

Archie MacIntire Ray



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Curriculum Vitae

EDUCATION

General

- Fall, 2017 Enrolled in the Architectural and Civil Engineering (ACE) Program at Central Maine Community College (CMCC); projected graduation, spring 2020.
- June, 2009 Diploma, Dirigo High School, Dixfield, Maine.
- June, 2008 Forestry, wood harvesting, and heavy equipment operation. Region 9, School of applied technology, Mexico, Maine.

TRAINING AND CERTIFICATIONS

Non-Destructive Testing (NDT) Certifications

- December, 2013 UT Level 2 by ASNT ACCP
- October, 2013 MT Level 2 by ASNT ACCP

Non-Destructive Testing (NDT) Training

- April, 2012 MT, PT Level 2 (40 hour combined training)
- March, 2012 Weld Inspection UT (24 hour training)
- April, 2011 ASTM E 1067
- April, 2011 AE Level1 (40 hour training)

Site Access Training and Certifications

- July, 2012 SPRAT Level 1
- October, 2011 Man Lift (5 hour training)
- July, 2010 Hazard Communication (3 hour training)
- 2010 Fall Protection
- November, 2009 Confined Space (2 hour training)

Other Training

November, 2015	MIG/GMAW Welding Clinic
September, 2014	FHWA Roadway Safety Systems Designer Training
September, 2014	FHWA Roadway Safety Systems Inspection and Maintenance Training
June, 2012	Pesticide Application (in Pennsylvania)
2010	Registered Maine Guide
2010	American Mountain Guide Association Single Pitch Instructor Course
2010	CPR and Mountain First Aid and Medicine

EXPERIENCE

2013 – Present NDE Technician at Roadsafe LLC in Canton Maine: Involved in all aspects of NDE inspections including mobilizations, performing field inspections, preparing inspection reports and interacting with clients.

Auto CAD drafting technician at Roadsafe LLC: Involved in interpretation of ideas and sketches for the development of comprehensive drawing packages of modified safety systems; and in the development of drawing packages of established safety systems, relative to specific site requirements.

Data Collector at Roadsafe LLC: Involved in identifying data needs for research projects, developing data collection protocol, and performing the data collection in accordance with that protocol.

Data Collection Tool Design at Roadsafe LLC: Involved in the design and development of innovative tools for the use of collecting more accurate and effective roadside data in accordance with specific research needs.

2011 – 2013 NDE Technician, Waves in Solids (WINS), State College, Pennsylvania: Involved in all aspects of NDE inspections including mobilizations, performing field inspections, preparing inspection reports and interacting with clients. Performed inspection services on above-ground storage tanks, wooden utility poles, bridge pins, wire rope and cable, amusement park rides and many other types of structures.

PUBLICATIONS AND PRESENTATIONS

1. C.E. Carrigan, M.H. Ray, and A.M. Ray “Evaluating the Performance of Roadside Hardware,” Transportation Research Board Annual Meeting Compendium of Papers, Transportation Research Board, Washington, D.C., 2017.
2. A.M. Ray “Asset Inventory Methods” AFB-20 group-meeting presentation, Transportation Research Board, Washington, D.C., 2016.
3. C.E. Carrigan, M.H. Ray, T.O. Johnson, and A.M. Ray, “Run-off-road Crash Prediction Models for Each Edge of Undivided and Divided Roadways,” Transportation Research Board Annual Meeting Compendium of Papers, Transportation Research Board, Washington, D.C., 2015.
4. C.A. Plaxico, M.H. Ray, C.E. Carrigan, T.O. Johnson, and A.M. Ray “Criteria for Restoration of Longitudinal Barriers – Phase II,” National Cooperative Highway Research Program, Project 22-28, National Academy of Sciences., 2015

FUNDED PROJECTS

Research Projects

1. “Recommended Guidelines for the Selection and Placement of Test Levels 2 through 5 Median Barriers,” National Cooperative Highway Research Program (NCHRP) Project 22-31, National Academy of Sciences, \$300,000.
2. “Guidelines for Shielding Bridge Piers,” National Cooperative Highway Research Program (NCHRP) Project 12-90, National Academy of Sciences, \$450,000.
3. “Consideration of Roadside Features in the Highway Safety Manual,” National Cooperative Highway Research Program (NCHRP) Project 17-54, National Academy of Sciences, \$1,140,000.
4. “Development of a Strategic Plan for the AASHTO SCOD Technical Committee on Roadside Safety,” National Cooperative Highway Research Program (NCHRP) Project 20-07(360), National Academy of Sciences, \$75,000. June, 2014.
5. “Recommended Guidelines for the Selection of Test Level 2 through 5 Bridge Railings,” National Cooperative Highway Research Program (NCHRP) Project 22-12(03), National Academy of Sciences, \$250,000. February, 2014.

