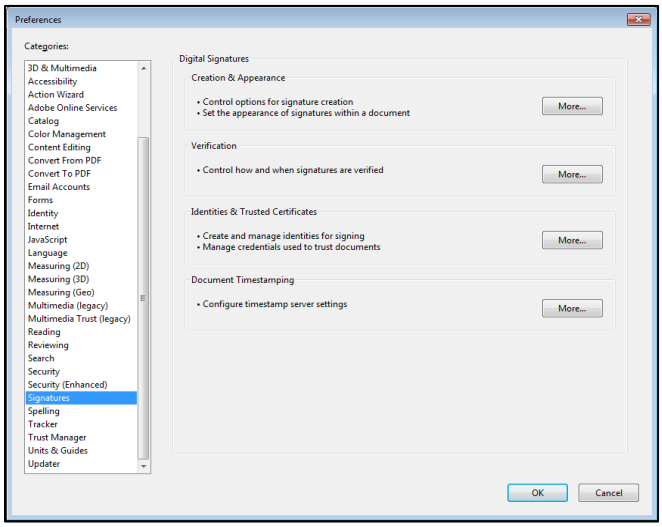
To now begin the process to create a digital signature, you must first open the Adobe Acrobat Pro DC program again if needed. Follow the instructions below:

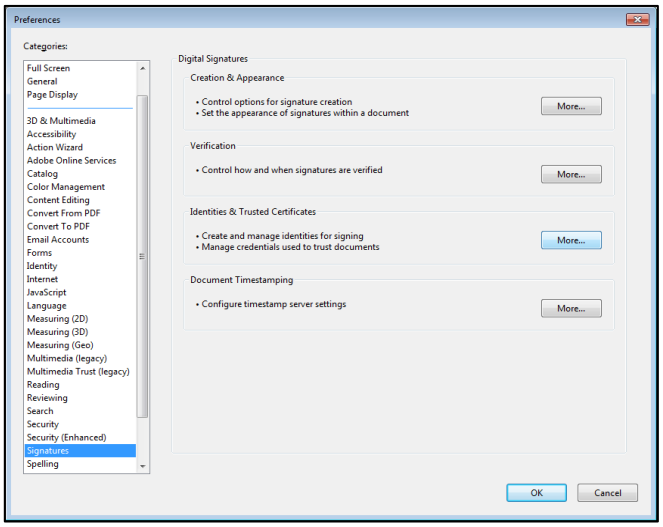
1. As shown in the pictures above, from the Adobe Acrobat menu bar, select ‘Edit’, then ‘Preferences’. ‘Preferences’ window will open again.

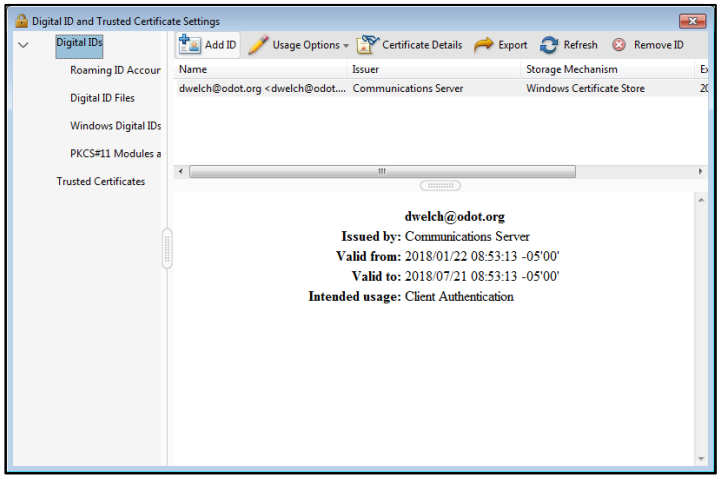
2. In the ‘Categories’ list, select the ‘Signatures’ option. The ‘Digital Signatures’ pane will open.

3. In the ‘Digital Signatures’ pane, select the ‘More’ button from the ‘Identities & Trusted Certificates’ option.

4. The ‘Digital Signatures & Trusted Certificate Settings’ window will open up. Pick ‘Digital IDs’ on the top left.

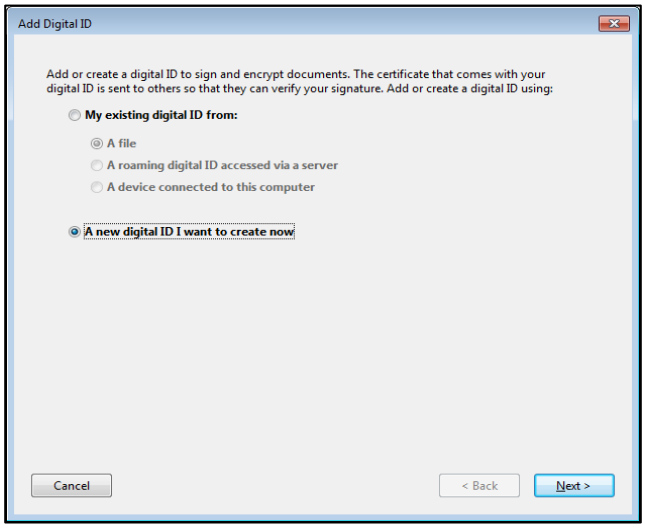


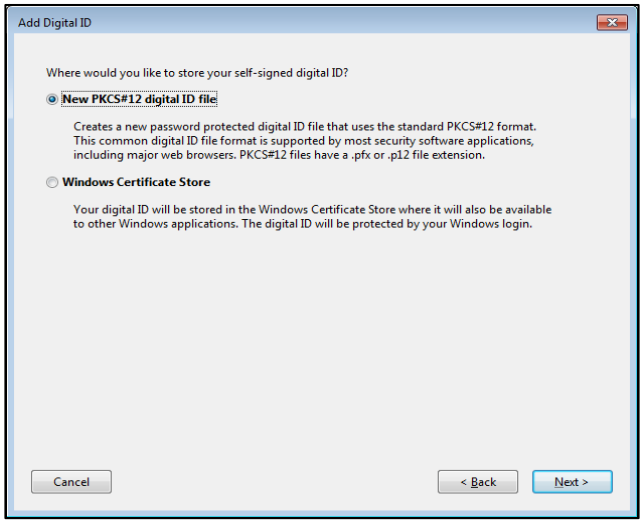




5. In the ‘Add Digital ID’ window, select the ‘A new digital ID I want to create now’ button. Click ‘Next’.

6. In the ‘Add Digital ID’ you are asked ‘Where would you like to store your Self-signed Digital ID?’, select ‘New PKCS #12 Digital ID file’ button. Click ‘Next’.





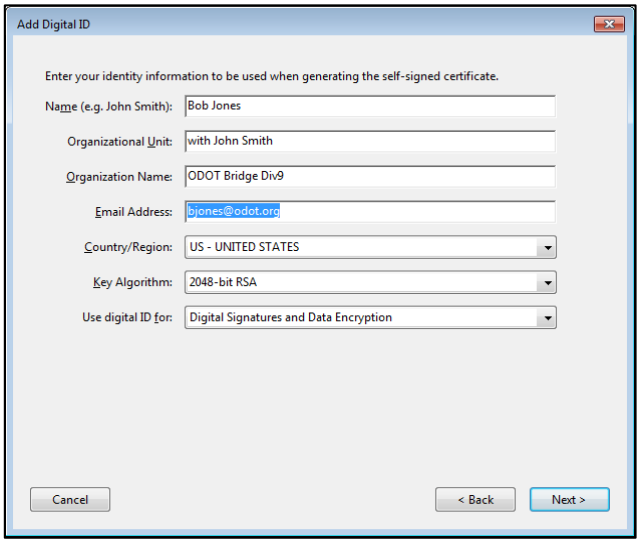
7. In the 'Add Digital ID' window, enter your name (i.e. Bob Jones) in the 'Name' field. In the 'Organizational Unit' field, enter the name of the person you inspect bridges with (i.e. with John Smith). Put your ODOT Division or Business Name in the 'Organization Name' field (i.e. ODOT Bridge Div9 or i.e. Bob Jones Inspection). Last enter your e-mail address (i.e. bjones@odot.org) in the 'Email Address' field. Click the 'Next' button.

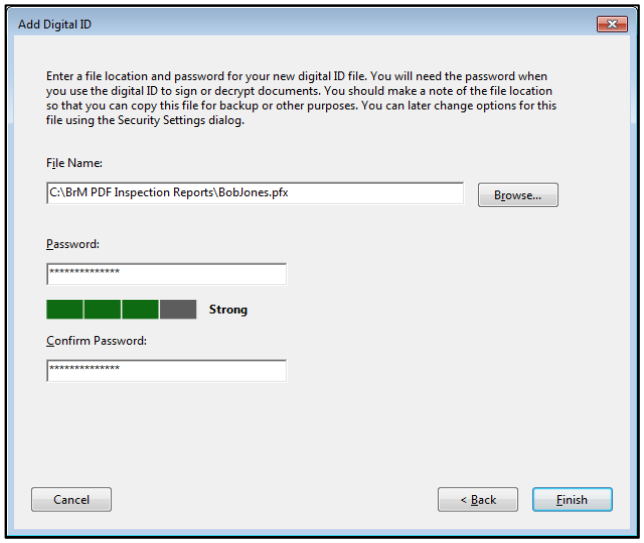
SUGGESTION: If you inspect bridges with different people, you may create multiple Digital IDs with a different helper's name in the signature. If so, you can modify your name by putting the helper's initials in parentheses behind your name. This will allow you to distinguish between the different digital signatures For example, if inspector Bob Jones frequently inspects bridges with helper 'John Smith' and sometimes inspects with helper 'Jane Doe', then Bob Jones might set up two digital signatures shown below:

Name:	**Organizational Unit:**
Bob Jones(JS)	with John Smith
Bob Jones(JD)	with Jane Doe

The example shown below is for if Bob Jones is a consultant who uses an available ODOT supplied helper:

