INTEGRATED REMOTE SENSING AND VISUALIZATION (IRSV) SYSTEM FOR TRANSPORTATION INFRASTRUCTURE OPERATIONS AND MANAGEMENT: PHASE TWO

VOLUME 5

AERIAL BRIDGE DECK IMAGING DATA COLLECTION AND SOFTWARE REVISION

By

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16. Abstract
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CONTENTS

LIST OF FIGURES

EXECUTIVE SUMMARY

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5.1. INTRODUCTION

5.1.1. Introduction

Economic and social functions depend heavily on transportation networking. Economic development in United States is achieved largely due to the establishment of the transportation infrastructure. About 20 % of the U.S gross national product and more than 80,000 jobs are being accounted by the transportation-based industries (Brecher 1995). Periodic inspection and maintenance is important in keeping the transportation system operational. This also helps in avoiding major replacements. In order to maintain the roads in their present condition, an annual $50 billion would be necessary, and in order to rehabilitate all deficient roads and bridges $215 billion would be needed. This was estimated by the Federal Highway Administration (FHWA) for year 2000. (Brecher 1995; Roberts and Shepard 2000; Ikhlas 2003). Also FHWA study indicated that one-third of existing bridges in the United States are structurally deficient, 10% of pavements require immediate repair, and 60% of pavements need rehabilitation. Therefore, a good transportation infrastructure management system is the key to the success of the transportation system. The inventory of bridges in the national transportation infrastructure is of particular importance due to their high cost and direct impact on public safety.

The average age of the entire network of bridges can be related to the total cost of maintenance, rehabilitation, and replacement (MR&R). The deterioration of bridges is being accelerated by many factors; for instance, truck weights and traffic counts have increased dramatically. This causes premature physical aging on all networks, but the available funds for MR&R have not been able to keep up with the declining situation. Data content is the major component of bridge maintenance and rehabilitation functions (Saito et al. 1990; AASHTO 1993; Hass et al. 1994). The conditions of bridges are periodically collected and saved as data. They are then analyzed to determine the optimum allocation of funds among new construction, maintenance, and rehabilitation programs (PCA 1995). An effective bridge management system for collecting, organizing, and using data for proper planning and appropriate performance of the maintenance and rehabilitation processes is of imminent need.

Bridge monitoring and inspection are expensive yet essential tasks in maintaining a safe infrastructure. Federal mandates that national bridges be inspected every other year. Current bridge inspection practices do not involve remote sensing techniques (FHWA 2006a). Traditionally, the primary method used to monitor bridges has been visual inspection. Physical scanning of bridge deck surfaces can be challenging - consider their sizes and physical locations; however, bridge deck scans can help quantify deck distress conditions and provide documentation for temporal tracing of deterioration progress. Conventional truck-mount systems include laser scanner (LiDAR) or video recording. They are unable to completely capture the entirety of the bridge deck without several passes - air-borne techniques appear to be the most logical for bridge scans.

Bridge inspection involves trained inspectors, who examine and evaluate the condition of the various components of a structure at close range and give a ranking to the bridge condition. This ranking is based on a set of guidelines and on the inspector's experience. It is a subjective evaluation of the current condition of the bridge. Many times, this type of evaluation is appropriate and effective. However, rankings of the conditions of similar bridge components can vary widely from inspector to inspector; this is primarily due to the subjective nature of the evaluation. Moreover, inspections are not necessarily always performed on each bridge at the appropriate time. Several factors can contribute to the selection of inspection procedures and may alter the timing of inspections (Silano 1993; AASHTO 2000). These factors include condition of the bridge as related to design, age, size, and complexity of the structure, traffic density and consequences of traffic disruption, availability of personnel and equipment; weather pattern, environmental conditions; geographic location; and methods and records of construction procedures. Any one of these factors can affect the deterioration rate of the bridge and also the need for MR&R. Therefore, an agency should develop a strategy for systematic inspection and documentation that includes frequency of inspection, the nature of observations, and equipment for measurements. An inspection program (Ikhlas 2003) includes the following

- Safety and serviceability assurance;
- Actual and potential sources of trouble identification at early stages;
- Recording state of structure systematically; and
- Studying effect of changes in load.

In the past three decades, the requisite for more advanced methods of bridge inspection to ensure safety and early detection of flaws has been recognized (Rens and Greimann 1997; Abudayyeh et al. 2000). Many evaluation methods are designed to operate upon existing bridges without damaging their usability. The **nondestructive evaluation (NDE)** method may be very broad and versatile and can be used in a number of applications. The most recent accomplishment is that the bridge inspection has included remote monitoring devices that record stress and vibration in real time to more accurately determine the wear on a particular bridge and promote early detection of problems. Remote monitoring used in parallelism with visual inspection has the potential to reduce the costs of bridge inspection and maintenance. The number of trips over the lifetime of a bridge by a bridge inspector could be reduced by a fully automated remote monitoring system. Such a system should enhance the inspection quality by increasing the inspection frequency without engaging actual trips by the inspector. When a bridge begins to deteriorate significantly, it can serve as an early warning system.

The natural geospatial representation and unique data acquisition features of remote sensing techniques have attracted interests in the potential applications of remote sensing for infrastructure analysis. Construction planning and management, transportation and structural health monitoring (SHM) are the three main categories in current application.

Remote sensing is defined as the sensing technique that assembles information of an object, area, or phenomenon from some distance without actual communication. Typically remote sensing interpolates imagery and image information captured by airborne or satellite systems (US Army Corps of Engineers 2003). Satellite data is classified as coarse resolution data or high resolution data depending on the spatial resolution. Large scale problem monitoring, such as weather prediction or marine observation, is achieved by coarse resolution data taken from dozens of meters to several hundred kilometers (Glantz et al. 2009 and Ahen et al. 2006).

Remote sensing devices in the form of multi-spectral photography, radar images or 3D geometry data provides surface data that could be used to extract information about structural displacement, strain, distress, surface crack, corrosion and collision damage, and critical structural factors, such as bridge clearance, degree of curve and skew distance (Herold et al.2005 and 2006), etc. With proper signal processing and analysis methods, the surface information could be useful for surface defect identification.

Airborne sensors provide images with higher resolution when compared to satellite imagery. Thus, a rapid and frequent solution to bridge scans without interruptions to traffic flow can be achieved by airborne sensors that coupled with sufficiently high resolution imageries. However, resolution requirements for bridge deck monitoring such as crack detections are difficult to establish by the conventional air-borne techniques (usually in sub-inch width or smaller). Detailed information with better resolution than satellite and airborne-based sensors can be provided by ground based sensors. They have greater accuracy.

The proposed method is the **SI-SFAP** (**S**patially **I**ntegrated **S**mall **F**ormat **A**erial **P**hotography) technique. SI-SFAP is a high resolution aerial imaging technique that integrates onboard GPS, vertical shots and image processing algorithm into measurement technique that provides the relative measurement. The relative measurement can then be used to calculate the actual measurement with known dimensions of the bridges. When the bridges are close together the proposed small format aerial photography can be a low cost approach for rapid deployment of bridge scan missions. High resolution images can be used to identify, analyze and quantify the various bridge deck problems such as cracks, which lead to the failure of the structure (Chen et al 2011). High resolution aerial image processing technique requires fewer samples. The entire bridge can be scanned in a single flyby. Thus it provides an excellent supplement to bridge visual inspection for pre-field visit assessment.

However, performance of aerial imaging poses different issues that are not encountered by ground based techniques. They include image complications due to shadows from trees, power lines and vehicles, visual obstructions from vehicles-on-bridge, signs or luminaire structures, image resolution induced uncertainties, etc. They also need good pilot skills and flying conditions. In order to devise a complete tool, various image processing tools have to be integrated. The various challenges faced in aerial imaging are discussed with some preliminary results. The images are analyzed pre geo-referencing using MATLAB.

5.1.2. Research Objectives

The main objectives of this research are

- To establish a potential automatable aerial image processing algorithm that can aid in damage evaluation and quantification of bridge structures;
- To identify obstacles that may hinder image processing automation;
- To suggest approach to overcome the obstacles;
- To document all aerial records and processed outcomes.

5.1.3. Scope of the Work

Nearly 100 bridges from Albama, California, Iowa, New York, North Carolina were scanned for this study. APBA software was developed to automate the damage evaluation on bridges using aerial imagery.

5.1.4. Report Outline

Section 5.1 gives the overview of Integrated Remote Sensing and Visualization (IRSV) system for Transportation Infrastructure Operations and Management. It explains the present need for remote sensing techniques to maintain the transportation network which is the backbone of the country’s development. It also introduces the low cost efficient approach to achieve the same.

Section 5.2 gives a brief idea about the existing techniques; evolution of aerial photography; types of aerial photography; current scenario in this field. It explains how history led to this research. Section 5.3 throws light on the conventional and proposed SI-SFAP approaches for bridge monitoring. It highlights the importance of high resolution image requirement for SI-SFAP. Section 5.4 explains the various challenges in aerial imaging. Section 5.5 explains the algorithm followed in APBA software. Section 5.6 validates the results obtained using APBA. Section 5.7 discusses the importance of aerial imaging in damage evaluation of bridges. Section 5.8 highlights the importance of using APBA as a tool to identify crack like structures. Section 5.9 explains the scope for future study. Details including user manual for APBA are included in Appendices. A separate volume (Volume 5 Supplement) is provided that tabulates aerial imaging analysis results.

5.2 LITERATURE REVIEW

5.2.1 Introduction

The science, technology and art of obtaining reliable information about physical objects and the environment through processes of measuring, recording and interpreting photographic images and patterns of recorded radiant electromagnetic energy, and other phenomena is termed photogrammetry. Photographic records still play a chief role in remote sensing. Included within the definition of aerial photogrammetry are two distinct areas:

1. **Interpretative photogrammetry** – deals with recognizing and identifying objects on aerial imagery and evaluates their significance.

2. **Metric photogrammetry –** the process of determining relative locations of points, distances, scales, angles, areas, volumes, elevations, and the sizes and shapes of objects by making precise measurements from photos and other image media.

Interpretative photogrammetry consists predominantly of identifying and recognizing objects and judging their significance through careful and systematic analysis, which includes branches of remote sensing and photographic interpretation. Remote sensing, which is a newer branch of interpretative photogrammetry, includes not only the analysis of photography but also the use of data gathered from a wide variety of sensing instruments, including infrared sensors, thermal scanners, multispectral cameras and side-looking airborne radar. Remote sensing instruments, which are often carried in vehicles as remote as orbiting satellites, are capable of providing qualitative as well as quantitative information about objects.

The relative location of points is determined using Metric photogrammetry, which consists of making precise measurements from photos and other information sources. This enables finding distances, volumes, angles, elevations, areas and the sizes and shapes of objects. The most common application of metric photogrammetry is the preparation of planimetric and topographic maps from photographs. The photographs are most often aerial (taken from an airborne vehicle), but terrestrial photos (taken from earth-based cameras) are also used.

5.2.2 Brief History of Aerial Photography

Aerial photography is associated with the photographs taken from cameras which are not supported by any ground based structure. Cameras may be hand held or mounted, and photographs may be taken by a photographer, triggered remotely or triggered automatically.

Platforms for aerial photography include helicopters, balloons, rockets, parachutes, fixed-wing aircraft, blimps and dirigibles, kites, poles and vehicle mounted poles, etc.

French photographer and balloonist Gaspard-Félix "Nadar" Tournachon was the first person to practice aerial photography in 1858. He patented the idea of using aerial photographs in mapmaking and surveying, but it took him three years of experimenting before successfully produced the very first aerial photograph.

Besides hot air balloons, early pioneers also used kites, pigeons and rockets to carry their cameras aloft. English meteorologist E. D. Archibald (1882) was among the first to take successful photographs from kites. In California, George R. Lawrence captured the devastation of San Francisco after the 1906 earthquake and fire, using a camera attached to a string of kites high above the city. It took as many as 17 kites to lift the extremely heavy camera 2,000 feet into the air.

Swedish inventor Alfred Nobel, who is best known for the Nobel Prize, took the first successful photographs from a rocket mounted camera in the year 1897. Albert Maul from Germany patented the idea of using powder rockets in 1903, and by 1904, he was testing gyroscopically-stabilized cameras launched by rockets and recovered by parachute. The first aerial photography taken from an airplane was in 1909, by Wilbur Wright. He was in Italy, engaged in marketing planes to the Italian government, when he carried a passenger who took motion pictures of the military field at Centocelli, near Rome.

Aerial photography soon replaced sketching and drawing by the aerial observers. By the end of the World War I, both sides were recording the entire front at least twice a day. Cameras especially designed for use in airplanes were being produced, including thermal infra-red detectors. Stability and shutter speed remained a problem, and towards the end of the war Sherman M. Fairchild developed a camera with the shutter located inside the lens. This design significantly improved the quality of the images, and became the standard for aerial camera systems over the next 50 years. The use of aerial photography for military purposes was expanded during World War I by many other aviators such as Fred Zinn, Leonard Taplin, etc. One of the first notable battles was that of Neuve Chapelle.

Commercial aerial photography was introduced by Sherman Fairchild and was used by several New York City agencies and businesses. Aerial photography was shown to have civilian uses and could be a successful commercial venture. One Fairchild aerial survey aircraft in 1935 carried unit that combined two synchronized cameras, and each camera having five six-inch lenses with a ten inch lenses and took photos from 23,000 feet. Each photo cover two hundred and twenty five square miles.

With the advent of inexpensive digital cameras, many people now take candid photographs from commercial aircraft and increasingly from general aviation aircraft on private pleasure flights. Nowadays, aerial cameras tend to be digital, and most aerial photographers use gyro-stabilizers to counteract the movement of the aircraft. The resulting images are outstanding quality, high-resolution aerial views that can be delivered right to the client's desktop on the day of shooting. Aerial Photography is in wide-spread use for a diverse set of commercial, industrial, agricultural, governmental and private clients

5.2.3 Types of Aerial Photographs

Oblique photographs

Photographs taken at an angle are called oblique photographs. If they are taken from a low angle earth surface–aircraft, they are called low oblique and photographs taken from a high angle are called high or steep oblique. The distortion of the earth surface to an aerial photograph is a critical element to consider, in particular to any oblique shot.

Vertical photographs

Vertical photographs are taken straight down. They are mainly used in photogrammetry and image interpretation. Pictures that are used in photogrammetry are traditionally taken with special large or medium format cameras with calibrated and documented geometric properties.

Combinations

Several photographs taken with single camera can be stitched together to make panoramic images. In pictometry, rigidly mounted cameras can combine to provide one vertical and four low oblique pictures that can be stitched together.

Orthophotos

Orthophotos can be created from vertical photographs. Orthophotos are geometrically corrected photographs that are usable as a map. In other words, a photograph taken from an infinite distance looking straight down to nadir is an orthophoto. Due to earth surface distortion, variations in terrain should be corrected for and perspective must be removed. Multiple geometric transformations are usually applied to the image, depending on the perspective and terrain corrections required on a particular part of the image.

Orthophotos are commonly used in geographic information systems (GIS), such as those used by mapping agencies (e.g. Ordnance Survey) to create maps. Once the images have been aligned, or "registered", with known real-world coordinates, they can be widely deployed.

Large sets of orthophotos, typically derived from multiple sources and divided into "tiles" (typically 256 x 256 pixels in size), are widely used in online map systems such as Google Earth.

Google Earth overlays orthophotos or satellite imagery onto a digital elevation model to simulate 3D landscapes.

5.2.4 Aerial Photography Today

Today's technology provides us with a wide range of options on aerial photography and aerial videos. At the very highest level, there are satellite images, covering most urban areas in very high resolution. These images are available to everyone via the internet, through the very popular Google Earth, TerraServer, and other services. These aerial maps provide a useful tool for viewing wide areas. The publicly available maps, however, are generally at least 2 years old, and do not show recent developments.

Aerial photos are taken by aerial photographers, who may be pilots themselves, or they may choose to work with a pilot to get the required photographs. Most have knowledge of flying as well as the expertise in taking photographs. Precision aerial photography needs specialist equipment’s that may include a professional quality camera and a gyro-stabilizer to get the best possible pictures. In recent years, digital cameras have taken over from medium-format film cameras, as the quality of the images became comparable, and as clients and photographers both came to appreciate the convenience of digital images. Instead of the slower print process, digital images can be delivered on CD or via the internet on the day of shooting. Many aerial photographers also have specific experience and equipment for special projects, such as infrared, aerial video, mosaics, ortho-rectified mapping, large-format murals, digital design work, and so on.

5.3 SPATIALLY INTEGRATED SMALL FORMAT AERIAL PHOTOGRAPHY (SI-SFAP)

5.3.1 Introduction

For the bridge monitoring purposes, specialized aerial photography technique has been developed. This is because aerial photography for bridge monitoring is both interpretative and metric photogrammetry. The following describes patent-pending SI-SFAP technique (Rice 2010).

Conventional mapping-grade aerial photographs are taken at a high altitude of approximately 5000 feet and above, while SI-SFAP technique involves low flying (around 1000 feet altitude) at a controlled speed (typically around 100 mph). High resolution images in the sub-inch range can be captured because of low flying and onboard small-format DSLR (Digital Single Lens Reflex) camera with pre-calibrated shutter speeds. The orthogonal rectification of the imagery was not performed as the photos are taken from low altitudes. Rapid firing (4-5 frames per second) for maximum sensor utilization can be achieved using full frame camera (35 mm lenses) with high electrostatic recharge rates. The use of extremely high shutter speeds help avoid the need for Forward Motion Compensation (FMC). Figure 1 shows the camera set up including the camera in a) a mount and b) the belly of an airplane (Rice 2010).

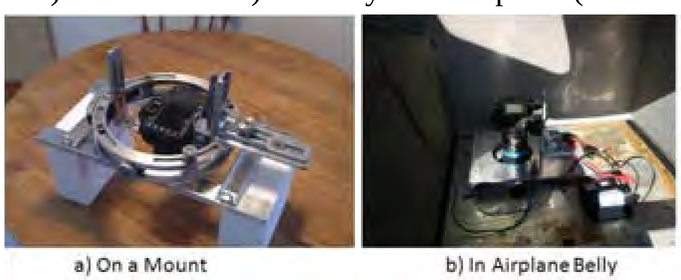


Figure 1: Camera for SI-SFAP

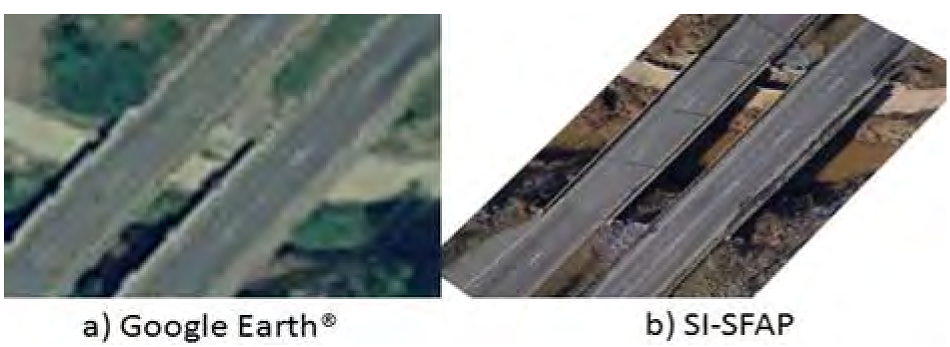


Figure 2: Aerial imaging at different scales and resolutions: a) Google Earth b) SI-SFAP

The photo quality and the actual flight height play a major role in SI-SFAP technology. As stated in introduction, the photo quality will be affected by airplane vibrations. Figure 2 shows an aerial image comparing to Google Earth® image.

5.3.2 Photo Mission Trip

Figure 3: Heavily Shadowed Bridge Deck (SI-SFAP)

Flight planning should consider the camera setup, required resolution, routing to the mission bridges. It should also consider approach and exit from each target bridge, minimal flight time, time and weather conditions. Ration of the actual physical dimension to the physical length of the object in photo is considered as the resolution of the digital images. Hence parameters such as focal length, flight height, can be determined beforehand. Appropriate flight planning can therefore avoid obstructions within the photos. For example, rush hour shootings or evening shootings should be avoided so that prolonged tree shadows will not cover over the bridge. Figure 3 shows bridges with heavy tree covers and shadowing. Accurate tracking over the bridge is accomplished through strong piloting and use of onboard GPS unit. However, the

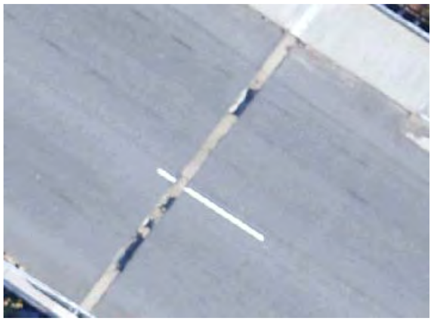
WAAS-enabled portable GPS is only accurate to 10 feet and has a delayed update period; hence, a remote miniature video camera w/ cockpit viewing screen can be installed to facilitate visual acquisition of the bridge underneath. Both crew members must remain vigilant during the bridge over flights to ensure adequate scanning for other aircraft is accomplished. Additional measures of safety are available from the ATC (Air Traffic Controller) when operating in Class B, C, and D airspace and when “VFR Flight Advisories” are requested by the pilot.

5.3.3 Bridge Deck Monitoring Applications

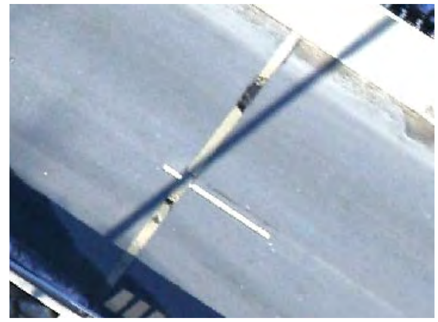
Bridge Inspector’s Reference Manual (FHWA, 2002) defines bridge deck as the “component of a bridge to which the live load is directly applied.” In this paper, only concrete decks, with or without wear surfaces, will be discussed. The deck surface conditions and the deck joint behaviors are the critical elements to look for on a bridge deck. Unlike highway pavements, currently, there is no bridge deck condition index defined. Loosely follow the Pavement Condition Index (PCI) system (Shahin 1994, Rice 2010), Chen et al. (2010) suggested a bridge surface condition index (BSCI) which defines deck crack severity based on crack length and density.

SI-SFAP provides ideal mapping of crack on bridge decks, hence, can provide reasonable BSCI values on a perfectly illuminated, obstruction-free deck surface. However, BSCI does not consider special damage scenarios including punching shear, corner cracking, spalling, potholes, expansion movement data, and other damages in the bridge. Another important feature of SI-SFAP method is the potential of quantifying bridge relative movements by measuring expansion joint openings. Current inspection reporting does not require exact joint movement measurements. Hence, no documentation of bridge superstructure movements has been included in the national bridge inventory database. However, using periodic, high-resolution aerial photography such as the SI-SFAP, it is possible to establish a temporal record of bridge joint movements. Figure 4 shows aerial image showing the transformation of a damaged joint over period and also the image taken at ground shot.

By detecting the expansion joint distances, an inspector can visually see bridge span horizontal movements at a specific period. With further analysis of temporal data, i.e. more aerial photos taken of one bridge across a period of months or even years, the actual movement of a particular bridge can be observed and actions can be proposed to address the situation at hand. It is noted that vertical movements were not studied due to suggestions that state that horizontal movements seem much more critical to structural damage than vertical movements (Moulton et al. 1985). Bridges experiencing noticeably larger horizontal movements, greater than 2 inches and 1.5 inches for abutments, should be flagged for possible immediate inspections.

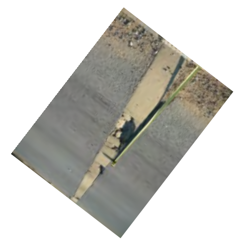


a.) 2009



b.) 2010

c.) 2011



d.)Ground Shot

Figure 4: Joint damage progression

5.4 AERIAL IMAGING ISSUES

5.4.1. Introduction

Aerial bridge deck photos are much noisier than truck mount camera shots, due to the fact that they have more artifacts (lighting, shadows) and obstructions such as trees and cars. However the noise identification is not an easy task. The challenges can be easily visualized but it is difficult to quantify using a computer. The following gives a brief overview of various challenges faced by bridge deck monitoring automation using aerial images. They are difficult to quantify into computer procedures.

5.4.2. Bridge Deck Identification

The concrete roads and bridges have the same color, hence nearly same pixel value. Therefore they are difficult to distinguish using aerial imaging for automatic bridge deck evaluation. Figure 5. shows the aerial image of Reedy Creek Road where the road and bridge are undistinguishable due to the new asphalt pavement.

5.4.3. Shadows

Shadows are regions devoid of illumination. In aerial images, shadows are usually cast by man-made objects such as buildings and also by natural objects such as trees, vehicles, power lines, vehicle-on-bridge, etc. Shadows of natural objects are distorted pattern and conceal many useful features that could be used in the analysis of damage evaluation. It is not difficult for humans to identify the shadows in aerial photographs as shadows itself is one of the fundamental elements in visual photo interpretation for obtaining information about the shape, relative position, and surface characteristics of the objects in the scene. However, identifying them using computer involves developing algorithms for solving many difficult problems.

Shadows can provide additional geometric and semantic clues about the shape and position of its casting object and the position of the light source. On the other hand, objects within the shadows reflect little radiance. Also they require much attention to discern on aerial images because the incident illumination is occluded by the casting objects. Shadows can greatly hinder the performance level of pattern detection and classification systems. Also extracting the features that are concealed by shadows is a prime issue posed by aerial imaging. Basically there are three types of shadows (i) shadows cast by patterns onto the background, (ii) shadows cast by patterns onto themselves, and (iii) shadows of patterns cast onto other patterns. Figure 5 shows the aerial image of Reedy Creek Road that has information being concealed by shadows. Active removal of those would result in very little crack information being left behind.

5.4.4. Trees, Power Lines and Vehicles

The variability in shape, dimension and color of the trees, vehicle poses different issue in deck evaluation. Moreover, any tree branch without leaves appear to look like minor crack on the bridge. This leads to false diagnoses in aerial imaging. They also cast shadows as explained above. Also the tree branches as well the vehicles on the bridge hide many important details of the bridge that could be used in the analysis.

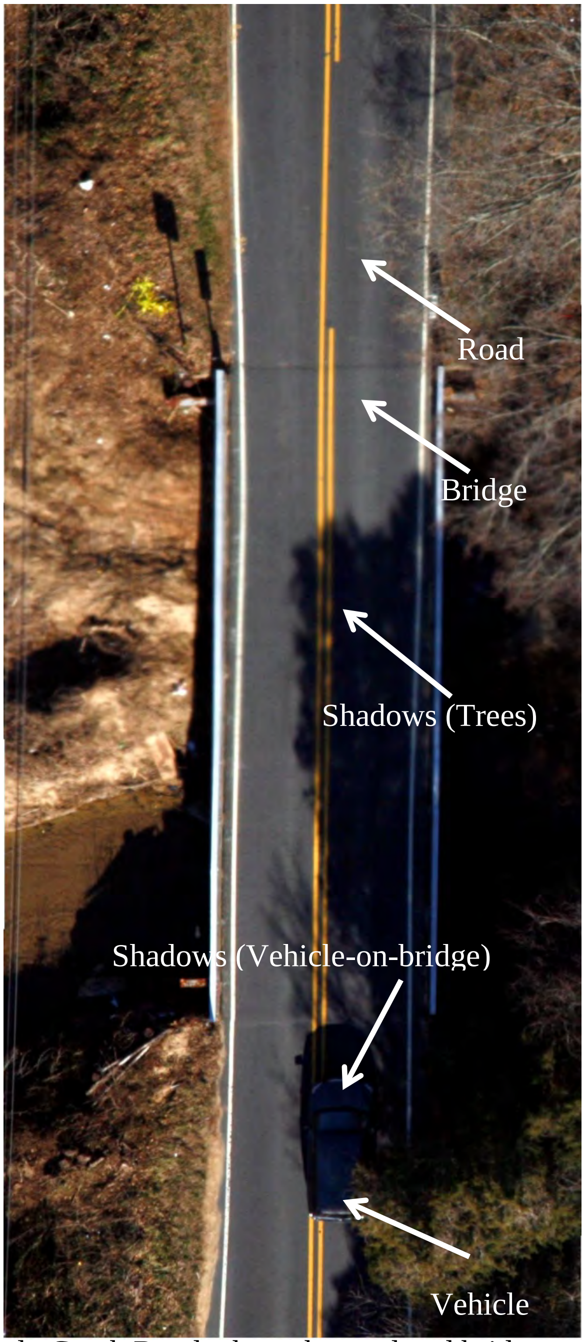


Figure 5: Aerial image of Reedy Creek Road where the road and bridge are undistinguishable.

Figure 5 shows the aerial image of Reedy Creek Road that has trees. Active removal of those would result in very little crack information being left behind. The feature recognition are difficult to procedurize using computer. Power lines running across the bridges and their shadows also pose challenges to the aerial imaging.

5.4.5. Surface Conditions

Surface roughness, discoloring and other surface conditions could cause the pixel to appear like cracks. Similar problem appears when using the color identification technique on both concrete and asphalt bridge surfaces.

On the other hand, indirectly some artifacts can help identify damages. While the view of the roadway surface is obscured by shadows, some larger objects may still be observed within the shadows such as holes in the surface and asphalt patches. By identifying the holes in the surface which are relatively easily observed, some cracks which radiate from the holes can be located. These kinds of observations are heuristic and hard to quantify into computer procedures.

5.5 APBA ALGORITHM

5.5.1. Introduction

The high resolution images of SI-SFAP are analyzed using MATLAB programs developed for this specific study. The outcome software APBA (Aerial Photography for Bridge Analysis) is a standalone. Figure 6 shows the flowchart showing the general process in SI-SFAP image processing.

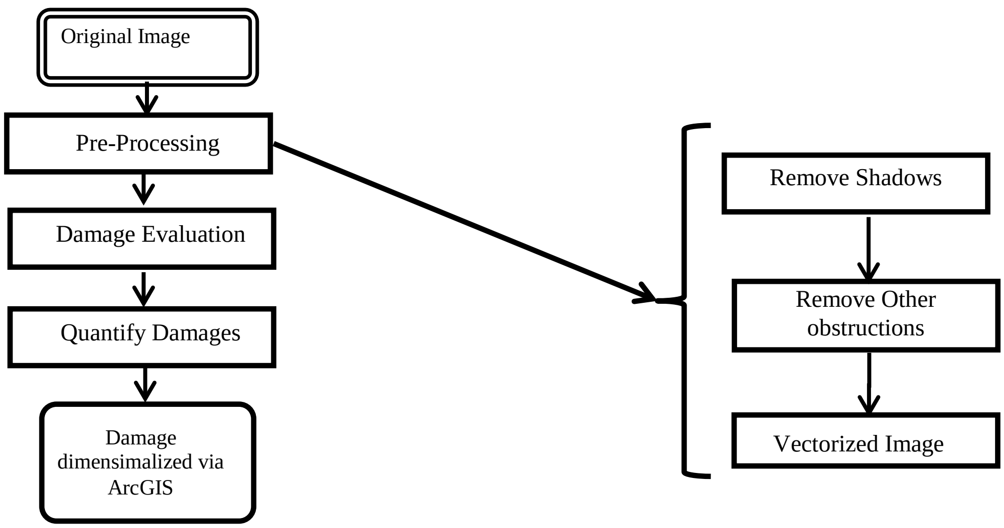


Figure 6: Flow chart

5.5.2. APBA Procedure

The following are the ten step processing procedure used in APBA. The procedure involves possible use of photoshop to remove obstructive objects within the aerial image.

Step 1: The entire stitched photo with obstructions on the bridge removed is being loaded as input to the software by selecting the load file option. The software gives a error message if no file is being loaded.

Step 2: The tolerance value and other information known by the user is given as input in the front end.

Step 3: On pressing the “Analyse” button, the image is being loaded as input appears in a new window with a user interactive option. The section of the image which is to be analyzed, i.e bridge portion is selected by marking a boundary line to the section. This is achieved by a separate subroutine running in the backend of the software. This is also known as “masking of the image”.

Step 4: The section of the image is then converted to grayscale to accelerate the image processing speed. This is highly necessary as the stitched images of the shots taken by SI-SFAP are very big showing the entire bridge in one single image (Wang, Zhang, and E. 2010).

Step 5: If there is presence of shadow in the image, go to next step else go to step 7.

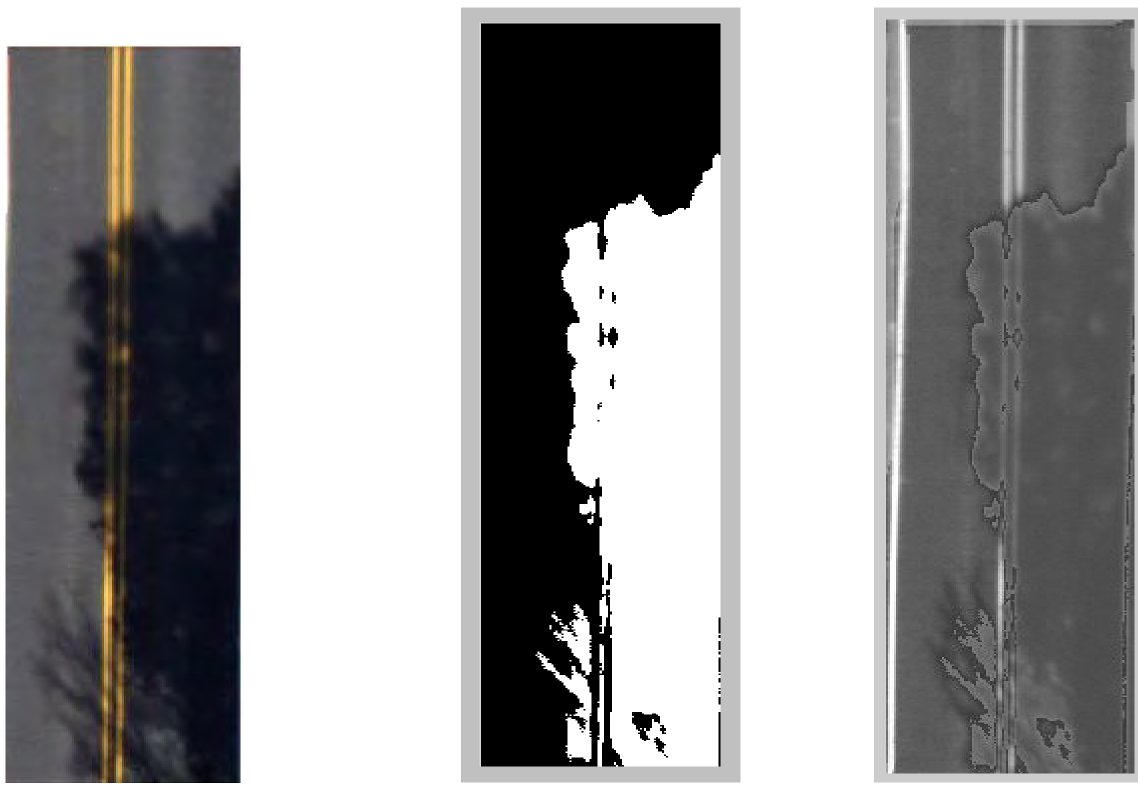


Figure 7: a.) Aerial image of Reedy Creek Bridge section b.) Aerial image of Reedy Creek Bridge shadow portion and c.) Shadow being removed using illuminance compensation

Step 6: In order to accurately identify the shadow regions the images are closed to remove thin cracks. Then by using the pixel information the shadow region is identified without the influence of crack pixels. The shadows are removed using illuminance compensation (Zou, Cao, Li, Wang 2012). Figure 7a. shows the section of Reedy Creek Road bridge being cropped from figure 5 using MATLAB. Figure 7b.shows the shadow portion of Figure 7a being identified and Figure 7c shows the shadow region being removed using illuminance compensation. The relative area of the shadow region is also being calculated.

Step 7: The lowest pixel value corresponding to the crack is identified.

Step 8: According to the tolerance value set by the user, a bandwidth is formed. Any pixel value falling in this bandwidth is identified as a crack.

Step 9: The number of pixels in each crack region, as well as along the major axis and minor axis are calculated.

Step 10: According to the known value (Length or width), the length and area of the crack is calculated and is displayed.

Cracks which are the earliest sign of degradation (Yamaguchi, T. Nakamra,S. Segusa,R. Hashimoto,S. 2008). Once cracking and expansion joints are identified, assumptions can then be made about structural integrity. Other defects such as patching, scaling, spalling, delamination and exposed reinforcement and potholes can also be identified using aerial photography. Figure 8: shows the original image as well the cracks and joints being identified in the vectorized image.

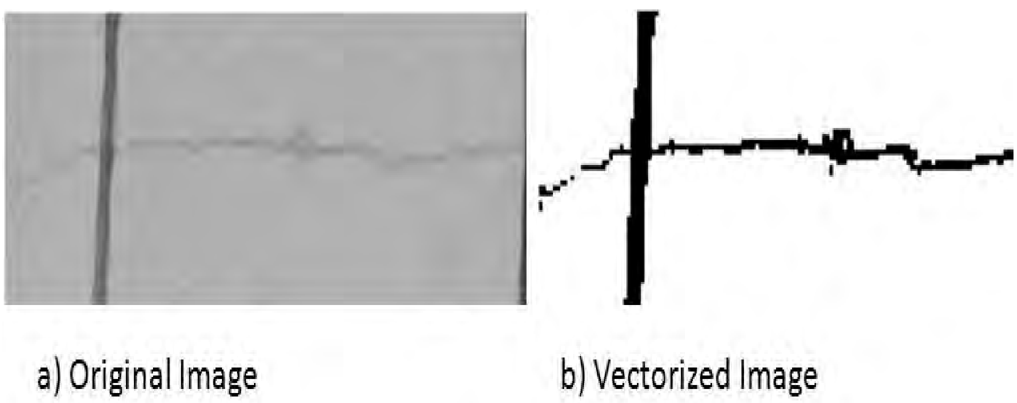


Figure 8: Original image and vectorized image of cracks and joint

5.5.3. Graphical User Interface (GUI) for APBA (Aerial Photography for Bridge Analysis):

The graphical user interface developed for APBA software is shown in Figure 9. The user interface is developed to help the user to analyze the images with ease. They are structured and simple interface developed in MATLAB using guide tool. The status of the data being given as input can be checked in the status space in user interface.