Non-Destructive Evaluation Projects

6. Inspector: Ultrasonic and magnetic particle weld inspection of tainter gate – welded connections, using rope access. U.S. Army Corps of Engineers (USACE). Raystown Lake Dam, Raystown Lake, Pennsylvania. \$3,509. April, 2016.
7. Inspector: Acoustic emission monitoring and external visual inspection of a fiberglass reinforced plastic (FRP) storage tank. Global Foundries Inc. \$2,952. March, 2016.
8. Inspector: Internal visual inspection of two polymer storage tanks. Global Foundries Inc. \$2,669. March, 2016.
9. Inspector: Acoustic emission monitoring, ultrasonic testing, and external visual inspection of pressurized gas cylinders. Metro Welding Supply. Detroit, Michigan. \$3,778. January, 2016.
10. Inspector: Ultrasonic and magnetic particle weld inspection of tainter gate – welded connections, using rope access. U.S. Army Corps of Engineers (USACE). Town Bluff Dam, B.A. Steinhagen Lake, Texas. \$4,486. January, 2016.

11. Inspector: Magnetic particle weld inspection of walking bridge – welded connections, using rope access. U.S. Army Corps of Engineers (USACE). Belleville Dam, Ohio River, Ohio. \$3,021. December, 2015.
12. Inspector: Ultrasonic and magnetic particle weld inspection of miter gate – welded connections, using rope access. U.S. Army Corps of Engineers (USACE). H.K. Thatcher Dam, Black River, Arkansas. \$3,024. November, 2015.
13. Inspector: Ultrasonic and magnetic particle weld inspection of tainter gate – welded connections, using rope access. U.S. Army Corps of Engineers (USACE). Howard Hanson Dam, Green River, Washington. \$2,212. July, 2015.
14. Inspector: Ultrasonic and magnetic particle weld inspection of tainter gate – welded connections, using rope access. U.S. Army Corps of Engineers (USACE). Felsenthal Dam and H.K. Thatcher Dam, Black River, Arkansas. \$2,941. May, 2015.
15. Inspector: Ultrasonic and magnetic particle weld inspection of tainter gate – welded connections and stop log – welded connections, using rope access. U.S. Army Corps of Engineers (USACE). Hildebrand Dam and Opokiska Dam, Morgantown, West Virginia. \$5,033. April, 2015.
16. Inspector: Ultrasonic and magnetic particle inspection of assorted equipment. NIPSCO coal burning, power generation plant – maintenance shut down. Wheatfield, Indiana. \$6,044. April, 2015.
17. Inspector: Ultrasonic inspection of front loader arms. Town of Livermore, Maine. \$119. March, 2015.
18. Inspector: Ultrasonic and magnetic particle weld inspection of tainter gate - welded connections, using rope access. U.S. Army Corps of Engineers (USACE). Foster Dam, South Santiam River, Oregon. \$1,635. February, 2015.

Fabrication Support and Construction Administration

19. Draftsman: “Evaluation and Design of a TL3 Bridge Guardrail System Mounted to Steel Fascia Beams.” Prepare modified side mount – 2 tube bridge rail component details. Ohio Department of Transportation (DOT). Project in progress, 2016.
20. On Site Representative: Design and construction inspection of Staples Hill Road improvements in Canton, Maine. 2014 - 2015.
21. Draftsman: Prepare proprietary bridge rail - component details and provide specific instructions for installation on Halstead and Harrison Street bridges, Chicago, Illinois. Valentine and Company. \$2,900, March, 2014.
22. Draftsman: Prepare proprietary bridge rail - component details and provide specific instructions for installation on Morgan Street Bridge, Chicago, Illinois. Valentine and Company. \$7,475, November, 2013.
23. Draftsman: Prepare proprietary bridge rail - component details and provide specific instructions for installation on Pulaski Skyway, Maryland. Valentine and Company. \$1,850, October, 2013.
24. Draftsman: Prepare modified guardrail component details and provide specific instructions for installation of the modified safety system, at the Transportation Research Center (TRC), East Liberty, Ohio. \$42,625. July, 2013.