Name:	**Organizational Unit:**
Bob Jones	with ODOT helper name

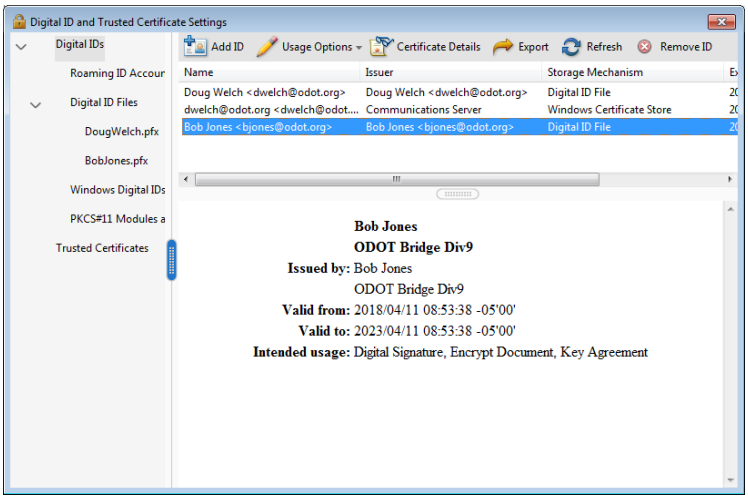




8. In the 'Add Digital ID' window in the 'File Name' field, click the 'Browse' button to pick a folder location (i.e. BrM PDF Inspection Reports) for your Digital ID file(s). Next enter a 'Password' and then 'Confirm Password' (You will be asked to enter this password each time you edit or delete a signature or sign a document). Then click 'Finish'.

9. Your name will now be in the 'Name' list of the 'Digital Signatures & Trusted Certificate Settings window.

10. Your digital signature is ready to sign any PDF document. Repeat steps 1 thru 9 to create additional digital ID's.



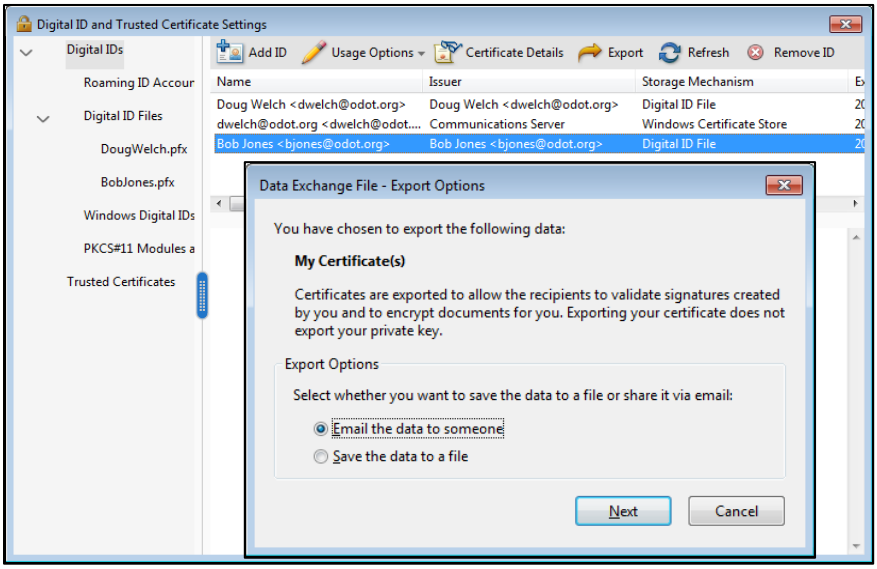
APPENDIX II
Creating Signed PDF Inspection Reports

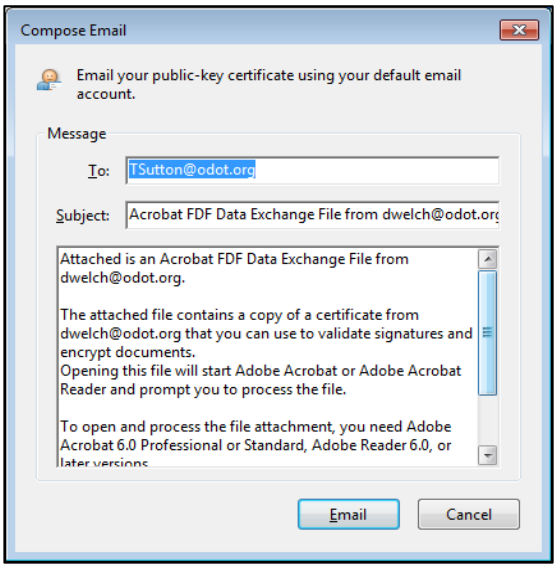
NOTE: A security certificate needs to be created and sent to the Bridge Division for each digital ID you create. This will allow confirmation as to the authenticity of the digital signature whenever the inspection PDF is opened. Computers without this certificate may open the inspection PDF and observe the report, but the signature will not be certified. To begin the email process:

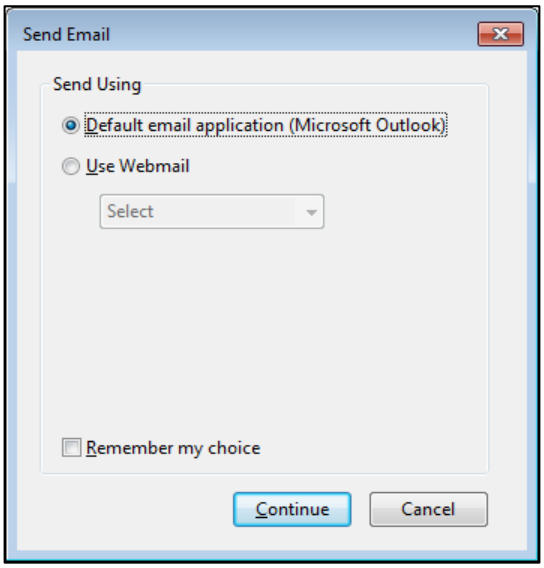
11. Select the Digital ID you just created. Then select the 'Export' button from the options at the top of the window and the 'Data Exchange File - Export Options' window will open.

12. In the 'Data Exchange File - Export Options' window, under 'Export Options' select 'Email the data to someone' Then click 'Next'.

13. In the 'Compose Email' window under Message in the 'To' field, enter the email address for Tony Sutton, (TSutton@odot.org) and also OKBMF@odot.org. Click the 'Email' button.



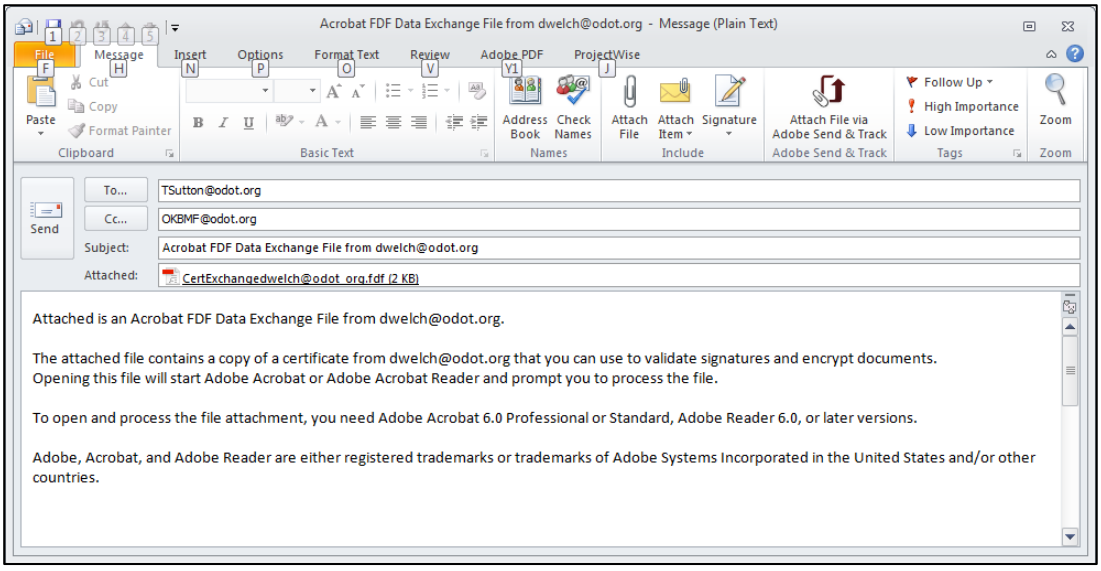




14. Next the 'Send Email' window will open. Under the 'Send Using' option, pick the 'Default email application (Microsoft Outlook)' button. Your email software should open with a prepared message and attachment as shown below.

NOTE: If your email software is not already open and running, you will be prompted to open up that software through your standard email login process.

15. Enter the email address for Tony Sutton, (TSutton@odot.org). Also CC: a copy to Bridge Maintenance, (OKBMF@odot.org) and then send the email.



16. Repeat steps 1 thru 15 for any additional Digital Signature ID's you created.

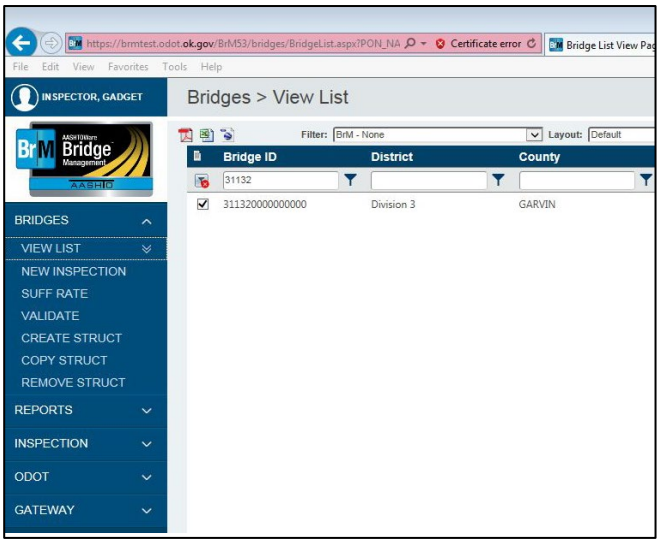
17. Close the 'Digital Signatures & Trusted Certificate Settings window.