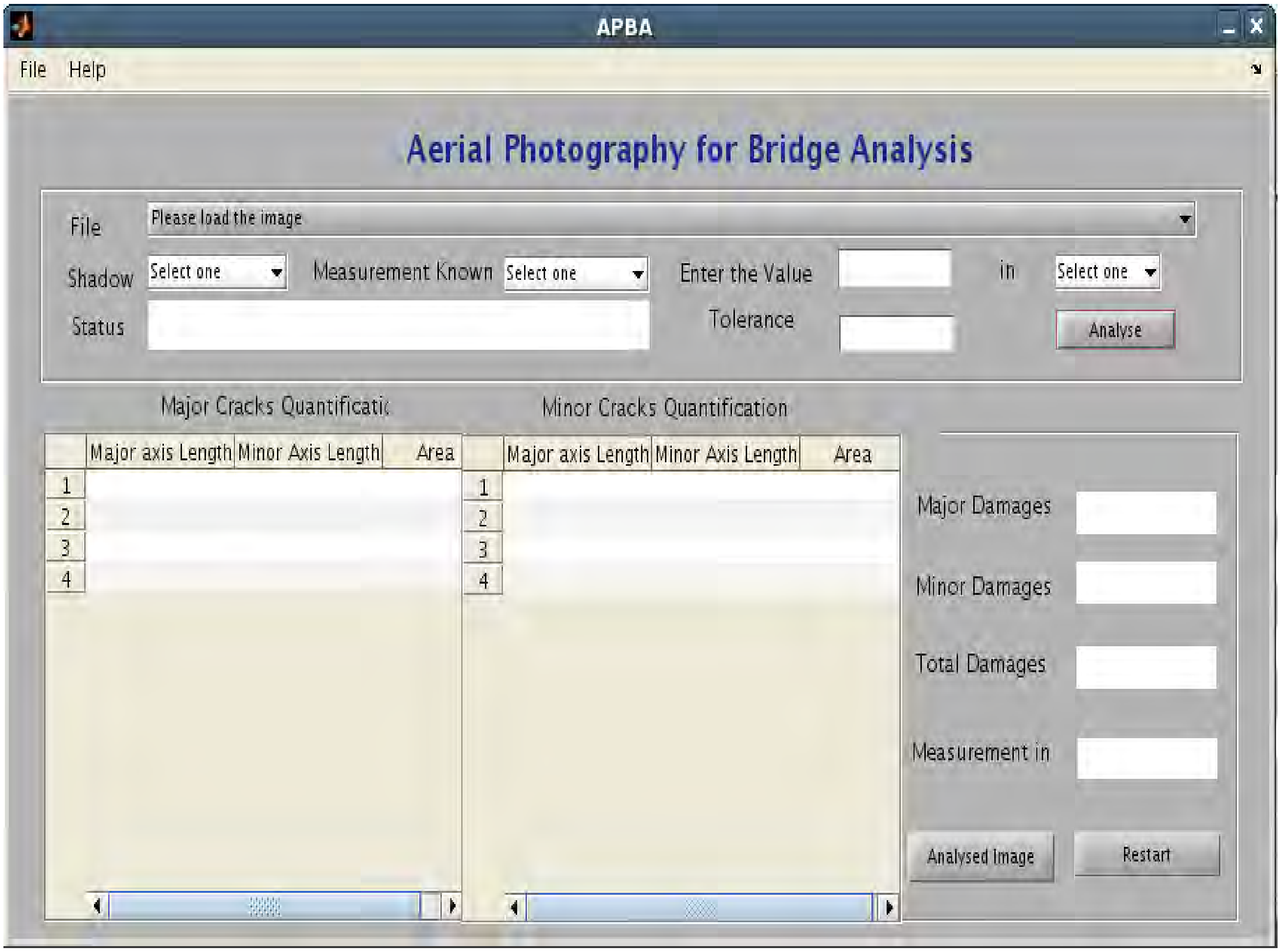


Figure 9: Graphical User Interface of APBA

5.6 VALIDATION

5.6.1. Introduction

In this chapter, several examples are presented to demonstrate the crack detection automation of APBA including a ground image validation (Section 5.6.2); two aerial image validation (Section 5.6.3). The ground image consists of a single crack within a bridge material. The aerial images consists of a severely of a bridge cracked surface and two

5.6.2. Ground Image Crack Validation

The ground image (Figure 10) of Mallard Creek Church Road Bridge was taken on November 3rd, 2011. The images were taken at an elevation of 40 inches, 94 inches from the curb. The other measurements, such as distance from rod to focal length is 4 inches and also the distance from centre to focal length is 10 inches, were also documented. Figure 10. Shows the original ground image of Mallard Creek Church Road bridge taken during a field trip.

Figure 10: Ground image of Mallard creek church road bridge

The original image is being loaded into APBA from the file menu. Other known parameters are also given as input to the software.

- Shadow: No
- Measurement Known: Width
- Enter the value: 10.5
- In: inches
- Tolerance: 0.1

The area under study, for which the dimensions are inputted, is selected as shown in the Figure 11. The resultant image has the damages being marked up in red color. The original image is loaded in the GUI and is cropped. This is done to study specified area of interest whose dimensions are known. Figure 11 shows the marking of region of study using APBA whose width is known.

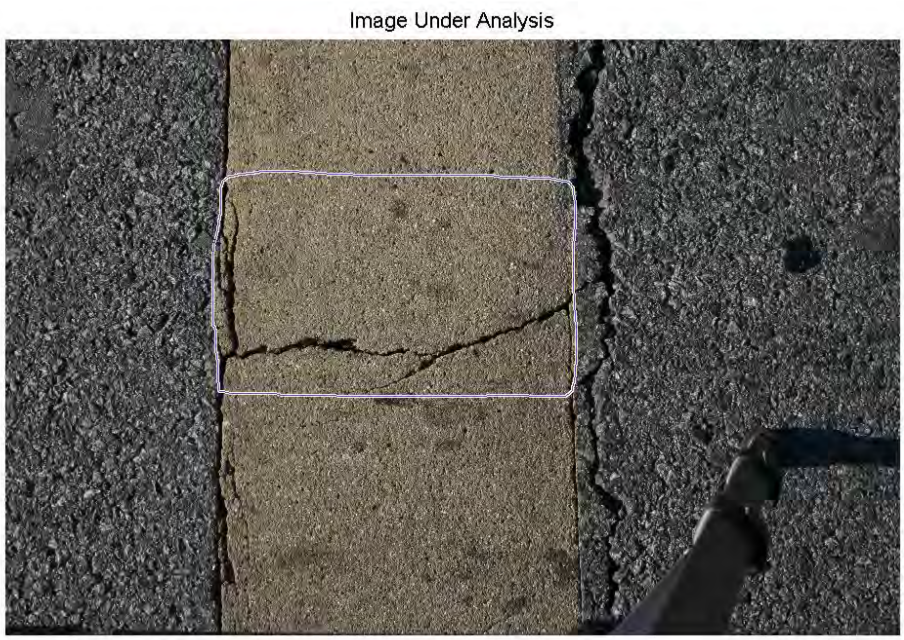


Figure 11: Original image being cropped for analysis using APBA software

Pixel intensity normalization technique is used to analyze the area of interest for crack detection. Figure 12.a shows the binary image of the area of interest with total crack regions being marked as high; Figure 12.b shows the original image of the area of study being marked with total damages in red pixels. The crack detection is shown to be consistent with the original image Figure 12.c shows the binary image of the area of interest with major crack regions being identified using APBA; Figure 12.d shows the original image of the area of study being marked with only major cracks identified in red pixels. Figure 12.e shows the binary image of the area of interest with minor crack regions being identified using APBA; Figure 12.f shows the original image of the area of study being marked with only minor cracks identified in red pixels.

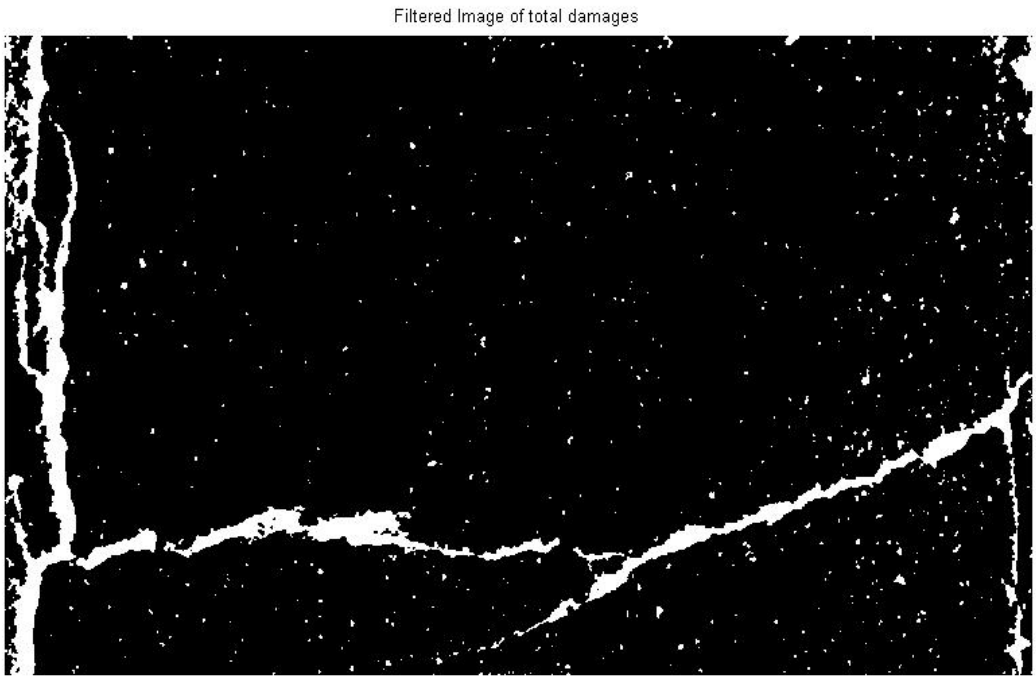
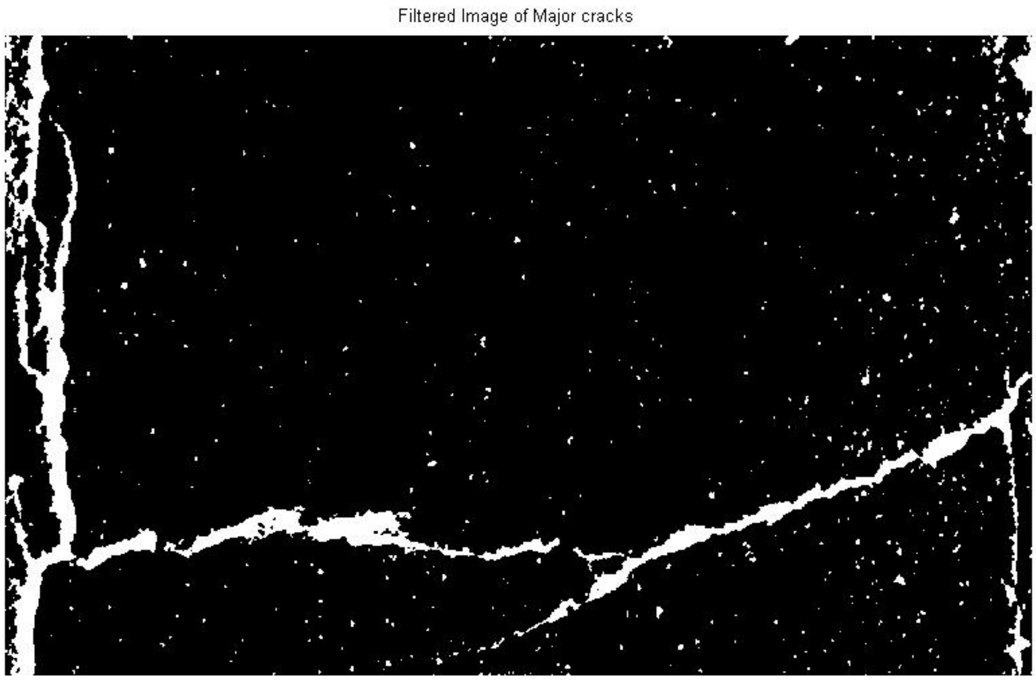


Figure 12: a.) Binary image of the area of interest with total crack regions; b.) Original image with total damages being marked up using APBA software as high value.



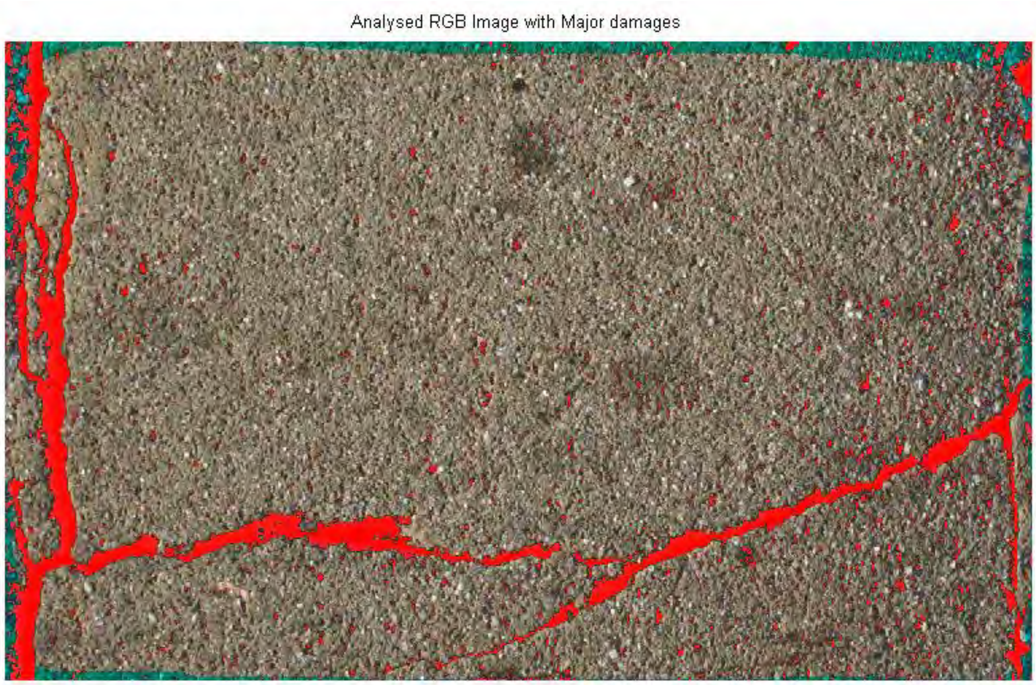


Figure 12: c.) Binary image of the area of interest with major crack regions; d.) Original image with major damages being marked up using APBA software as high value.

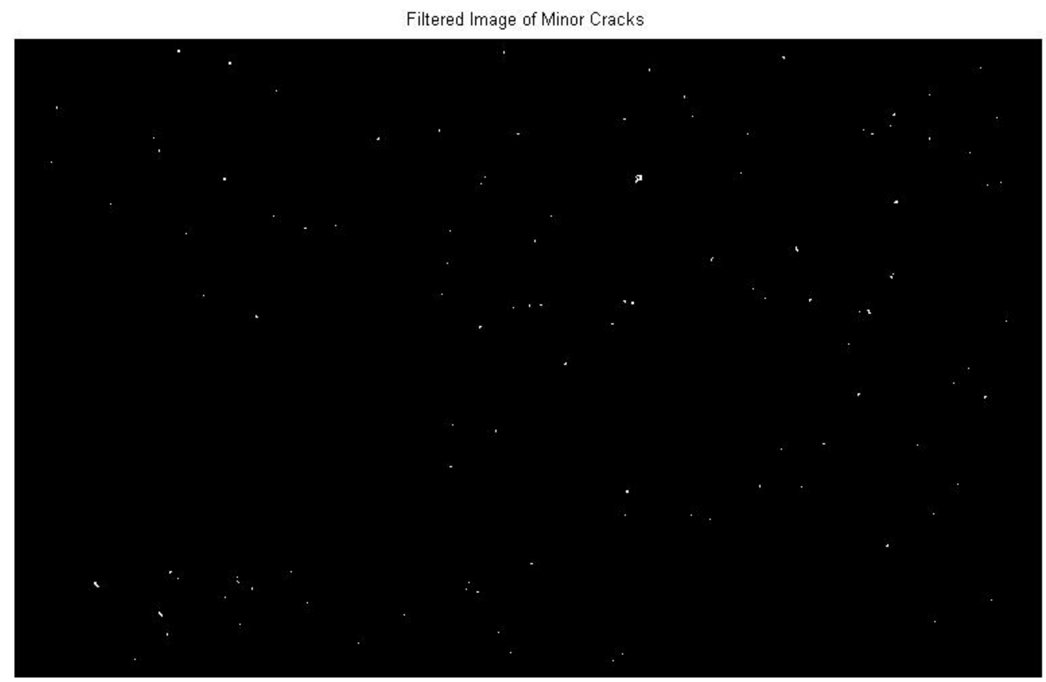


Figure 12: e.) Binary image of the area of interest with minor crack regions; f.) Original image with minor damages being marked up using APBA software as high value.

Figure 13. shows the GUI with quantified results of major and minor crack regions using APBA software. Using the “save as” option in the GUI all the resultant images and the quantified results of total (930 pixels), major (780 pixels) and minor damages (149 pixels) can be saved in “.jpg” format and Ms-Excel (.xls) spreadsheet in a Windows OS (Appendix A- User Manual).

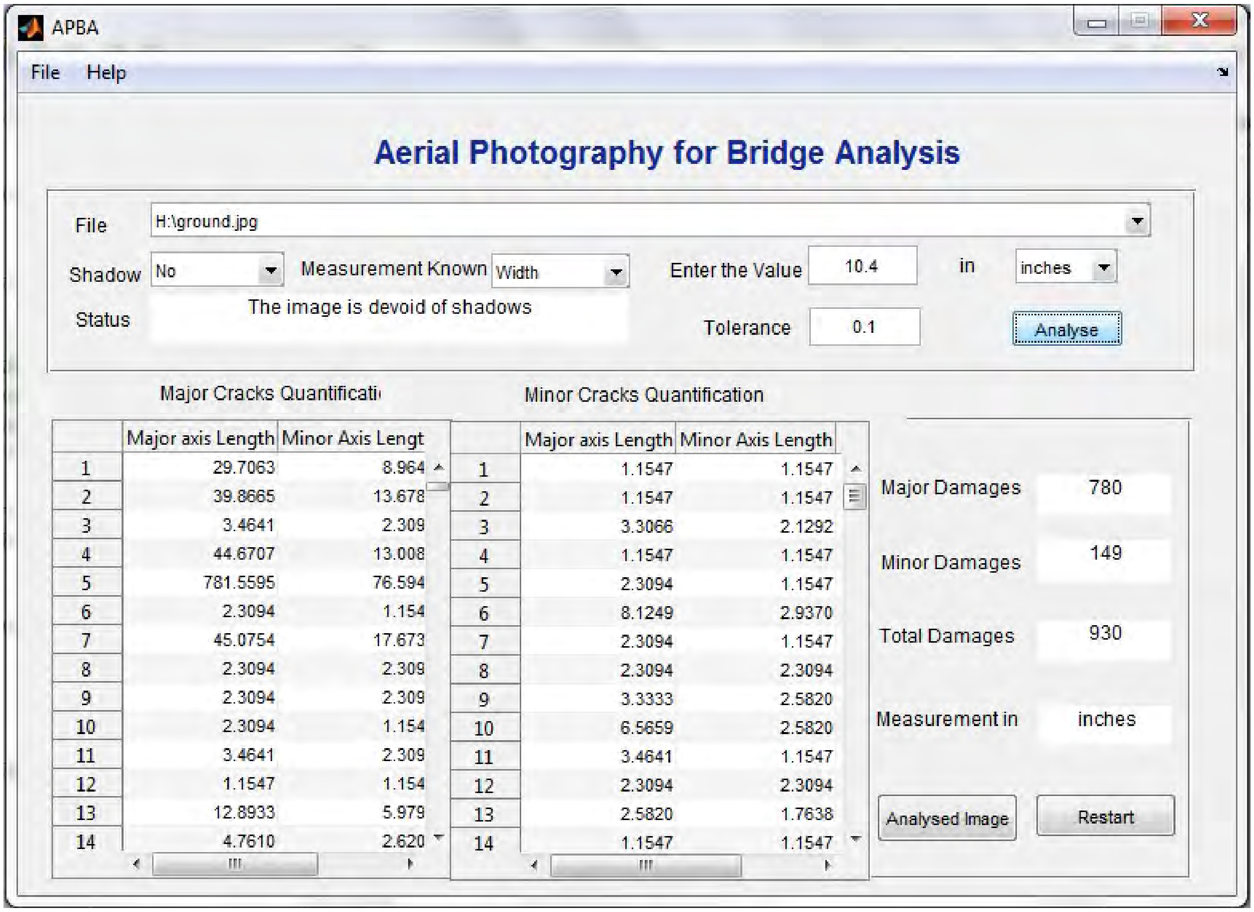


Figure 13: GUI with quantified results of major and minor crack region

5.6.3. Aerial Image Crack Analysis

The Mallard Creek Church Road Bridge aerial image is analyzed for damages on the bridge using APBA software. For simplicity and to get more accurate results all obstructions in aerial image are removed. Figure 14. Shows the aerial image of Mallard Creek Church Road Bridge with all obstruction removed to aid in analysis.

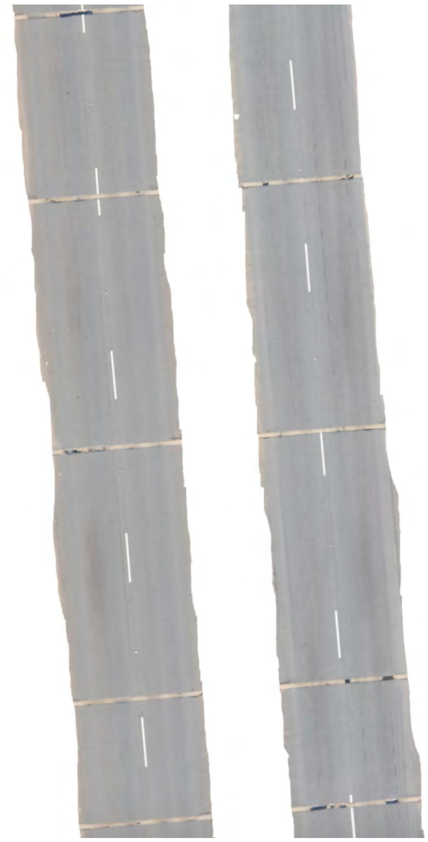


Figure 14: Aerial image of Mallard Creek Church Road Bridge with all obstructions removed

Figure 15 shows the cropped sections of the Mallard Creek Church Road bridge using APBA software, showing the south bound and north bound bridge sections. The analysis is done individually for each parallel section. Figure 16.a shows the binary image of the area of interest with total crack regions being marked as high; Figure 16.b shows the original image (south bound) of the area of study being marked with total damages in red pixels. Figure 16.c shows the binary image of the south bound with only major crack regions being identified using APBA; Figure 16.d shows the original image of the south bound being marked with only major cracks in red pixels. Figure 16.e shows the binary image of the south bound with only minor crack regions being identified using APBA; Figure 16.f shows the original image of south bound being marked with only minor cracks in red pixels.

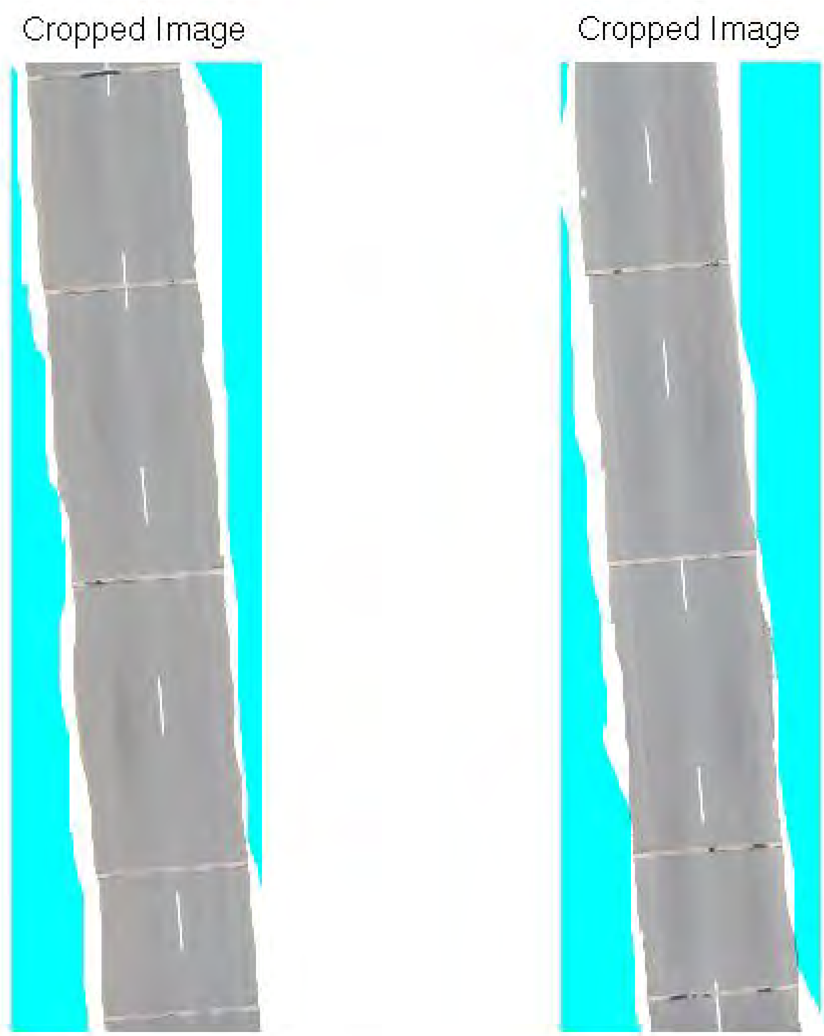


Figure 15: Cropped south bound and north bound sections of the Mallard Creek Church Road Bridge using APBA software.

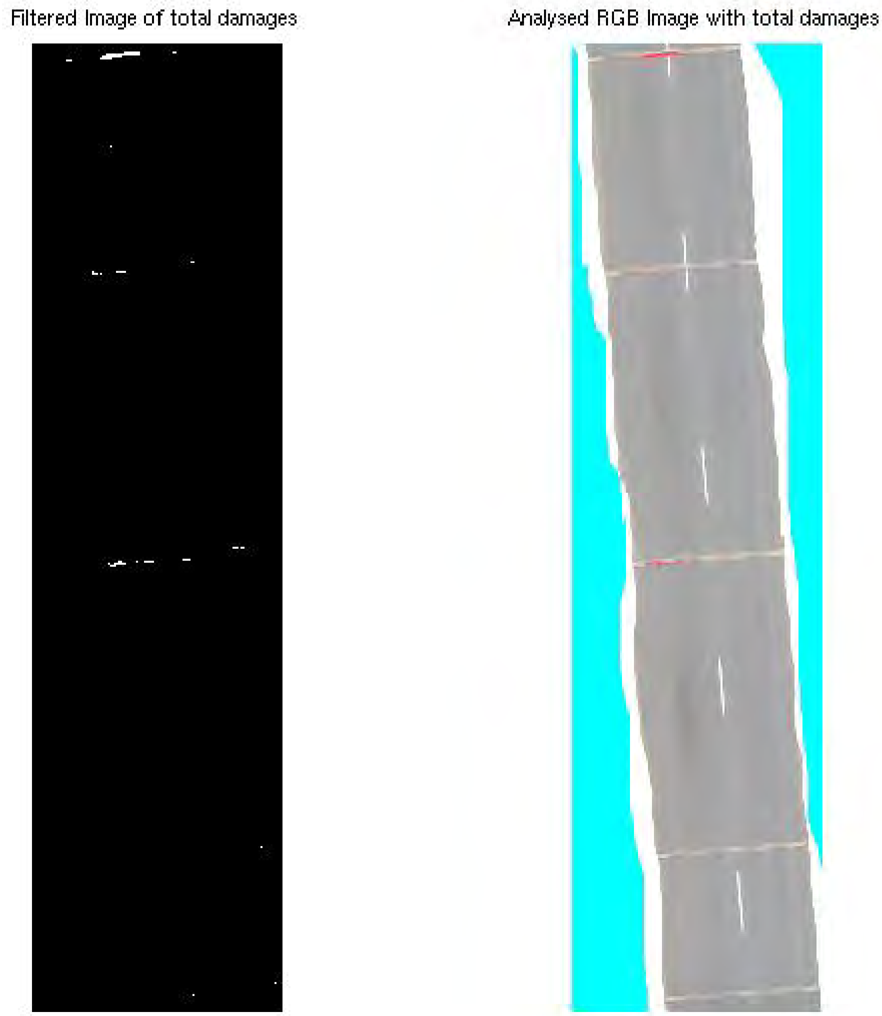


Figure 16: a.) Binary image of the area of interest with total crack regions being marked as high; b.)Original image of the area of study being marked with total damages in red pixels.

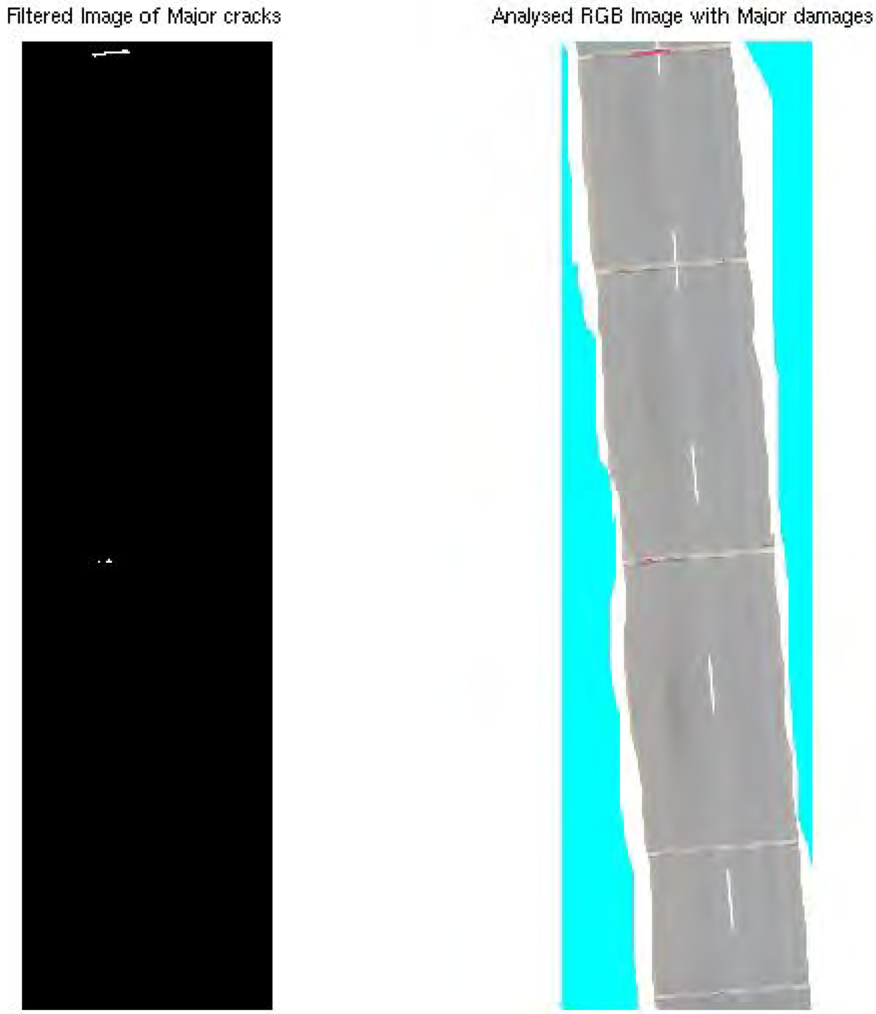


Figure 16: c.) Binary image of the area of interest with major crack regions being identified using APBA; d.) Original image of the area of study being marked with major cracks in red pixels.

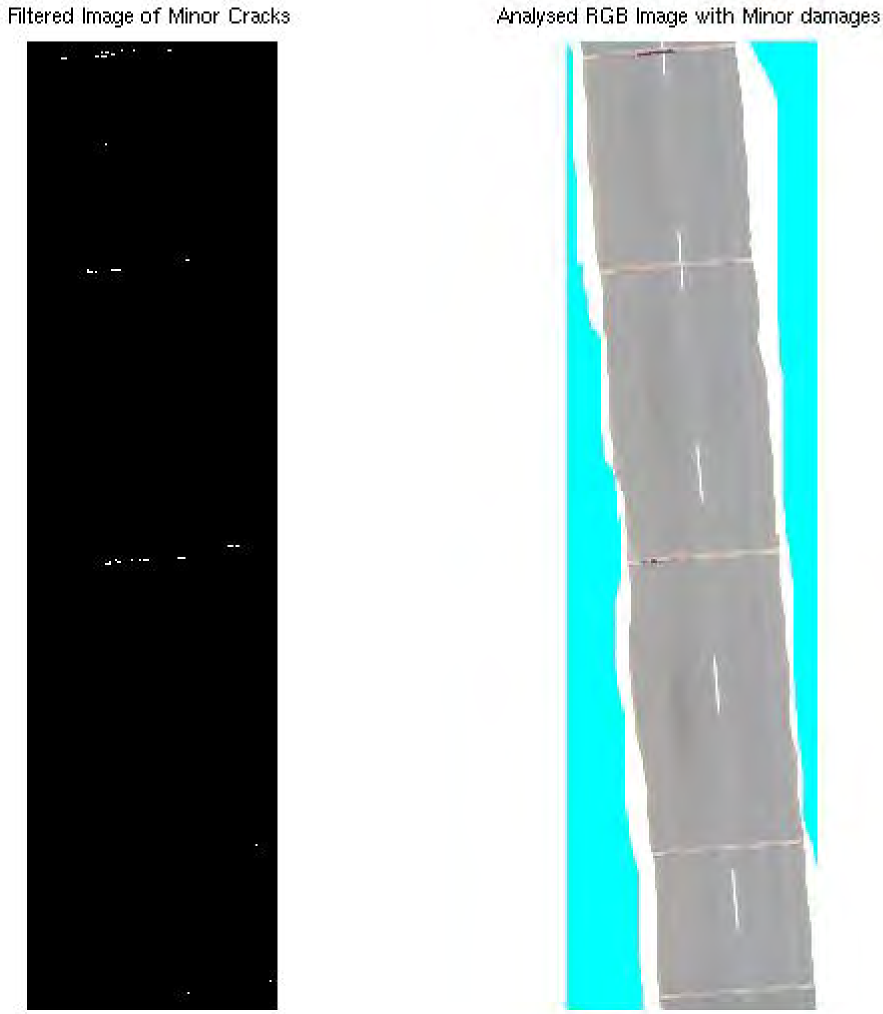


Figure 16: e.) Binary image of the area of interest with minor crack regions being identified using APBA; f.) Original image of the area of study being marked with minor cracks in red pixels

The aerial images of the North Bound of the Mallard Creek Church Road bridge were taken for study. The damages are identified and marked up using red color. Figure 16.g shows the binary image of the North Bound with total crack regions being marked as high; Figure 16.h shows the original image of the North Bound being marked with total damages in red pixels. Figure 16.i shows the binary image of the North Bound with only major crack regions being identified using APBA; Figure 16.j shows the original image of the North Bound being marked with only major cracks in red pixels. Figure 16.k shows the binary image of the North Bound with only minor crack regions being identified using APBA; Figure 16.l shows the original image of North Bound being marked with only minor cracks in red pixels.

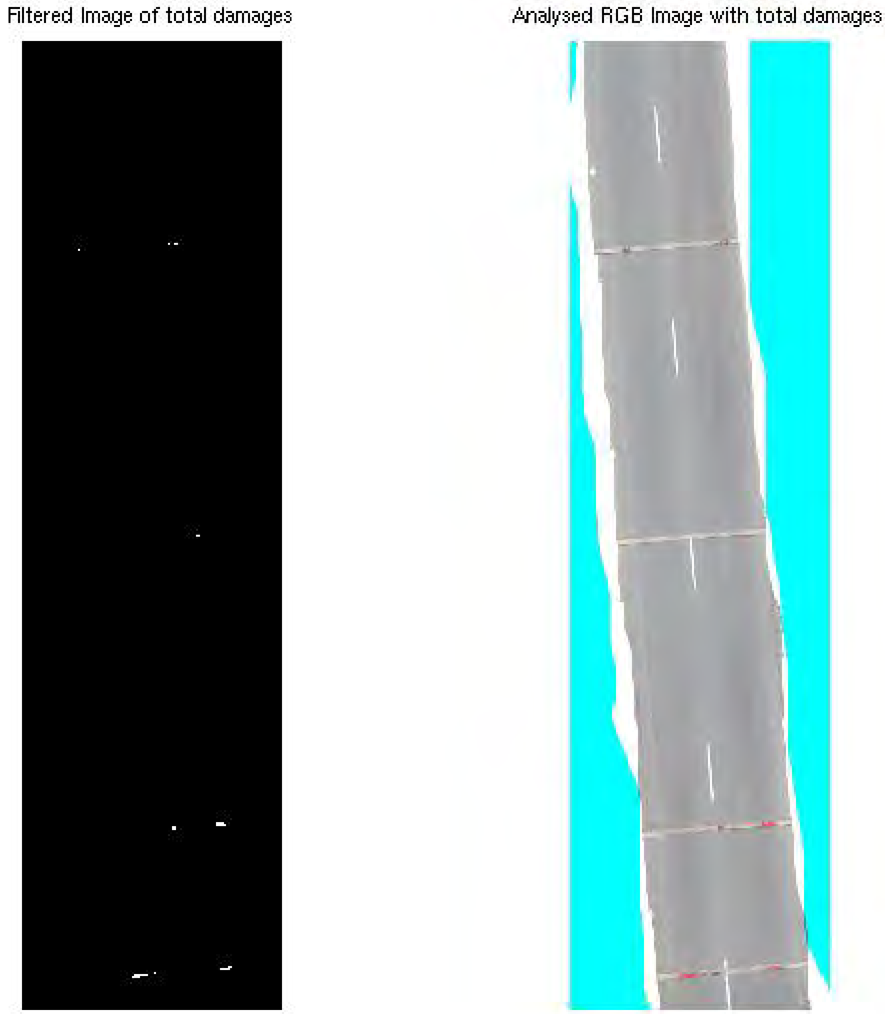


Figure 16: g.) Binary image of the area of interest with total crack regions being marked as high; h.) Original image of the area of study being marked with total damages in red pixels

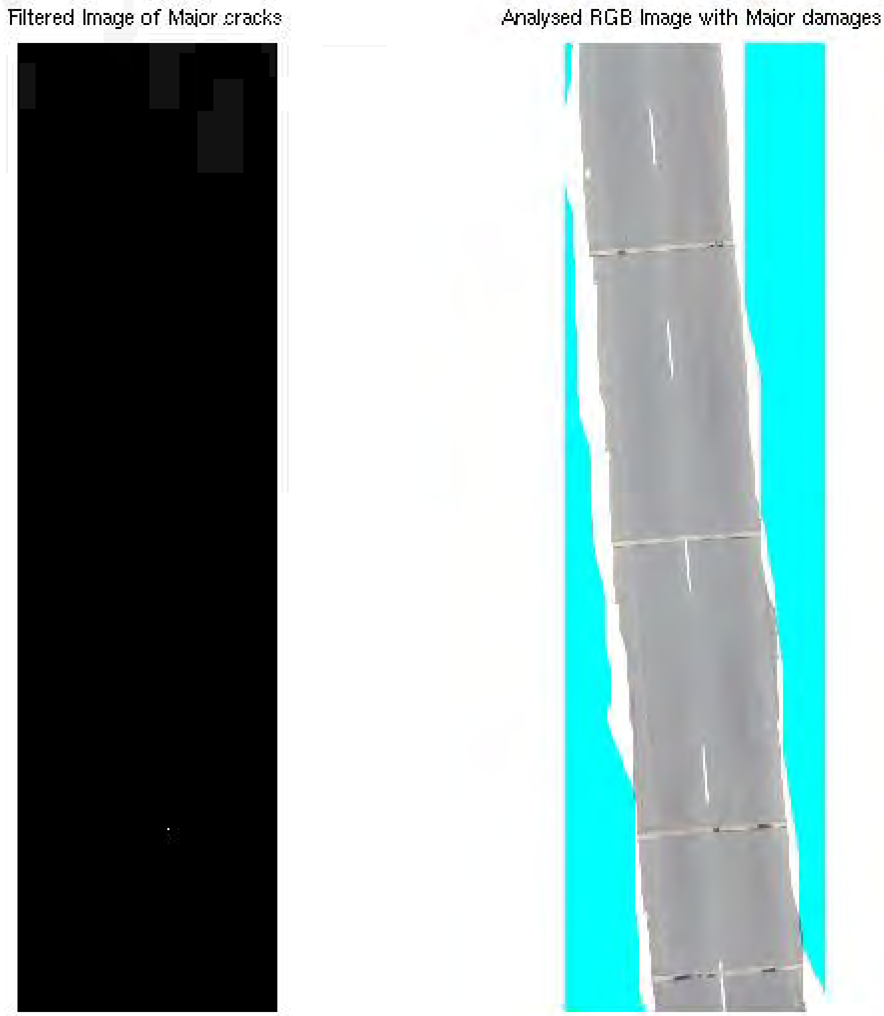


Figure 16: i.)Binary image of the area of interest with major crack regions being identified using APBA; j.)Original image of the area of study being marked with major cracks in red pixels.

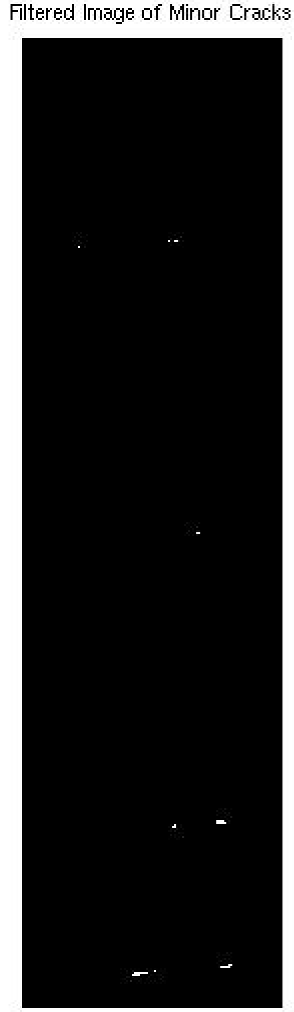


Figure 16: k.)Binary image of the area of interest with minor crack regions being identified using APBA; l.)Original image of the area of study being marked with minor cracks in red pixels

Figure 17 shows mark-up of bridge deck cracking in Arc-GIS. In this case, because the joint damages have sufficient contrast to the undamaged sections, as a result, the joint damage detection minimalized the effects of other damages on the bridge deck.

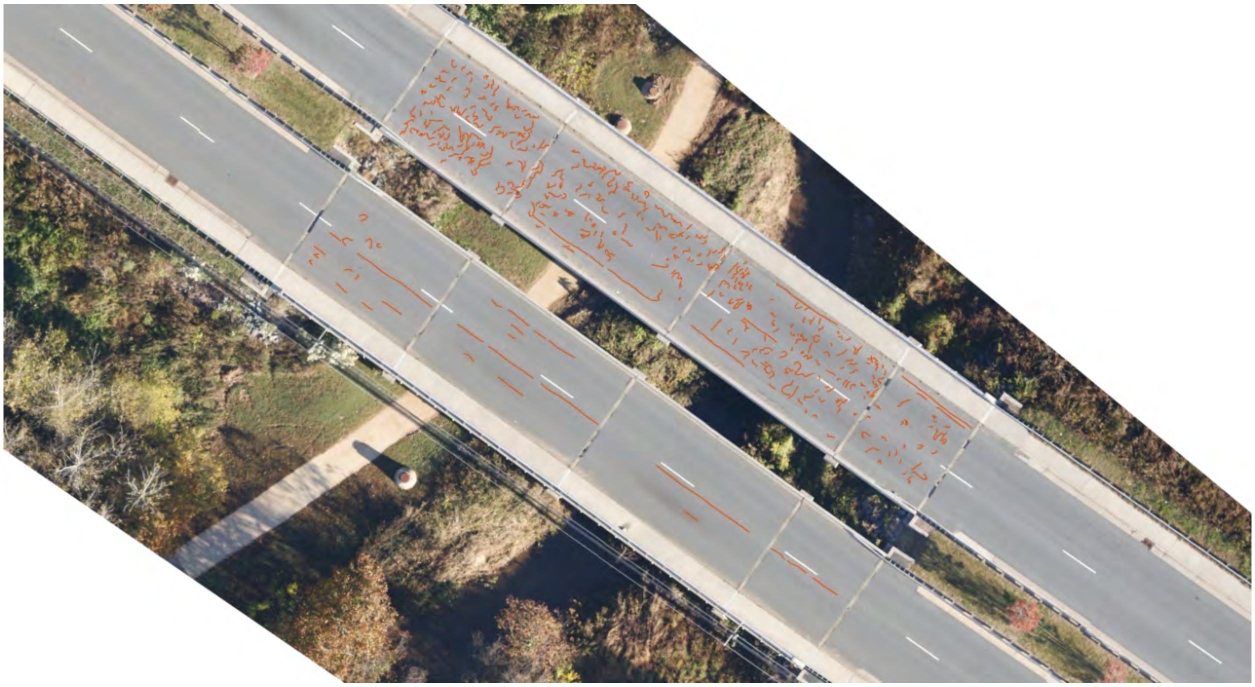


Figure 17: Mark-up of bridge deck cracking in Arc-GIS.

Aerial image of a heavily damaged bridge deck, taken for the bridge competition in 2010, is used for this study. Figure 18 shows the cropped sections (span A) of the bridge under study using APBA software. Figure 19.a shows the binary image of the area of interest with total crack regions being marked as high.

Figure 18: Cropped section (span A) of the bridge under study using APBA software

Figure 19.b shows the original image of the area of study being marked with total damages in red pixels. Figure 19.c shows the binary image of the area of interest with major crack regions being identified using APBA; Figure 19.d shows the original image of the area of study being marked with only major cracks in red pixels. Figure 19.e shows the binary image of the area of interest with only minor crack regions being identified using APBA; Figure 19.f shows the original image of the area of study being marked with minor cracks in red pixels.

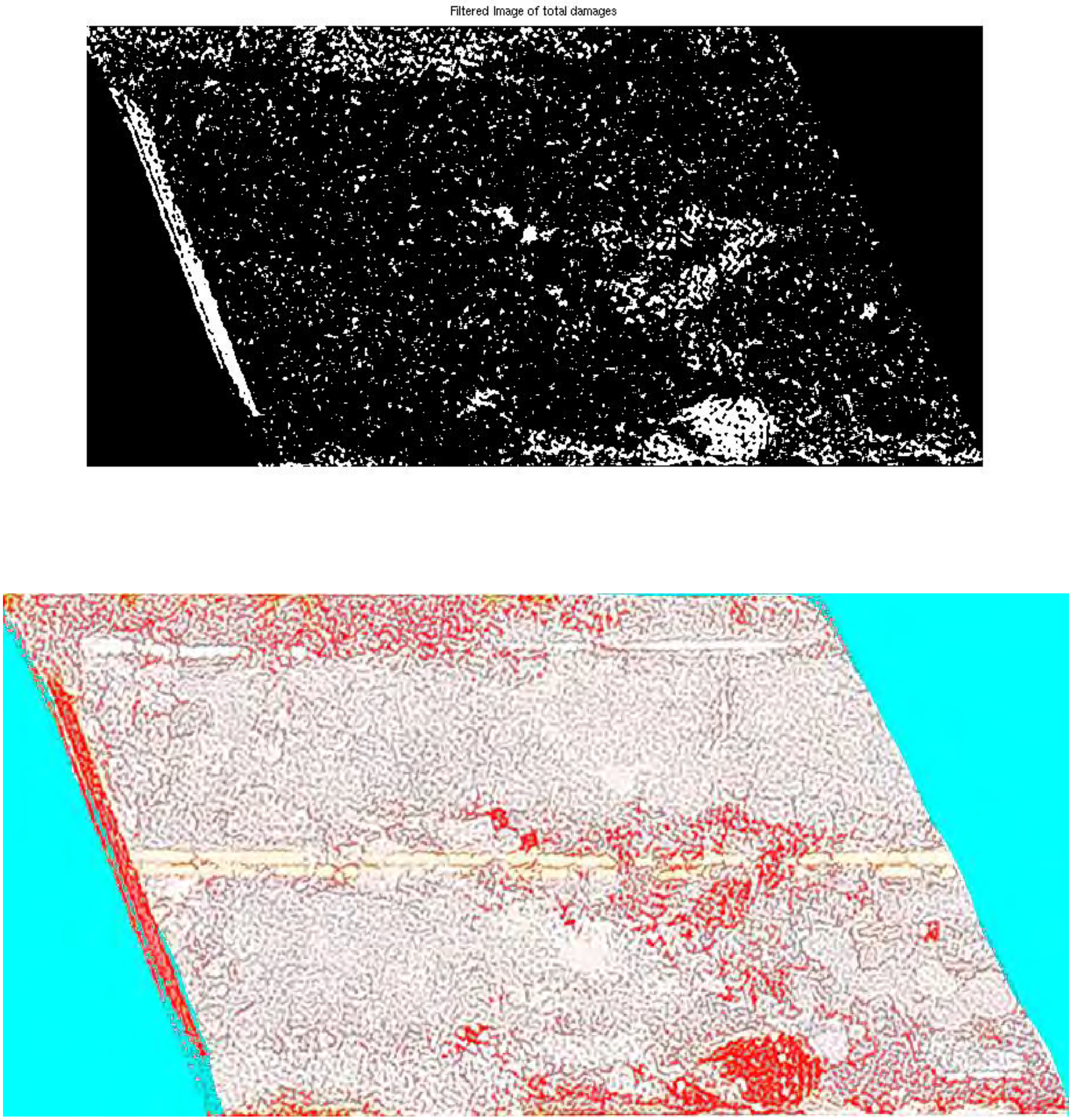


Figure 19: a.) Binary image of the area of interest with total crack regions being marked as high; b.) Original image of the area of study being marked with total damages in red pixels.

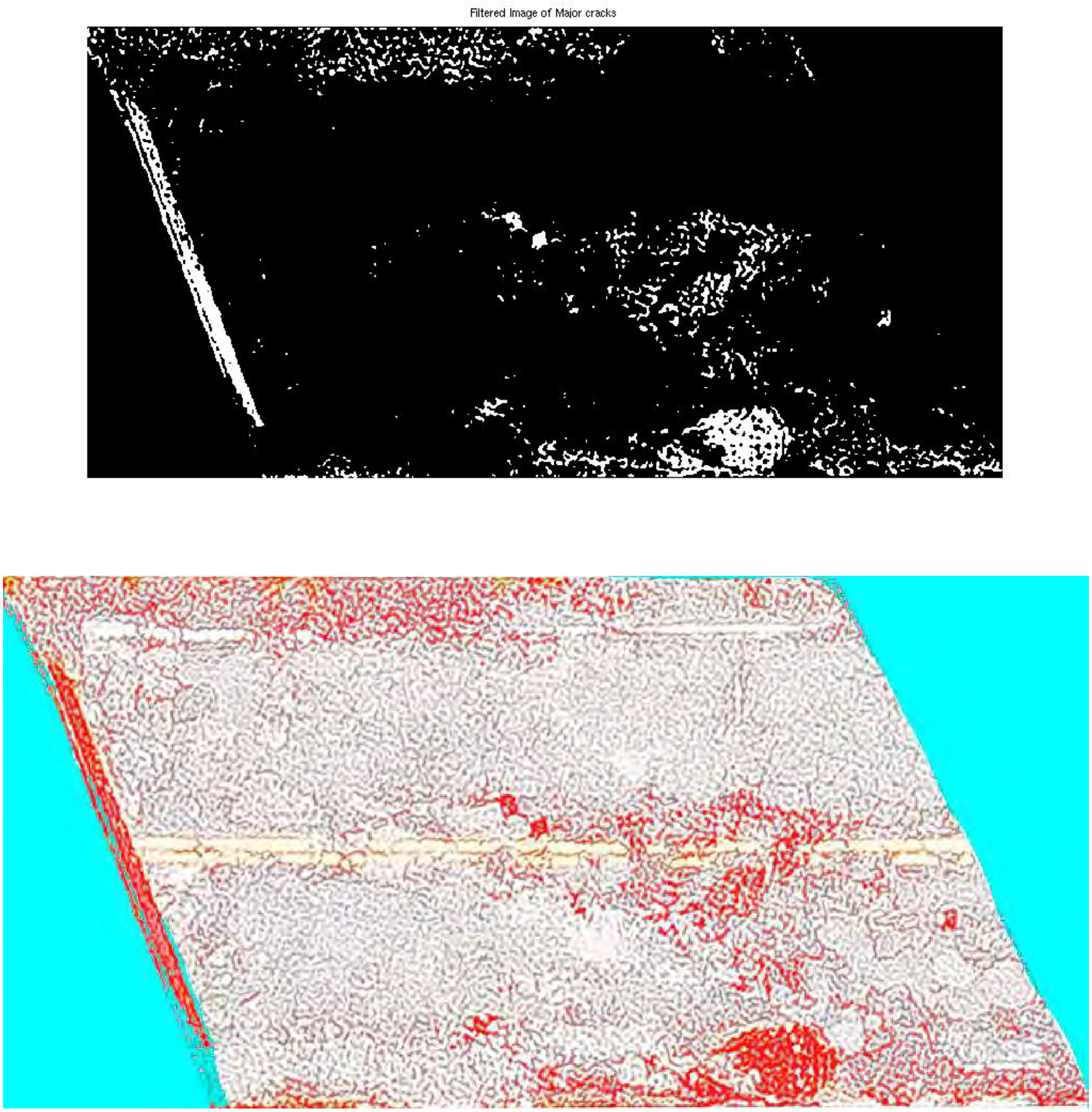


Figure 19: c.) Binary image of the area of interest with major crack regions being identified using APBA; d.)Original image of the area of study being marked with major cracks in red pixels.

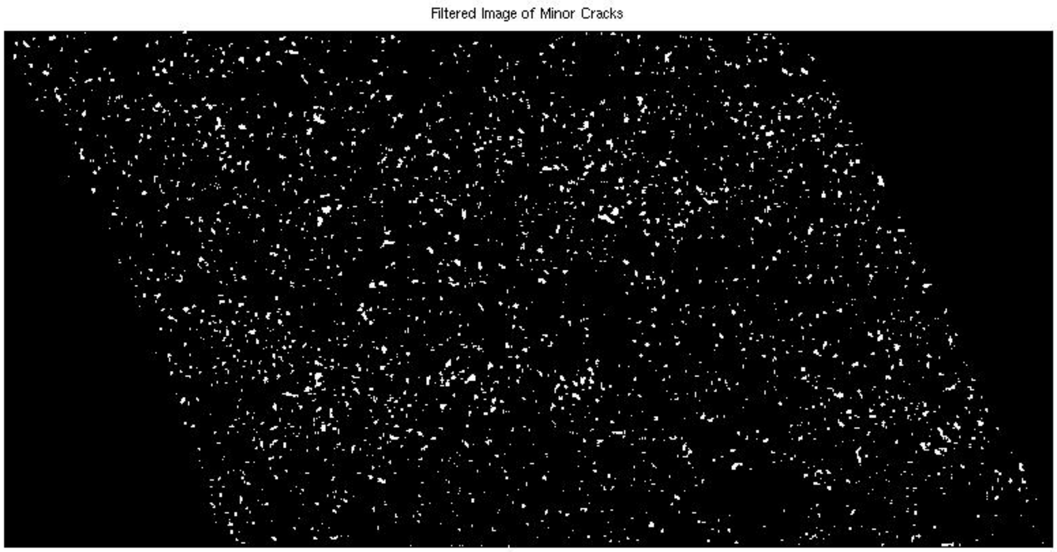


Figure 19: e.) Binary image of the area of interest with minor crack regions being identified using APBA; f.) Original image of the area of study being marked with minor cracks in red pixels

5.6.4. Discussion

In the three examples presented, the ground image of a crack demonstrated that APBA can capture a crack image accurately and is able to differentiate between major and minor cracking.

When applied to actual aerial imaging, the pixel resolution becomes critical to the accuracy of crack detection. The Mallard Creek Church Road bridge image consists of several cracks which can be visually observed on the ground and from the aerial image. However, when using image automation analysis, the crack detection was influenced by the joint cracking which consists of higher color contrasts than deck material cracking. As a result, the cracking on the deck was minimalized by the joint crack and was not detected.

The second aerial image example consists of a heavily cracked deck demonstrated that aerial imaging can accurately discern major and minor cracking even on an aerial.

5.7 CONCLUSION

SI-SFAP technique has been proposed as a low cost supplement to existing visual inspection process. SI-SFAP faces different challenging issues when compared to ground imaging. Chapter 5.4 summarized these artifacts which include shadows, actual trees, power lines and vehicles. Other issues identified include non-damage related surface conditions. Using image processing automation, it is suggested that shadow regions can be removed using illuminance compensation and cracks be differentiated by pixel grey scale value contrasts. Using different bandwidth values, major and minor cracks can be differentiated. This has been demonstrated in chapter 5.5 using both aerial and ground truth images.

The examples provided show that the crack detection can be performed accurately on high quality aerial images (second aerial bridge). Hence, APBA is a valid and viable, automated image processing algorithm.

5.8 RECOMMENDATIONS FOR FUTURE STUDY

Aerial imagery offers room for future study such as full automation of the bridge damages overcoming all the challenges posed by it. This can efficiently lower the human error in identifying the bridge damages. The proposed method can be seen as an excellent supplement to bridge visual inspection. It is superior to all conventional truck mount techniques. Aerial images can aid in visualizing the full damage scenario on the entire bridge. Thus aerial imagery could be a potential tool to identify and quantify damages on bridges, if it is possible to overcome the challenges posed by them.

The first bridge aerial example (Section 5.6.3) clearly indicated that the SI-SFAP technique can capture aerial images with bridge deck problems. However, current image pixel based processing technique is highly influenced by color contrasts. More advanced techniques, such as non-pixel based approaches may be able to resolve the contrast issues and should be implemented.

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APPENDIX A

APBA User Manual

User Manual for APBA(Aerial Photography for Bridge Analysis)

All comments that might be helpful to the improvement of this tool are welcome to schen12@uncc.edu

Note 1:If Matlab is installed in the system, to start APBA, type "APBA" in Matlab command window (Please do not click "APBA.fig", which is a figure file) with the directory being set to the folder where the APBA.exe is present.

Note 2: If MATLAB is not installed in the system, double click on the APBA_pkg.exe (application file). The MCR (MATLAB Compiler Runtime 7.15) installer file shipped with APBA package shall install all the necessary library files. This enables APBA software to operate as standalone application.

The APBA was tested under Matlab 7.12.

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(1) Contents:

Purpose of APBA

APBA software is developed to perform damage evaluation of bridges using aerial images. The desired results are achieved using Pixel Intensity Normalisation and Texture illuminance.

The function parts of APBA:
Part 1: Loaded Image and Known parameters.
Part 2: Image section selection for study.
Part 3: Damage evaluation.
Part 4: Displaying quantified result and visualization.
Part 5: Data saving for future.

(2) **Part 1: Loaded Image and Known parameters.**

Image Loading: In APBA GUI, an image can be loaded for analysis from File menu => click "Load Image" (to find and load an image file). The software will give an error message for invalid input file. The image will pop up in a new window in grayscale format for valid input file.

Supported Image Format :".jpg"; ".jpeg"; ".bmp"; ".tiff"'. The image has to be in RGB color.

Load Known Parameters: In order to automate the damage evaluation in bridges, it is necessary to know certain parameters about the region of study such as the length/width of the section of the image under study and measurement units. The user is requested to load the values of the known measurement and the tolerance limit accepted by the user in the text box. As the software works with pixel intensity normalisation, it is highly recommended to give information about the presence of shadows in the shadows drop down menu by selecting "YES" or "NO". For every information being loaded into the GUI, the status of the APBA is displayed in the status tab.

Once the informations are loaded click "Analyse" button to start the bridge deck analysis.

(3)**Part 2: Select the section of the image under study.**
Once analysis is started, a new window will pop up with the image. To select the portion of the image under study, click "ok" in the message box and then left click and hold to begin drawing on the recent image window. Then simply lift the mouse button to finish. The section of the image being selected proceeds to the next stage known as “damage evaluation”. The image cropping is performed to select the bridge section from its surroundings.

(4)**Part 3: Damage evaluation.**
If the image has shadows, the image undergoes texture illuminance to get rid of shadows, else the program will proceeds with pixel intensity transformation to identify the damages and quantification.

(5)**Part 4: Displaying quantified result and visualising the result**.
The quantified results of the damages are displayed on the GUI under two sections - a. Major Cracks Quanitfication and b.Minor Cracks Quantification

Each section has three tabs - 1.Major Axis Length 2. Minor Axis Length 3. Area

The damages are shown as red markings on the images which pops up as new window.Also the total number of major and minor crack regions are displayed. The total number of crack regions are also displayed removing the common regions of major and minor cracks.

Once the analysis is done, the resultant image with major,minor and all cracks being marked can be viewed by clicking on the "Analysed Image". They shall pop up in new window each.

(6)**Part 5: Saving the results.**
The results can be saved from File menu => click "Save Results" (to find a location and save). The user can save the figures (Total damges, Major damages, Minor damages) and the quantified results in Microsoft excel sheets (Total in sheet no:1, Major Cracks in sheet no:2, Minor Cracks in sheet no:3).

(7)**Part 6: Restart the analysis.**
The user can restart the analysis for different set of datas by clicking the "Restart" button. The software refreshes itself for a new set of data.

(8)**Part 7: Exit.**
The software can be shut down from file menu => "Exit" or by clicking on "x" on the right top corner

(9) **Part 8: Help files and Copyright text**
The user manual and the copyright text files can be found from help menu.

SOFTWARE DESIGN POLICY FOR APBA GROUP

User Interface
Basic Design Principles

- ***The structure principle***: Design should organize the user interface purposefully, in meaningful and useful ways based on clear, consistent models that are apparent and recognizable to users, putting related things together and separating unrelated things, differentiating dissimilar things and making similar things resemble one another. The structure principle is concerned with overall user interface architecture.
- ***The simplicity principle*:** The design should make simple, common tasks easy, communicating clearly and simply in the user's own language, and providing good shortcuts that are meaningful related to longer procedures.
- ***The visibility principle*:** The design should make all needed options and materials for a given task visible without distracting the user with extraneous or redundant information. Good designs don't overwhelm users with alternatives or confuse with unneeded information.
- ***The feedback principle*:** The design should keep users informed of actions or interpretations, changes of state or condition, and errors or exceptions that are relevant and of interest to the user through clear, concise, and unambiguous language familiar to users.
- ***The tolerance principle*:** The design should be flexible and tolerant, reducing the cost of mistakes and misuse by allowing undoing and redoing, while also preventing errors wherever possible by tolerating varied inputs and sequences and by interpreting all reasonable actions.
- ***The reuse principle*:** The design should reuse internal and external components and behaviors, maintaining consistency with purpose rather than merely arbitrary consistency, thus reducing the need for users to rethink and remember.

The Requirement of APBA Software

- **Ensure user interface works consistently.**
- **Word the messages and labels effectively**.
- **Create a second thread to load data.** To make the system movable or minimizable while loading data, multi-thread is necessary. At least make sure there is one separate thread to handle the windows message.
- **Disable the item which is not usable currently.**
- **Use progress bar to indicate processing operation.** Since the data used in aerial imaging is usually large, the software might look like “not responding” during data processing. A progress bar is required to indicate how much data is processed.
- **Always include minimize system menu.**
- **Do not set any window with topmost property.**

- **Use default system font and font size.**
- **The User Interface is properly displayed in any size if resizable.**
- **Do not use several windows in the same layer.** Parent-child is OK.
- **Include about box for version, developers and acknowledgement information.**
- **Title bar format follows the rule "Opened file name – Program name".**
- **Use mouse gesture to control the zoom in/out and rotation.**

Security

- **Never store the software in third party computer.**
- **The software is protected from outside party.** It comprises protected functions created using MATLAB in-built feature. The user can use the software but he cannot change the functionality of the code. The protected functions were created using MATLAB 7.12. But it can run on any machine with MATLAB 7.5 or later versions.

Coding style

MATLAB: Google coding style guide has to be followed which is currently the best standard.

Documentation

The documents should include:

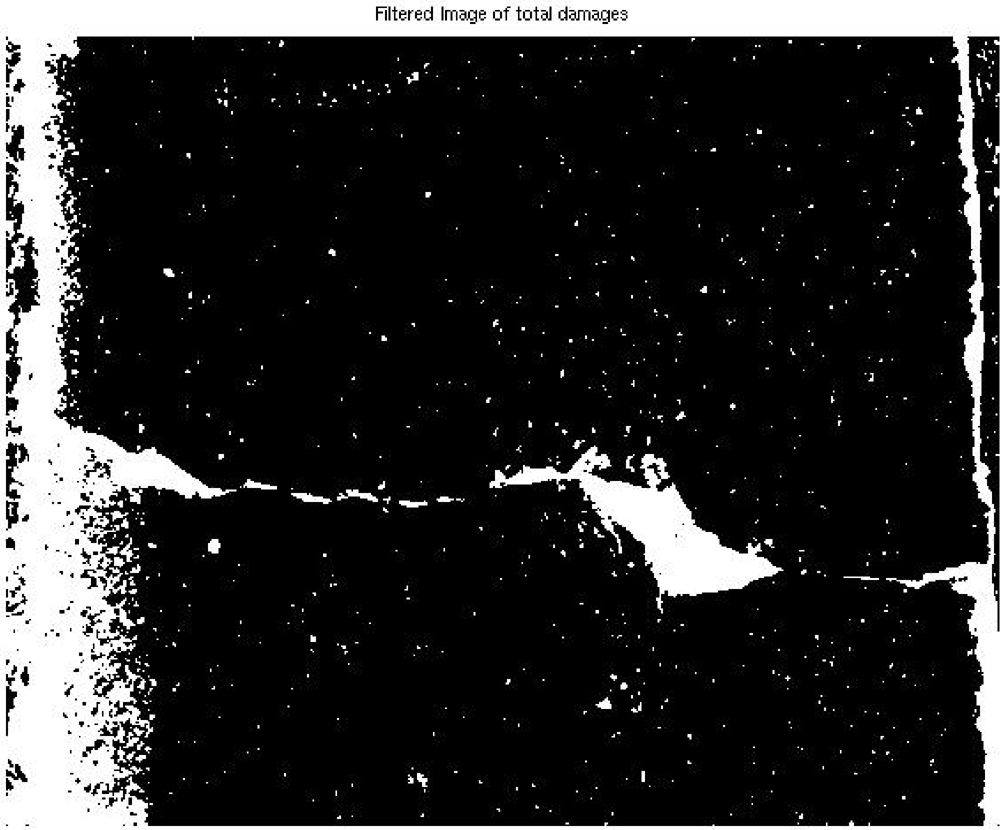
- ***Architecture/Design*** - Overview of software (our internal document). Includes relations to an environment and construction principles to be used in design of software components.
- ***Technical*** - Documentation of code, algorithms, interfaces, and APIs (our internal document).
- ***End User*** - Manuals (to run standalone application and to run the software) for the end-user,, system administrators and support staff.

APPENDIX B

IMAGE ANALYSIS USING APBA

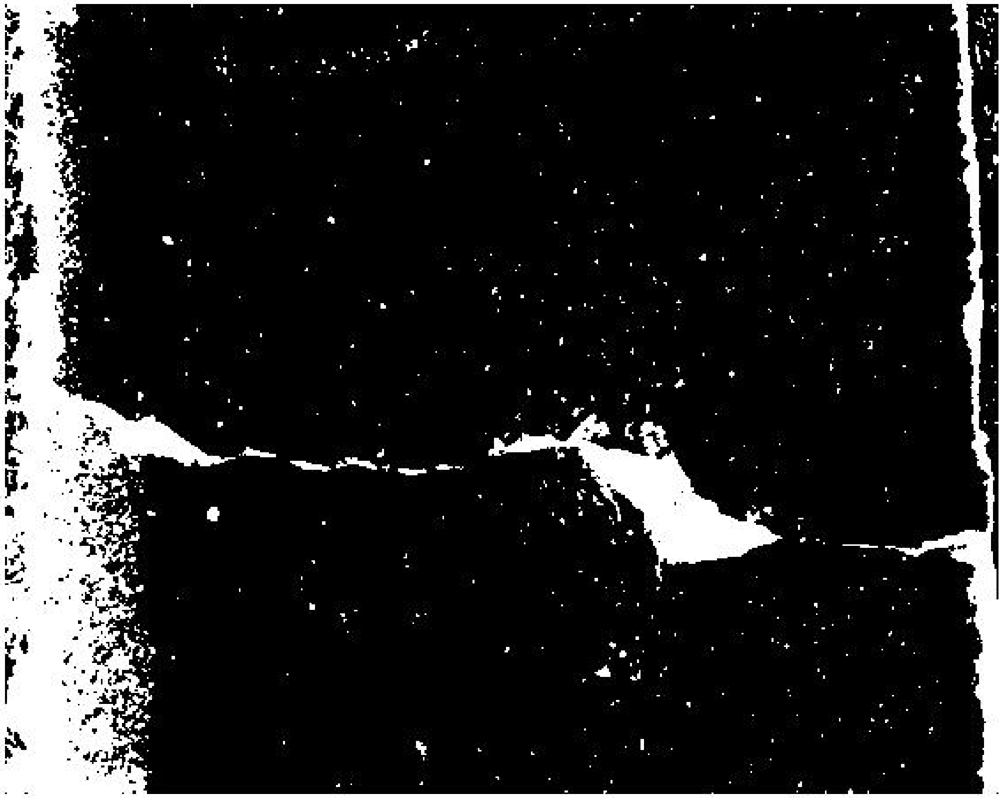
B.1. Ground Images analyzed using APBA

B.1.1: Cropped portion of the image under study



B.1.2: Binary image of the area of interest with total crack regions being marked as high

B.1.3: Original image of the area of study being marked with total damages in red pixels.



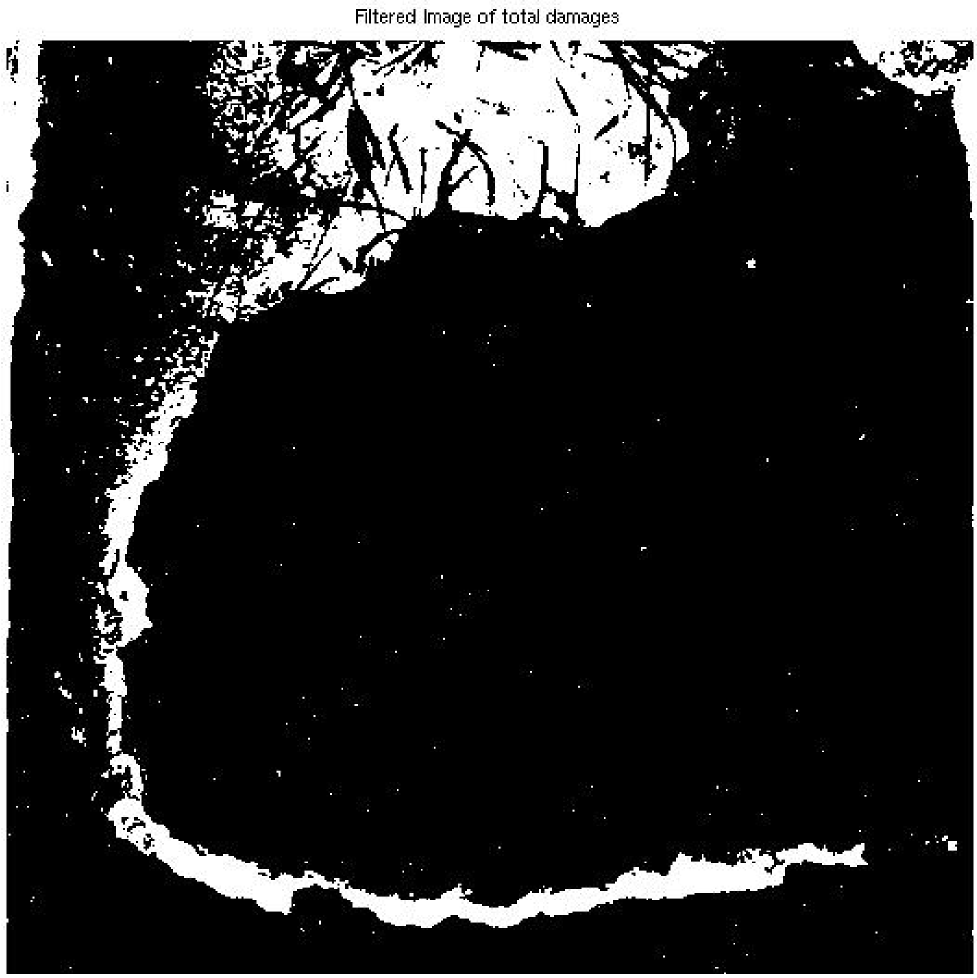
B.1.4: Binary image of the area of interest with major crack regions being identified using APBA


B.1.5: Original image of the area of study being marked with major cracks in red pixels

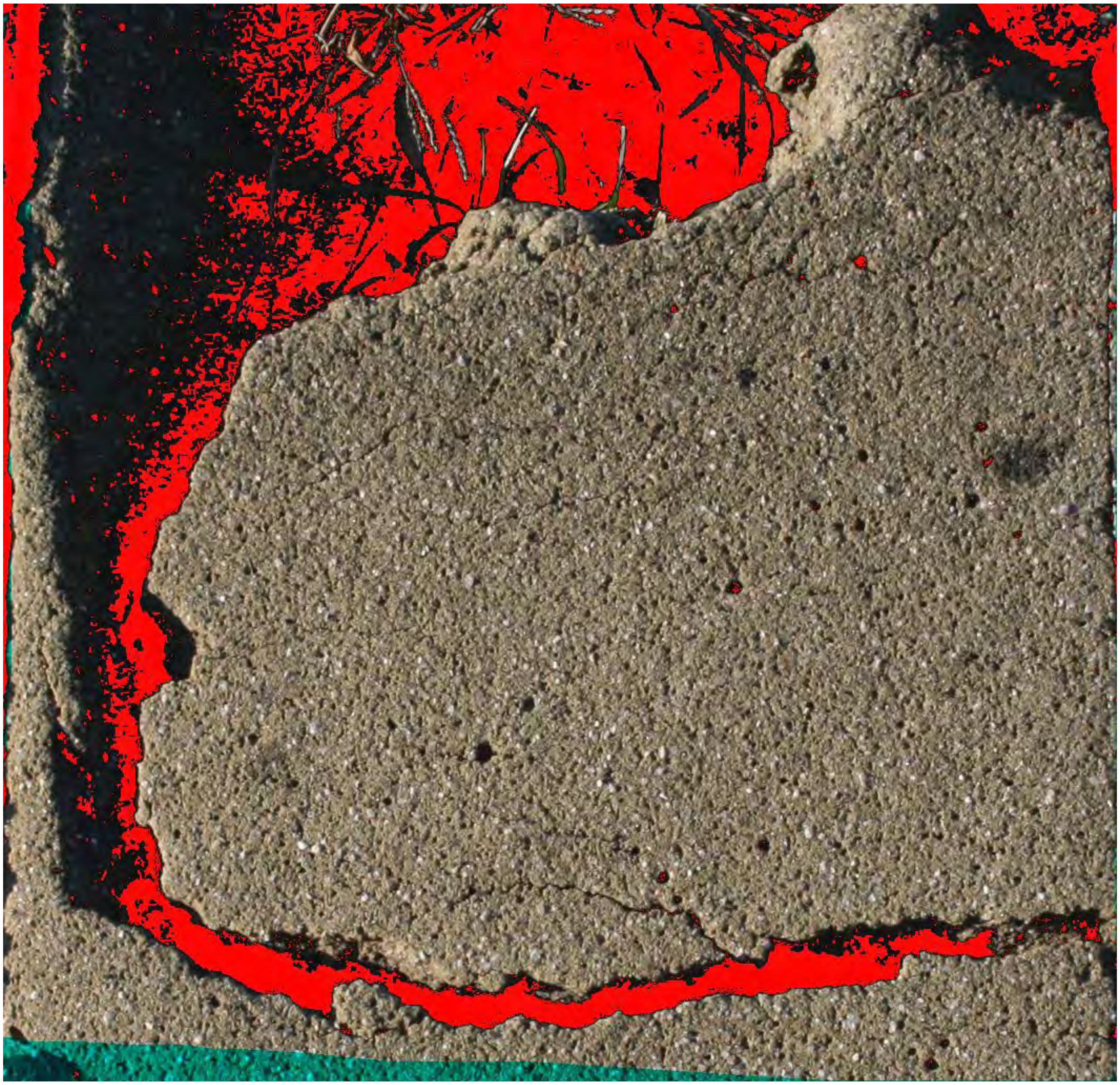
B.1.6: Binary image of the area of interest with minor crack regions being identified using APBA


B.1.7: Original image of the area of study being marked with minor cracks in red pixels

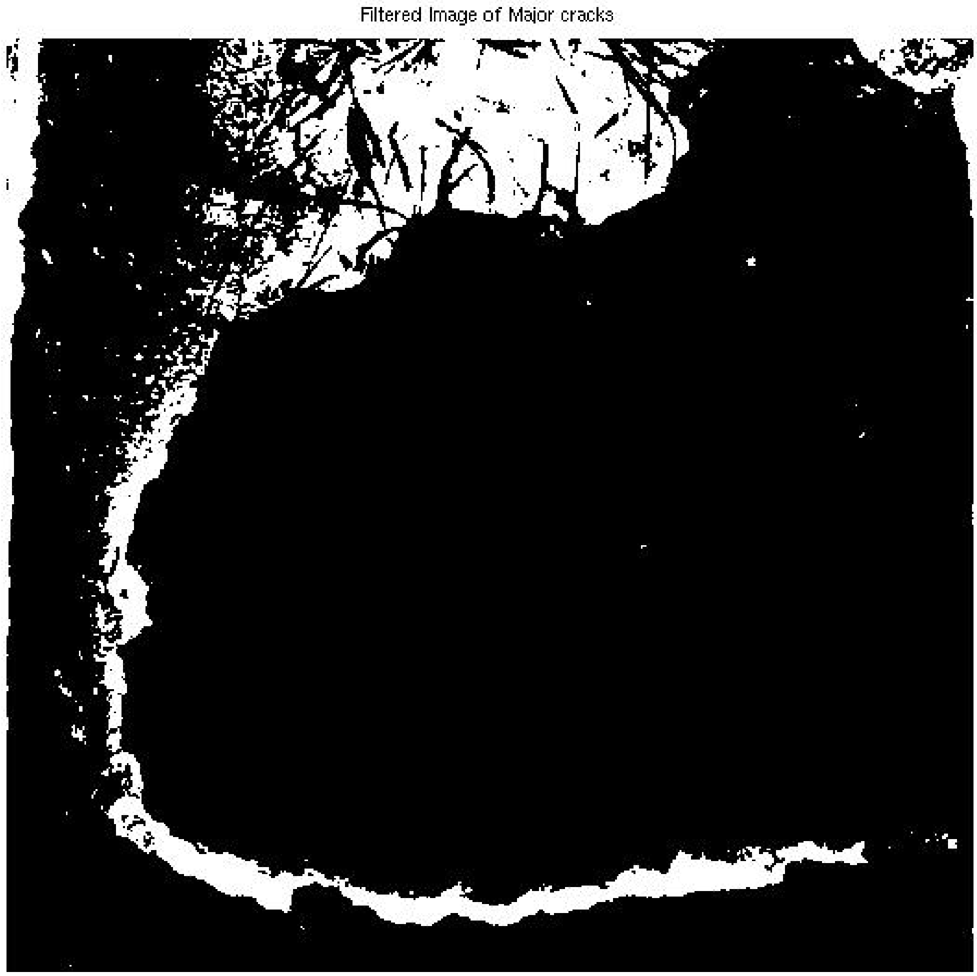

B.1.8: Cropped portion of the image under study



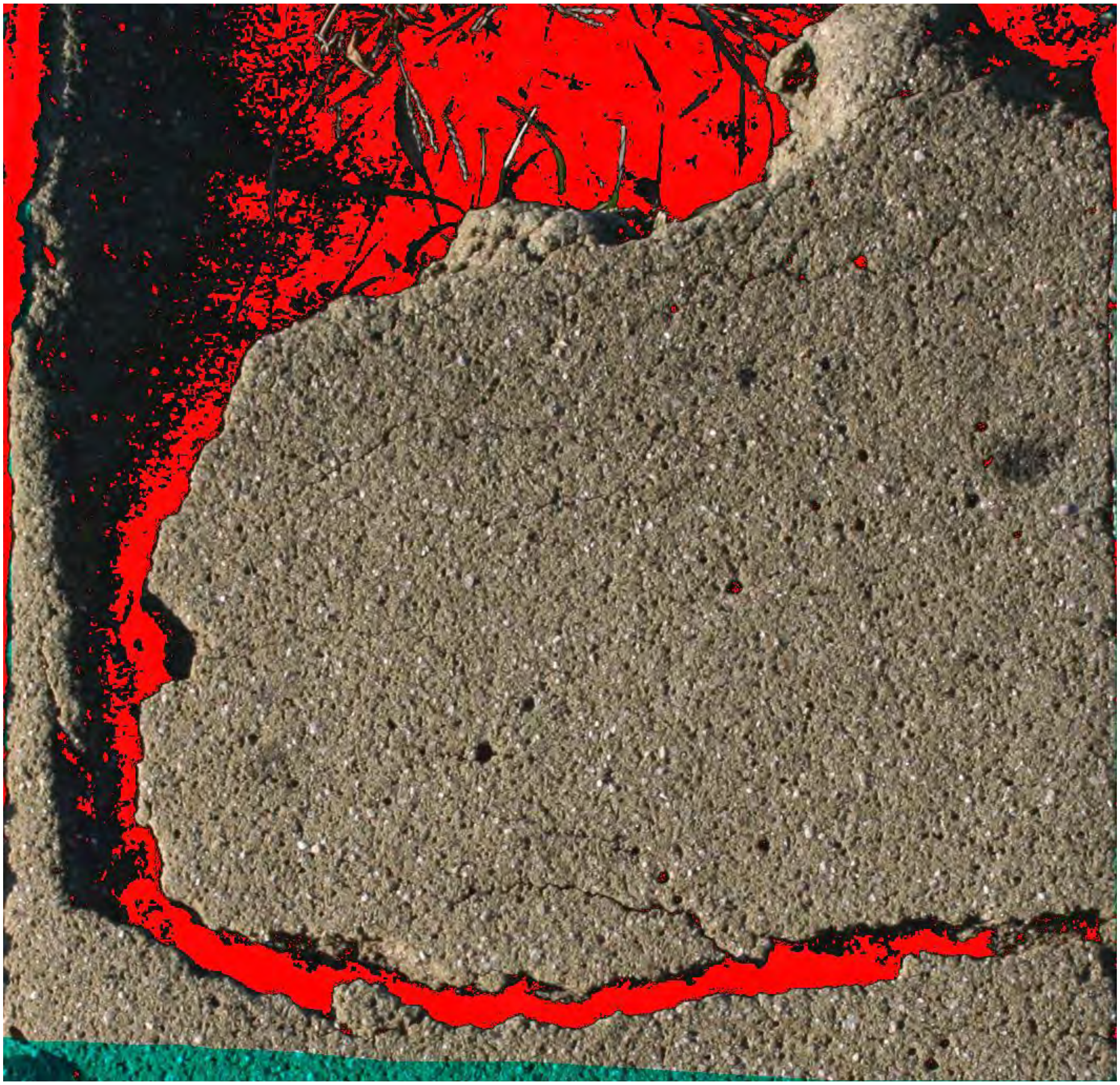
B.1.9: Binary image of the area of interest with total crack regions being marked as high



B.1.10: Original image of the area of study being marked with total damages in red pixels.