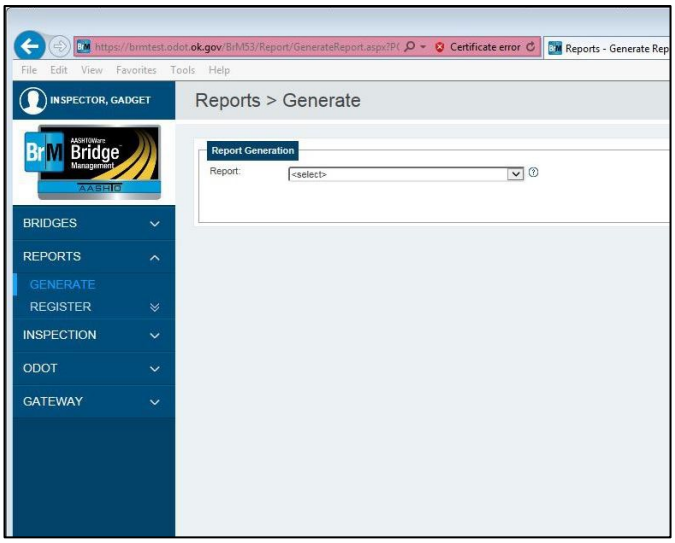
CREATING A DIGITAL PDF FORMATTED INSPECTION REPORT IN BrM

Before a signed PDF Inspection Report file can be stored in an individual bridge folder, the PDF Inspection Report file must be created one bridge at a time. To create a signed Bridge Inspection Report in PDF file format use the following procedure:

1. In the BRM 'Inspection' window, under the 'Bridges' 'View List' and 'Bridge ID'; check the check box by the selected the bridge from the bridge list for which the inspection report is to be printed. Next select the 'Reports' tab located on the left side of the BRM 'Inspection' window.

2. The 'Reports Generate' window will open with the 'Report Generation' 'Report:' drop down window showing. This drop down window allows a particular report type to be generated.

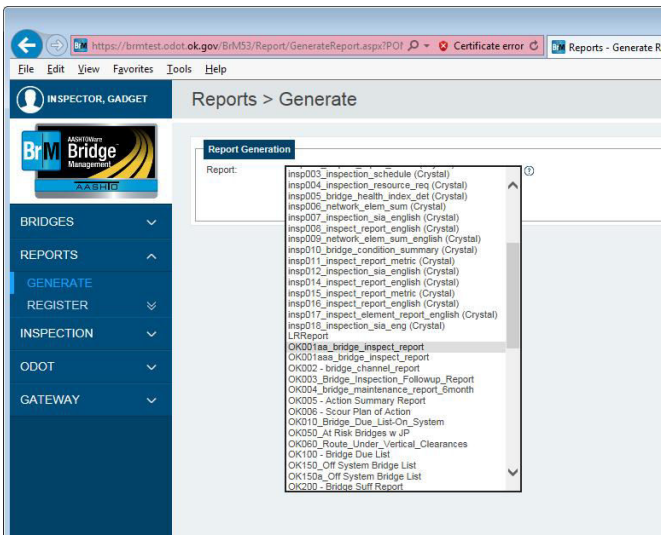


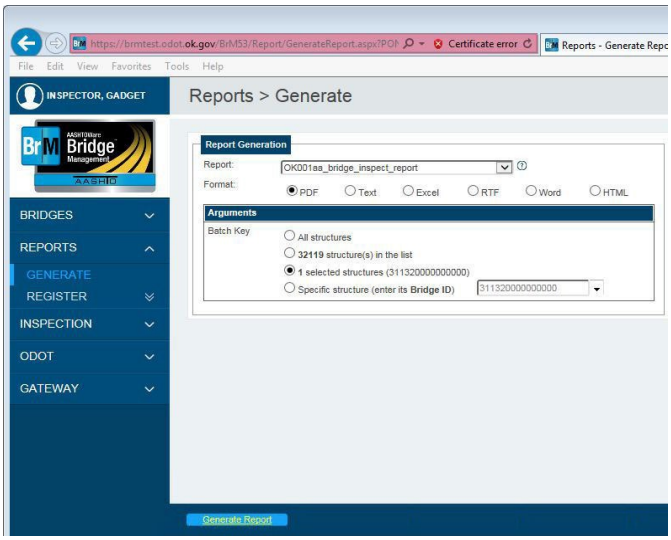


3. From the list of reports, select the 'OK001_bridge_inspection_report' from the 'Report Generation' 'Report:' drop down window. Under 'Report Generation' 'Format:' pick the 'PDF' button option.

4. Next, under 'Arguments' 'Batch Key:' pick the '**1** selected structures (e.g., 311320000000000)' button option.

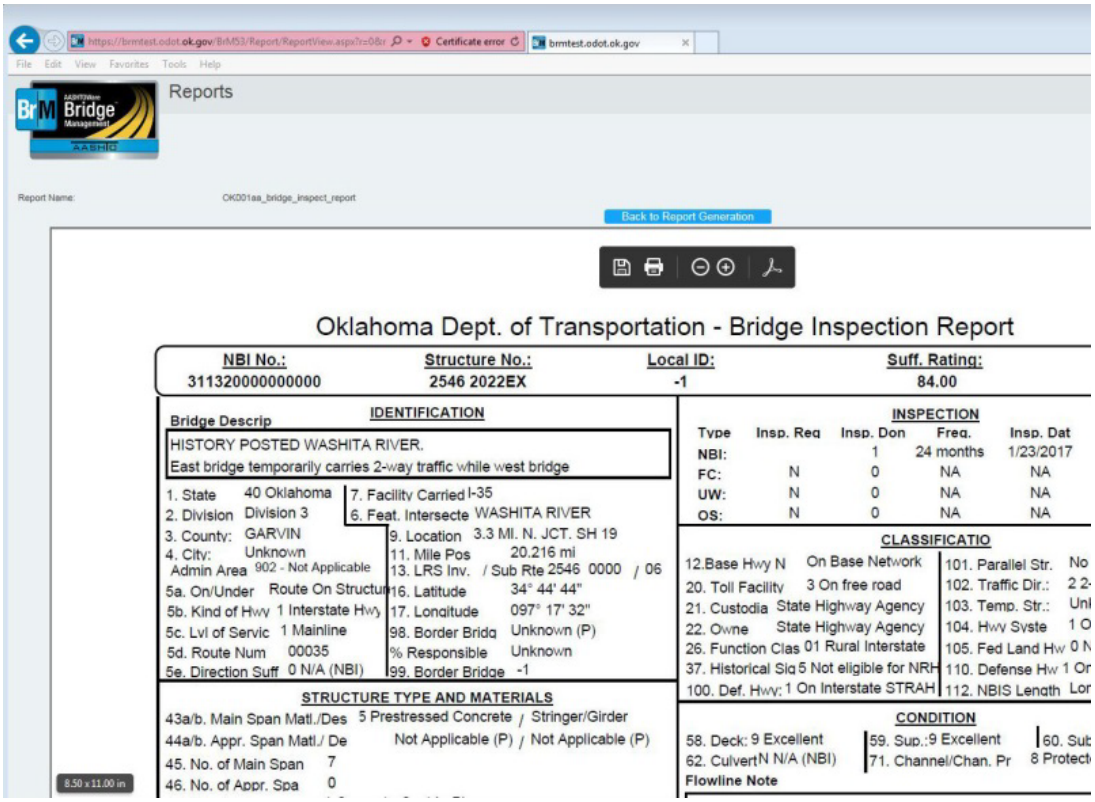
5. Click the 'Generate Report' button at the bottom of the 'Reports Generate' window. This begins the PDF report generation process using Adobe Acrobat Distiller Pro. When finished, the report is displayed on your computer monitor in the BrM 'Report' window.





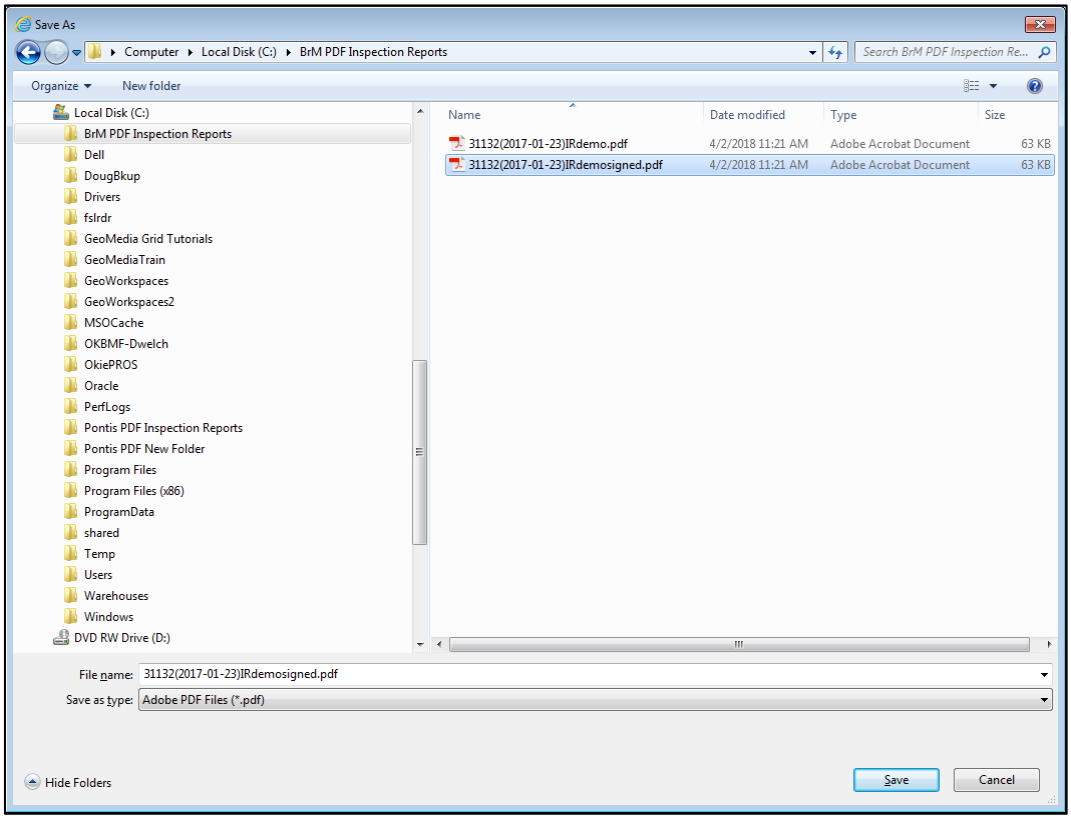
6. With the BrM PDF Inspection Report displayed on your computer monitor, select the 'Save' button at the top of displayed PDF.