B.1.11: Binary image of the area of interest with major crack regions being identified using APBA

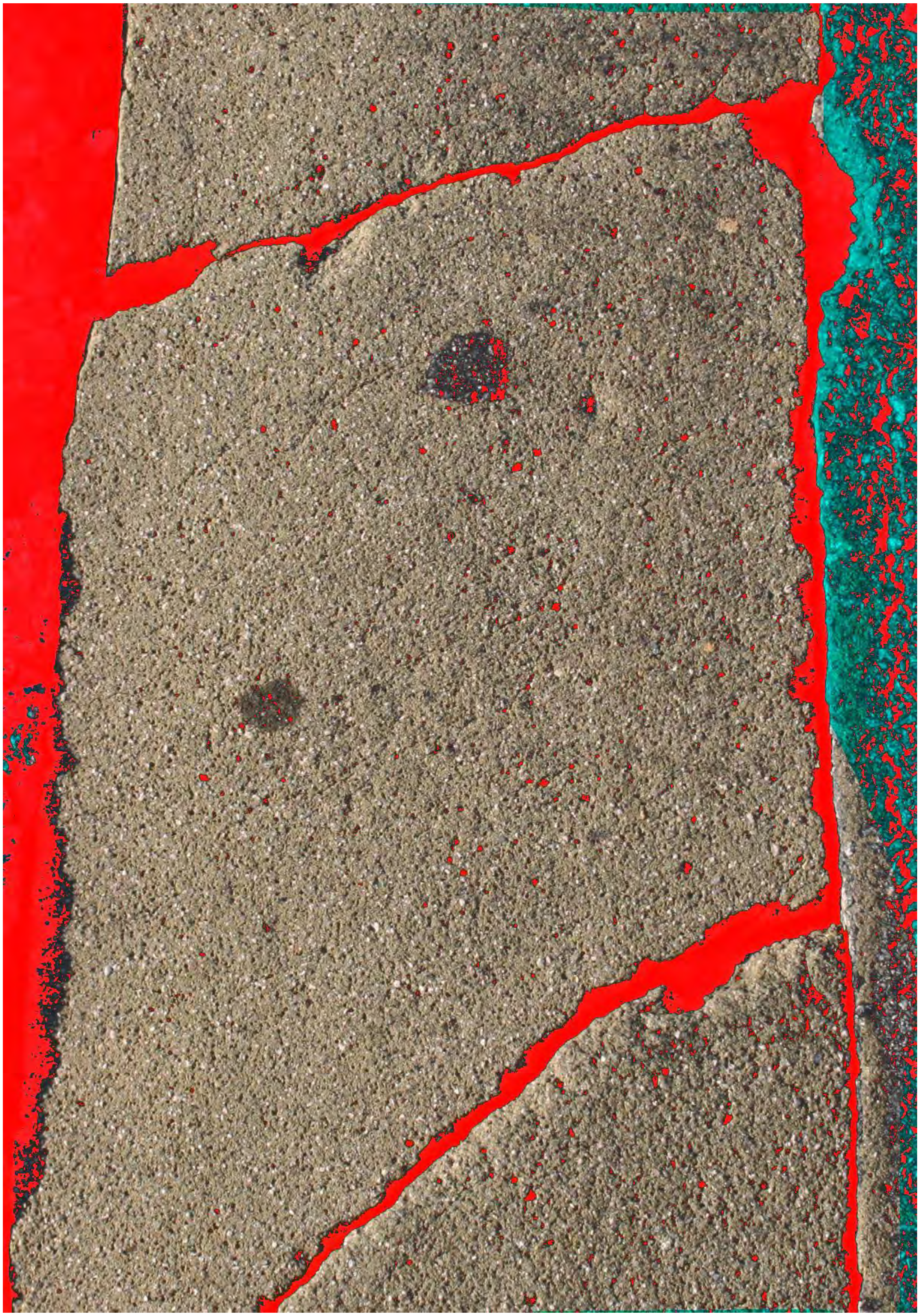

B.1.12: Original image of the area of study being marked with major cracks in red pixels

B.1.13: Binary image of the area of interest with minor crack regions being identified using APBA

B.1.14: Original image of the area of study being marked with minor cracks in red pixels

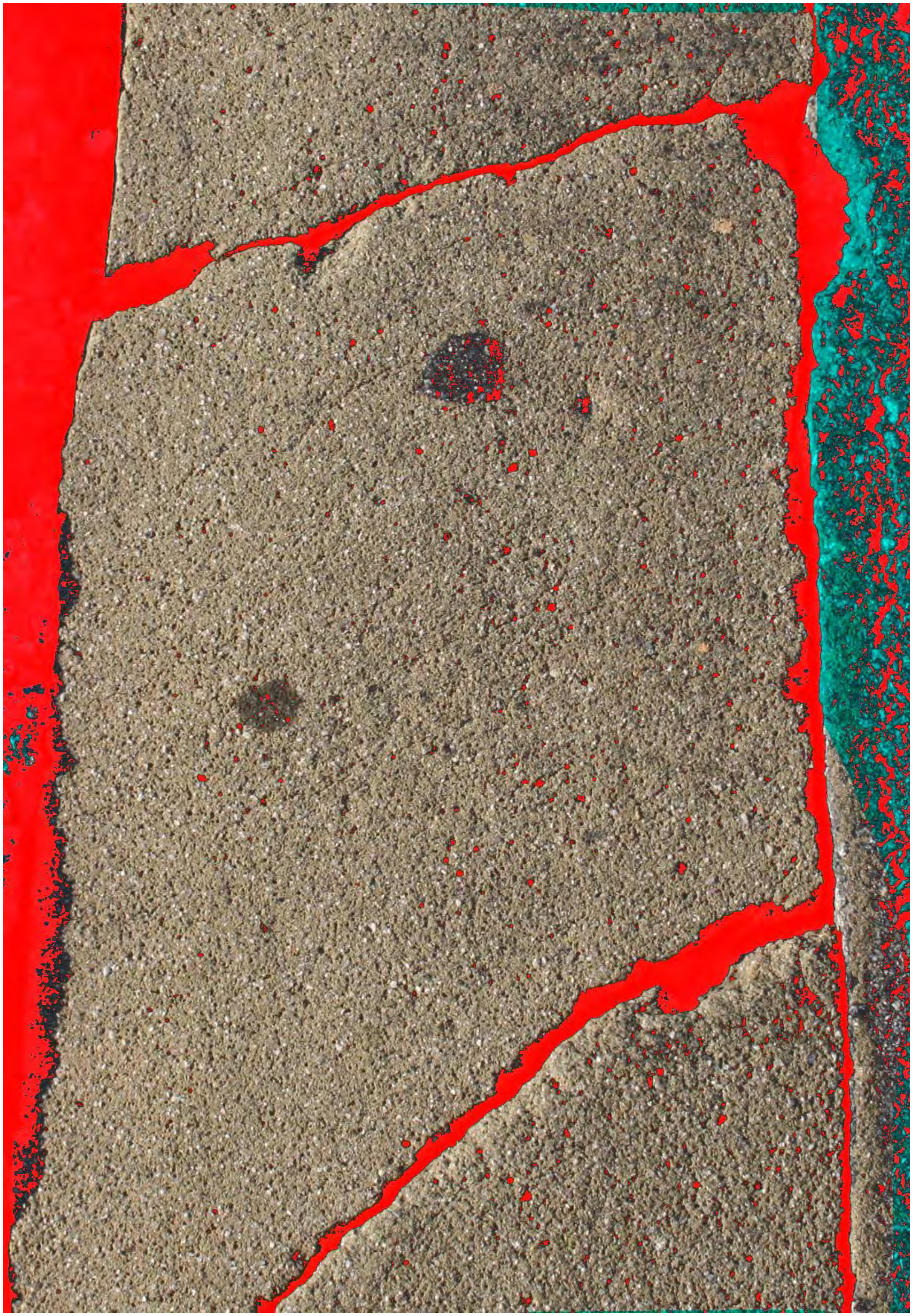
B.1.15: Cropped portion of the image under study

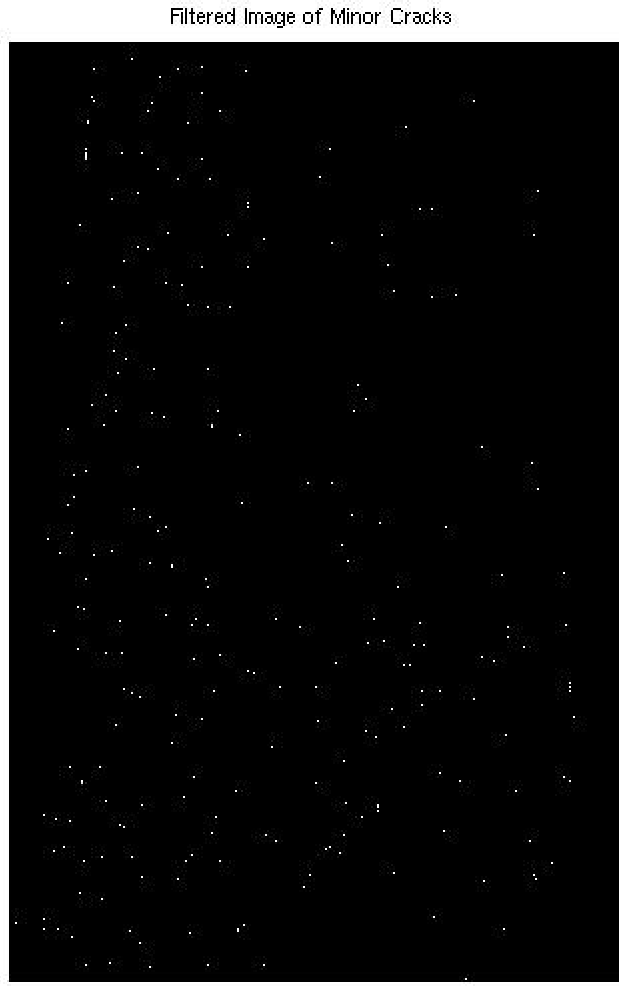
B.1.16: Binary image of the area of interest with total crack regions being marked as high



B.1.17: Original image of the area of study being marked with total damages in red pixels.

B.1.18: Binary image of the area of interest with major crack regions being identified using APBA

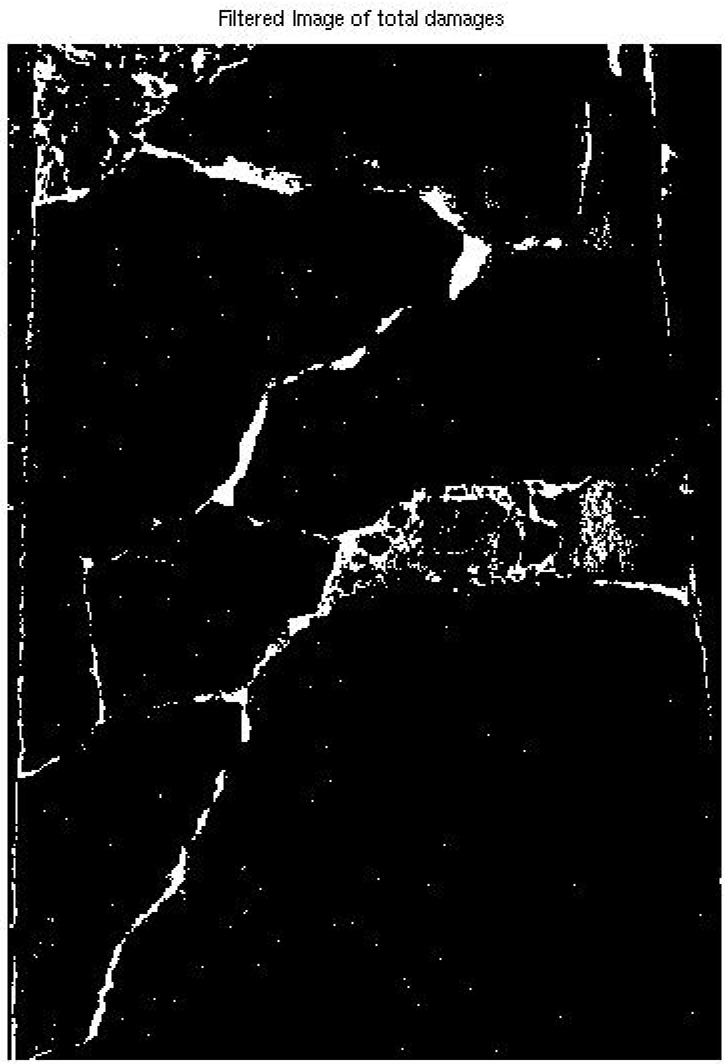

B.1.19: Original image of the area of study being marked with major cracks in red pixels



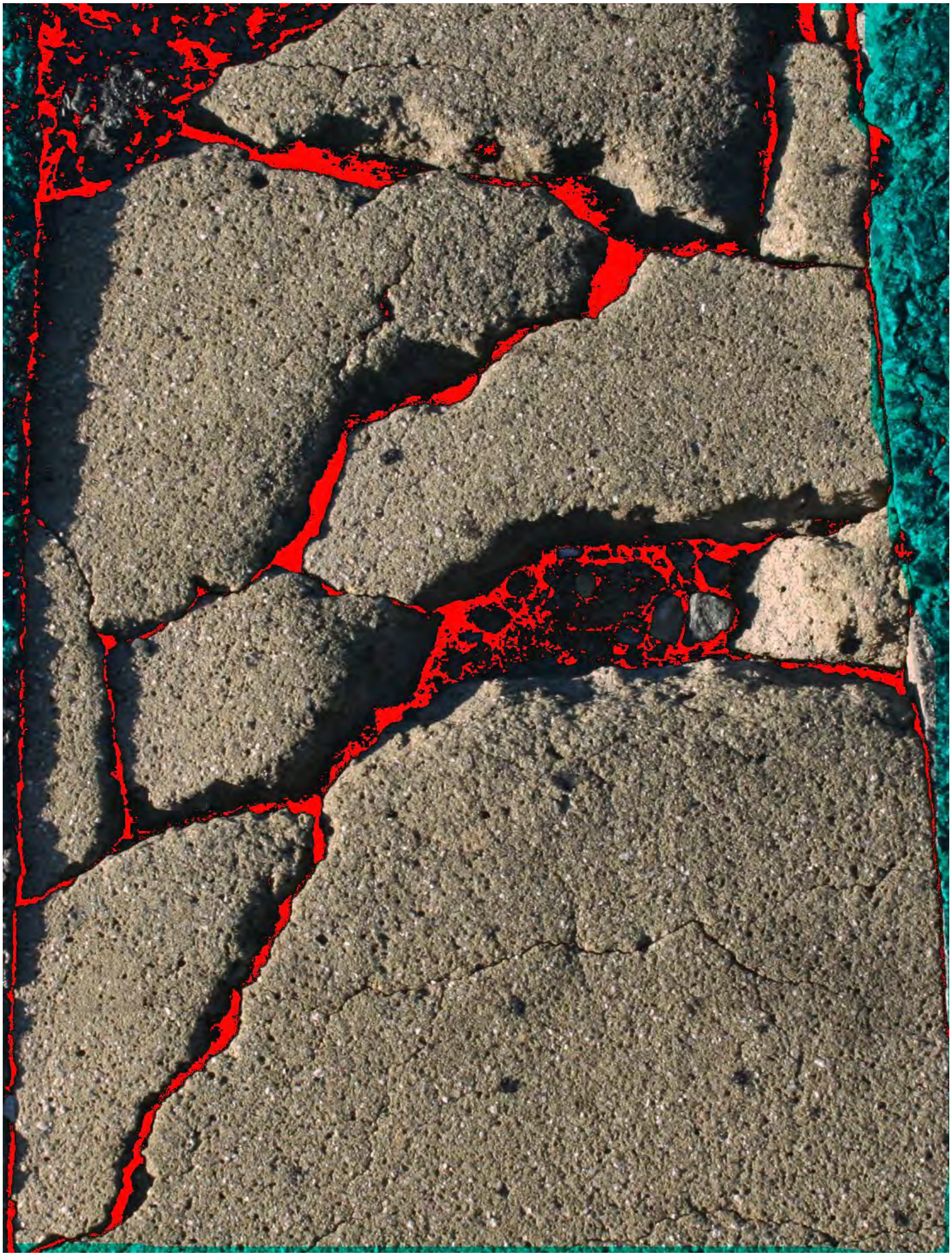
B.1.20: Binary image of the area of interest with minor crack regions being identified using APBA

B.1.21: Original image of the area of study being marked with minor cracks in red pixels


B.1.22: Cropped portion of the image under study



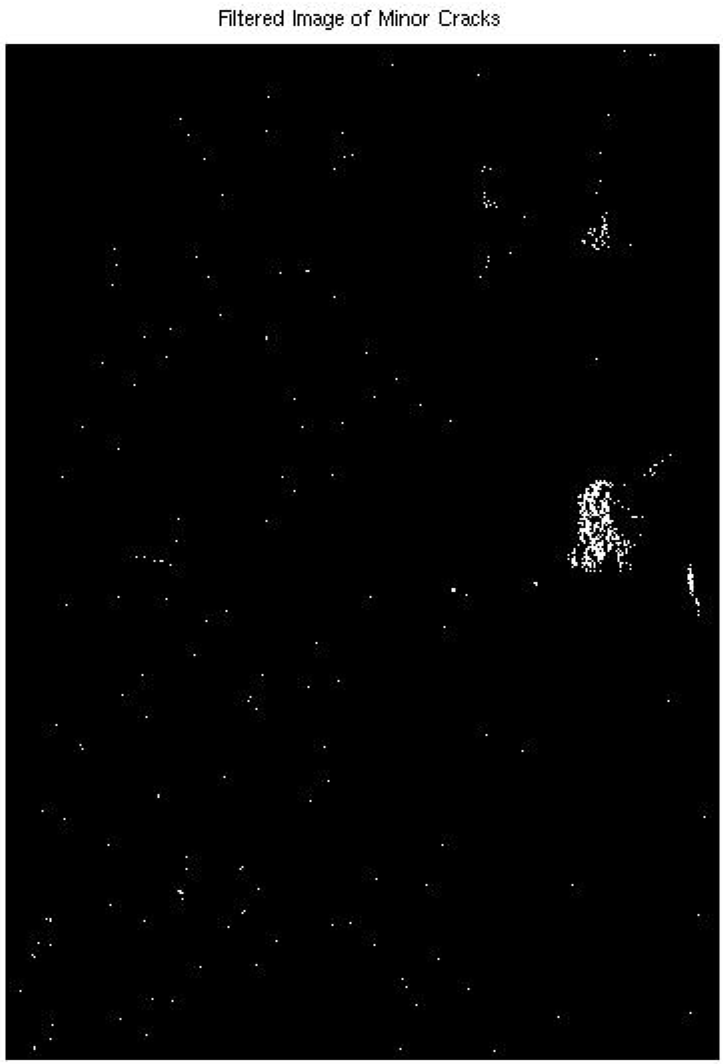
B.1.23: Binary image of the area of interest with total crack regions being marked as high



B.1.24: Original image of the area of study being marked with total damages in red pixels.

B.1.25: Binary image of the area of interest with major crack regions being identified using APBA

B.1.26: Original image of the area of study being marked with major cracks in red pixels

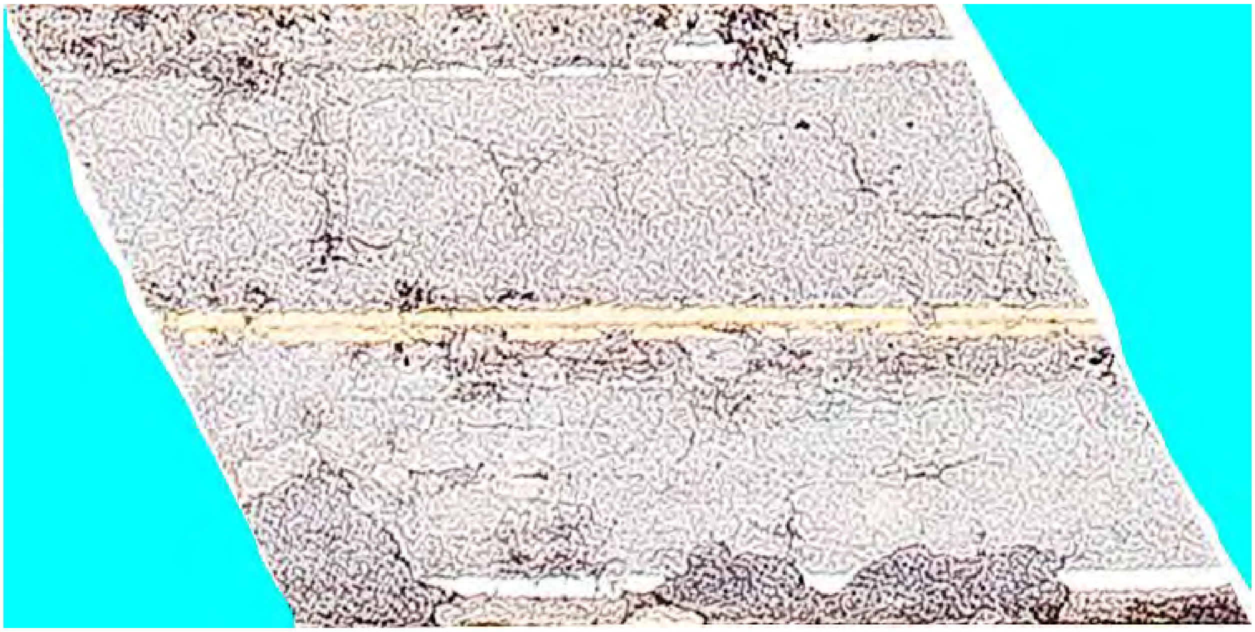


B.1.27: Binary image of the area of interest with minor crack regions being identified using APBA

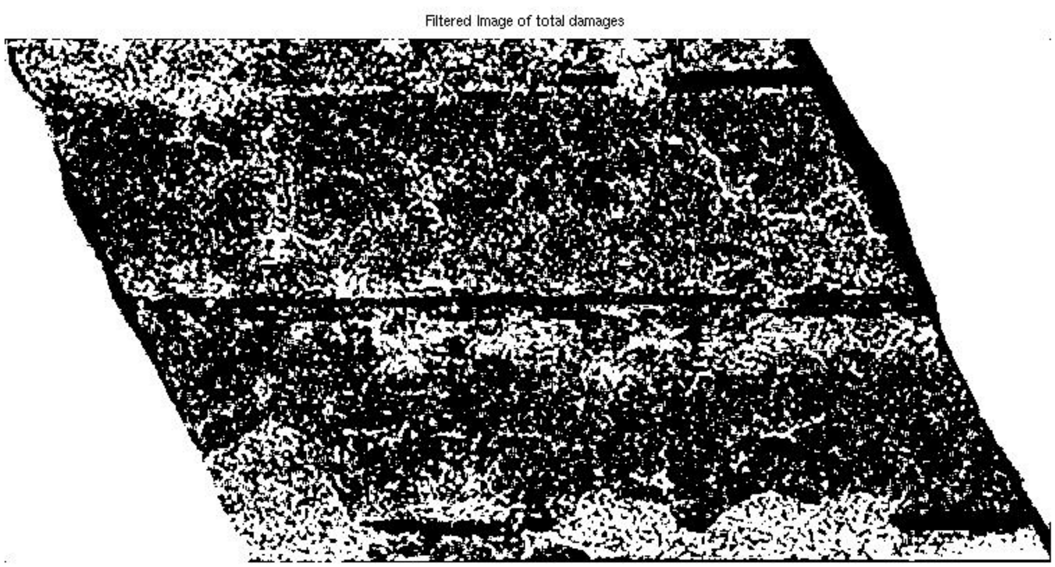
B.1.28: Original image of the area of study being marked with minor cracks in red pixels

B.2. Aerial Images analyzed using APBA

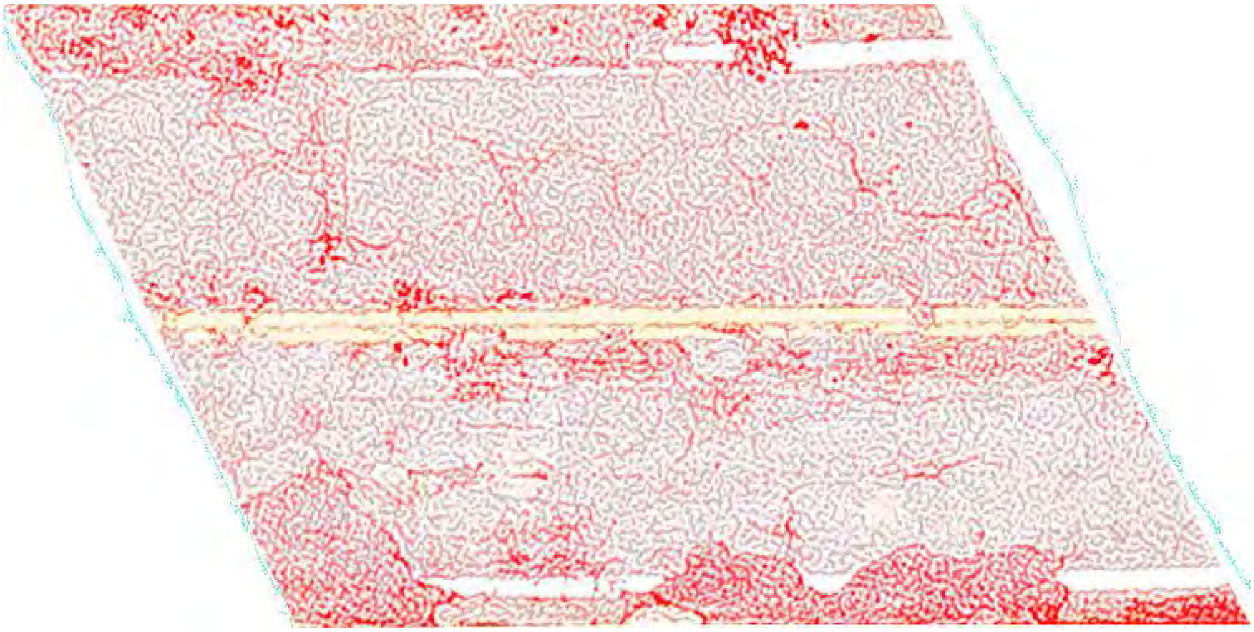
- Span B of Bridge competition 2010 image



B.2.1: Cropped portion of the image under study

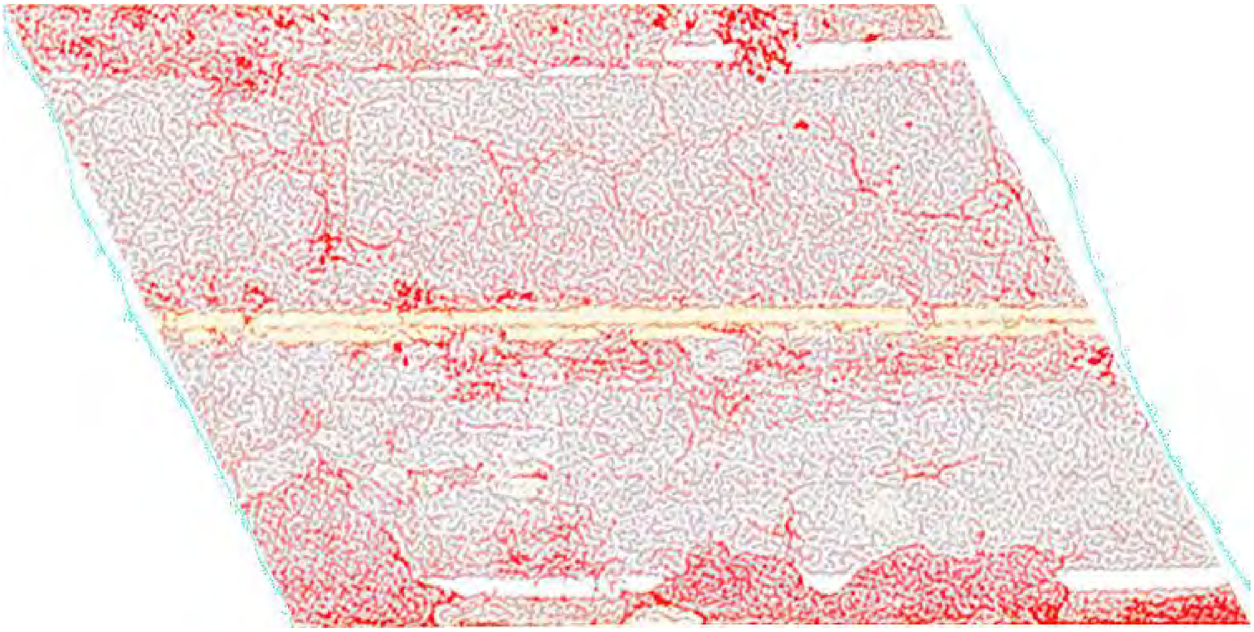


B.2.2: Binary image of the area of interest with total crack regions being marked as high

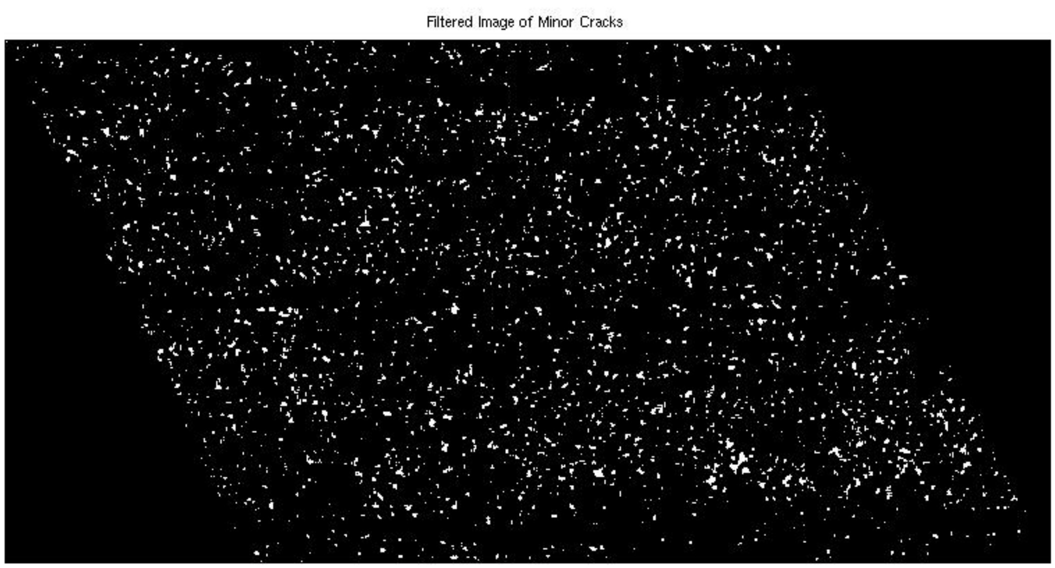


B.2.3: Original image of the area of study being marked with total damages in red pixels.

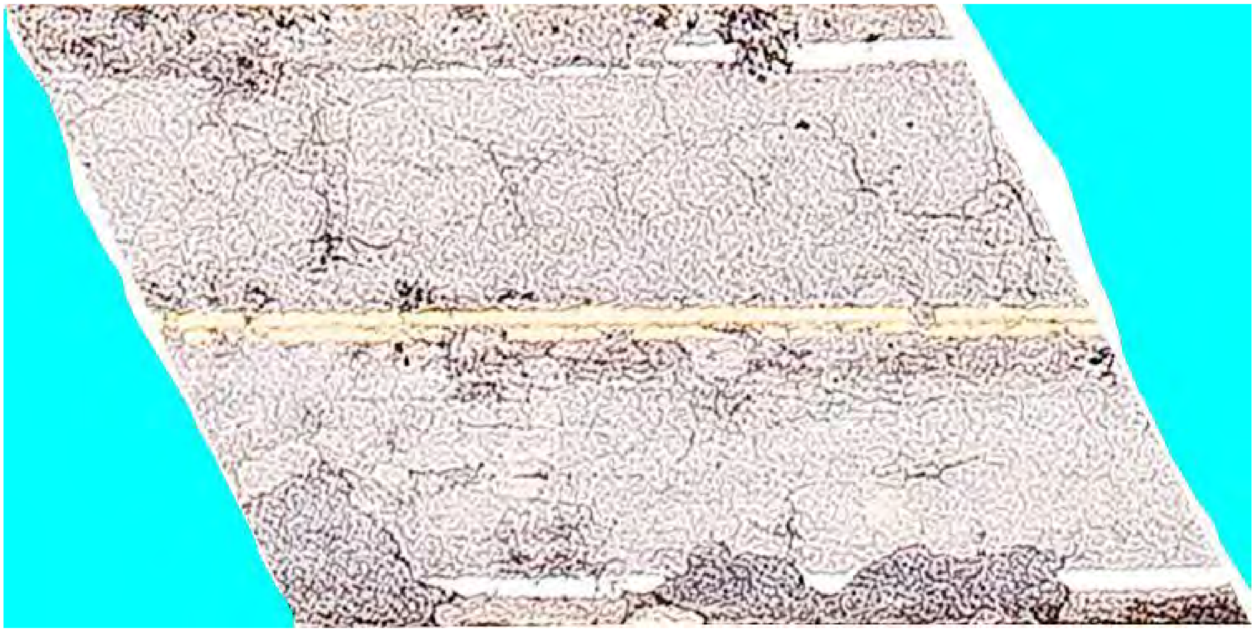
B.2.4: Binary image of the area of interest with major crack regions being identified using APBA



B.2.5: Original image of the area of study being marked with major cracks in red pixels

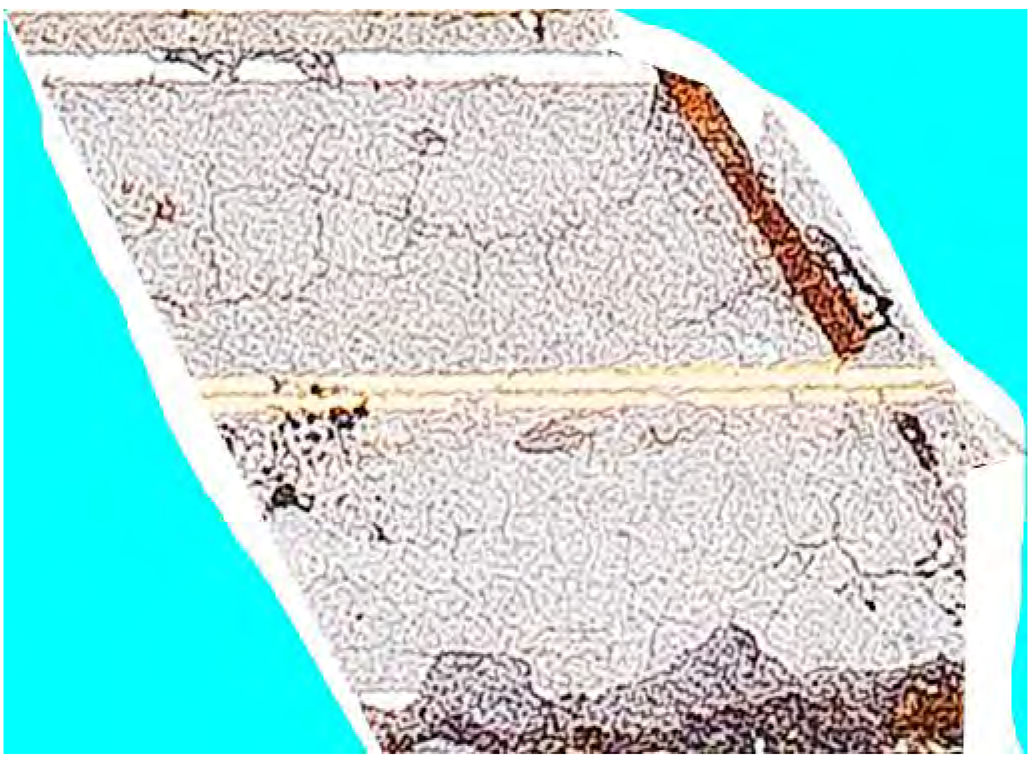


B.2.6: Binary image of the area of interest with minor crack regions being identified using APBA

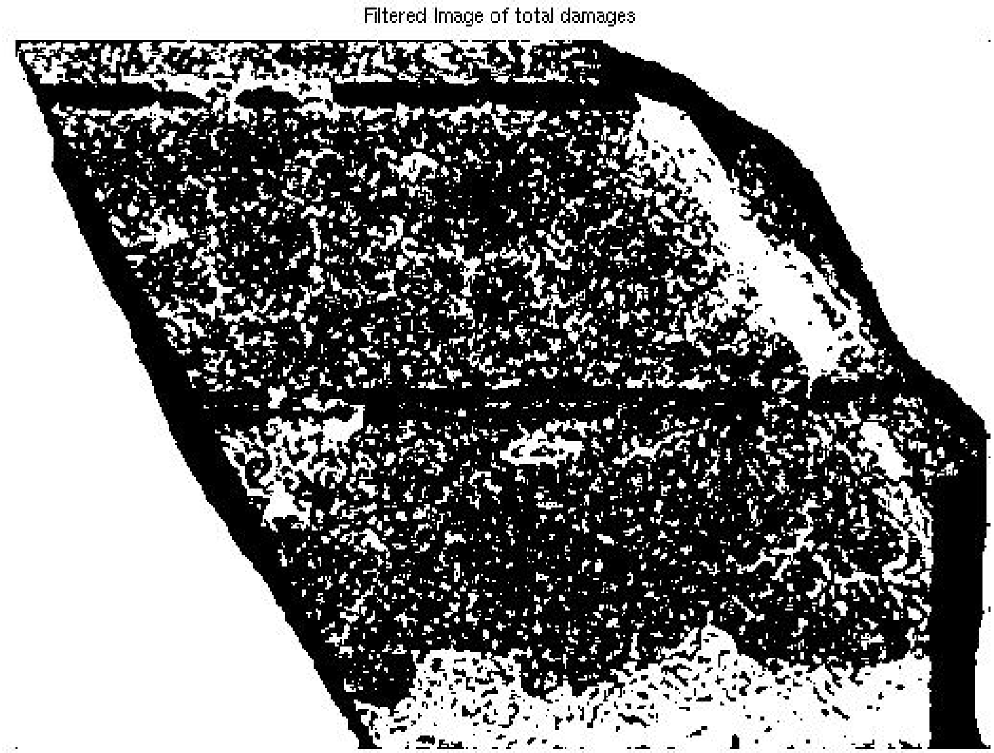


B.2.7: Original image of the area of study being marked with minor cracks in red pixels

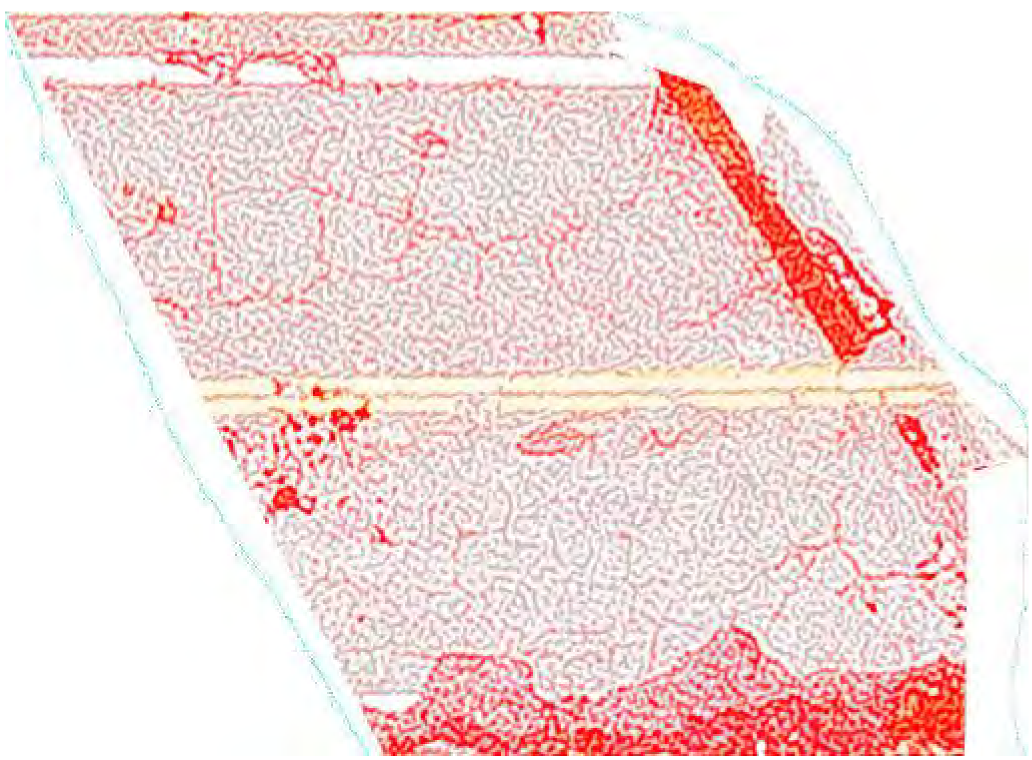
- Span C of Bridge competition 2010 image



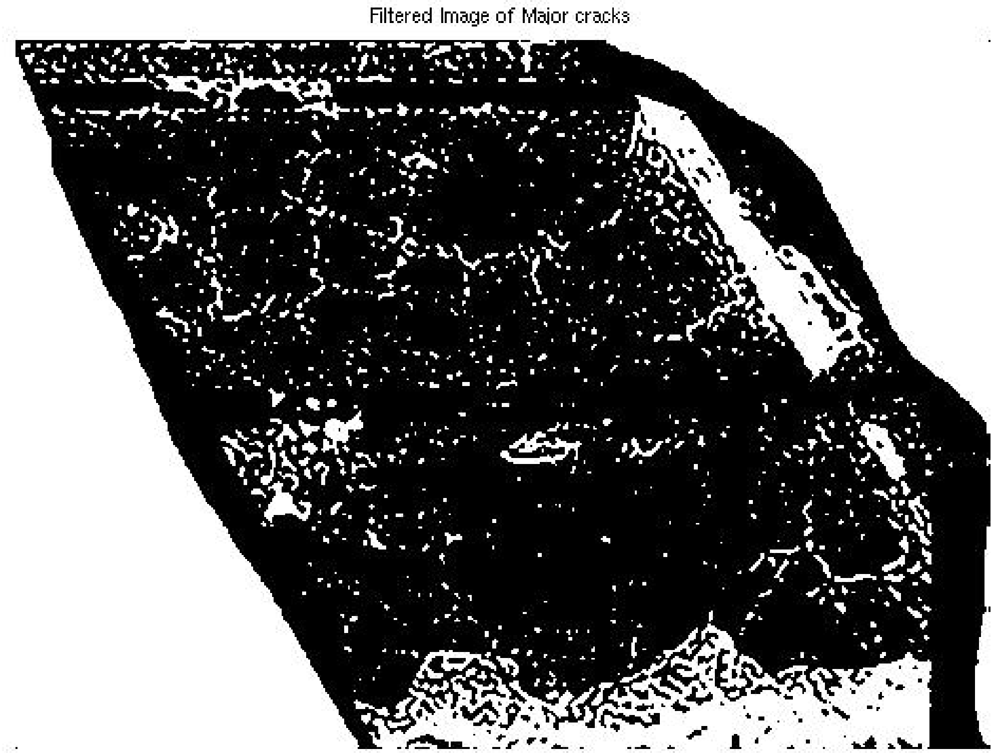
B.2.8: Cropped portion of the image under study



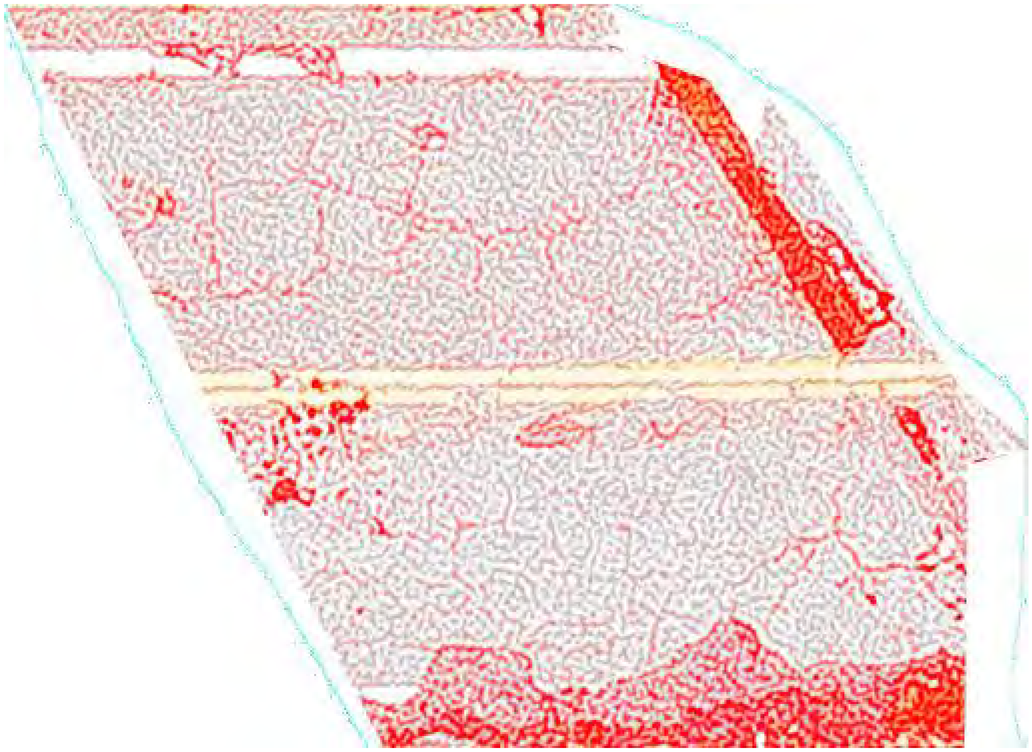
B.2.9: Binary image of the area of interest with total crack regions being marked as high



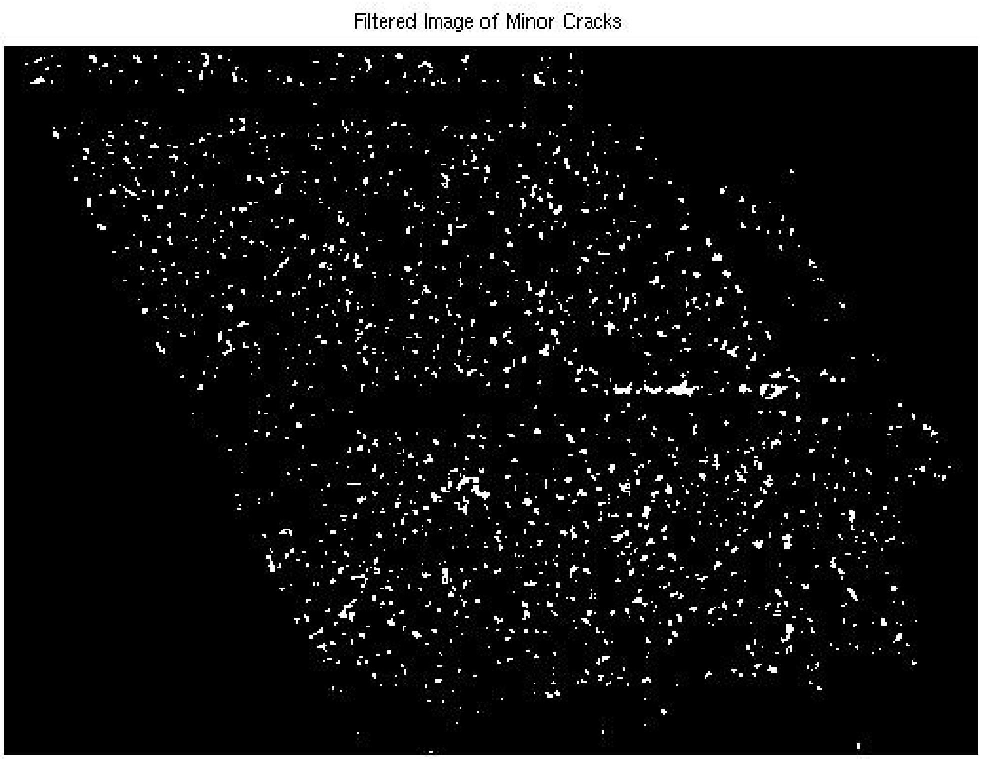
B.2.10: Original image of the area of study being marked with total damages in red pixels.



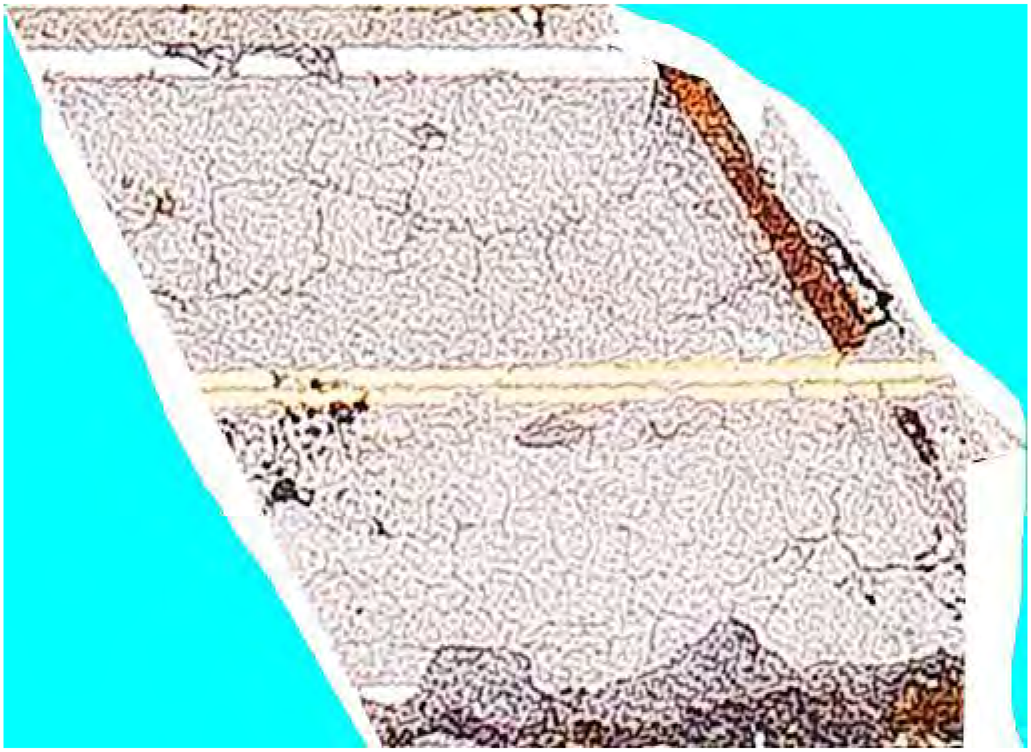
B.2.11: Binary image of the area of interest with major crack regions being identified using APBA



B.2.12: Original image of the area of study being marked with major cracks in red pixels



B.2.13: Binary image of the area of interest with minor crack regions being identified using APBA



B.2.14: Original image of the area of study being marked with minor cracks in red pixels

APPENDIX C

Aerial Imaging and Image Evaluation

C.1 Alabama
Bridge NO. 003267

Table C.1.1: Bridge NO. 003267 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	33.22062

Figure C.1.1: Bridge NO. 003267 Blank Image

Figure C.1.2: Bridge NO. 003267 Obstruction Image

Figure C.1.3: Bridge NO. 003267 Crack Image

Table C.1.2: Bridge NO. 003267 Span Area

Span Area							
FID	Span ID	Area	Span	# Cracks	Obstruction Area	DV	Crack Density
0	A	8733.44	A	13	1770.531004	1	0.186703575
1	B	8371.73	B	30	1225.894392	1	0.419824939
2	C	8441.72	C	43	2690.259268	1	0.747636157

Table C.1.3: Bridge NO. 003267 Crack Extraction

Crack Extraction			
FID	Crack ID	Span	Length
0	14	B	17.2422
1	15	B	13.6982
2	16	B	24.5263
3	17	B	14.019
4	18	B	14.128
5	19	B	11.7452
6	20	B	20.6873
7	21	B	11.3702
8	22	B	6.29521
9	23	B	19.9321
10	24	B	12.5937
11	1	A	6.17003
12	2	A	7.5605
13	3	A	11.658
14	4	A	12.5876
15	5	A	19.862
16	6	A	16.3765
17	7	A	8.21259
18	8	A	22.8334
19	9	A	9.9845
20	10	A	12.1201
21	11	A	10.4107
22	12	A	11.6126
23	13	A	16.456
24	26	B	6.75916
25	29	B	11.1667
26	30	B	11.3526
27	31	B	5.71211
28	32	B	7.99697
29	33	B	10.1813
30	34	B	10.6173

31	35	B	13.7707
32	36	B	8.25074
33	37	B	7.36584
34	38	B	12.6743
35	39	B	8.3213
36	40	B	6.89658
37	41	B	2.41668
38	42	B	14.9883
39	43	B	5.22863
40	44	B	3.71084
41	45	B	8.36168
42	25	B	6.26344
43	46	C	5.95871
44	47	C	2.24459
45	48	C	0.402407
46	49	C	5.70603
47	50	C	9.47937
48	51	C	4.69179
49	52	C	10.901
50	53	C	7.63632
51	54	C	3.07275
52	55	C	7.47675
53	56	C	7.06751
54	57	C	1.04753
55	58	C	6.96293
56	59	C	9.73212
57	60	C	5.65604
58	61	C	2.81742
59	62	C	6.53105
60	63	C	7.67592
61	64	C	8.02487
62	65	C	7.14779
63	66	C	14.332
64	67	C	8.63406
65	68	C	10.3716
66	69	C	9.04383
67	70	C	8.9966
68	71	C	7.71682
69	72	C	14.1061
70	73	C	8.78486
71	74	C	7.81831
72	75	C	9.59433
73	76	C	5.04419
74	77	C	9.18789

75	78	C	7.18171
76	79	C	6.10081
77	80	C	8.01747
78	81	C	8.26987
79	82	C	8.11164
80	83	C	3.83694
81	84	C	5.11453
82	85	C	4.68199
83	86	C	4.79222
84	87	C	5.0656
85	88	C	5.35594

Table C.1.4: Bridge NO. 003267 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Span	Type	Area
0	1	A	Shadow	242.439
1	2	A	Shadow	339.246
2	3	A	Shadow	182.406
3	11	A	Shadow	52.5216
4	12	A	Shadow	28.135
5	13	A	Shadow	829.91
6	14	A	Hole	1.23809
7	15	A	Hole	1.20331
8	4	A	Hole	2.00529
9	5	A	Hole	1.35311
10	6	A	Hole	1.63349
11	7	A	Hole	1.78587
12	8	A	Hole	1.59692
13	9	A	Hole	1.46892
14	10	A	Hole	1.46283
15	16	B	Shadow	268.558
16	17	B	Shadow	645.587
17	18	B	Hole	0.620559
18	19	B	Hole	0.665129
19	20	B	Hole	0.730271
20	21	B	Hole	0.620559
21	22	B	Hole	1.31312
22	23	B	Hole	0.713128
23	24	B	Hole	0.774841
24	25	B	Hole	0.421706
25	26	B	Hole	0.798841
26	27	B	Hole	0.836554
27	28	B	Hole	0.908553
28	29	B	Hole	1.34397

29	30	B	Shadow	102.913
30	31	B	Shadow	2.05367
31	32	B	Shadow	10.4535
32	33	B	Shadow	186.582
33	34	C	Shadow	251.131
34	35	C	Shadow	102.093
35	36	C	Shadow	1371.41
36	37	C	Shadow	96.4848
37	38	C	Shadow	8.95867
38	39	C	Shadow	29.4062
39	40	C	Hole	0.979573
40	41	C	Hole	1.06636
41	42	C	Hole	1.1564
42	43	C	Hole	0.725731
43	44	A	Shadow	19.7299
44	45	A	Patch	41.4102
45	46	A	Patch	20.9855
46	47	C	Patch	251.905
47	48	C	Patch	162.77
48	49	C	Patch	22.2045
49	50	C	Patch	8.96591
50	51	C	Patch	35.9368
51	52	C	Patch	251.295
52	53	C	Patch	2.22472
53	54	C	Patch	42.9096
54	55	C	Patch	3.22431
55	56	C	Patch	25.3435
56	57	C	Patch	1.17026
57	58	C	Shadow	18.8979

Bridge NO. 10357

Table C.1.5: Bridge NO. 10357 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	20.7739

Figure C.1.4: Bridge NO. 10357 Blank Image

Figure C.1.4: Bridge NO. 10357 Obstruction Image

Figure C.1.5: Bridge NO. 10357 Crack Image

Table C.1.6: Bridge NO. 10357 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	CD
0	A	5426.963	12	2935.88446	1	0.481719
1	B	5735.473	13	497.1437102	1	0.248171
2	C	6294.948	16	536.2343051	1	0.27784
3	D	6842.981	33	632.9509412	1	0.531398
4	E	11020.27	45	994.4184705	1	0.44884

Table C.1.7: Bridge NO. 10357 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	2.573276
1	A	13.47965
2	A	13.74519
3	A	8.775325
4	A	4.524215
5	A	6.713924
6	A	3.542823
7	A	5.847424
8	A	4.1015

9	A	6.761605
10	A	4.559945
11	A	5.446362
12	B	36.58355
13	B	7.62759
14	B	13.35392
15	B	8.116884
16	B	3.560542
17	B	4.492941
18	B	5.144063
19	B	2.988019
20	B	1.955485
21	B	3.512878
22	B	6.840042
23	B	2.923888
24	B	5.019263
25	C	14.79131
26	C	5.093388
27	C	3.202086
28	C	3.770616
29	C	5.777569
30	C	9.944427
31	C	10.20005
32	C	13.07548
33	C	18.26379
34	C	5.353482
35	C	6.468635
36	C	4.073352
37	C	3.626061
38	C	9.36636
39	C	7.246254
40	C	5.444737
41	E	8.367676
42	E	6.347548
43	E	8.934207
44	E	5.341103
45	E	4.2314
46	E	5.174088
47	E	10.32592
48	E	3.038221
49	E	4.657514
50	E	8.709917
51	E	5.669887
52	E	5.660529
53	E	4.120319
54	E	2.689186
55	E	4.807472
56	E	5.717347
57	E	6.058769
58	E	16.02662

59	E	8.286306
60	E	5.595055
61	E	7.575565
62	E	7.221032
63	E	12.42822
64	E	3.9148
65	E	2.722209
66	E	12.0309
67	E	10.88588
68	E	6.492665
69	E	8.387268
70	E	4.657843
71	E	9.316495
72	E	3.494651
73	E	3.300515
74	E	4.364406
75	E	14.33134
76	E	8.431985
77	E	6.998148
78	E	6.148835
79	E	17.82851
80	E	4.991492
81	E	4.339305
82	E	5.638671
83	E	6.599201
84	E	3.818243
85	E	6.59432
86	D	4.057948
87	D	8.724747
88	D	7.879072
89	D	6.17571
90	D	5.941538
91	D	3.559735
92	D	11.3596
93	D	6.497976
94	D	7.111556
95	D	7.403204
96	D	3.696295
97	D	5.60289
98	D	8.445198
99	D	7.464617
100	D	4.236882
101	D	2.944235
102	D	9.496236
103	D	2.726333
104	D	11.90585
105	D	7.059961
106	D	9.011603
107	D	8.283707
108	D	2.213202

109	D	3.842909
110	D	6.905084
111	D	4.787672
112	D	6.102533
113	D	10.48118
114	D	6.746489
115	D	9.637281
116	D	4.93679
117	D	5.660281
118	D	12.11773

Table C.1.8: Bridge NO. 10357 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	B	497.1437
1	C	536.2343
2	E	994.4185
3	D	632.9509
4	A	2935.884

Bridge NO. 11015

Table C.1.9: Bridge NO. 11015 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	79.60891

Figure C.1.6: Bridge NO. 11015 Blank Image

Figure C.1.7: Bridge NO. 11015 Obstruction Image

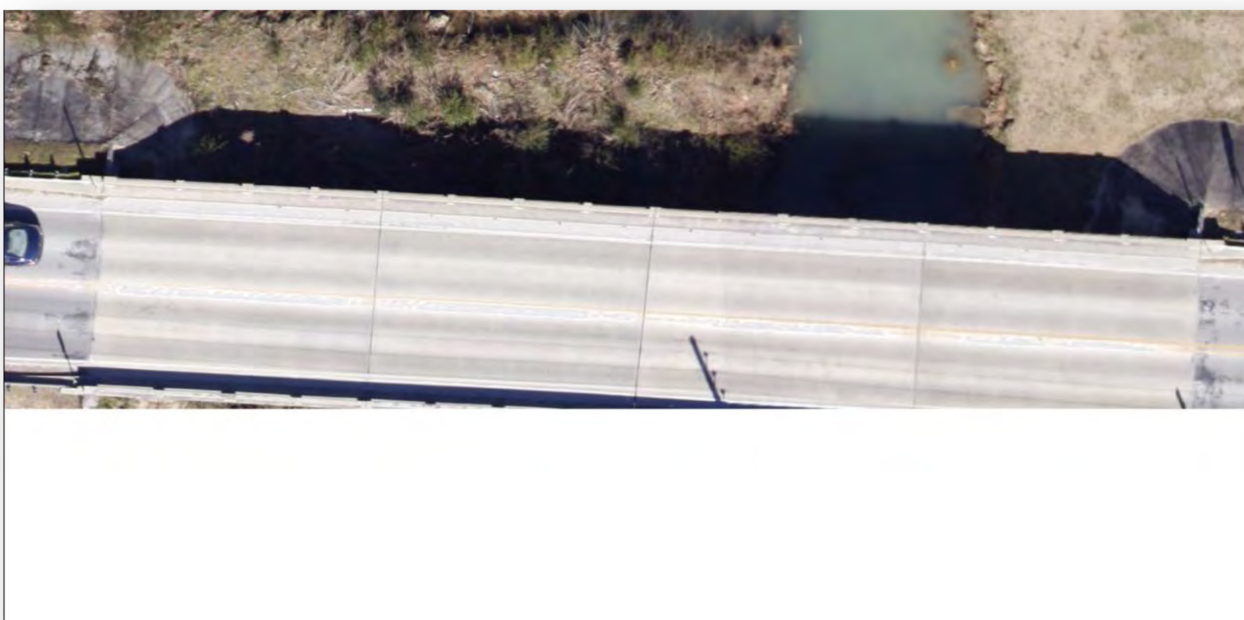


Figure C.1.8: Bridge NO. 11015 Crack Image

Table C.1.10: Bridge NO. 11015 Span Area

	Span Area						
FID	Span ID	Area	Span	# Cracks	Obstruction Area	DV	Crack Density
0	A	8965.89	A	14	480.9570007	1	0.164998357
1	C	8748.2	B	11	485.4190063	1	0.133127091
2	D	8710.66	C	4	402.9773045	1	0.048148204
3	B	8591.55	D	18	415.697998	1	0.220160541

Table C.1.11: Bridge NO. 11015 Crack Extraction

	Crack Extraction		
FID	Crack ID	Span	Length
0	1	A	12.8123
1	2	A	9.2542
2	3	A	7.80757
3	4	A	3.34965
4	5	A	7.48827
5	6	A	12.4404
6	7	A	7.61998
7	8	A	5.7767
8	9	A	7.08462
9	10	A	26.3119
10	11	A	29.4196
11	12	A	22.0601
12	13	A	5.5696
13	15	D	12.1629
14	16	D	5.96785
15	14	D	5.99599
16	17	D	7.2019
17	18	D	5.89019
18	19	D	6.79679
19	20	D	25.5274
20	21	D	48.9163
21	22	D	31.4721
22	23	D	4.83739
23	24	D	13.0577
24	25	D	2.79556
25	26	D	7.70927
26	27	D	13.8216
27	28	B	6.06332
28	29	B	5.20109
29	30	B	15.6666
30	31	B	13.7285
31	32	B	7.98982
32	33	B	15.115
33	34	C	12.9836
34	35	C	18.7066

35	36	C	11.7264
36	37	C	20.5101
37	0	D	16.3439
38	0	D	17.7533
39	0	D	7.14376
40	0	B	14.0054
41	0	B	19.4259
42	0	B	18.6801
43	0	B	12.7471
44	0	B	25.3843
45	0	D	4.85849
46	0	A	18.2972

Table C.1.12: Bridge NO. 11015 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Span	Type	Area
0	1	A	Shadow	480.957
1	2	D	Shadow	415.698
2	4	C	Shadow	386.393
3	3	B	Shadow	485.419
4	5	C	Shadow	16.5843

C.2 California
Bridge NO. 53C0625

Table C.2.1: Bridge NO. 53C0625 Index Values

Bridge Surface Condition Index:	80.19718
Image Quality Index:	96.74997

Figure C.2.1: Bridge NO. 53C0625 Blank Image

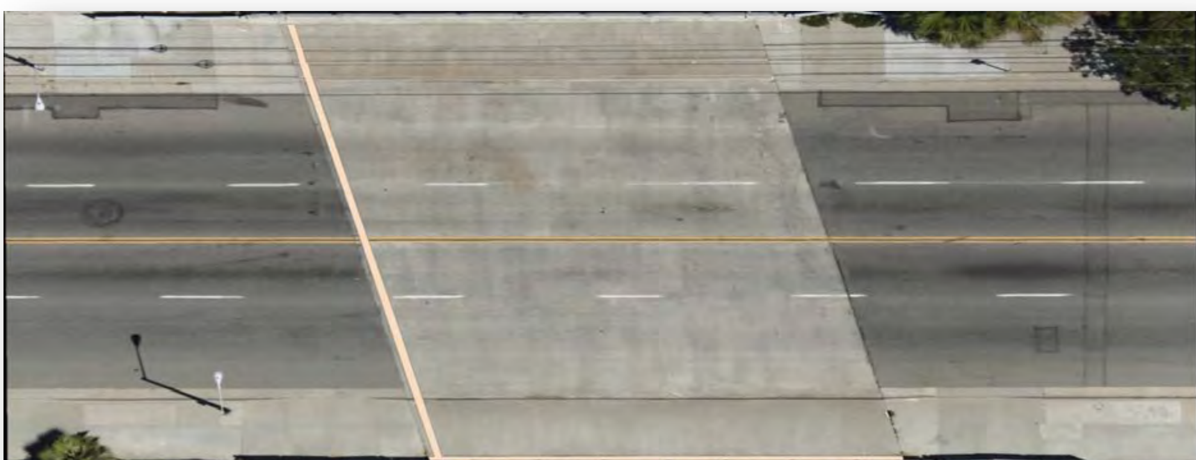


Figure C.2.29: Bridge NO. 53C0625 Obstruction Image

Figure C.2.3: Bridge NO. 53C0625 Crack Image

Table C.2.2: Bridge NO. 53C0625 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	6477.648	156	210.5257911	19.80282	2.489180696

Table C.2.313: Bridge NO. 53C0625 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	0.89785
1	A	66.71296
2	A	66.62835
3	A	0.768715
4	A	66.63107
5	A	32.62787
6	A	0.726008
7	A	0.726008
8	A	66.75585
9	A	66.7645
10	A	0.512476

11	A	66.50502
12	A	66.54272
13	A	0.46977
14	A	0.597889
15	A	1.921787
16	A	1.806333
17	A	6.877761
18	A	3.205237
19	A	3.32179
20	A	5.969895
21	A	5.032899
22	A	4.264189
23	A	4.907071
24	A	2.007199
25	A	2.153054
26	A	2.907846
27	A	1.918728
28	A	3.302966
29	A	3.416009
30	A	7.602193
31	A	2.681515
32	A	7.753591
33	A	7.191458
34	A	3.335884
35	A	2.910329
36	A	2.563472
37	A	5.543602
38	A	6.858493
39	A	5.285303
40	A	4.824015
41	A	5.569767
42	A	2.765273
43	A	6.09377
44	A	6.152173
45	A	4.664863
46	A	4.05883
47	A	1.872977
48	A	3.757034
49	A	1.366301
50	A	3.871026
51	A	2.58552
52	A	3.722149
53	A	5.687548
54	A	5.003754
55	A	3.931007
56	A	5.885029
57	A	7.533727
58	A	7.007945
59	A	4.363848
60	A	1.970412

61	A	2.890707
62	A	5.54391
63	A	5.286459
64	A	2.778934
65	A	4.75244
66	A	2.238155
67	A	2.790567
68	A	8.043175
69	A	6.532883
70	A	3.740399
71	A	5.491906
72	A	2.978465
73	A	2.380949
74	A	2.001166
75	A	4.30325
76	A	3.610816
77	A	3.270484
78	A	1.744198
79	A	3.909515
80	A	4.183593
81	A	3.002127
82	A	6.083555
83	A	6.348168
84	A	2.044627
85	A	4.706517
86	A	4.479008
87	A	4.95287
88	A	3.325896
89	A	4.42928
90	A	6.031045
91	A	3.281797
92	A	2.00942
93	A	3.289454
94	A	3.120619
95	A	2.192607
96	A	3.205306
97	A	2.283376
98	A	2.696372
99	A	1.849934
100	A	2.984357
101	A	4.145465
102	A	6.266698
103	A	6.230474
104	A	2.759243
105	A	1.571969
106	A	1.518284
107	A	2.059919
108	A	3.338037
109	A	2.216207
110	A	1.424083

111	A	2.093858
112	A	3.71739
113	A	15.59407
114	A	4.537822
115	A	1.545371
116	A	0.974853
117	A	1.571714
118	A	1.839383
119	A	2.521017
120	A	5.013067
121	A	1.970319
122	A	4.032444
123	A	3.390324
124	A	3.44843
125	A	7.427885
126	A	5.975891
127	A	5.325905
128	A	2.416106
129	A	4.513057
130	A	4.820744
131	A	2.057896
132	A	3.675589
133	A	2.890351
134	A	1.089998
135	A	2.511896
136	A	2.634253
137	A	0.692678
138	A	5.599964
139	A	5.800158
140	A	3.881829
141	A	1.622842
142	A	1.823872
143	A	3.803674
144	A	1.603736
145	A	2.688674
146	A	11.18429
147	A	4.087003
148	A	3.473273
149	A	1.280795
150	A	4.298204
151	A	7.484471
152	A	1.618047
153	A	0.76392
154	A	2.251887
155	A	2.804632

Table C.2.414: Bridge NO. 53C0625 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	209.3017
1	A	1.224106

Bridge NO. 53C0642

Table C.2.515: Bridge NO. 53C0642 Index Values

Bridge Surface Condition Index:	82.78923
Image Quality Index:	100

Figure C.2.4: Bridge NO. 53C0642 Blank Image

Figure C.2.510: Bridge NO. 53C0642 Crack Image

Table C.2.6: Bridge NO. 53C0642 Span Area

	Span Area					
FID	**Span**	**Area**	**# Cracks**	**ObsArea**	**DV**	**Crack Density**
0	A	2399.167	53	0	17.21077	2.209100384
1	B	2354.706	44	0	13.5758	1.868598305
2	C	2391.774	43	0	12.73741	1.797828528

Table C.2.7: Bridge NO. 53C0642 Crack Extraction

	Crack Extraction	
FID	Span	Length
0	A	9.248782
1	A	9.255962
2	A	11.34444
3	A	6.914831
4	A	5.180896
5	A	9.521363
6	A	12.32408
7	A	6.34135
8	A	4.53524
9	A	4.511747
10	A	5.213544
11	A	5.278866
12	A	4.548996
13	A	4.535226
14	A	4.53445
15	A	3.344362
16	A	2.415233
17	A	4.454609
18	A	7.375911
19	A	5.495429
20	A	5.234022
21	A	2.826382
22	A	8.29214
23	A	4.208936
24	A	3.852669
25	A	3.317674
26	A	4.052791
27	A	7.97424
28	A	6.792031
29	A	11.75762
30	A	3.209002
31	A	6.83974
32	A	2.158583
33	A	2.254754
34	A	4.643137
35	A	3.786921
36	A	3.820744
37	A	4.442876
38	A	5.228168
39	A	4.615382
40	A	2.433303
41	A	5.725043
42	A	8.258708
43	A	7.178813
44	A	7.053254
45	A	7.679428

46	A	2.627315
47	A	1.604026
48	A	2.214556
49	A	1.613111
50	A	1.711951
51	A	2.784376
52	A	4.746139
53	B	2.742538
54	B	7.030181
55	B	3.595151
56	B	3.073044
57	B	2.125284
58	B	2.729417
59	B	4.298053
60	B	5.557753
61	B	8.908054
62	B	2.815668
63	B	2.496346
64	B	6.15322
65	B	4.348786
66	B	3.297246
67	B	2.74392
68	B	12.70008
69	B	3.653818
70	B	6.105063
71	B	5.38491
72	B	6.113447
73	B	17.12871
74	B	8.555046
75	B	2.360452
76	B	2.224278
77	B	3.341623
78	B	9.296811
79	B	4.786831
80	B	3.110485
81	B	9.251384
82	B	9.974559
83	B	7.541636
84	B	3.394977
85	B	9.172497
86	B	3.123771
87	B	4.755479
88	B	5.415257
89	B	5.291867
90	B	5.493097
91	B	9.542462
92	B	4.472647
93	B	3.718913
94	B	3.086581
95	B	6.916222

96	B	2.538268
97	C	4.07676
98	C	3.804871
99	C	4.151318
100	C	1.505725
101	C	2.218016
102	C	13.73882
103	C	1.853046
104	C	6.855261
105	C	3.710348
106	C	7.082281
107	C	18.30614
108	C	9.937291
109	C	11.36902
110	C	4.093041
111	C	7.660595
112	C	10.28513
113	C	3.676824
114	C	3.566917
115	C	3.408224
116	C	4.17246
117	C	0.820907
118	C	6.848472
119	C	2.5861
120	C	3.882701
121	C	6.493299
122	C	3.278838
123	C	7.157258
124	C	5.349181
125	C	2.987026
126	C	1.401214
127	C	2.249578
128	C	5.1402
129	C	2.618296
130	C	8.602407
131	C	14.36242
132	C	7.480497
133	C	4.794709
134	C	4.746648
135	C	8.982015
136	C	2.400183
137	C	4.537929
138	C	3.478449
139	C	4.11233

Bridge NO. 53C0602

Table C.2.8: Bridge NO. 53C0602 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	77.54488