7. After clicking the 'Save' button the 'Save' PDF File As window will open up.



8. After the 'Save' PDF File As window opens, take the opportunity to check the directory location where the file will be saved as well as name of the file. You are then given the opportunity to identify the location where the file will be stored on your computer and to name the report.

9. Navigate to the 'BrM PDF Inspection Reports' folder that was set up in earlier instructions for the location to save the Digital PDF Inspection Reports to. Name the file in the approved Bridge file naming format (See the '**NOTE**' below). Select the 'Save' button.



NOTE: In order to standardize file names, use the following format to name your digital inspection report PDF files: NBI Number (Date in the YYYY-MM-DD format)IR, where IR indicates it is an inspection report. The date portion of the name is entered in the year-month-day order so that the files will sort in the correct order after multiple inspections have been performed on the same bridge. For example, the PDF file for bridge NBI# 31132, inspected on January 23, 2017, will be named 31132(2017-01-23)IR.pdf. Refer to the 'BrM Office Manual Appendix GG' for additional information.

10 After selecting 'Save' Adobe Acrobat Pro DC will create the Digital PDF Bridge Inspection Report and save it in the designated folder for PDF's. When finished creating all of the needed reports, log out of the BrM 'online software. This returns you back to the main BrM 'Login' window.

11. At this point you can choose to repeat steps 1 thru 10 to create PDF's for all of the remaining bridge inspection reports before digitally signing them, or digitally sign each Inspection Report PDF after it is created in BrM.

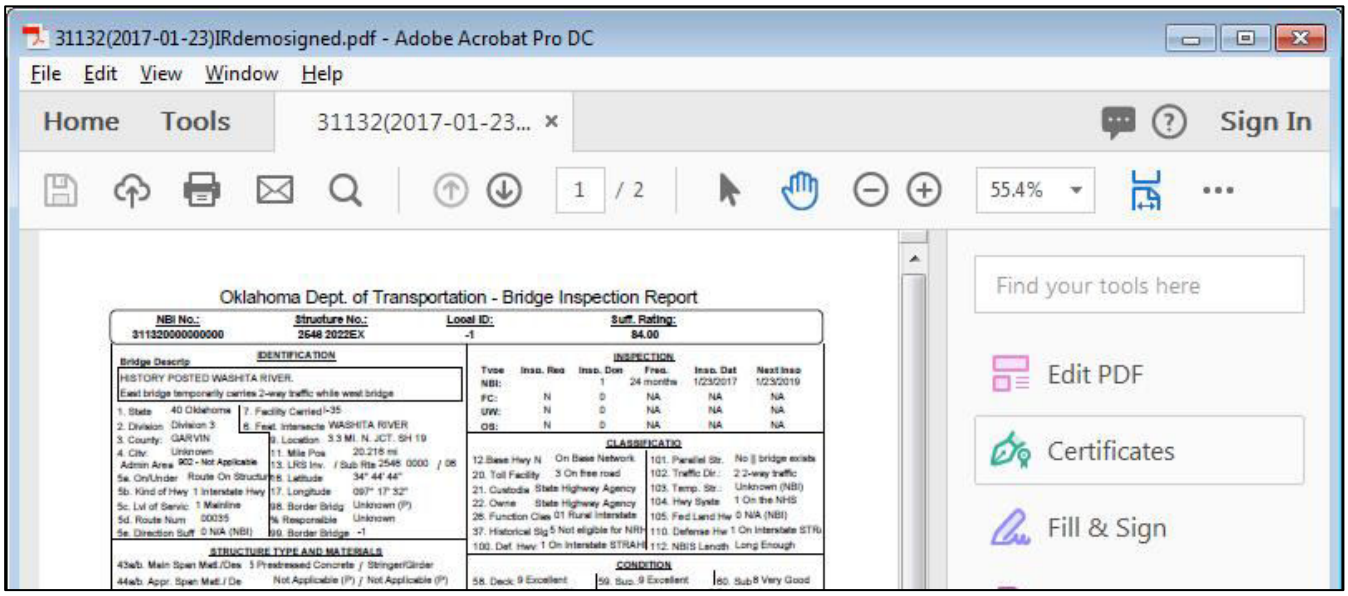
APPENDIX II
Creating Signed PDF Inspection Reports

CREATE A SIGNED PDF INSPECTION REPORT

In order for the digitally signed inspection report file to be stored in an individual bridge folder, the signed PDF file must be created one bridge at a time. To create a digitally signed Bridge Inspection Report in PDF file format use the following procedure:

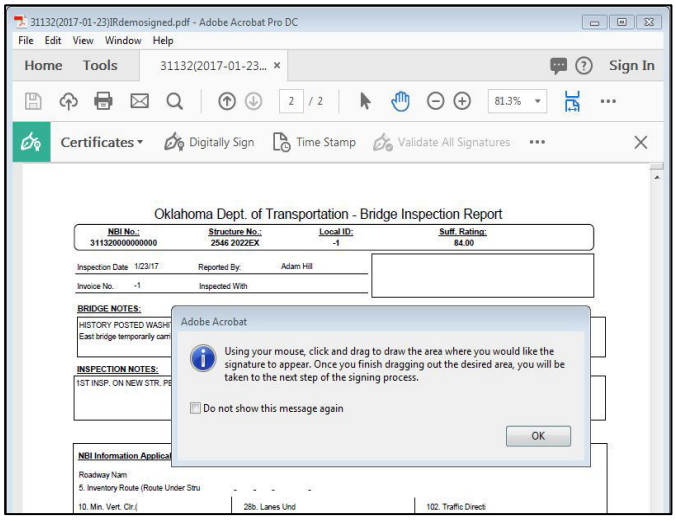
1. Once the digital PDF Inspection Report file is created and then located on your computer, open the digital PDF Inspection Report in Adobe Acrobat Pro DC. Scroll down to the top of page 2 of the digital inspection report.

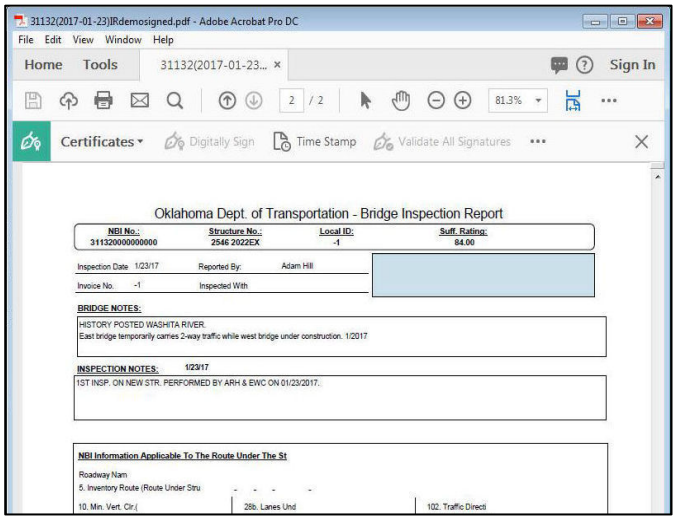
2. To digitally sign the report, first select the 'Certificates' button on the tool bar at the right side of the Adobe Acrobat window. This will open the 'Certificates' tool bar banner located above the inspection report. Then select the 'Digitally Sign' button option on the 'Certificates' tool bar banner.



3. An 'Adobe Acrobat' window will open up informing you to click and drag a window where you want the digital signature to be placed. Read the directions on how to place the signature in the PDF file. When familiar with this process, if you do not want see this prompt again check the 'Don't show this message again' box. Next click the 'OK' button. Crosshairs will appear on the screen in place of the mouse pointer.

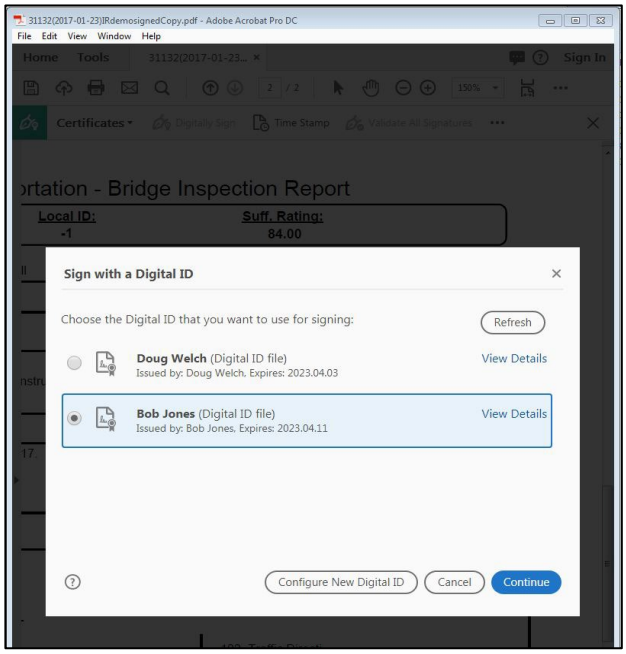
4. Locate the rectangular signature box in the upper right hand corner of page 2. Place the cursor at upper left hand corner of the signature box. Then hold down the left mouse button. Click and drag the mouse from the upper left hand corner of the signature box to the lower right hand corner, then release the mouse button.