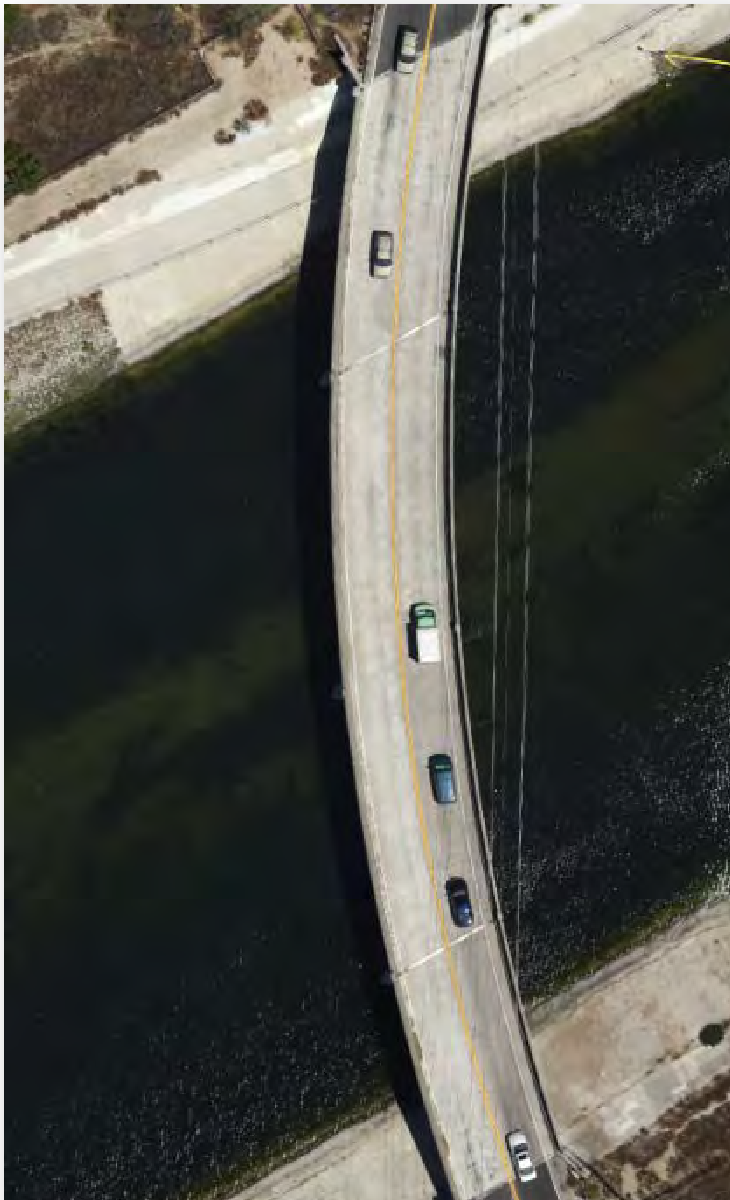


Figure C.2.6: Bridge NO. 53C0602 Blank Image

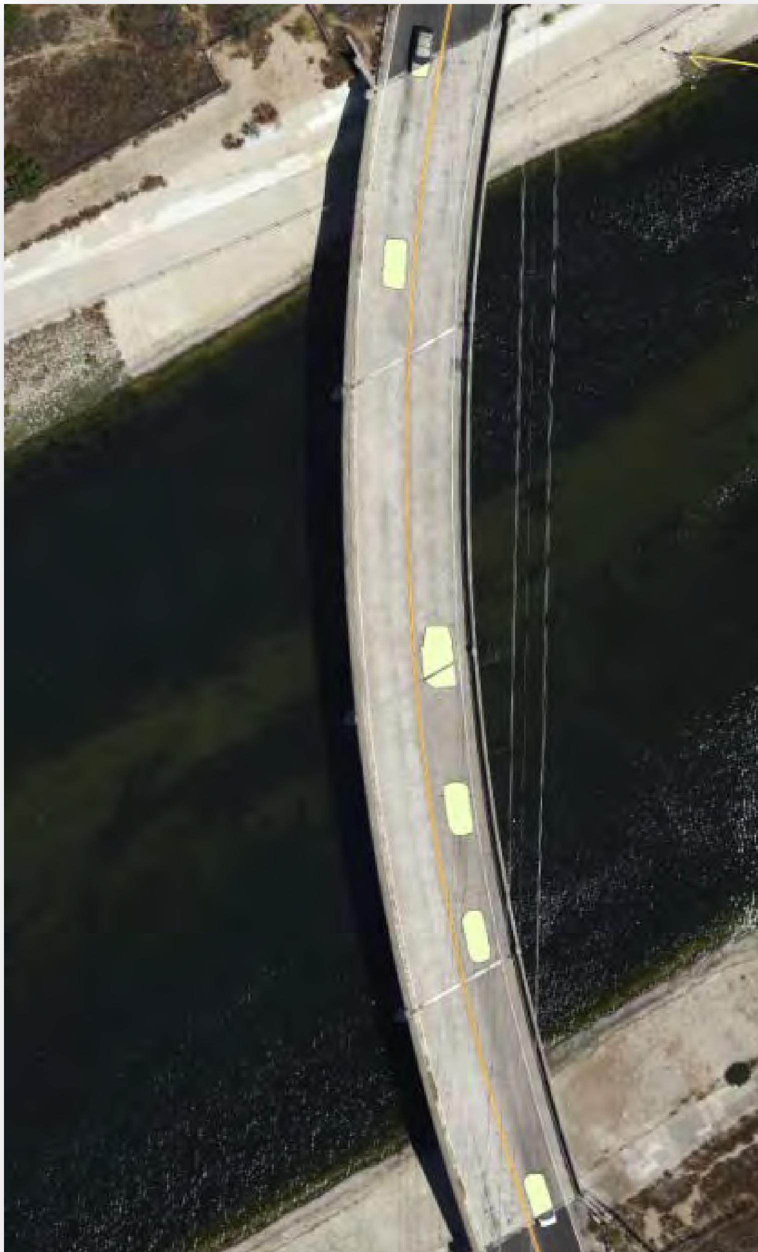


Figure C.2.7: Bridge NO. 53C0602 Obstruction Image

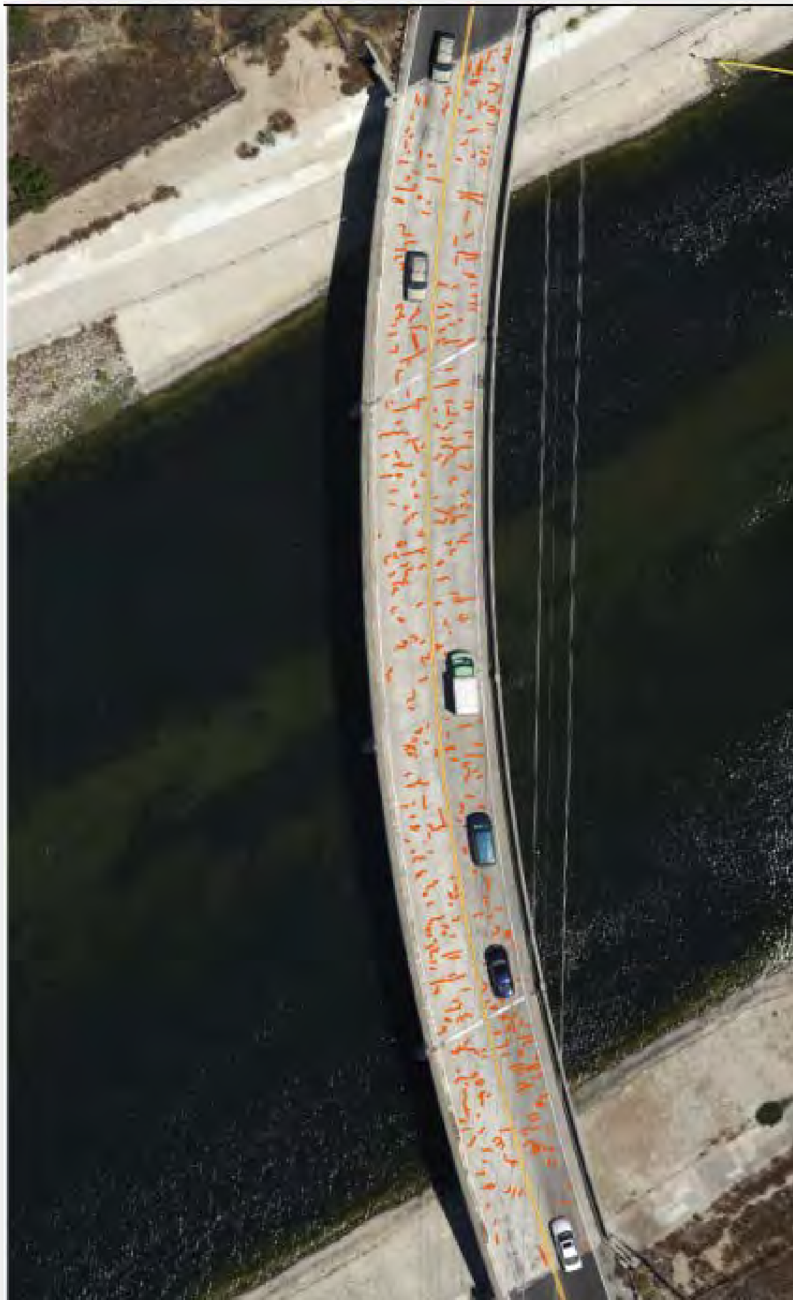


Figure C.2.8: Bridge NO. 53C0602 Crack Image

Table C.2.9: Bridge NO. 53C0602 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	10864745	85	395203.9891	1	0.000811879
1	B	13287687	113	1339308.638	1	0.000945735
2	C	14890129	108	620973.4265	1	0.000756877
3	D	13676723	108	604058.008	1	0.000826151

Table C.2.10: Bridge NO. 53C0602 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	132.7056
1	A	205.0144
2	A	281.2233
3	A	292.1768
4	A	86.78044
5	A	188.286
6	A	111.1071
7	A	100.3837
8	A	109.6913
9	A	113.0814
10	A	189.8703
11	A	165.9368
12	A	101.6961
13	A	216.7298
14	A	113.9445
15	A	205.116
16	A	145.306
17	A	60.11226
18	A	147.1168
19	A	177.718
20	A	155.2948
21	A	205.9675
22	A	79.32921
23	A	97.52924
24	A	188.673
25	A	160.748
26	A	184.9788
27	A	173.7087
28	A	177.7832
29	A	222.9848
30	A	195.169
31	A	232.6589
32	A	161.4829
33	A	273.8206
34	A	277.3467
35	A	141.3113
36	A	193.1899

37	A	331.9597
38	A	140.0899
39	A	102.703
40	A	393.6635
41	A	188.7345
42	A	202.8776
43	A	65.9101
44	A	203.6581
45	A	113.6087
46	A	148.2203
47	A	102.1312
48	A	509.4064
49	A	174.9691
50	A	215.1321
51	A	125.883
52	A	90.98382
53	A	77.67036
54	A	55.36092
55	A	307.1917
56	A	301.224
57	A	359.3145
58	A	75.7672
59	A	197.631
60	A	145.6397
61	A	251.2104
62	A	305.8592
63	A	282.3012
64	A	72.51197
65	A	551.2209
66	A	299.1047
67	A	237.6488
68	A	151.1368
69	A	195.1157
70	A	246.0048
71	A	322.4709
72	A	340.526
73	A	452.1187
74	A	269.4582
75	A	129.0774
76	A	129.941
77	A	255.0387
78	A	228.0484
79	A	195.7183
80	A	129.8526
81	A	225.2243
82	A	243.1272
83	A	96.86354
84	A	149.1707
85	B	137.1964
86	B	111.2307

87	B	115.8913
88	B	96.56721
89	B	224.0356
90	B	95.46071
91	B	165.9844
92	B	317.459
93	B	111.1948
94	B	116.5615
95	B	122.6075
96	B	103.2956
97	B	452.9692
98	B	52.49182
99	B	173.507
100	B	257.0217
101	B	304.5411
102	B	124.4974
103	B	52.49779
104	B	196.2539
105	B	96.54637
106	B	135.1809
107	B	221.0103
108	B	202.4942
109	B	294.1186
110	B	416.6479
111	B	127.1007
112	B	114.4331
113	B	84.32357
114	B	119.6515
115	B	55.91668
116	B	190.7991
117	B	54.83639
118	B	142.8098
119	B	187.3029
120	B	150.8563
121	B	60.13461
122	B	41.60232
123	B	89.60356
124	B	69.18949
125	B	112.6206
126	B	122.2856
127	B	122.2364
128	B	177.0831
129	B	15.10922
130	B	143.3455
131	B	139.4521
132	B	142.1736
133	B	187.3917
134	B	102.8548
135	B	101.8336
136	B	150.2277

137	B	125.6213
138	B	91.35249
139	B	327.6752
140	B	122.1185
141	B	222.5433
142	B	131.8525
143	B	124.7094
144	B	406.5051
145	B	168.0528
146	B	317.474
147	B	89.42207
148	B	159.4243
149	B	170.7769
150	B	259.3478
151	B	76.83328
152	B	353.3576
153	B	20.14563
154	B	188.3308
155	B	115.904
156	B	223.7852
157	B	85.09598
158	B	123.5141
159	B	117.6803
160	B	393.3468
161	B	287.9269
162	B	215.402
163	B	79.34421
164	B	154.6795
165	B	457.4261
166	B	263.744
167	B	311.567
168	B	89.06508
169	B	243.3631
170	B	168.5408
171	B	188.5219
172	B	67.51171
173	B	44.13479
174	B	220.6136
175	B	133.6428
176	B	109.0183
177	B	237.9093
178	B	45.41146
179	B	52.76878
180	B	210.9894
181	B	118.772
182	B	350.4534
183	B	184.0729
184	B	464.0294
185	B	59.40932
186	B	275.7893

187	B	243.899
188	B	121.5721
189	B	178.193
190	B	175.2116
191	B	121.3089
192	B	118.3973
193	B	243.1307
194	B	98.91718
195	B	116.5293
196	B	260.6603
197	B	118.7379
198	C	108.2326
199	C	218.6005
200	C	336.7312
201	C	344.9193
202	C	192.4397
203	C	156.2308
204	C	319.4169
205	C	111.6441
206	C	192.8157
207	C	129.452
208	C	102.1869
209	C	129.5454
210	C	101.943
211	C	126.3041
212	C	540.355
213	C	197.1746
214	C	136.1356
215	C	157.4068
216	C	121.3301
217	C	197.2257
218	C	166.4041
219	C	270.8655
220	C	72.54203
221	C	47.43858
222	C	174.18
223	C	301.7413
224	C	263.7939
225	C	242.6808
226	C	157.6629
227	C	132.8351
228	C	225.1934
229	C	185.0669
230	C	196.6835
231	C	194.4023
232	C	185.4179
233	C	404.3016
234	C	274.4206
235	C	159.2639
236	C	230.7633

237	C	155.1405
238	C	97.63066
239	C	92.22355
240	C	122.2367
241	C	84.99709
242	C	72.22273
243	C	416.2795
244	C	198.4958
245	C	230.9278
246	C	135.0049
247	C	166.5851
248	C	99.68596
249	C	91.657
250	C	76.63503
251	C	95.02584
252	C	190.2922
253	C	91.53601
254	C	151.4119
255	C	169.3224
256	C	188.878
257	C	228.8101
258	C	263.2378
259	C	178.1869
260	C	159.548
261	C	84.53269
262	C	216.2216
263	C	296.3185
264	C	342.1368
265	C	191.6409
266	C	177.0279
267	C	492.9808
268	C	349.7847
269	C	231.9651
270	C	368.8737
271	C	97.0342
272	C	208.1046
273	C	145.3683
274	C	323.1328
275	C	294.2972
276	C	128.3892
277	C	90.22049
278	C	410.1754
279	C	89.1254
280	C	154.7735
281	C	220.5888
282	C	184.315
283	C	344.4372
284	C	131.5033
285	C	180.2894
286	C	201.6622

287	C	175.8575
288	C	95.2206
289	C	167.6599
290	C	178.2819
291	C	201.0322
292	C	157.9461
293	C	136.3344
294	C	100.6152
295	C	201.4577
296	C	292.2768
297	C	311.8038
298	C	111.1079
299	C	88.01657
300	C	228.002
301	C	227.7684
302	C	489.448
303	C	196.2098
304	C	196.8183
305	C	122.8744
306	D	609.3295
307	D	378.5637
308	D	283.7436
309	D	228.982
310	D	361.3554
311	D	404.0609
312	D	145.4769
313	D	183.195
314	D	98.32303
315	D	330.9488
316	D	122.9544
317	D	382.7047
318	D	213.2612
319	D	293.1647
320	D	137.5525
321	D	81.52466
322	D	206.2586
323	D	112.5932
324	D	128.9479
325	D	156.9161
326	D	151.3528
327	D	140.0165
328	D	137.9543
329	D	192.4991
330	D	126.4971
331	D	266.1631
332	D	98.41093
333	D	118.7507
334	D	154.6758
335	D	179.1622
336	D	215.4046

337	D	86.3625
338	D	163.2096
339	D	169.3228
340	D	189.8
341	D	149.6857
342	D	184.6876
343	D	181.1055
344	D	210.2489
345	D	468.0245
346	D	201.4776
347	D	270.1998
348	D	264.7453
349	D	437.217
350	D	572.9539
351	D	241.3773
352	D	270.9143
353	D	569.3162
354	D	181.3746
355	D	228.6889
356	D	383.1716
357	D	79.61829
358	D	166.2527
359	D	106.0106
360	D	66.30227
361	D	220.5402
362	D	156.2545
363	D	178.2387
364	D	174.441
365	D	186.6957
366	D	265.1034
367	D	92.79458
368	D	45.08787
369	D	196.8681
370	D	278.7291
371	D	160.1266
372	D	59.6004
373	D	135.5828
374	D	50.80796
375	D	42.51903
376	D	181.515
377	D	96.66439
378	D	82.98519
379	D	101.09
380	D	278.9802
381	D	103.0434
382	D	169.7109
383	D	136.3967
384	D	78.43549
385	D	116.6385
386	D	146.1256

387	D	97.37811
388	D	104.1766
389	D	155.1941
390	D	178.698
391	D	155.0639
392	D	80.32751
393	D	43.84952
394	D	368.3923
395	D	117.7923
396	D	65.08183
397	D	41.65589
398	D	148.3722
399	D	89.60083
400	D	114.9513
401	D	152.4289
402	D	104.277
403	D	268.514
404	D	197.1578
405	D	167.5738
406	D	223.9385
407	D	94.49781
408	D	168.4119
409	D	117.9103
410	D	111.2037
411	D	158.5658
412	D	63.23808
413	D	210.9974

Table C.2.1116: Bridge NO. 53C0602 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	D	82707.99
1	D	521350
2	C	620973.4
3	B	222218.1
4	B	595721.8
5	B	521368.7
6	A	395204

Bridge NO. 53C0775

Table C.2.12: Bridge NO. 53C0775 Index Values

Bridge Surface Condition Index:	74.68438
Image Quality Index:	97.09911

Figure C.2.9: Bridge NO. 53C0775 Blank Image

Figure C.2.1011: Bridge NO. 53C0775 Obstruction Image

Figure C.2.11: Bridge NO. 53C0775 Crack Image

Table C.2.13: Bridge NO. 53C0775 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	3980.1	124	115.4583988	25.31562	3.20857696

Table C.2.14: Bridge NO. 53C0775 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	18.27018
1	A	4.250205
2	A	4.109925
3	A	3.417831
4	A	3.215044
5	A	2.595988
6	A	5.063025
7	A	5.231405
8	A	5.769245
9	A	1.835509
10	A	4.264397
11	A	4.145989
12	A	3.354984
13	A	1.681564

14	A	3.644957
15	A	4.168962
16	A	0.971425
17	A	4.888841
18	A	1.243354
19	A	2.086224
20	A	1.815069
21	A	2.533125
22	A	2.312376
23	A	1.486514
24	A	3.776614
25	A	2.122354
26	A	1.446932
27	A	4.732566
28	A	6.483289
29	A	1.316513
30	A	2.741254
31	A	4.298098
32	A	2.944437
33	A	2.787426
34	A	5.391238
35	A	2.081632
36	A	3.559149
37	A	2.372232
38	A	6.077074
39	A	7.050792
40	A	2.060936
41	A	4.241855
42	A	1.511135
43	A	2.79023
44	A	2.248856
45	A	7.734462
46	A	8.139975
47	A	3.743158
48	A	2.372698
49	A	11.20189
50	A	2.91358
51	A	2.505445
52	A	3.215913
53	A	2.324156
54	A	2.823394
55	A	0.59197
56	A	0.578643
57	A	3.418734
58	A	2.007805
59	A	2.949717
60	A	1.643535
61	A	0.722065
62	A	4.165564
63	A	2.20255

64	A	2.072403
65	A	2.164129
66	A	3.026535
67	A	1.802427
68	A	2.149631
69	A	3.147212
70	A	3.279277
71	A	5.198476
72	A	2.687813
73	A	4.017465
74	A	2.087975
75	A	3.329121
76	A	2.095795
77	A	2.084001
78	A	4.181154
79	A	3.409535
80	A	1.028921
81	A	1.461076
82	A	2.249831
83	A	2.054311
84	A	1.752034
85	A	2.068656
86	A	2.060661
87	A	2.489411
88	A	3.038257
89	A	3.325316
90	A	2.997758
91	A	3.783776
92	A	2.402198
93	A	5.06394
94	A	3.867754
95	A	5.859096
96	A	4.624355
97	A	3.712025
98	A	3.528464
99	A	5.456694
100	A	8.470256
101	A	5.201269
102	A	2.590886
103	A	13.81164
104	A	3.1626
105	A	4.021294
106	A	5.976287
107	A	1.891501
108	A	1.777144
109	A	2.138039
110	A	9.287067
111	A	2.189257
112	A	2.4256
113	A	2.798097

114	A	2.370042
115	A	1.846405
116	A	4.184718
117	A	2.044286
118	A	1.465703
119	A	2.041562
120	A	2.791147
121	A	0.653718
122	A	5.446113
123	A	3.28519

Table C.2.15: Bridge NO. 53C0775 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Span	Type	Area
0	1	A	Tree	12.1727
1	2	A	Tree	49.7856
2	3	A	Tree	18.6284
3	4	A	Tree	11.7968
4	5	A	Shadow	23.0749

Bridge NO. 53C0470

Table C.2.16: Bridge NO. 53C0470 Index Values

Bridge Surface Condition Index:	58.6436
Image Quality Index:	99.25854

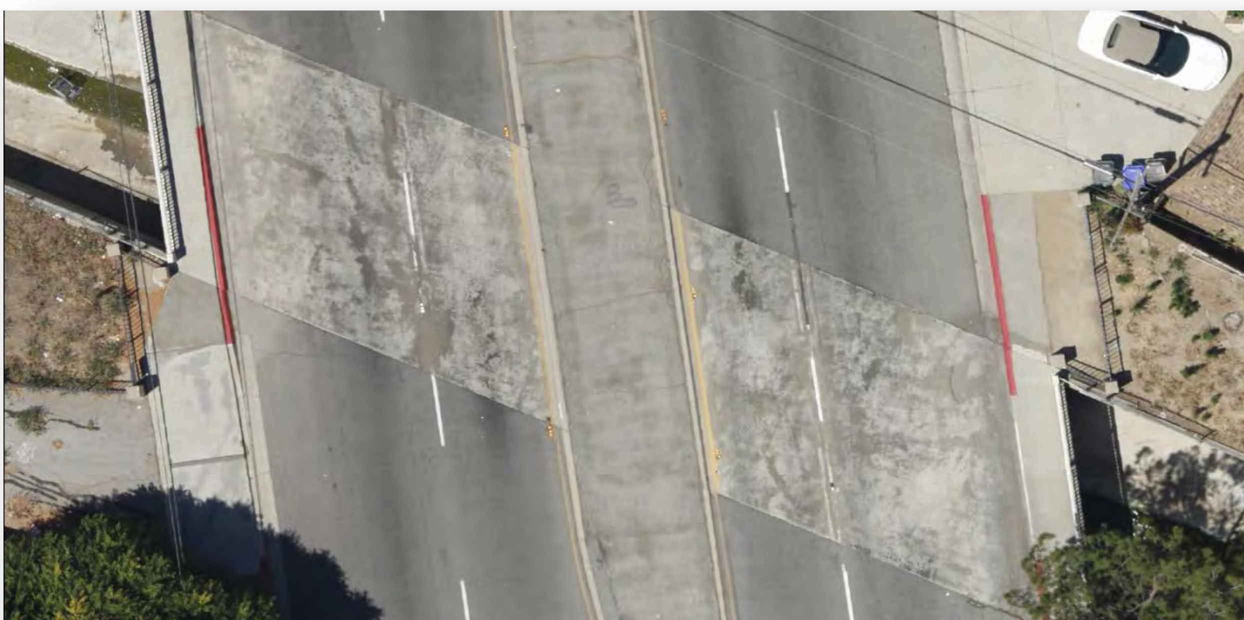


Figure C.2.12: Bridge NO. 53C0470 Blank Image

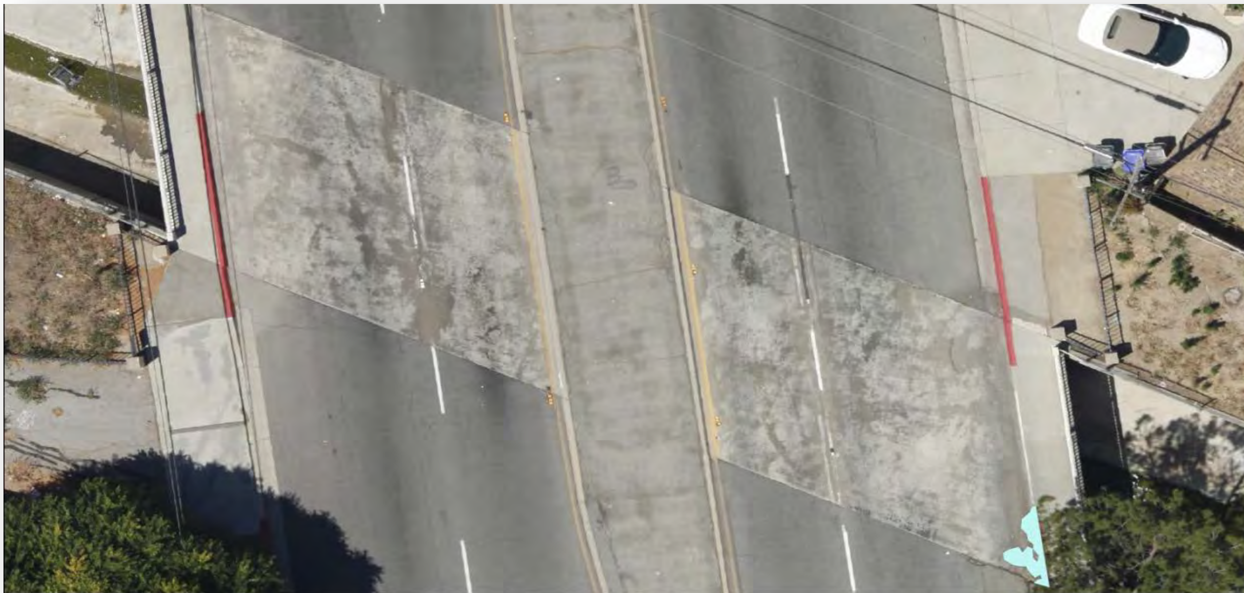


Figure C.2.13: Bridge NO. 53C0470 Obstruction Image

Figure C.2.14: Bridge NO. 53C0470 Crack Image

Table C.2.17: Bridge NO. 53C0470 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	3750.11	250	27.80540085	41.3564	6.716269272

Table C.2.1817: Bridge NO. 53C0470 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	2.985455
1	A	1.429854
2	A	1.352547
3	A	2.162262
4	A	3.5137
5	A	4.190486
6	A	1.781888
7	A	5.855791
8	A	2.51749
9	A	4.531808
10	A	10.56027
11	A	8.540863
12	A	2.186966
13	A	5.014471
14	A	1.501405
15	A	1.401491
16	A	4.216751
17	A	3.284472
18	A	1.278874
19	A	2.441353
20	A	1.918311
21	A	0.308507
22	A	0.561623
23	A	1.456055
24	A	3.110037
25	A	7.220974
26	A	6.976481
27	A	3.657665
28	A	6.771017
29	A	4.281117
30	A	3.423633
31	A	1.504558
32	A	3.197469
33	A	4.319714
34	A	2.758978
35	A	1.29499
36	A	9.366151
37	A	2.946599
38	A	1.048088
39	A	3.148576

40	A	2.436937
41	A	1.664657
42	A	2.328712
43	A	2.446037
44	A	2.080235
45	A	2.143848
46	A	3.236979
47	A	4.013965
48	A	3.758175
49	A	1.27912
50	A	2.150721
51	A	2.238024
52	A	3.195415
53	A	0.505345
54	A	0.611105
55	A	4.768518
56	A	3.880877
57	A	2.897663
58	A	2.155645
59	A	0.949193
60	A	0.742716
61	A	1.231061
62	A	2.305095
63	A	3.065186
64	A	1.697741
65	A	2.8051
66	A	5.144126
67	A	1.406534
68	A	2.996653
69	A	1.881078
70	A	5.731756
71	A	6.713639
72	A	7.244509
73	A	1.81634
74	A	4.18863
75	A	1.891339
76	A	1.14474
77	A	0.66789
78	A	14.01873
79	A	18.5715
80	A	2.199474
81	A	1.303006
82	A	1.961719
83	A	2.558019
84	A	1.106561
85	A	3.060107
86	A	1.836143
87	A	3.349801
88	A	1.390271
89	A	2.072149

90	A	1.360037
91	A	1.939563
92	A	11.67348
93	A	0.766994
94	A	1.373572
95	A	1.218621
96	A	0.88717
97	A	0.525197
98	A	14.88683
99	A	20.53461
100	A	0.792168
101	A	1.54063
102	A	1.992289
103	A	0.843516
104	A	1.108043
105	A	1.402574
106	A	1.822908
107	A	1.236588
108	A	1.259741
109	A	0.647072
110	A	2.244058
111	A	0.918838
112	A	1.980693
113	A	3.561222
114	A	0.757495
115	A	1.210183
116	A	2.514377
117	A	1.168117
118	A	1.385129
119	A	1.260026
120	A	2.908487
121	A	2.51855
122	A	1.583583
123	A	1.714124
124	A	1.790091
125	A	1.38052
126	A	1.757475
127	A	1.725233
128	A	0.990822
129	A	1.638574
130	A	1.827249
131	A	0.316436
132	A	2.057837
133	A	1.604735
134	A	1.757138
135	A	1.538642
136	A	0.801042
137	A	2.009068
138	A	1.277827
139	A	2.368826

140	A	0.206201
141	A	0.689232
142	A	1.438861
143	A	2.671641
144	A	2.34343
145	A	9.344208
146	A	1.586584
147	A	2.752693
148	A	4.266549
149	A	1.653529
150	A	1.111641
151	A	2.195683
152	A	2.91915
153	A	2.369991
154	A	2.394599
155	A	0.498566
156	A	3.14212
157	A	0.884035
158	A	6.041625
159	A	4.146952
160	A	2.723627
161	A	2.662911
162	A	5.104886
163	A	1.615758
164	A	3.488159
165	A	2.545279
166	A	0.706438
167	A	9.426638
168	A	1.547723
169	A	3.899801
170	A	1.194912
171	A	0.235885
172	A	1.871291
173	A	2.234847
174	A	1.799439
175	A	2.094885
176	A	0.957646
177	A	0.913539
178	A	3.079372
179	A	1.652111
180	A	2.200165
181	A	3.513262
182	A	2.743582
183	A	2.857679
184	A	4.085069
185	A	4.542186
186	A	9.490083
187	A	2.815958
188	A	4.952063
189	A	2.850486

190	A	2.264466
191	A	1.072232
192	A	2.274611
193	A	2.149482
194	A	2.240399
195	A	3.567541
196	A	5.252669
197	A	1.83851
198	A	1.740758
199	A	2.217668
200	A	4.172314
201	A	2.480147
202	A	5.169801
203	A	3.065337
204	A	2.123729
205	A	2.698995
206	A	1.967926
207	A	3.383096
208	A	4.59166
209	A	3.61369
210	A	4.874393
211	A	7.326635
212	A	2.374768
213	A	3.294418
214	A	0.650108
215	A	2.233375
216	A	0.559468
217	A	2.557454
218	A	3.693707
219	A	3.39925
220	A	0.767037
221	A	2.624207
222	A	1.565708
223	A	3.296996
224	A	1.999259
225	A	2.411954
226	A	5.447888
227	A	1.838099
228	A	2.256775
229	A	4.085822
230	A	0.763108
231	A	1.63202
232	A	4.170289
233	A	8.960591
234	A	1.99636
235	A	3.420441
236	A	0.676952
237	A	1.309094
238	A	3.903426
239	A	1.178672

240	A	3.330686
241	A	2.091188
242	A	7.031405
243	A	2.510469
244	A	1.362917
245	A	0.918352
246	A	3.614148
247	A	2.082991
248	A	2.946982
249	A	1.695791

Table C.2.19: Bridge NO. 53C0470 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Type	Area	Span
0	1	Tree	27.8054	A

Bridge NO. 53C1527

Table C.2.20: Bridge NO. 53C1527 Index Values

Bridge Surface Condition Index:	70.85075
Image Quality Index:	99.97297

Figure C.2.15: Bridge NO. 53C1527 Blank Image

Figure C.2.1612: Bridge NO. 53C1527 Crack Image

Table C.2.21: Bridge NO. 53C1527 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	2456.18	94	0.664022982	29.14925	3.828116

Table C.2.22: Bridge NO. 53C1527 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	7.180155
1	A	7.992682
2	A	3.609458
3	A	2.217229
4	A	2.820306
5	A	3.012661
6	A	3.425396
7	A	4.102599
8	A	2.874184

9	A	2.945427
10	A	1.611593
11	A	5.043009
12	A	5.717116
13	A	3.403141
14	A	2.170456
15	A	5.178087
16	A	10.89627
17	A	8.327861
18	A	3.848863
19	A	3.157072
20	A	2.644076
21	A	2.244909
22	A	2.065756
23	A	3.764074
24	A	1.818977
25	A	1.767835
26	A	1.29885
27	A	2.990425
28	A	1.709958
29	A	3.943086
30	A	2.273881
31	A	2.294
32	A	1.873713
33	A	1.043686
34	A	2.233374
35	A	1.602234
36	A	1.98752
37	A	4.469317
38	A	2.877832
39	A	2.486823
40	A	5.074819
41	A	2.965328
42	A	6.905714
43	A	10.26789
44	A	16.45897
45	A	1.235749
46	A	2.507246
47	A	3.622586
48	A	3.798002
49	A	3.456557
50	A	3.101495
51	A	2.467572
52	A	3.197315
53	A	3.23366
54	A	5.44185
55	A	5.379845
56	A	4.199258
57	A	4.928481
58	A	2.195236

59	A	2.435841
60	A	3.294245
61	A	9.436031
62	A	3.732415
63	A	2.269653
64	A	3.00268
65	A	3.129431
66	A	2.83896
67	A	2.058262
68	A	2.799023
69	A	2.206088
70	A	1.905486
71	A	2.789828
72	A	2.447576
73	A	1.10341
74	A	1.715919
75	A	2.085492
76	A	1.890595
77	A	0.927959
78	A	2.160184
79	A	0.789213
80	A	2.012925
81	A	1.963322
82	A	1.351347
83	A	2.387264
84	A	0.988928
85	A	1.551201
86	A	2.657133
87	A	1.903942
88	A	2.165748
89	A	1.963885
90	A	1.306896
91	A	0.90488
92	A	1.669031
93	A	2.017822

Table C.2.2318: Bridge NO. 53C1527 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Span	Type	Area
0	1	A	Debris	0.321791
1	2	A	Debris	0.342232

Bridge NO. 53C0620

Table C.2.24: Bridge NO. 53C0620 Index Values

Bridge Surface Condition Index:	73.8971
Image Quality Index:	88.20438

Figure C.2.17: Bridge NO. 53C0620 Blank Image

Figure C.2.18: Bridge NO. 53C0620 Obstruction Image

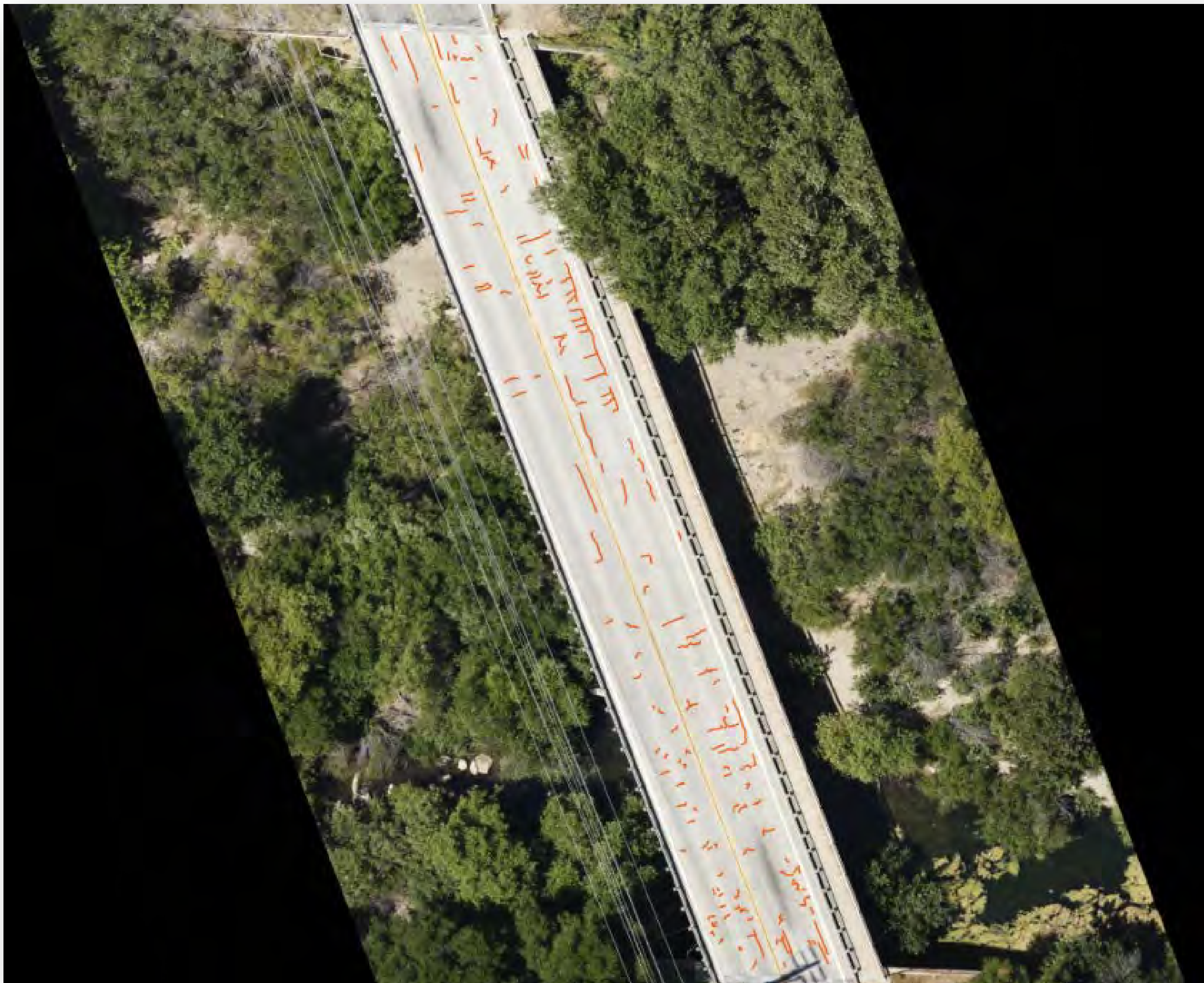


Figure C.2.19: Bridge NO. 53C0620 Crack Image

Table C.2.25: Bridge NO. 53C0620 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	2531.85	81	97.25279999	26.1029	3.327039068
1	B	3430.75	37	0	1.640633	1.078481382
2	C	2594.9	50	239.2172379	16.34266	2.122526887

Table C.2.26: Bridge NO. 53C0620 Crack Extraction

	Crack Extraction	
FID	Span	Length
0	A	2.424726
1	A	1.343175
2	A	1.310769
3	A	5.231707
4	A	6.884047
5	A	1.096578
6	A	9.191113
7	A	5.777213
8	A	1.186121
9	A	1.521612
10	A	1.699088
11	A	1.913764
12	A	7.474032
13	A	1.764374
14	A	0.809891
15	A	1.783479
16	A	1.839489
17	A	2.013694
18	A	1.770155
19	A	1.019134
20	A	2.215242
21	A	1.942787
22	A	1.464946
23	A	0.538001
24	A	1.078552
25	A	1.574604
26	A	1.897034
27	A	1.937677
28	A	0.937397
29	A	1.479767
30	A	3.256318
31	A	1.884448
32	A	1.613267
33	A	2.197013
34	A	3.221963
35	A	4.162088
36	A	1.177879
37	A	1.660259
38	A	1.458636
39	A	1.083654
40	A	1.590517
41	A	0.754011
42	A	1.516127
43	A	1.460707
44	A	1.291689
45	A	1.139154

46	A	2.397209
47	A	4.975068
48	A	1.443032
49	A	2.150691
50	A	3.30557
51	A	2.566545
52	A	2.835719
53	A	1.935574
54	A	2.773767
55	A	1.418873
56	A	1.963382
57	A	1.771862
58	A	2.032834
59	A	5.394338
60	A	3.340512
61	A	2.412648
62	A	1.652611
63	A	2.293842
64	A	1.437721
65	A	1.40382
66	A	3.63383
67	B	12.78222
68	A	1.451862
69	A	0.993398
70	A	2.555014
71	A	2.420127
72	A	1.667369
73	A	4.330456
74	A	3.681153
75	A	2.524683
76	A	1.670404
77	A	3.869111
78	A	1.592606
79	A	1.901133
80	A	0.297629
81	A	0.201743
82	B	1.884453
83	B	5.951745
84	B	7.058043
85	B	2.112738
86	B	2.325824
87	B	5.877672
88	B	5.504613
89	B	2.350107
90	B	3.523747
91	B	2.661282
92	B	4.582923
93	B	9.570637
94	B	2.044102
95	B	6.408747

96	B	13.407
97	B	2.25713
98	B	3.996886
99	B	3.989562
100	B	5.686495
101	B	11.82401
102	B	7.132093
103	B	5.457671
104	B	2.761839
105	B	3.424799
106	B	1.292291
107	B	6.180726
108	C	18.21201
109	B	2.550325
110	B	2.623419
111	C	3.277994
112	C	2.888849
113	B	3.351527
114	B	3.281762
115	B	2.872753
116	B	2.378072
117	B	2.473684
118	B	3.581124
119	B	3.774133
120	B	1.695204
121	C	10.45952
122	C	2.390585
123	C	2.550086
124	C	2.644367
125	C	3.109262
126	C	1.728746
127	C	3.273427
128	C	1.831369
129	C	3.04524
130	C	2.758802
131	C	3.537951
132	C	3.124541
133	C	2.7841
134	C	3.505945
135	C	4.66685
136	C	8.672792
137	C	2.069156
138	C	2.649578
139	C	2.807635
140	C	3.378032
141	C	3.129915
142	C	2.421037
143	C	3.883413
144	C	2.817223
145	C	4.158109

146	C	1.928974
147	C	3.750249
148	C	2.220355
149	C	3.478839
150	C	5.652608
151	C	2.882917
152	C	1.575099
153	C	6.018559
154	C	6.810832
155	C	1.606268
156	C	3.87764
157	C	1.73544
158	C	0.396719
159	C	2.150841
160	C	6.561359
161	C	1.876399
162	C	1.296388
163	C	0.529242
164	C	4.57678
165	C	3.611724
166	C	12.10498
167	C	1.469644

Table C.2.27: Bridge NO. 53C0620 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Span	Type	Area
0	1	A	Shadow	35.6052
1	2	A	Shadow	61.6476
2	3	C	Shadow	84.3653
3	4	C	Shadow	56.4037
4	5	C	Tree	93.1983
5	6	C	Tree	5.24993

Bridge NO. 53C0981

Table C.2.28: Bridge NO. 53C0981 Index Values

Bridge Surface Condition Index:	68.48389
Image Quality Index:	85.57907

Figure C.2.20: Bridge NO. 53C0981 Blank Image

Figure C.2.21: Bridge NO. 53C0981 Obstruction Image

Figure C.2.22: Bridge NO. 53C0981 Crack Image

Table C.2.29: Bridge NO. 53C0981 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	2326.64	85	335.5231751	31.51611	4.268960964

Table C.2.30: Bridge NO. 53C0981 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	4.642668
1	A	3.233059
2	A	6.797123
3	A	7.302191
4	A	6.296202
5	A	2.398129
6	A	11.99205
7	A	1.800479
8	A	3.025371
9	A	6.393598
10	A	12.67225

11	A	4.662144
12	A	11.54013
13	A	10.78176
14	A	3.974097
15	A	2.068908
16	A	1.162336
17	A	3.662843
18	A	1.033282
19	A	0.986422
20	A	1.580589
21	A	2.728049
22	A	0.876119
23	A	1.646926
24	A	5.812323
25	A	1.258268
26	A	1.984065
27	A	3.172716
28	A	1.693712
29	A	4.624933
30	A	2.85142
31	A	0.292405
32	A	0.892858
33	A	1.744474
34	A	1.397317
35	A	3.736982
36	A	1.76065
37	A	2.56527
38	A	6.366066
39	A	5.866069
40	A	2.629868
41	A	3.576129
42	A	1.924362
43	A	1.481898
44	A	1.620271
45	A	2.914748
46	A	3.135649
47	A	3.455898
48	A	7.000593
49	A	8.982035
50	A	4.441727
51	A	3.570268
52	A	3.409864
53	A	2.644122
54	A	5.335153
55	A	5.233903
56	A	4.58998
57	A	1.305078
58	A	2.022542
59	A	1.591477
60	A	4.400814

61	A	1.915503
62	A	5.526794
63	A	0.596377
64	A	2.871327
65	A	1.582945
66	A	2.365977
67	A	2.035283
68	A	0.962259
69	A	2.090443
70	A	13.59741
71	A	1.835545
72	A	2.055791
73	A	2.743702
74	A	5.148797
75	A	4.343748
76	A	3.802516
77	A	2.042659
78	A	4.742799
79	A	6.707172
80	A	3.5435
81	A	3.34401
82	A	1.898431
83	A	3.003724
84	A	2.474708

Table C.2.3119: Bridge NO. 53C0981 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Span	Type	Area
0	1	A	Shadow	35.2245
1	2	A	Shadow	0.381395
2	3	A	Shadow	0.661534
3	4	A	Shadow	3.20754
4	5	A	Tree	38.3454
5	6	A	Shadow	133.089
6	7	A	Tree	12.9754
7	8	A	Tree	80.7713
8	9	A	Tree	30.8671

Bridge NO. 53C1008

Table C.2.3220: Bridge NO. 53C1008 Index Values

Bridge Surface Condition Index:	83.597
Image Quality Index:	97.76119

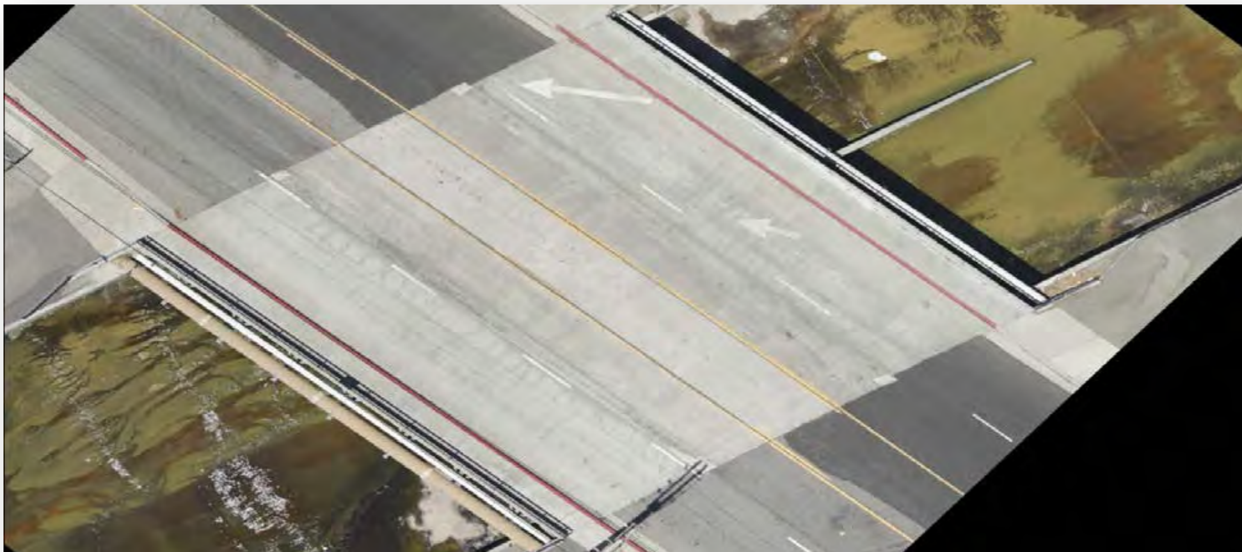


Figure C.2.23: Bridge NO. 53C1008 Blank Image

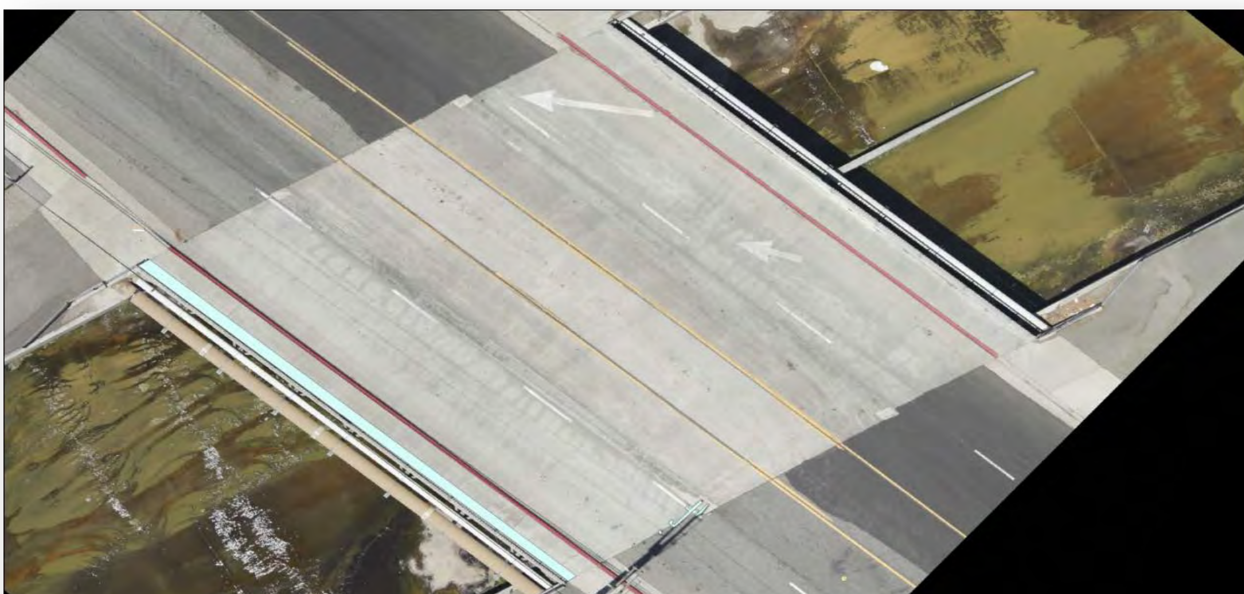


Figure C.2.24: Bridge NO. 53C1008 Obstruction Image

Figure C.2.25: Bridge NO. 53C1008 Crack Image

Table C.2.3321: Bridge NO. 53C1008 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	7929.712	165	177.5308495	16.403	2.128433234

Table C.2.34: Bridge NO. 53C1008 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	92.55473
1	A	3.360138
2	A	3.100991
3	A	2.976301
4	A	2.933184
5	A	2.728019
6	A	91.74322
7	A	26.84698
8	A	2.237693
9	A	1.916595
10	A	1.623424

11	A	1.737381
12	A	1.695129
13	A	1.999093
14	A	5.22629
15	A	16.6702
16	A	1.735004
17	A	1.52702
18	A	8.210311
19	A	3.664663
20	A	3.192189
21	A	7.789709
22	A	16.78539
23	A	2.743711
24	A	2.791044
25	A	1.913815
26	A	1.81984
27	A	1.723729
28	A	1.555605
29	A	2.658423
30	A	1.111646
31	A	4.042149
32	A	2.937967
33	A	23.22964
34	A	9.175006
35	A	5.280023
36	A	2.940455
37	A	6.93283
38	A	2.093991
39	A	3.288242
40	A	2.172432
41	A	2.077508
42	A	2.396364
43	A	61.51341
44	A	54.696
45	A	5.060514
46	A	2.579413
47	A	2.387001
48	A	4.527629
49	A	1.2758
50	A	1.843166
51	A	0.89496
52	A	2.607686
53	A	1.922524
54	A	3.641355
55	A	2.484187
56	A	1.904314
57	A	2.406036
58	A	2.186889
59	A	1.428008
60	A	2.210883

61	A	3.010001
62	A	3.013516
63	A	2.934827
64	A	2.52844
65	A	2.575197
66	A	1.787114
67	A	2.468171
68	A	4.633699
69	A	3.074127
70	A	1.276909
71	A	9.620974
72	A	3.783462
73	A	16.69474
74	A	13.61106
75	A	10.44354
76	A	2.040554
77	A	2.299095
78	A	2.545685
79	A	1.791747
80	A	2.02586
81	A	1.656069
82	A	5.83364
83	A	5.652215
84	A	2.258751
85	A	12.29228
86	A	73.99034
87	A	89.25487
88	A	15.41004
89	A	1.616244
90	A	20.62264
91	A	26.80986
92	A	20.52117
93	A	2.231146
94	A	2.15745
95	A	1.409254
96	A	1.557658
97	A	1.892524
98	A	1.404346
99	A	4.961363
100	A	2.82004
101	A	2.678557
102	A	2.087598
103	A	3.778844
104	A	1.076694
105	A	0.786888
106	A	1.211574
107	A	9.041988
108	A	2.334174
109	A	3.187688
110	A	3.530073

111	A	4.091618
112	A	2.541723
113	A	1.724147
114	A	3.794671
115	A	3.665081
116	A	1.826117
117	A	3.011157
118	A	3.842551
119	A	2.497344
120	A	5.005908
121	A	3.099257
122	A	1.271062
123	A	3.26865
124	A	3.064422
125	A	1.788792
126	A	1.876552
127	A	3.487582
128	A	3.646405
129	A	3.224199
130	A	3.568308
131	A	2.002063
132	A	2.947918
133	A	2.163457
134	A	1.039897
135	A	1.812606
136	A	1.931834
137	A	2.672392
138	A	4.722491
139	A	3.670046
140	A	3.492402
141	A	1.732354
142	A	1.273902
143	A	1.86905
144	A	1.915641
145	A	1.714557
146	A	1.553475
147	A	1.662551
148	A	1.342712
149	A	2.332311
150	A	2.854502
151	A	1.403916
152	A	4.075069
153	A	4.329001
154	A	2.86277
155	A	1.181417
156	A	1.95182
157	A	4.555778
158	A	1.643671
159	A	1.663113
160	A	4.643934

161	A	3.937201
162	A	2.290407
163	A	1.108267
164	A	2.642184

Table C.2.35: Bridge NO. 53C1008 Obstruction Analysis

Obstruction Analysis				
FID	Obs_Id	Span	Type	Area
0	1	A	Shadow	172.1169
1	2	A	Shadow	0.265227
2	3	A	Shadow	4.087863
3	4	A	Shadow	1.060908

Bridge NO. 53C0431

Table C.2.36: Bridge NO. 53C0431 Index Values

Bridge Surface Condition Index:	90.03209
Image Quality Index:	97.97171

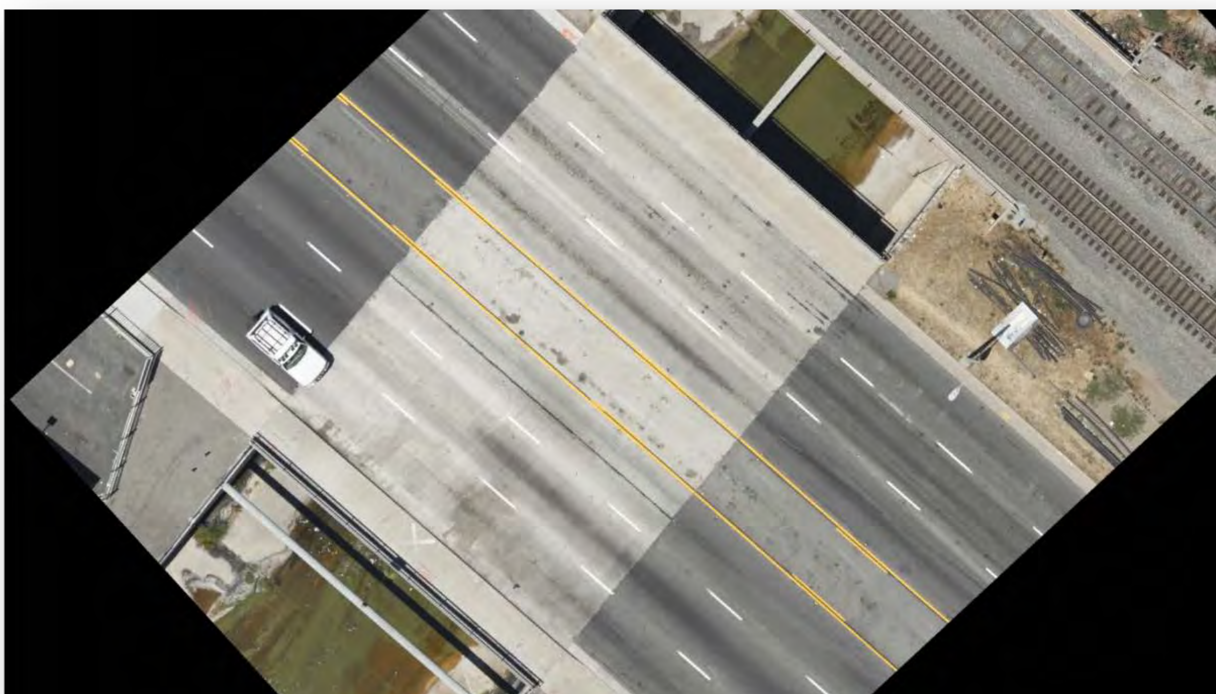


Figure C.2.2613: Bridge NO. 53C0431 Blank Image

Figure C.2.27: Bridge NO. 53C0431 Obstruction Image

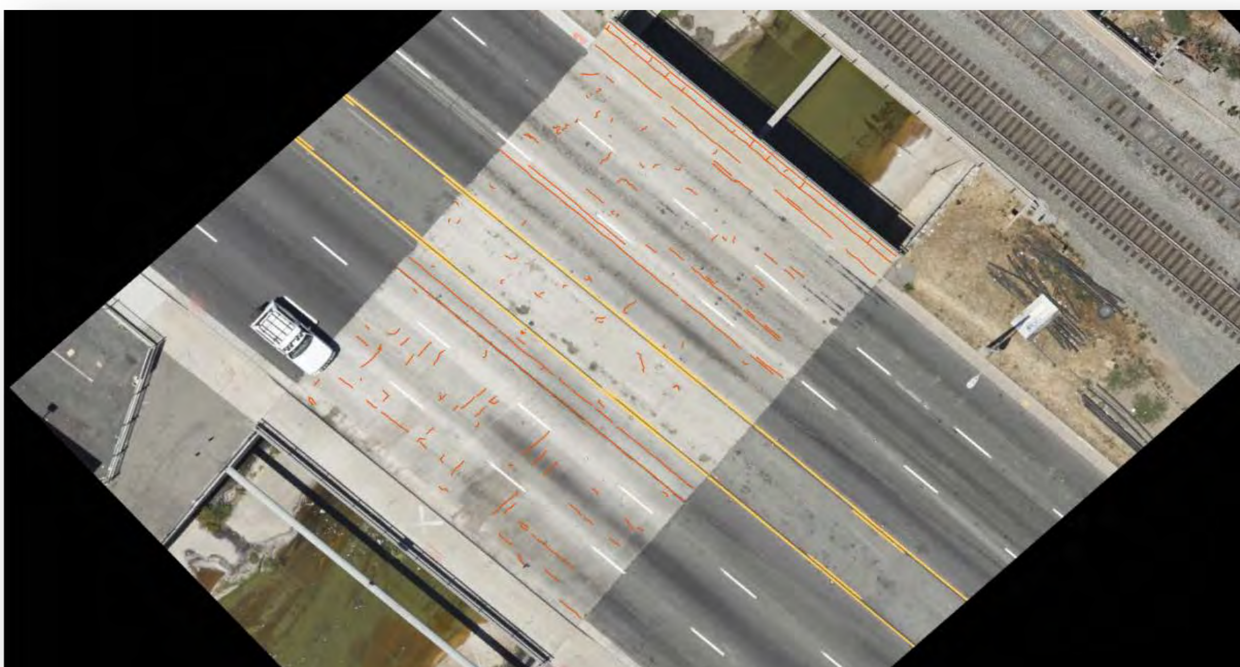


Figure C.2.28: Bridge NO. 53C0431 Crack Image

Table C.2.37: Bridge NO. 53C0431 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	9803.58	152	198.8447967	9.96791	1.582552739

Table C.2.38: Bridge NO. 53C0431 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	10.23169
1	A	0.970224
2	A	6.20068
3	A	2.759709
4	A	2.584828
5	A	1.956412
6	A	4.210741
7	A	2.713912
8	A	3.643574
9	A	2.561871
10	A	3.428596
11	A	1.597518
12	A	1.802293
13	A	3.760084
14	A	2.622868
15	A	1.278715
16	A	2.126126
17	A	1.919815
18	A	1.946469
19	A	7.370611
20	A	3.608788
21	A	0.575882
22	A	1.702901
23	A	3.972464
24	A	2.864549
25	A	3.287285
26	A	8.251851
27	A	2.880939
28	A	2.393433
29	A	2.744291
30	A	4.322286
31	A	4.227648
32	A	1.925217
33	A	1.016664
34	A	1.052558
35	A	3.290866
36	A	1.545826
37	A	3.904171
38	A	2.521484
39	A	2.000134

40	A	0.705698
41	A	1.993731
42	A	1.944501
43	A	2.027346
44	A	3.054015
45	A	1.281174
46	A	7.763148
47	A	4.54495
48	A	4.339731
49	A	2.015197
50	A	7.733196
51	A	3.172792
52	A	4.275735
53	A	17.35891
54	A	3.938496
55	A	4.818215
56	A	5.559722
57	A	3.367991
58	A	15.66609
59	A	7.340222
60	A	17.09667
61	A	81.29645
62	A	2.379829
63	A	0.814419
64	A	2.248718
65	A	2.19315
66	A	0.701115
67	A	0.733711
68	A	0.980148
69	A	1.167514
70	A	1.447433
71	A	1.745378
72	A	0.891761
73	A	1.095204
74	A	1.429504
75	A	0.799162
76	A	2.463329
77	A	1.047287
78	A	4.842447
79	A	1.994159
80	A	1.477227
81	A	6.475641
82	A	7.366844
83	A	17.01427
84	A	50.81251
85	A	27.51554
86	A	1.105887
87	A	1.210593
88	A	5.004129
89	A	3.74553

90	A	2.084971
91	A	3.166005
92	A	1.855714
93	A	2.113789
94	A	2.241462
95	A	1.322391
96	A	0.926357
97	A	2.115348
98	A	1.264529
99	A	0.870071
100	A	1.543127
101	A	1.283665
102	A	5.588249
103	A	2.737246
104	A	2.805918
105	A	4.09119
106	A	14.32804
107	A	2.448883
108	A	10.49511
109	A	4.343194
110	A	2.368008
111	A	3.226068
112	A	2.976773
113	A	3.621592
114	A	3.848898
115	A	8.705798
116	A	16.43301
117	A	4.079319
118	A	81.84293
119	A	81.44672
120	A	1.278681
121	A	1.556308
122	A	0.946286
123	A	1.237821
124	A	1.527687
125	A	0.677556
126	A	0.88841
127	A	1.223398
128	A	1.218626
129	A	0.484365
130	A	0.868629
131	A	18.72072
132	A	19.50659
133	A	3.671439
134	A	1.728808
135	A	1.712856
136	A	1.867151
137	A	1.177491
138	A	1.543085
139	A	6.506545

140	A	5.115027
141	A	4.529329
142	A	3.456247
143	A	1.364234
144	A	0.926383
145	A	4.652668
146	A	1.459651
147	A	0.99174
148	A	1.325398
149	A	1.408085
150	A	2.168081
151	A	1.288761

Table C.2.39: Bridge NO. 53C0431 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Span	Type	Area
0	1	A	Car	22.8004
1	2	A	Shadow	6.1823
2	3	A	Shadow	133.327
3	4	A	Shadow	26.1816
4	5	A	Shadow	10.3535

Bridge NO. 53C0825

Table C.2.40: Bridge NO. 53C0825 Index Values

Bridge Surface Condition Index:	92.28569
Image Quality Index:	93.03456

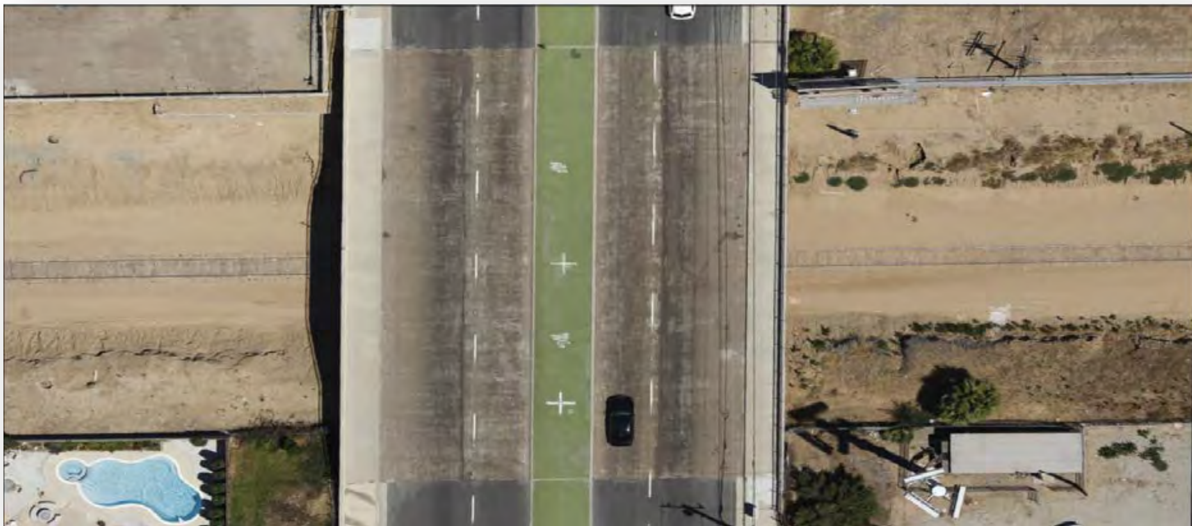


Figure C.2.29: Bridge NO. 53C0825 Blank Image

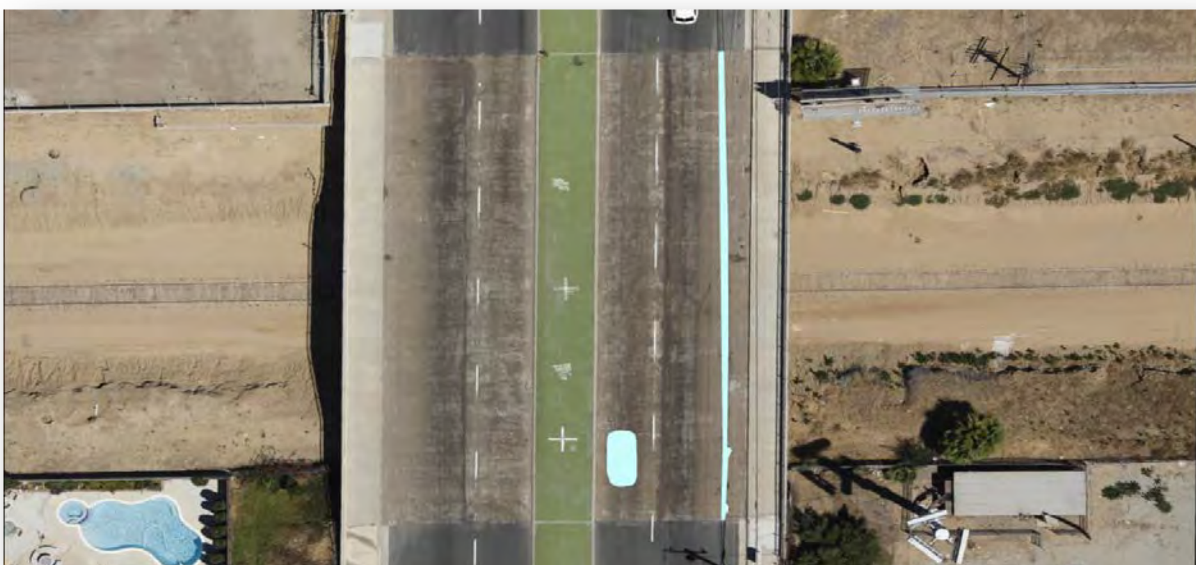


Figure C.2.30: Bridge NO. 53C0825 Obstruction Image

Figure C.2.31: Bridge NO. 53C0825 Crack Image

Table C.2.41: Bridge NO. 53C0825 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	6406.11	85	447.669014	7.714314	1.42654765
1	B	6447.903	83	0	5.482979	1.287240166

Table C.2.42: Bridge NO. 53C0825 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	11.32512
1	A	10.30771
2	A	11.32512
3	A	6.849538
4	A	2.351099
5	A	3.190137
6	A	5.973784
7	A	3.594136
8	A	6.248085
9	A	4.473053
10	A	3.594776
11	A	4.819605
12	A	11.81574
13	A	6.04956

14	A	6.215827
15	A	3.484628
16	A	2.44039
17	A	2.497804
18	A	4.418275
19	A	7.772578
20	A	5.774227
21	A	5.440926
22	A	2.117119
23	A	3.082345
24	A	6.432313
25	A	1.717212
26	A	4.412722
27	A	6.209545
28	A	2.51003
29	A	5.461847
30	A	3.797578
31	A	3.644745
32	A	5.086042
33	A	4.814122
34	A	8.001902
35	A	4.206351
36	A	6.661933
37	A	3.813649
38	A	3.982838
39	A	4.31466
40	A	4.039282
41	A	4.407903
42	A	5.922688
43	A	11.90428
44	A	6.306691
45	A	3.777975
46	A	3.929031
47	A	2.106452
48	A	7.827941
49	A	3.953854
50	A	5.052069
51	A	9.098835
52	A	11.30424
53	A	3.00234
54	A	3.737659
55	A	6.467014
56	A	3.482391
57	A	11.37569
58	A	4.073653
59	A	6.752293
60	A	2.271169
61	A	1.316738
62	A	3.521289

63	A	2.877098
64	A	7.166986
65	A	4.81503
66	A	5.170333
67	A	4.922538
68	A	3.246596
69	A	1.324222
70	A	1.398019
71	A	11.30359
72	A	8.363875
73	A	5.995759
74	A	3.571076
75	A	3.752631
76	A	3.097973
77	A	5.431269
78	A	4.777028
79	A	6.986444
80	A	29.89406
81	A	3.631737
82	A	2.809078
83	A	5.897497
84	A	4.185721
85	B	6.420841
86	B	3.299492
87	B	3.803108
88	B	8.822951
89	B	8.504472
90	B	4.922821
91	B	7.551439
92	B	10.60586
93	B	10.76085
94	B	7.877134
95	B	2.972339
96	B	3.487872
97	B	4.849366
98	B	6.704088
99	B	2.73769
100	B	5.989074
101	B	4.834522
102	B	3.376996
103	B	4.235521
104	B	0.807915
105	B	7.17636
106	B	5.417137
107	B	4.343914
108	B	2.736221
109	B	1.244897
110	B	9.175915
111	B	21.77877

112	B	1.950632
113	B	2.296752
114	B	7.772672
115	B	3.408599
116	B	3.709787
117	B	9.918783
118	B	13.41603
119	B	6.918665
120	B	3.262502
121	B	3.963923
122	B	8.993531
123	B	4.210102
124	B	2.767222
125	B	5.168924
126	B	3.979014
127	B	8.568817
128	B	7.562413
129	B	2.456875
130	B	8.601882
131	B	4.271066
132	B	4.005039
133	B	4.509768
134	B	2.675077
135	B	4.711829
136	B	2.1738
137	B	1.764843
138	B	4.932611
139	B	7.834434
140	B	3.621407
141	B	5.628553
142	B	11.51668
143	B	6.055461
144	B	8.492478
145	B	7.424075
146	B	12.35183
147	B	8.412009
148	B	5.755961
149	B	3.369904
150	B	19.48518
151	B	5.869856
152	B	16.83521
153	B	123.4161
154	B	13.20669
155	B	8.348401
156	B	12.59042
157	B	6.298543
158	B	4.309404
159	B	8.131888
160	B	9.98091

161	B	18.54397
162	B	7.799132
163	B	6.632389
164	B	1.240384
165	B	4.722462
166	B	1.675397
167	B	2.578999

Table C.2.43: Bridge NO. 53C0825 Obstruction Analysis

	Obstruction Analysis	
FID	Span	Area
0	A	305.2335
1	A	142.4355

C.3 Florida
Bridge NO. 730008

Table C.3.1: Bridge NO. 730008 Index Values

Bridge Surface Condition Index:	77.85428
Image Quality Index:	84.00644

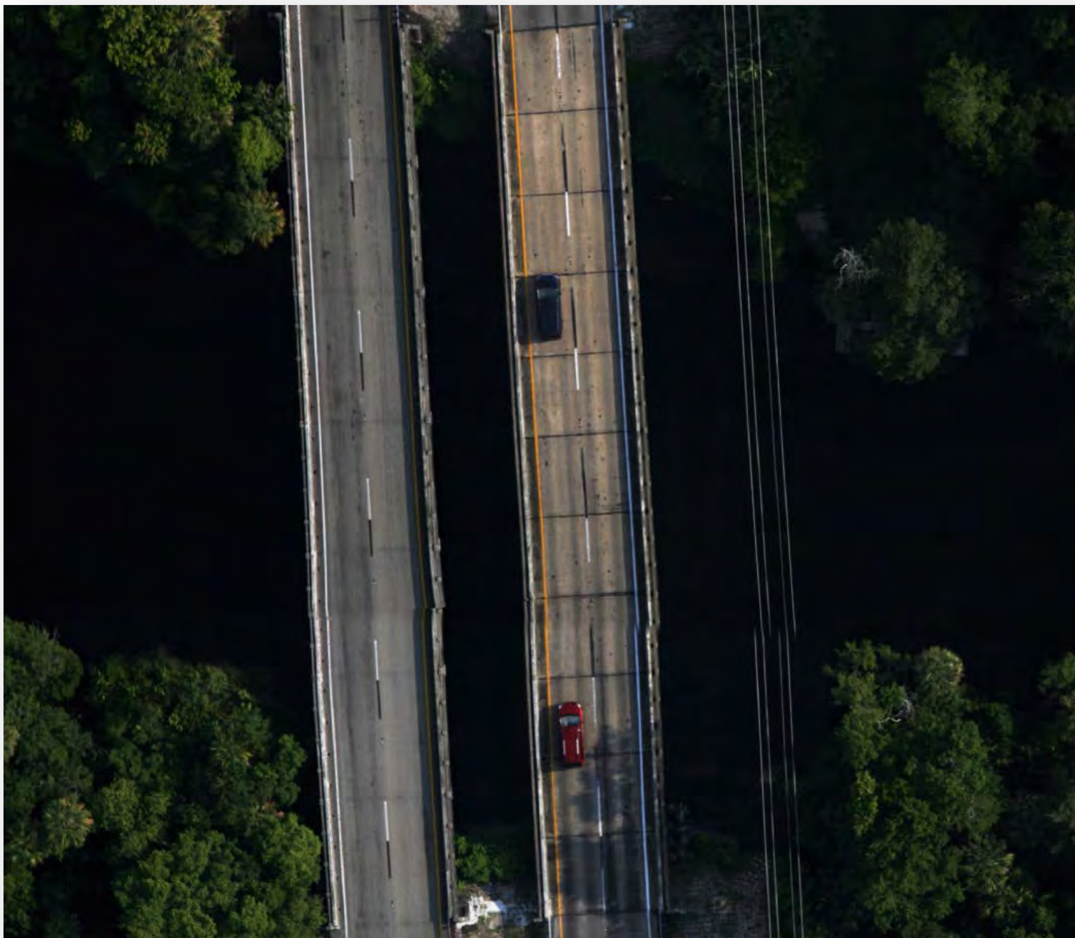


Figure C.3.1: Bridge NO. 730008 Blank Image

Figure C.3.214: Bridge NO. 730008 Obstruction Image

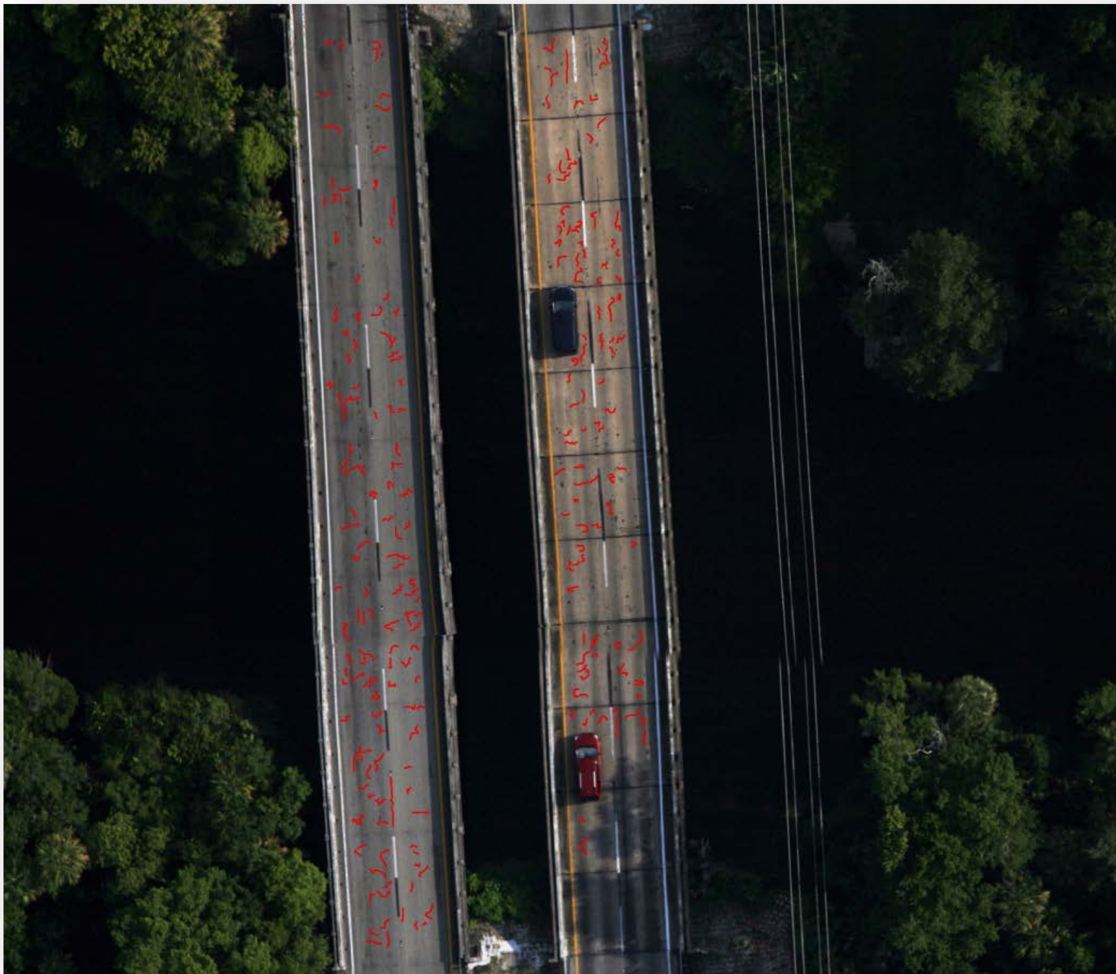


Figure C.3.315: Bridge NO. 730008 Crack Image

Table C.3.2: Bridge NO. 730008 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	1225.083	20	192.9276181	14.36425	1.93769275
1	B	1211.563	22	193.0742265	16.72332	2.160063083
2	C	1222.117	29	176.2328396	22.14572	2.772773611
3	D	1239.521	18	193.5604914	11.78786	1.720906273
4	E	1241.71	22	203.9012872	16.31527	2.119851157
5	F	1230.168	11	197.1427508	1.364087	1.064833605
6	G	1354.215	9	238.4991589	1	0.806657006

Table C.3.3: Bridge NO. 730008 Crack Extraction

	Crack Extraction	
FID	Span	Length
0	A	5.869987
1	A	2.635679
2	A	2.834477
3	A	3.594107
4	A	4.863743
5	A	3.806018
6	A	4.404006
7	A	4.423429
8	A	4.015396
9	A	3.373313
10	A	6.337597
11	A	6.517766
12	A	2.051316
13	A	4.193888
14	A	2.46491
15	A	1.347671
16	A	2.297184
17	A	2.565703
18	A	2.01976
19	A	1.627625
20	B	14.22869
21	B	4.524566
22	B	6.963236
23	B	2.695373
24	B	2.900599
25	B	4.656292
26	B	4.993106
27	B	1.557694
28	B	3.626657
29	B	4.741075
30	B	2.010692
31	B	7.905475
32	B	1.84429
33	B	2.868518
34	B	3.094882
35	B	2.718527
36	B	2.894756
37	B	4.156533
38	B	2.389855
39	B	3.939849
40	B	4.039525
41	B	4.055442
42	C	4.862431
43	C	3.729452
44	C	3.608006
45	C	2.287401