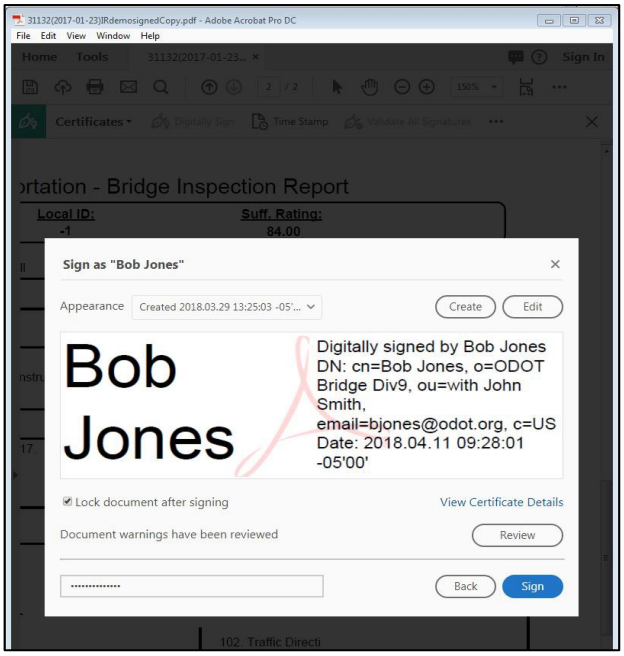


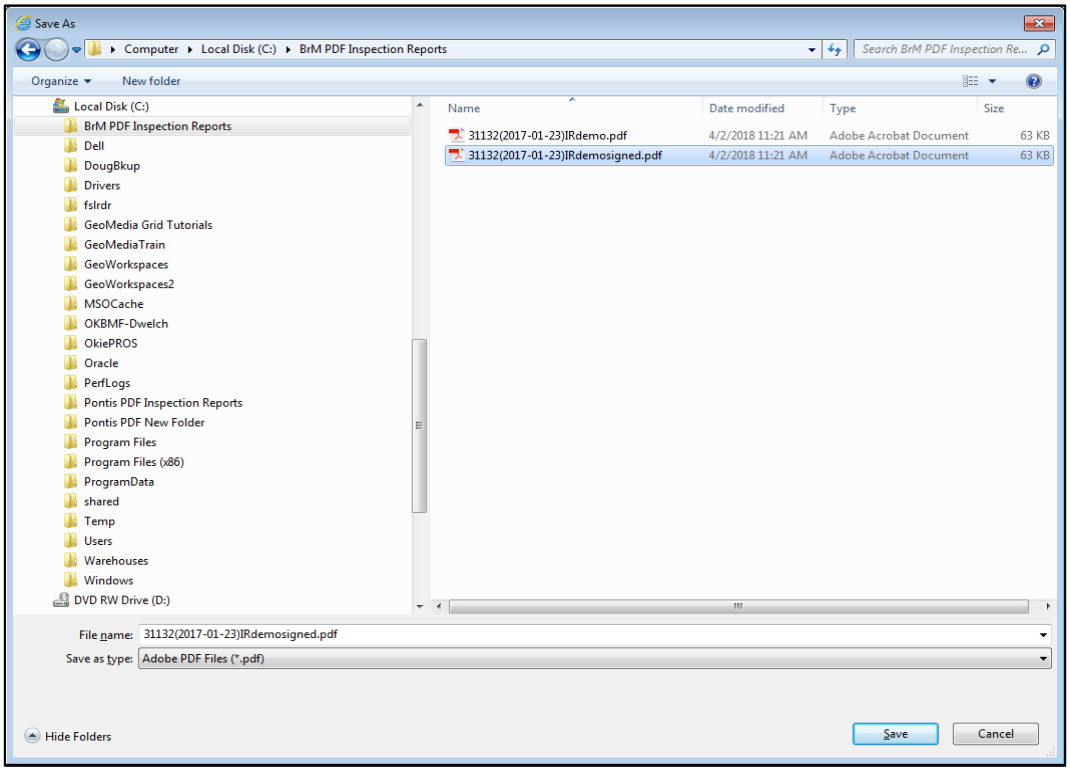


5. The 'Sign' with a Digital ID' window will open up. Select the digital signature profile needed from the list of available signatures that have been created in Adobe Acrobat. Click the 'Continue' button and the 'Sign as Bob Jones' window will open. Review the digital signature to make sure it is current.

6. Enter your password in the 'Password' field. Check the 'Lock document after signing' box and click the 'Sign' button. **YOU MUST REMEMBER YOUR PASSWORD**. You cannot edit or delete digital signatures then without it.



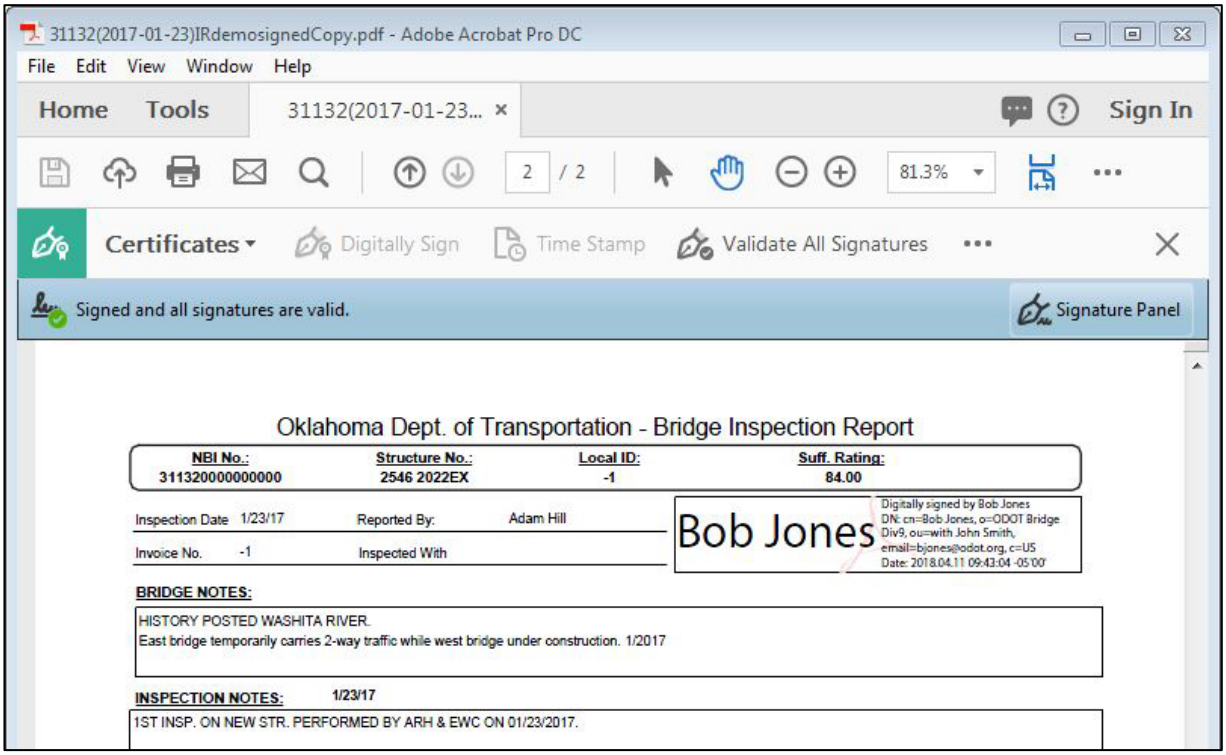




7. Click the 'Save' button. The digitally signed PDF inspection report is now complete. Close the document.

8. To create each Bridge Inspection Report PDF and digitally sign them one at a time repeat steps 1 thru 7 for each bridge inspection.

9. Or repeat steps 1 thru 7 to digitally sign a batch of previously created Bridge Inspection Reports in BrM.



PROVIDE PDF FILES TO ODOT

Once all inspection reports are created as digitally signed PDF files, then they should then be sent to the same person at the ODOT Division Office and the ODOT Central Office as you previously send the paper inspection reports. The PDF digitally signed inspection files (IR) and PDF combined photo files (PH) should be provided in the manner described in the 'BrM Office Manual Appendix GG'.

PRINT PDF FILES TO PAPER (ONLY IF NEEDED FOR LOCAL STORAGE)

If paper inspection reports are required for local bridge inspection files, a convenient way to print the PDF files in one batch job is to open 'Computer' and navigate to the folder where the PDF files are saved on your hard drive. Highlight all reports to be printed and then select 'Print'. The reports will be printed in a single batch.

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APPENDIX JJ
CREATING SCOUR PLANS OF ACTION

When do you need to produce and complete a Plan of Action (POA)?

A bridge is considered scour critical if **SNBI Item B.AP.03 (Scour Vulnerability) is a C or D**. If a bridge is determined to be scour critical, a Plan of Action shall be developed and implemented to address the problem; to comply with NBIS regulation 23 CFR 650.313(e)(3). Figure JJ-1 shows a sample POA.

The Program manager is required to complete a Plan of Action, if required.

Check the Bridge Maintenance File for the POA. The POA must be maintained and kept up to date. At each inspection the inspector needs to review the POA and confirm that the contact information is still applicable and if any changes are warranted.

The Scour Plan of Action (POA) is a report in BrM.

To generate a POA:

1. On the BrM desktop, select the bridge(s) you want to work on (i.e., all in same county, along a certain highway, or District) by placing a check in the box to the left of the bridge listing.
    a. You may highlight certain bridges out of a larger list or use the BrM filters to display only the bridges desired.
2. Select the 'Reports' task. The 'Reports > Generate' screen will appear.
3. Click on the down arrow for the reports field and select 'OK006 – Scour Critical POA'
    a. Make sure the PDF format is selected.
4. Click on 'Generate Report' at the bottom of the screen.
5. This will generate a POA for all selected bridges which also meet the following criteria:
    a. Item B.AP.03 (Scour Vulnerability) is coded a C or D
    b. Scour Smart Flag (961) exists

Instructions for completing a Scour Plan of Action (POA)

1. Fill in the coding of SNBI Item B.AP.03 (Scour Vulnerability) from the last inspection.
2. Fill in the coding of the following items from the last inspection:
    a. Substructure – Item B.C.03
    b. Culvert – Item B.C.04
    c. Channel – Item B.C.09
    d. Channel Protection – Item B.C.10
    e. Scour Condition – Item B.C.11
    f. Overtopping Likelihood – Item B.AP.02
3. Fill in your contact phone number.
4. Fill in your Employer/Company.
5. Criteria for Bridge Closure – This section should be completed during the follow-up meeting with the bridge owner.
    a. Circle or write in what the owner decides as the criteria for closing the roadway.
6. Detour route – this can be a Google map or a county map with a route highlighted or written instructions.
    a. When choosing a route, be sure that if the same stream or creek that is causing the closure crosses the detour route, that the roadway will not be overtopped, and it is not a scour critical bridge.
7. Fill in the names and contact phone numbers of the Bridge Contact personnel.
8. Countermeasures recommended can include adding riprap at abutment, bracing piles, or just monitoring the bridge.
9. The Author(s) of the POA, Bridge Owner, and County Bridge Coordinator are required to sign and date.
10. Insert the date that the Countermeasures were installed and implemented.

03/2024

OKLAHOMA DEPT. OF TRANSPORTATION
PLAN OF ACTION FOR SCOUR CRITICAL BRIDGES

District :	County :	Bridge NBI# :

	Current Condition	Previous Condition				
Item B.AP.03 Scour Vulnerability		1	ADT :		ADT Year :	
Bridge Structure #			Year Built :		Bus Route :	
Bridge Location :			Location :			
Bridge Desc. :						
Structure Notes :						
Inspection Notes :						
Foundation Type	Abutment Type and Foundation :		Type of Pier and Foundation :		Foundation Soils Type :	
Replacement Plans :	JP Number :		Project No.		Let Date :	
			Project Type :			

	Item Description	Item ID	Current Condition	Previous Condition	Comments
Bridge Condition:	Substructure	B.C.03	2		
	Culvert	B.C.04	2		
	Channel	B.C.09	2		
	Channel Protection	B.C.10	2		
	Scour Condition	B.C.11	2		
	Overtopping Likelihood	B.AP.02	2		
Sources of Scour Critical Rating:					
Scour Smart Flag:	961		Condition State (CS1/CS2/CS3)		XX / XX / XX
Scour Comments:					

Inspection and Monitoring		Inspection Date :		Inspection Frequency :	
Inspector :		Contact Number : 3		Company : 4	
Criteria for Bridge Closure (Circle all that apply) 5	Roadway Overtopped	Roadway Fill Failed	Bridge Failed	Settlement	
	Approach Fill Washed Out	Other (Explain)			
Detour Route (County approved mapped route that cannot also be affected by the same storm event which closes this bridge). 6					

Bridge Contact Info						
	BRIDGE OWNER	Name:	7	COUNTY BRIDGE COORDINATOR	Name:	7
		Contact Number:			Contact Number:	
	MAINTENANCE RESPONSIBILITY	Name:	7	COUNTY COMMISSIONER	Name:	7
		Contact Number:			Contact Number:	

Countermeasures Recommended: 8			
			Date Implemented: 10
Author(s) of POA	Bridge Inspector	Signature 9	Date
Reviewed with Bridge Owner	Bridge Owner	Signature 9	Date
Reviewed with Co. Bridge Coordinator	County Bridge Coordinator	Signature 9	Date

Figure JJ-1. Sample Scour Plan of Action

APPENDIX KK
CREATING ACTION SUMMARY REPORTS

When do you need to produce and complete an Action Summary Report (ASR)? Whenever a bridge meets the following criteria, an ASR is required:

- The bridge has an NSTM member rated '3' or less
- The bridge has a deck, superstructure*****, or culvert rating of '2' or less
- The channel and/or scour condition rated '2' or less

* *It is <u>extremely</u> rare, if not impossible, for a superstructure to have a rating of '2' or less without a 'CX' recommendation*.

The ASR must be presented to the bridge owner. In addition, a digital copy of the inspection report and photos must be emailed to the FHWA representative, ODOT Field Service Engineer and the District 1-8 County Bridge Engineer/Coordinator.

How to generate an Action Summary Report (ASR)

1. On the BrM desktop, select the bridge(s) you want to work on (i.e., all in same county, along a certain highway, or division) by placing a check in the box to the left of the bridge listing. You may highlight certain bridges out of a larger list or use the BrM filters to display only the bridges desired.
2. Select the 'Reports' task. The 'Reports > Generate' screen will appear.
3. Click on the down arrow for the reports field and select 'OK005a –Action Summary Report '. Then make sure the PDF format is selected.
4. Click on 'Generate Report' at the bottom of the screen.
5. This will generate the ASR for all selected bridges which meet the criteria above.

Instructions for completing an Action Summary Report (ASR)

1. The bridge identification information at the top of the report is filled in by BrM when the report is generated.
2. Fill in the Program Manager and Team Leader names along with the date of the report and the date of the inspection.
3. Specify the bridge condition causing the 'critical' finding.
4. Fill in the recommended short term and long-term actions required to repair the condition, along with the recommended completion dates and timeframe.
5. Program Manager signs the report and affix seal.
6. Submit the ASR to the personnel identified at the top of the report along with the signed inspection report and photos.

Instructions for Action Summary Report (ASR) Follow-up

1. The Program Manager will ensure that the bridge owner has a clear understanding of recommended repairs and timeframes.
2. The Program Manager will maintain contact with the bridge owner to ensure that repairs are implemented within the recommended and reasonable time frame.
3. The Program Manager will ensure that any repairs that are completed are properly documented and reported to the Department along with photos and updated inspection reports.
4. The Program Manager will ensure that, if required, supplemental ASR's are properly documented.

Department Role in Local Government Action Summary Report (ASR) Follow-up

1. The Department (Bridge Division, applicable ODOT Field District) will monitor the actions taken by the Program Manager to ensure proper follow-up.
2. Bridge Division will relay to the FHWA the satisfactory completion of ASR's and documentation.

ACTION SUMMARY REPORT
FOR
BRIDGES WITH 'CRITICAL CONDITION' RATING

Digital copies of this report (for all applicable bridges) are to be emailed to the following persons:

FHWA Representative: Ralph Nguyen (ralph.nguyen@dot.gov)
ODOT Bridge Maintenance Engineer (wkellogg@odot.org)
Division 1-8 (as appropriate) County Bridge Coordinator

Each Action Summary report should be submitted as an individual PDF file to facilitate filing in the appropriate bridge file.
Also a copy of this report must be included in the bridge information presented at the bridge owner conference.

NBI No.: Struct. No.: Posting: Local No.:

Year Built: Year Reconstructed: Span Type: Concrete Culvert

Superstructure Rating: Substructure Rating: Culvert Rating:

Program Manager: PROGRAM MANAGER Date: DD/MM/YYYY

Team Leader: TEAM LEADER Inspection Date: DD/MM/YYYY

First Time ASR: YES OR NO Date: DD/MM/YYYY

Follow Up ASR: YES OR NO Date: DD/MM/YYYY

Condition / Situation Causing Rating of '2':

DESCRIBE CONDITION THAT HAS RESULTED IN 'CRITICAL' RATING IN DETAIL.

Recommended Short Term Action(s): RECOMMEND REASONABLE AND ADEQUATE REPAIRS

Recommended Completion Date For Short Term Action(s): RECOMMEND A REASONABLE TIMEFRAME

Recommended Long Term Action(s): RECOMMEND REASONABLE AND ADEQUATE REPAIRS, IF SO REQUIRED

Recommended Completion Date For Long Term Action(s): RECOMMEND A REASONABLE TIMEFRAME

Program Manager Seal:

Program Manager Signature: PROGRAM MANAGERS SIGNATURE

Figure KK-1 Sample Action Summary Report

APPENDIX MM
HYDRAULIC DATA ENTRY

Hydraulic data is entered in BrM under the ODOT tab. It is to be entered by Bridge Hydraulics personnel only. The inspector is not to edit this data.

Item 212: HYDRAULIC DATA

Enter the bridge hydraulic data available from the bridge plans (for bridges over waterways only):

I212HWELEV: HW Elevation (nearest 1/10 foot) **5 Digits**
I212NAV: (Select 'Yes' for Navigable or 'No' for Not Navigable)
I212SV: Stream Velocity as shown on plans (Feet/Second) **3 Digits**
I212TOE Top of opening elevation (TOE)
(Low steel or top of RCB to nearest 1/10 foot) **5 Digits**
I212LPT: Low point elevation of approach roadway (nearest 1/10 foot) **5 Digits**
I212BEDDING: Type Bedding Material at bottom of pier piling, spread footing or drilled shaft
(Examples: red bed, black clay, sandy clay, clay, sand, rock, hard rock, shale) **10 Digits**
I212WBLS: Waterway Area below Low Steel (sq. ft.) **4 Digits**
I212DRAIN: Total Drainage Area (sq. Miles) **4 Digits**
I212CDR: Contributing Drainage Area (sq. miles) **4 Digits**
I212Q: Amount of Flow Going through the Bridge (CFS) **40 Digits**
I212V: Velocity of the flow at the downstream face of the bridge in (fps) **40 Digits**
I212CHW: Computed high water or water surface elevation of the water
due to the bridge and roadway fill upstream of the bridge (feet) **50 Digits**

Example for I212Q, I212V, I212CHW :

Hydraulic Data

Q25 = 1370 cfs
V25 = 10.16 fps
CHW25 = 1431.52 ft.

Q50 = 1860 cfs
V50 = 7.22 fps
CHW50 = 1432.02 ft.

Q100 = 2420 cfs
V100 = 7.69 fps
CHW100 = 1432.24 ft.

Q500 = 4100 cfs
V500 =8.01 fps
CHW500 = 1432.64 ft.

Would be entered as follows:

I212Q = Q25-1370,Q50-1860,Q100-2420,Q500-4100

I212V = V25-10.16,V50-7.22,V100-7.69,V500-8.01

I212CHW = C25-1432.52,C50-1432.02,C100-1432.24,C500-1432.64

APPENDIX MM HYDRAULIC DATA ENTRY

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APPENDIX NN
BRIDGE SCOUR OFFICE ASSESSMENT FORM

Instructions for Completing Bridge Scour Assessment Form (BASF)

The Bridge Scour Assessment form is a simplified, non-analytical evaluation which results in a conservative assignment of the coding of the **Scour Vulnerability, SNBI Item B.AP.03**. A hydraulic analysis is not required to perform this procedure. The Oklahoma Department of Transportation (ODOT) has developed this to reduce time and cost of evaluating local bridges for scour. This form and procedure are meant to document and provide guidance in evaluating existing bridges for scour vulnerability and not an exact analysis.

The Bridge Scour Assessment shall be completed by a professional engineer familiar with the bridge and site conditions. Locate and review as much of the recommended information to perform a scour assessment as you can. These include: plans, past inspection reports, photos, flood info, scour reports, USGS Quadrangle maps, aerial photos (different times to compare river course through bridge), any soils logs, data or reports for the area. Although a field review may not be necessary if the engineer doing the assessment is familiar with the bridge, in some cases it allows the engineer to see and document the conditions as they currently exist.

The BSAF may be used in lieu of or as a prescreening for the HEC-18 analysis method. In many instances the BSAF may tend to give more conservative results. In order to avoid costly scour countermeasures or monitoring that may be indicated for certain bridges because of this, it may be prudent to perform an analysis using the procedures from HEC-18. Use BrM to select the bridge that you will be assessing, then run report 'OK008 – Bridge Scour Office Assessment Form'. You will also need the bridge file, all past inspections, any photos and plans available.

Line 1 [Bridge Identification]
Automatically filled in by BrM.

Line 2 [Type of Foundation]
Circle the appropriate answer. If no plans exist, also circle 'unknown'. If you can tell it is spread footing but have no plans, circle both unknown and spread footings. If there are pile bents in the overbank [ob] and pile footings at the banks [b], circle both and write "ob" or "b" below. If the foundation is drilled shafts, circle 'Drilled Shafts' and go to line 10 and enter Scour Vulnerability, SNBI Item B.AP.03, = 'A' and Frequency = '24 Months'. Drilled shafts have been designed for maximum scour.

Line 3 [Channel bed material]
Complete using data from plans and field observation; both the type and size for upstream, downstream and under the bridge. For example, upstream may have a sandy clay bed where downstream may have sandy clay bed with rock. This may be an indication that a prior countermeasure placed has failed (riprap around the piers).

STREAM STABILITY

Line 4 [Flowline Measurement]
Complete using measurements and locations from previous inspections. Flowline measurements may not always be in Flowline Notes. If there is a location where the flowline is, write that in. BrM has the flowline profile data and location under the ODOT > Inspector Items > Channel Profile group. Compare those to see if the channel is migrating. Look through all flowline measurements to determine if degradation has occurred or is occurring and if it is stabilized. Record any comments or conclusions you feel make the bridge more vulnerable or susceptible to scour after reviewing these items.

Lines 5 and 6. [Vertical and Lateral Stability]
Based on measurements and field observation, has degradation or lateral movement occurred? If so, describe. Degradation can expose substructure members, or cause sloughing of the banks under the bridge, making the bridge unstable. Likewise lateral movement could change the flow's angle of attack, hitting piers or abutments at unfavorable angles. Floodplain piers could become channel piers. Record any comments or conclusions you feel make the bridge more vulnerable or susceptible to scour after reviewing these items.

Line 7 [Check yes for any that apply and describe]
Further defines the stream stability. For each item checked, circle the location observed (upstream or downstream) and describe. The more of these items occurring, the more likely it is that scour will occur. Document your observations and take pictures for future comparison.

Line 8 [Bridge Scour Potential]
The more of these items occurring, the more likely it is that scour will occur. Document your observations and take pictures for future comparison. If the inspection reports or document files have any flood or high-water mark information, write it in the comment line. The best way of evaluating flow conditions through the bridge is to look at and photograph the bridge from the up- and downstream channel. Is there a significant angle of attack of the flow on a pier or abutment? Is there evidence of movement of piers or abutments; rotational movement, settlement (check lines of substructure and superstructure, bridge rail, etc., for discontinuities; check for structural cracking or spalling). Check bridge seats for excessive movement. Is there damage to scour countermeasures protecting the foundations (riprap, guide banks, sheet-piling, sills, etc.). Examples of damage could include riprap placed around piers and/or abutments that has been removed or replaced with river run bed material. A common cause of damage to abutment riprap protection is runoff from the ends of the bridge which flows down to the riprap and undermines it. This condition can be corrected by installing bridge-end drains. Are there changes in streambed elevation at foundations (undermining of footings or exposure of piles), or changes in streambed cross section at the bridge, including location and depth of scour holes.

Note and measure any depressions around piers and abutments. Note the approach flow conditions. Is there an angle of attack of flood flow on piers or abutments?

a. Substructure
   - Is there evidence of scour at piers?
   - Is there evidence of scour at abutments (upstream or downstream sections)?
   - Is there evidence of scour at the approach roadway (upstream or downstream)?
   - Are piles, pile caps or footings exposed?
   - Is there debris on the piers or abutments?
   - If riprap has been placed around piers or abutments, is it still in place?

b. Superstructure
   - Evidence of overtopping by flood water (Is superstructure tied down to substructure to prevent displacement during floods?)
   - Obstruction to flood flows (Does superstructure collect debris or present a large surface to the flow?)
   - Design (Is superstructure vulnerable to collapse in the event of foundation movement, e.g., simple spans and non-redundant design for load transfer?)

c. Channel Protection and Scour Countermeasures
   - Riprap (Is riprap adequately toed into the streambed or is it being undermined and washed away? Is riprap pier protection intact, or has riprap been removed and replaced by bed-load material? Can displaced riprap be seen in streambed below bridge?)
   - Guide banks (Spur dikes) (Are guide banks in place? Have they been damaged by scour and erosion?)

Line 9 [Bridge Appraisal Rating]
Using this inspection, and the previous inspection, compare the ratings of the substructure, culvert, channel, channel protection, overtopping likelihood, and scour condition. Ratings for the current inspection are automatically filled in by BrM. Enter the ratings for the previous inspection. Rating of the Substructure Condition Rating, SNBI Item B.C.03, should be consistent with the Scour Condition Rating, SNBI Item B.C.11, refer to Appendix C for additional guidance. When Scour Condition Rating, SNBI Item B.C.11 is rated less than or equal to 5, a Scour Smart Flag exists that could give you additional information to contribute to your scour assessment. Place any of these in the comments.

APPENDIX NN
BRIDGE SCOUR OFFICE ASSESSMENT FORM

Line 10 [Recommended Scour Vulnerability, Item B.AP.03, Code]
Use the Oklahoma SNBI and Appendix C to code the Scour Vulnerability, SNBI Item B.AP.03. Record any comments or conclusions that helped in forming your rating in the remarks section.

1. Culvert
    a. Use the Scour Condition Rating-CULVERTS chart in the Oklahoma SNBI-Waterway Items to determine the inspection frequency.
2. Span
    a. Use Appendix X to determine the inspection frequency.
    b. For a Scour Critical Bridge, the inspection frequency should be a minimum of 12 Months and after a flood event.

A Scour POA is required when Scour Vulnerability, SNBI Item B.AP.04, is coded a C or D. A POA may be generated in BrM. Using BrM filters, select the desired bridges on the BrM desktop. Select 'Reports' on left side, then on the Reports > Generate screen, select report 'OK006 – Scour Plan of Action' from the drop down list. Then click on 'Generate Report' at the bottom of the screen. The Scour Smart Flag (961) must also exist for the Scour POA to be printed.

Line 11 [Scour Elevation and Foundation Bottom Elevation]
If you have scour computations, enter the elevation that is worst case for the foundation element associated with it. Enter the foundation bottom elevation associated with the previous scour elevation. (For instance:
if, at pier 1, Computed Scour elevation = 613.20' and Foundation Bottom elevation = 611.60'
and at pier 2, Computed Scour elevation = 612.20' and Foundation Bottom elevation = 614.60';
you would enter the info for pier 2.)

Line 12 [Remarks]
Enter anything that factored in your decisions and rating.

Line 13 [Date Inspected]
The date the bridge was inspected is entered by BrM. Enter the inspector's name.

Line 14 [Date Assessed]
Enter the date the bridge scour was assessed and the program manager's name.

Line 15 [Signed]
Must be signed, dated and sealed by Program Manager approved in contract.

UPDATE BrM AS NECESSARY. MAKE COPY FOR MASTER FILE. GENERATE AND COMPLETE POA's USING BrM REPORTS. THERE MUST BE A COPY OF THIS COMPLETED DOCUMENT; SIGNED, DATED, AND SEALED IN EACH BRIDGE MAINTENANCE FILE FOLDER IN THE MASTER FILE LOCATED AT THE FIELD DIVISION OFFICE.

BRIDGE SCOUR OFFICE ASSESSMENT FORM

	NBI No.:	Structure No.:	Local ID	Division	County	River/Creek Name	Bridge Length	Bridge Width
1	00586	24E0420N2970008	113A	04	GARFIELD	BLACK BEAR CREEK	30.0	18.8

2 **Type of Foundation:** Unknown Spread Footing Pile Bents Pile Footings Drilled Shafts Culvert

3 **Channel Bed Material:** (TYPE - Silt/Clay Sand Gravel Cobble/Boulders Bedrock) (SIZE - Fine Medium Coarse)

UPSTREAM_____ **UNDER BRIDGE**_____ **DOWNSTREAM**_____

4 **STREAM STABILITY**

Flowline Measurement / Location From Last 10 Inspections:

	1	2	3	4	5	6	7	8	9	10
Inspection Year										
Flowline Measurement										
Location of Flowline										

5 **Vertical Stability**

Degradation (flowline measurements increasing) **Aggradation** (flowline measurements decreasing) **of flowline?**

Describe: Are substructure elements exposed?

6 **Lateral Stability**

Has channel moved toward abutment or floodplain pier? Are piers originally on floodplain now in main channel?

Describe:

7 **Check yes for any that apply and describe**

Yes

____ Bridge located near bend: upstream / downstream_____

____ Steep vertical banks, sloughing: upstream / downstream_____

____ Bed deposits, islands or point bars: upstream / downstream_____

____ Nearby tributary, or confluence: upstream / downstream_____

____ Nearby bridge, culvert, control structure: upstream / downstream_____

8 **BRIDGE SCOUR POTENTIAL**

Are there observed or potential scour problems at bridge? Describe

____ High-water marks _____

____ Angle of attack on bridge or piers: normal flow: _____flood flow: _____

____ Scour holes near abutments, piers _____

____ Bridge rail sagging _____

____ Abutments tilting in moving _____

____ Approach panel cracking or settlement _____

____ Debris build up or potential _____

____ Damage to existing countermeasures, riprap, abutments, piers, dikes etc_____

9 **BRIDGE APPRAISAL RATING**

SNBI Item Description	Item ID	Current	Previous	Comments
Substructure	B.C.03			
Culvert	B.C.04			
Channel	B.C.09			
Channel Protection	B.C.10			
Overtopping Likelihood	B.AP.02			
Scour Condition	B.C.11			

10 **Recommended Scour Vulnerability, Item B.AP.03, Code:**____ **Recommended Inspection Freq.:**_____ **POA Needed?**_____

11 **Scour Elevation: (If Computed)**_____ **Foundation Bottom Elevation:**_____

12 **REMARKS:**

13 **Date Inspected:** **7/2/2019** **Team Leader:**_____

14 **Date Assessed:** _____ **Program Manager:**_____

15 **Signed**_____ **Date**_____ **PE Seal**

(must be signed, dated and sealed by Program Manager approved in Contract)

Field Inspection Internal Quality Control

- The Program Manager will review each of their Team Leaders at least once every inspection cycle (24 months) at the location of the structures inspected.
    - If the Team Leader completes inspections on multiple contracts/bridge types, the review may encompass any of the inspected structures.
    - If the Program Manager completes bridge inspections, the senior Team Leader under the Program Manager's management shall complete the review.
    - The Program Manager will select five (5) bridges for a field audit previously inspected by the Team Leader and evaluate the ratings with the Team Leader at the location of the structures.
        - The Program Manager will coordinate the field audit with the ODOT Field District and Bridge Division for attendance, if necessary.
    - The Program Manager shall review the inspection report with respect to the following items (This list is not exhaustive and subject to revision):
        - Accuracy – Does the inspection report accurately reflect the conditions in the field at the time of inspection.
        - Photos – Do the photos accurately depict conditions in the field and add to the notes/narrative contained in the inspection report.
        - Elements – Does the inspection report contain all relevant bridge elements.
        - Quantities – Are the quantities for elements accurate.
        - Coding – Are the relevant SNBI items and bridge elements coded appropriately to reflect the conditions in the field at the time of inspection.
        - Current Inspection Policy – Has the structure been inspected, coded, and reported with respect to Oklahoma inspection policy and guidelines at the time of inspection.

Field Inspection Internal Quality Control Report

- Following the field audit, the Program Manager will submit a report to Bridge Division (with a copy to the appropriate field district) containing:
    - A copy of the inspection report with the reviewer's remarks and data corrections found during the field review.
    - Photographs, drawings, and reports to support the inspection.
    - Summary of findings from the field review, and an implementation plan for quality control measures to eliminate errors in the future.
    - A final Quality Control Report stamped and signed by the Program Manager.

Field Inspection Data Submittal Internal Quality Assurance

- The Program Manager will ensure that all applicable error checks are executed for each bridge inspection data submittal prior to submittal to ODOT Field Districts or Bridge Division.
    - See Appendix FF for data error check requirements and procedures

- The Program Manager will review and ensure that all submittals conform to ODOT submittal requirements.
    - See Appendix GG for submittal requirements

Field Inspection External Quality Assurance

- ODOT will select three (3) test bridges once every twenty-four (24) months which are representational of the types of bridges inspected.
    - The field exercise specifics will be determined based on needs and changes within the bridge inspection program at the time
    - Specific instructions for the exercise will be given at the time of notification
- Program Managers and/or Team Leaders will inspect the selected test bridges independently, develop an independent inspection report containing pertinent information, photographs, and drawings for each of the test bridges and submit to Bridge Division.
- Each inspection/data submission will be graded/evaluated based on federal/state inspection requirements
- A QCQA training session will be held annually to establish consistency requirements and assess quality among the statewide inspection teams.
    - All Program Manager(s) and all Team Leaders will be required to attend these training sessions unless otherwise accepted by Bridge Division.
    - The training session will cover the results of the field exercise and any changes with respect to bridge inspection policy or procedures.

Field Inspection External Quality Control

- Bridge Division will follow-up on any inspection Team Leaders that fail to perform at an acceptable level.
    - Based on the follow-up, the following actions may be taken (This list is subject to revision):
        - Disqualification from the bridge inspection program
        - Additional training requirements
        - Probationary measures

Load Rating External Quality Control

- In the even-numbered years, the quality consistency training exercise will require all load raters to participate in a bridge load rating exercise as set forth by the Bridge Rating Team (BRT). Load raters may include Program Managers, PE Team Leaders, PE-Supervised EITs, or other Civil Engineers licensed in the State of Oklahoma who perform load ratings on behalf of the Consultant.
- The load rating engineer must demonstrate competence in the following manner:
    - Participate in the ODOT load rating QCQA exercise
        - The load rating exercise will be held in even-numbered years
        - The load rating exercise will cover relevant topics pertaining to load rating policy and procedures

APPENDIX PP
BRIDGE FILE DATA REQUIREMENTS

This appendix lists all information and documents that are required, or prudent, to keep in the master bridge file. A bridge file is required by the SNBI, and fully defined in the Manual for Bridge Evaluation (MBE) Section 2.

This appendix shall serve as a checklist for ODOT, CED, Consultant, and FHWA file reviews as required.

Plans
Each bridge requires an abbreviated set of plans should be retained in each bridge file. *Ideally* both original letting and as-built plans should be included. The plans *should* include the following:

- General plan and elevation
- Typical bridge section
- Superstructure details
- Substructure details
- Geotechnical details
- General bridge notes
- Any special details related to the specific bridge type, materials, or details

Sketches
Each bridge requires legible and accurate sketches depicting relevant and quantifiable information if as-let or as-built plans are not available.

Structure Inventory & Appraisal (SI&A)
Each bridge requires a current inspection report.

Photographs
Each bridge requires current inspection requires the following properly labeled photos, minimum:

- Bridge Centerline
- Bridge Signage – Clearances, posting signage, etc., if applicable
- Bridge Profile
- Bridge Channel – Upstream, from center of bridge, if applicable
- Bridge Channel – Downstream, from center of bridge, if applicable
- Google Earth screen shot of the channel (Most recent satellite image), if applicable
- Photos of any PX or CX items, if applicable

Channel Profile
Each bridge over water requires at least a channel profile be taken and recorded as the as built channel condition. Channel profiles are to be updated and compared as required and dictated by changes in the channel condition, profile changes, and flowline changes (See Appendix C).

Correspondence
Each bridge file *should* include any correspondence between the bridge owner and the inspector/program manager.

Load Rating Documentation
Each bridge file is to include load rating information. See appendix GG

Scour Assessment
Each bridge over water requires a scour assessment be completed, updated as necessary, and stored in the bridge file, see Appendix NN.

Scour Plan of Action (POA)
Each bridge determined to be scour critical requires a scour POA, updated as needed, and stored in the bridge file see Appendix JJ.

Action Summary Report (ASR)
Each bridge with a rating described in appendix KK will require an ASR, updated as required.

Shop Drawings
Ideally, shop drawings for superstructure details should be included, but not required.

Construction Documents
Ideally, relevant documents relevant to change in plans, material properties, etc., should be included in the bridge file.

Bridge File Office Review	
NBI	
Structure	
County	
District	
Plans	
As-Let	
As-Built	
Sketch	
"Ideally" Included Information	
Shop Drawings	
Construction Documents	
Required Information	
Most Recent SI&A	
Load Rating Summary	
Load Rating	
Scour Assessment	
Channel Profile (As-Built)	
Required Recent Photos	
Centerline	
Profile	
2 Channel	
Sat Plan View	
Signage	
Conditionally Required Information	
Scour POA	
Channel Profile (Scour Critical)	
ASR Summary	
Significant Correspondence	
Maintenance Records	

APPENDIX QQ QUALIFICATIONS OF PERSONEL

As per CFR, inspection personnel must have sufficient inspection experience to perform bridge inspections in Oklahoma (See CFR of this manual for particulars for inspection types).

To be qualified in Oklahoma, a team leader must have a current team leader form on file with Bridge Division. This form will document the potential team leaders training, years of experience, number of bridges inspected, professional qualifications, as well as employer and contact information.

It is incumbent on the Program Manager for each Team Leader to ensure that updated contact and experiential information are on file with the Department should there be a change in employer.

The official form is available from Bridge Division.