46	C	3.875308
47	C	3.459334
48	C	5.689653
49	C	4.935762
50	C	1.556443
51	C	5.07124
52	C	5.581574
53	C	2.729714
54	C	3.500474
55	C	2.549306
56	C	3.16477
57	C	4.117039
58	C	6.618692
59	C	2.529859
60	C	1.712755
61	C	4.90545
62	C	3.80154
63	C	3.582175
64	C	2.951894
65	C	2.228161
66	C	6.985061
67	C	4.73896
68	C	4.613156
69	C	2.925831
70	C	7.262899
71	D	4.247071
72	D	3.628142
73	D	8.423105
74	D	3.068989
75	D	3.094467
76	D	4.502967
77	D	5.809523
78	D	3.102701
79	D	5.332544
80	D	6.551911
81	D	2.342955
82	D	5.008519
83	D	4.43687
84	D	3.788844
85	D	4.72207
86	D	3.39171
87	D	4.875868
88	D	3.747562
89	E	5.117451
90	E	6.070488
91	E	3.665742
92	E	2.116299
93	E	3.595077
94	E	3.182581
95	E	2.10418

96	E	3.101958
97	E	1.361789
98	E	3.829309
99	E	3.108805
100	E	2.476759
101	E	3.081274
102	E	3.842875
103	E	2.330083
104	E	1.654243
105	E	5.253767
106	E	1.481981
107	E	2.575446
108	E	4.988905
109	E	6.090131
110	E	3.292918
111	F	2.645587
112	F	2.563632
113	F	4.583647
114	F	3.318864
115	F	4.323513
116	F	4.105093
117	F	3.208681
118	F	3.622917
119	F	2.830621
120	F	2.470657
121	F	6.73514
122	G	5.246118
123	G	3.570462
124	G	5.541694
125	G	4.447414
126	G	3.764797
127	G	3.706225
128	G	2.982969
129	G	2.426456
130	G	6.536342

Table C.3.4: Bridge NO. 730008 Obstruction Analysis

	Obstruction Analysis			
FID	Obstruction ID	Span	Type	Area
0	1	A	Shadow	191.6574
1	2	B	Shadow	191.8959
2	3	C	Shadow	175.2078
3	4	D	Shadow	192.2528
4	5	E	Shadow	201.8887
5	6	F	Shadow	195.1574
6	7	G	Shadow	232.3557

7	8	A	Hole	0.289465
8	9	A	Hole	0.354169
9	10	A	Hole	0.286059
10	11	A	Hole	0.340547
11	12	B	Hole	0.29287
12	13	B	Hole	0.238383
13	14	B	Hole	0.234977
14	15	B	Hole	0.412061
15	16	C	Hole	0.262221
16	17	C	Hole	0.07492
17	18	C	Hole	0.248599
18	19	C	Hole	0.439305
19	20	D	Hole	0.347358
20	21	D	Hole	0.33033
21	22	D	Hole	0.303087
22	23	D	Hole	0.326925
23	24	E	Hole	0.36779
24	25	E	Hole	0.408656
25	26	E	Hole	0.497198
26	27	E	Hole	0.738986
27	28	F	Hole	0.606173
28	29	F	Hole	0.425683
29	30	F	Hole	0.459738
30	31	F	Hole	0.493793
31	32	G	Hole	0.497198
32	33	G	Hole	0.701526
33	34	G	Hole	0.507414
34	35	G	Hole	0.442711
35	36	G	Shadow	3.994612

Bridge NO. 750143

Table C.3.5: Bridge NO. 750143 Index Values

Bridge Surface Condition Index:	92.68431
Image Quality Index:	81.00524

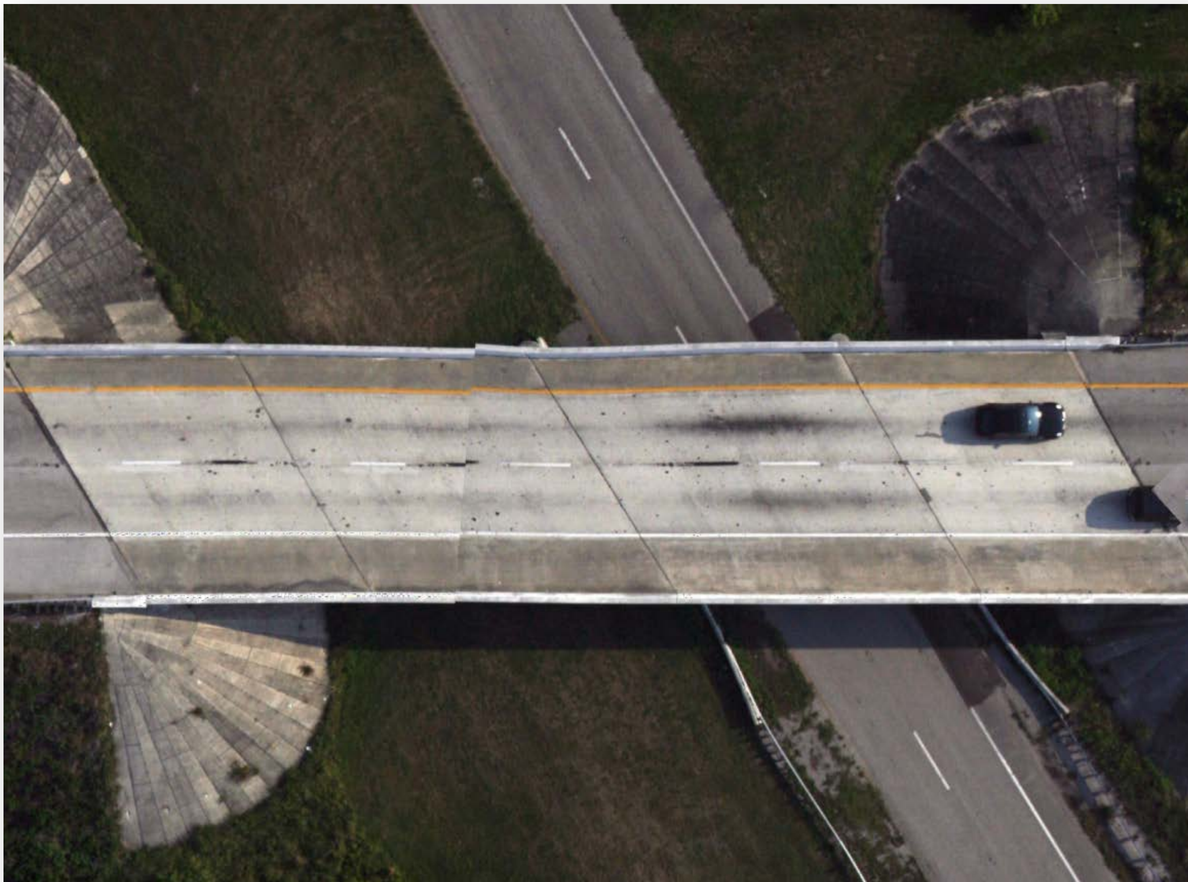


Figure C.3.4: Bridge NO. 750143 Blank Image

Figure C.3.5: Bridge NO. 750143 Obstruction Image

Figure C.3.6: Bridge NO. 750143 Crack Image

Table C.3.6: Bridge NO. 750143 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	2591.26	19	0	1	0.733234025
1	B	2696.96	36	126.6315002	7.315693	1.400599184
2	C	2039.68	24	269.7761002	6.613078	1.356005826
3	D	2038.61	13	48.37900162	1	0.65319051

Table C.3.7: Bridge NO. 750143 Crack Extraction

Crack Extraction		
FID	Span	Length
0	D	2.731908
1	D	5.311633
2	D	3.375757
3	D	4.390473
4	D	9.279668
5	D	5.312979
6	D	9.282714
7	D	1.809941
8	D	8.719069
9	D	5.994966
10	D	3.546733
11	D	6.424902
12	A	9.075433
13	D	11.53034
14	A	3.213002
15	A	3.60343
16	A	5.183881
17	A	6.267012
18	A	4.2712
19	A	6.3915
20	A	7.886148
21	A	2.267704
22	A	4.432438
23	A	8.397644
24	A	5.063142
25	A	3.230776
26	A	4.133034
27	A	6.484842
28	A	4.540189
29	A	3.746715
30	A	5.933709
31	A	5.758582

32	B	4.892565
33	B	5.597043
34	B	3.201157
35	B	4.585146
36	B	3.851409
37	B	4.777027
38	B	3.598402
39	B	4.57251
40	B	2.39523
41	B	3.907063
42	B	9.288064
43	B	7.117358
44	B	3.437029
45	B	4.982439
46	B	5.163996
47	B	3.700301
48	B	5.140687
49	B	5.233133
50	B	3.643704
51	B	6.013895
52	B	3.106997
53	B	5.848848
54	B	7.556683
55	B	5.393477
56	B	3.493632
57	B	3.715962
58	B	3.093058
59	B	4.899277
60	B	2.924919
61	B	7.654601
62	B	6.114834
63	B	3.75102
64	B	4.47171
65	B	7.967088
66	B	6.792258
67	B	3.48725
68	C	6.623853
69	C	6.722368
70	C	6.353055
71	C	10.32704
72	C	8.600122
73	C	7.586071
74	C	5.276992
75	C	9.160187
76	C	5.745625
77	C	4.555946
78	C	6.984902
79	C	3.057873
80	C	11.52946

81	C	4.581774
82	C	3.726887
83	C	2.982473
84	C	6.206156
85	C	4.244718
86	C	4.000944
87	C	5.719317
88	C	6.376435
89	C	2.485364
90	C	4.571639
91	C	6.4587

Table C.3.8: Bridge NO. 750143 Obstruction Analysis

Obstruction Analysis				
FID	**Obstruction ID**	**Span**	**Type**	**Area**
0	1	D	Patch	48.379
1	2	C	Car	108.507
2	3	C	Shadow	57.0342
3	4	C	Car	41.5888
4	5	C	Shadow	62.6461
5	6	B	Spot	64.2313
6	7	B	Spot	62.4002

Bridge NO. 920098

Table C.3.9: Bridge NO. 920098 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	76.51684

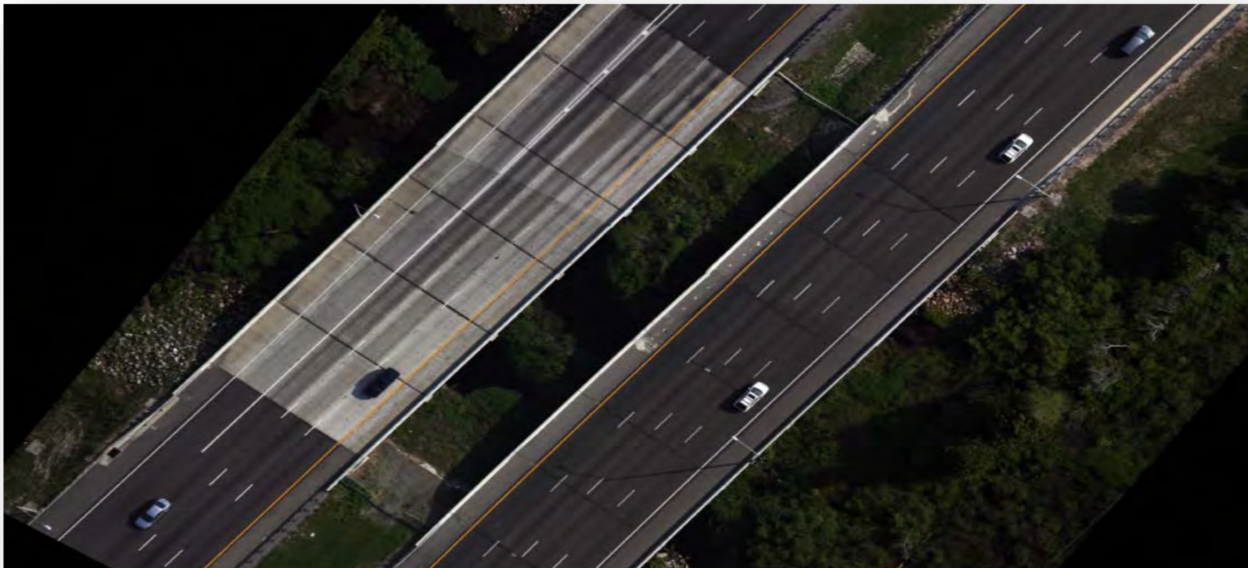


Figure C.3.7: Bridge NO. 920098 Blank Image

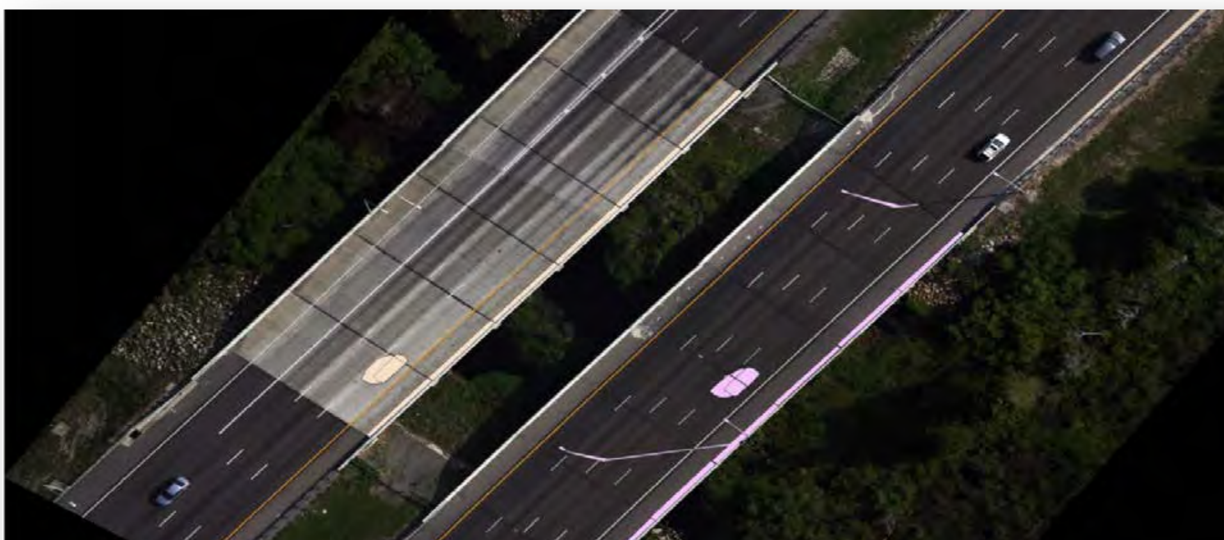


Figure C.3.8: Bridge NO. 920098 Obstruction Image

Figure C.3.9: Bridge NO. 920098 Crack Image

Table C.3.10: Bridge NO. 920098 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	3517.408	12	103.3799286	1	0.351490959
1	B	3521.154	11	112.8386178	1	0.322740086
2	C	3493.143	9	104.6304092	1	0.265603263
3	D	3521.353	26	100.0149918	1	0.759936608
4	E	3582.966	19	112.6114502	1	0.547494492
5	F	3448.504	20	291.7434101	1	0.633560875

Table C.3.11: Bridge NO. 920098 Crack Extraction

Crack Extraction		
FID	Span	Length
0	F	9.307807
1	F	20.72307
2	F	2.875437
3	F	9.000653
4	F	3.006789

5	F	5.030335
6	F	8.075282
7	F	3.144317
8	F	10.23445
9	F	9.409028
10	F	5.294265
11	F	7.170639
12	F	12.86481
13	F	5.614765
14	F	3.219989
15	F	6.11268
16	F	29.76849
17	F	6.023264
18	F	3.964608
19	F	4.668908
20	A	7.558486
21	A	9.222483
22	A	2.989757
23	A	28.6742
24	A	8.650082
25	A	9.294681
26	A	29.46951
27	A	18.52743
28	A	5.820867
29	A	11.40864
30	A	21.22523
31	A	10.87859
32	B	13.66398
33	B	34.38747
34	B	5.090366
35	B	5.973213
36	B	3.563334
37	B	10.97854
38	B	7.081708
39	B	8.094828
40	B	4.038397
41	B	15.41938
42	B	14.94381
43	C	28.14003
44	C	3.802414
45	C	20.45917
46	C	16.96061
47	C	9.978877
48	C	6.950228
49	C	8.09306
50	C	5.080874
51	C	4.897856
52	E	3.316681
53	E	33.46729
54	E	19.51715

55	E	7.92234
56	E	14.29973
57	E	2.250727
58	E	8.234369
59	E	38.22091
60	E	29.40674
61	E	9.083982
62	E	6.715885
63	E	6.525955
64	E	2.211227
65	E	1.819085
66	E	5.472541
67	E	14.41791
68	E	16.48735
69	E	7.879354
70	E	7.059572
71	D	38.17943
72	D	26.71436
73	D	11.50979
74	D	25.81045
75	D	9.197971
76	D	3.448982
77	D	6.558147
78	D	6.238747
79	D	5.498502
80	D	4.568562
81	D	9.58191
82	D	8.247117
83	D	5.472902
84	D	4.41335
85	D	4.510801
86	D	6.861613
87	D	2.889217
88	D	18.5284
89	D	8.143304
90	D	3.137961
91	D	3.027312
92	D	7.422556
93	D	10.83036
94	D	4.75545
95	D	4.039775
96	D	7.864934

Table C.3.12: Bridge NO. 920098 Obstruction Analysis

Obstruction Analysis				
FID	Obstruction ID	Span	Type	Area
0	1	F	Car	92.89997
1	2	F	Shadow	94.00679
2	3	F	Shadow	89.47749
3	5	A	Shadow	103.3799
4	4	F	Car	15.35916
5	6	B	Shadow	96.66164
6	7	B	Shadow	11.2197
7	8	B	Lightpole	4.957279
8	9	C	Shadow	104.6304
9	10	E	Shadow	112.6115
10	11	D	Shadow	100.015

Bridge NO. 920099

Table C.3.1322: Bridge NO. 920099 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	72.0317

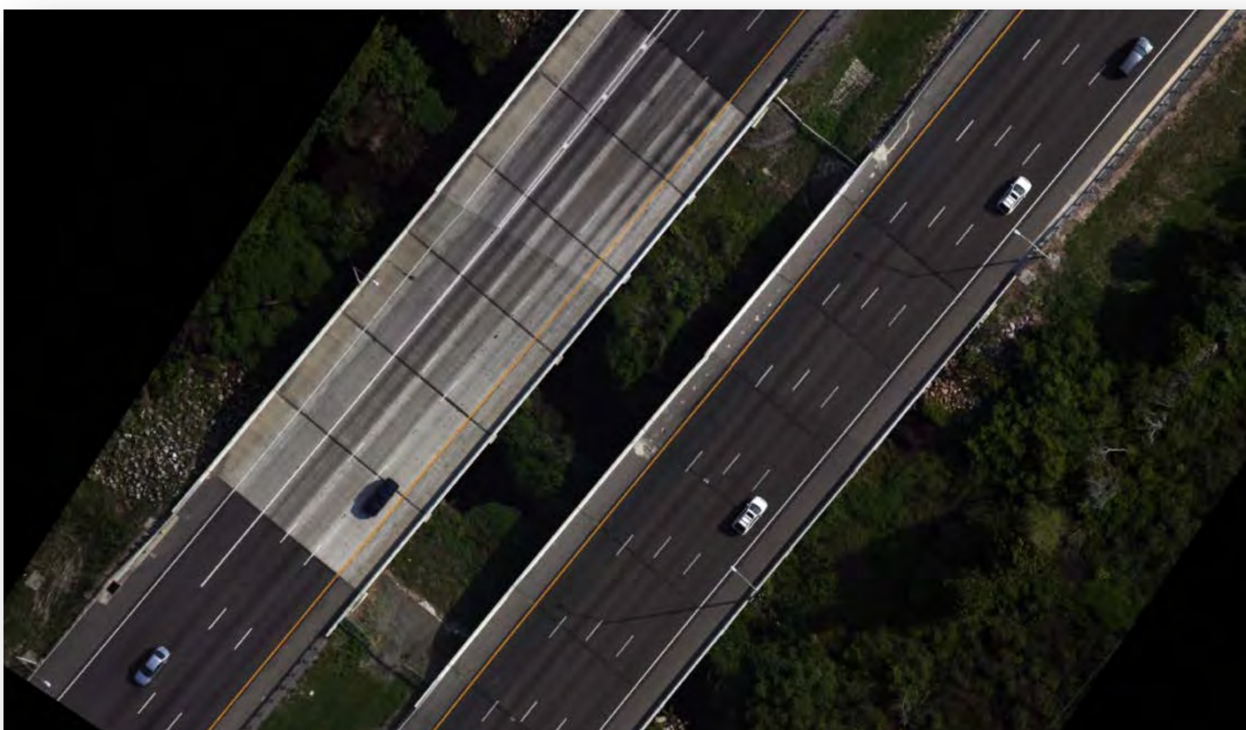


Figure C.3.1016: Bridge NO. 920099 Blank Image

Figure C.3.11: Bridge NO. 920099 Obstruction Image

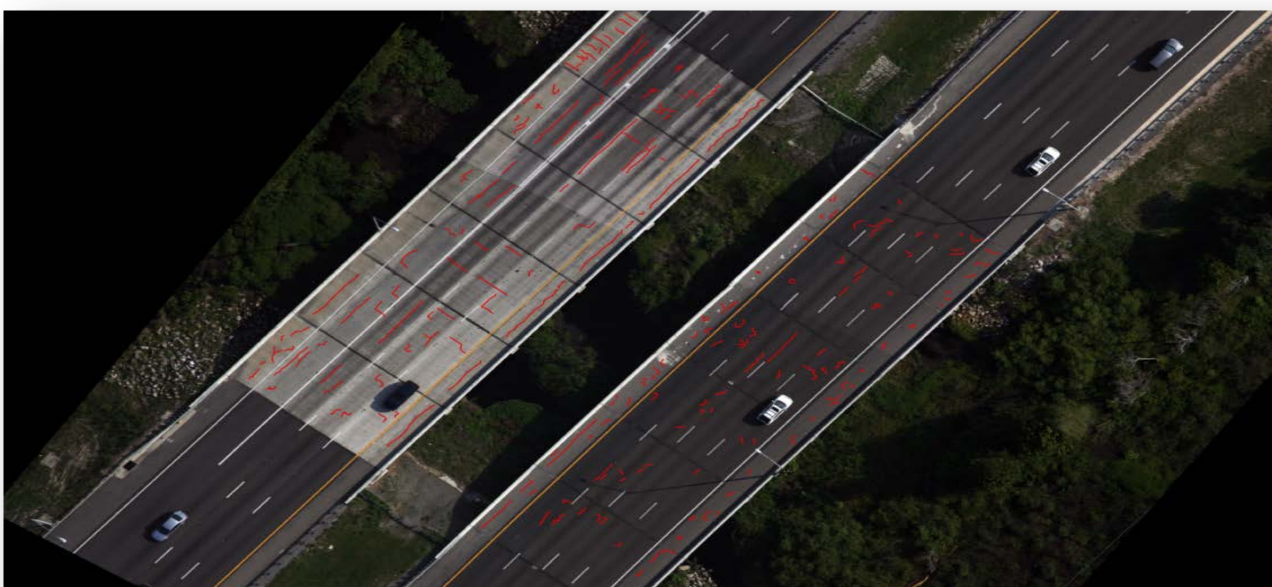


Figure C.3.12: Bridge NO. 920099 Crack Image

Table C.3.14: Bridge NO. 920099 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	3333.86	17	91.06322479	1	0.524238834
1	B	3271.418	17	173.3792419	1	0.548734258
2	C	3346.323	18	247.3802662	1	0.58084326
3	D	3329.202	24	169.2161407	1	0.75949707
4	E	3249.325	13	101.4396057	1	0.412975645
5	F	3309.469	23	142.3213005	1	0.726205475

Table C.3.1523: Bridge NO. 920099 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	7.969395
1	A	2.960492
2	A	4.415567
3	A	5.622983
4	A	3.632351
5	A	3.001958
6	A	1.726327
7	A	5.53011
8	A	9.223173
9	A	19.11385
10	A	4.257563
11	A	5.524683
12	A	3.075595
13	A	1.918827
14	A	4.703543
15	A	5.226033
16	A	8.724637
17	B	4.427417
18	B	7.492023
19	B	1.998182
20	B	5.039787
21	B	32.52736
22	B	5.257315
23	B	3.005721
24	B	4.406468
25	B	5.28153
26	B	2.889183
27	B	4.137411
28	B	3.03656
29	B	2.79351
30	B	7.178108
31	B	4.173734
32	B	3.538643
33	B	3.309002

34	C	6.065073
35	C	5.133971
36	C	2.803332
37	C	2.261628
38	C	2.585009
39	C	5.89056
40	C	4.713796
41	C	3.247213
42	C	1.847593
43	C	4.791453
44	C	6.320384
45	C	2.878019
46	C	2.310613
47	C	3.808311
48	C	5.904725
49	C	3.529668
50	C	3.541058
51	C	2.811286
52	D	3.967125
53	D	7.027223
54	D	4.336751
55	D	4.668978
56	D	2.425458
57	D	6.354746
58	D	2.901476
59	D	3.068296
60	D	20.12294
61	D	14.78226
62	D	5.449943
63	D	6.462757
64	D	8.009085
65	D	6.717599
66	D	5.188846
67	D	7.273074
68	D	8.231271
69	D	5.631012
70	D	5.852437
71	D	12.45102
72	D	5.533124
73	D	6.981972
74	D	5.156186
75	D	2.802459
76	E	4.631326
77	E	0.884057
78	E	5.497
79	E	8.512936
80	E	7.409676
81	E	4.952797
82	E	3.20614
83	E	4.892877

84	E	3.979042
85	E	4.098596
86	E	6.04425
87	E	3.476193
88	E	6.174992
89	F	1.752982
90	F	2.9015
91	F	3.251396
92	F	2.667459
93	F	4.94836
94	F	6.642646
95	F	5.312241
96	F	6.60293
97	F	4.257776
98	F	5.338959
99	F	2.874031
100	F	5.652711
101	F	6.253881
102	F	7.940682
103	F	7.647423
104	F	5.087799
105	F	5.909706
106	F	7.390029
107	F	3.171866
108	F	2.919538
109	F	4.334556
110	F	7.665394
111	F	2.478666

Table C.3.16: Bridge NO. 920099 Obstruction Analysis

Obstruction Analysis				
FID	Obstruction ID	Span	Type	Area
0	1	A	Shadow	91.06322
1	2	B	Shadow	116.5124
2	3	B	Shadow	56.86684
3	4	C	Shadow	65.65083
4	5	C	Shadow	54.35152
5	6	C	Lightpole	8.945158
6	7	C	Car	53.73711
7	8	C	Shadow	64.69564
8	9	D	Car	61.51332
9	10	D	Shadow	13.99906
10	11	D	Shadow	93.70376
11	12	E	Shadow	101.4396
12	13	F	Shadow	98.77394
13	14	F	Shadow	43.54736

Bridge NO. 924038

Table C.3.1724: Bridge NO. 924038 Index Values

Bridge Surface Condition Index:	79.46079
Image Quality Index:	93.82955

Figure C.3.13: Bridge NO. 924038 Blank Image

Figure C.3.14: Bridge NO. 924038 Obstruction Image

Figure C.3.15: Bridge NO. 924038 Crack Image

Table C.3.18: Bridge NO. 924038 Span Area

	Span Area					
FID	**Span**	**Area**	**# Cracks**	**Obstruction Area**	**DV**	**Crack Density**
0	**A**	**1572.75**	**38**	**97.04570007**	**20.53921**	**2.575041626**

Table C.3.19: Bridge NO. 924038 Crack Extraction

Crack Extraction			
FID	Crack ID	Span	Length
0	1	A	6.04056
1	2	A	2.42874
2	3	A	4.57679
3	4	A	2.97077
4	5	A	3.72596
5	6	A	2.03009
6	7	A	1.79197
7	8	A	1.17587
8	9	A	3.73774
9	10	A	3.13151
10	11	A	2.86995
11	12	A	2.20973
12	13	A	1.58957
13	14	A	2.86286
14	15	A	2.40234
15	16	A	4.48276
16	17	A	1.96034
17	18	A	1.72785
18	19	A	2.8074
19	20	A	4.51238
20	21	A	2.14946
21	23	A	2.29327
22	24	A	1.90151
23	26	A	3.4545
24	27	A	4.57402
25	22	A	2.98999
26	25	A	2.41351
27	28	A	2.95871
28	29	A	1.68471
29	30	A	2.14504
30	31	A	2.18521
31	33	A	0.815497
32	34	A	0.44241
33	35	A	3.02239
34	32	A	1.64078
35	36	A	2.81733
36	37	A	2.29345
37	38	A	1.12551

Table C.3.20: Bridge NO. 924038 Obstruction Analysis

Obstruction Analysis				
FID	Obstruction ID	Span	Type	Area
0	1	A	Shadow	97.0457

Bridge NO. 924046

Table C.3.21: Bridge NO. 924046 Index Values

Bridge Surface Condition Index:	57.2246
Image Quality Index:	98.25606

Figure C.3.16: Bridge NO. 924046 Blank Image

Figure C.3.17: Bridge NO. 924046 Crack Image

Table C.3.22: Bridge NO. 924046 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	507.0936	11	0.920557991	16.85468	2.173169788
1	B	370.3431	15	0.291976996	30.39148	4.053494203
2	C	474.425	21	0.852480598	32.34164	4.434378765
3	D	376.7293	27	0.150527	42.7754	7.169815256
4	E	369.9904	18	0.71405641	34.39605	4.874398162
5	F	362.9606	16	1.093272999	32.27853	4.421509854
6	G	359.3296	22	0.155990005	39.35591	6.125171221
7	H	351.9516	18	0.774569988	35.48732	5.125620515
8	I	355.6457	16	0.184229001	32.66637	4.501190611
9	J	356.8933	22	0.508311003	39.52516	6.173099655
10	K	475.7328	23	1.26809001	34.2762	4.847567929

Table C.3.23: Bridge NO. 924046 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	7.762658
1	A	6.302692
2	A	4.890054
3	A	4.495494
4	A	4.604996
5	A	8.012647
6	A	5.710669
7	A	3.851181
8	A	4.933936
9	A	4.613829
10	A	3.789224
11	B	8.022058
12	B	6.590782
13	B	2.870902
14	B	4.695545
15	B	4.474095
16	B	5.784776
17	B	2.462137
18	B	1.389883
19	B	5.287451
20	B	3.739543
21	B	5.36495
22	B	1.675684
23	B	4.281364
24	B	2.644644
25	B	3.404168
26	C	1.192652
27	C	3.09059
28	C	3.04547

29	C	2.862182
30	C	6.13235
31	C	6.632037
32	C	4.307985
33	C	2.577659
34	C	3.545634
35	C	3.245573
36	C	1.069936
37	C	1.02859
38	C	2.453228
39	C	4.225945
40	C	1.59176
41	C	3.838345
42	C	4.683554
43	C	2.377554
44	C	3.057074
45	C	1.380515
46	C	1.149885
47	D	2.858521
48	D	5.418326
49	D	1.788439
50	D	2.964573
51	D	3.177014
52	D	2.468162
53	D	3.318044
54	D	2.23577
55	D	2.090646
56	D	1.567757
57	D	2.775992
58	D	2.775219
59	D	2.112415
60	D	1.416542
61	D	2.613377
62	D	1.758297
63	D	1.795549
64	D	1.698403
65	D	2.596063
66	D	2.490103
67	D	3.715312
68	D	1.631494
69	D	1.437828
70	D	3.901743
71	D	4.098413
72	D	3.019103
73	D	2.570069
74	E	2.585952
75	E	3.002489
76	E	3.051632
77	E	3.881928
78	E	1.792749

79	E	3.788576
80	E	2.794599
81	E	3.010569
82	E	6.85716
83	E	2.631092
84	E	5.629332
85	E	7.508721
86	E	2.674854
87	E	1.6631
88	E	2.863928
89	E	6.262799
90	E	3.616166
91	E	1.844395
92	F	4.691764
93	F	6.370539
94	F	1.460688
95	F	2.222877
96	F	5.292312
97	F	2.429272
98	F	4.450107
99	F	3.24353
100	F	5.395904
101	F	4.344055
102	F	2.146613
103	F	4.284872
104	F	3.502415
105	F	3.095162
106	F	2.492059
107	F	3.357491
108	G	6.141623
109	G	4.00053
110	G	3.021982
111	G	2.365236
112	G	3.921995
113	G	2.91742
114	G	3.320044
115	G	6.851202
116	G	5.089537
117	G	9.901396
118	G	5.389066
119	G	2.322281
120	G	3.760301
121	G	3.327832
122	G	2.77511
123	G	2.503507
124	G	3.066753
125	G	2.503277
126	G	3.131251
127	G	2.499501
128	G	4.795564

129	G	2.281299
130	H	3.909986
131	H	4.214144
132	H	2.761498
133	H	3.296924
134	H	1.940586
135	H	2.253018
136	H	3.104915
137	H	6.369569
138	H	3.136415
139	H	3.10739
140	H	2.67865
141	H	1.620157
142	H	1.705399
143	H	4.278763
144	H	1.930031
145	H	3.435605
146	H	4.335737
147	H	2.074202
148	I	4.511374
149	I	7.907895
150	I	4.416112
151	I	4.527271
152	I	1.225952
153	I	5.182988
154	I	3.596436
155	I	2.46073
156	I	2.750195
157	I	6.027306
158	I	2.976646
159	I	1.771249
160	I	1.749914
161	I	2.192146
162	I	2.653329
163	I	2.942628
164	J	6.522874
165	J	2.011515
166	J	4.730189
167	J	2.375356
168	J	4.35404
169	J	1.446366
170	J	2.494642
171	J	2.269019
172	J	2.344814
173	J	1.393991
174	J	6.048316
175	J	2.19744
176	J	0.967319
177	J	1.641016
178	J	3.365196

179	J	4.230538
180	J	2.968848
181	J	2.242306
182	J	1.49228
183	J	2.412198
184	J	2.279524
185	J	2.537953
186	K	2.55932
187	K	9.151104
188	K	8.560329
189	K	5.736659
190	K	2.983569
191	K	2.314582
192	K	7.563801
193	K	2.445659
194	K	5.550311
195	K	3.727605
196	K	2.272941
197	K	6.436008
198	K	1.862479
199	K	5.753759
200	K	1.463159
201	K	4.479238
202	K	4.919394
203	K	2.418947
204	K	1.54871
205	K	0.73637
206	K	3.275528
207	K	3.166876
208	K	3.916063

Table C.3.2425: Bridge NO. 924046 Obstruction Analysis

Obstruction Analysis				
FID	Obstruction ID	Span	Type	Area
0	1	K	Hole	0.277016
1	2	K	Hole	0.549999
2	3	K	Hole	0.441075
3	5	J	Hole	0.235329
4	6	J	Hole	0.272982
5	7	I	Hole	0.184229
6	8	H	Hole	0.264914
7	9	H	Hole	0.216503
8	10	H	Hole	0.293153
9	11	G	Hole	0.15599
10	12	F	Hole	0.141198
11	13	F	Hole	0.242053
12	14	F	Hole	0.20709
13	15	F	Hole	0.272982

14	16	F	Hole	0.22995
15	17	E	Hole	0.092787
16	18	E	Hole	0.086063
17	19	E	Hole	0.100855
18	20	E	Hole	0.31198
19	21	E	Hole	0.122371
20	22	D	Hole	0.150527
21	23	C	Hole	0.08018
22	24	C	Hole	0.083206
23	25	C	Hole	0.239784
24	26	C	Hole	0.195155
25	27	C	Hole	0.174732
26	28	C	Hole	0.079424
27	29	B	Hole	0.183809
28	30	B	Hole	0.108168
29	31	A	Hole	0.316182
30	32	A	Hole	0.208014
31	33	A	Hole	0.226168
32	34	A	Hole	0.170194

Bridge NO. 924049

Table C.3.25: Bridge NO. 924049 Index Values

Bridge Surface Condition Index:	79.92581
Image Quality Index:	100

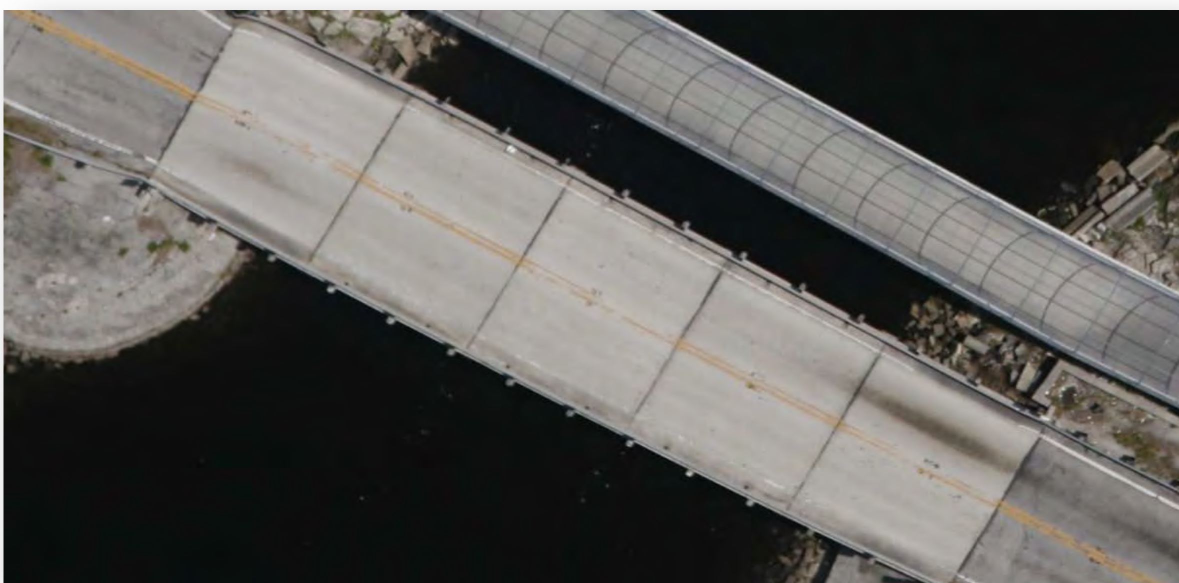


Figure C.3.18: Bridge NO. 924049 Blank Image

Figure C.3.19: Bridge NO. 924049 Crack Image

Table C.3.26: Bridge NO. 924049 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	583.324	9	0	9.416633	1.542881829
1	B	583.277	8	0	6.860757	1.371561025
2	C	578.678	12	0	15.83721	2.073692105
3	D	572.747	11	0	14.17149	1.920568768
4	E	555.449	14	0	20.07419	2.520483429

Table C.3.27: Bridge NO. 924049 Crack Extraction

Crack Extraction			
FID	Crack ID	Span	Length
0	1	A	8.52298
1	2	A	3.10644
2	3	A	7.94662
3	4	A	0.935703
4	5	A	1.12453
5	6	A	0.855281

6	7	A	1.52092
7	8	A	1.17976
8	9	A	2.48357
9	10	B	3.01841
10	11	B	1.12074
11	12	B	3.24912
12	13	B	4.29915
13	14	B	4.31823
14	15	B	3.54484
15	16	B	5.0711
16	17	B	0.923869
17	18	C	6.58446
18	19	C	3.25127
19	20	C	5.473
20	21	C	4.02992
21	22	C	5.27623
22	23	C	2.27685
23	24	C	0.908219
24	25	C	5.59573
25	26	C	2.00689
26	27	C	1.12407
27	28	C	1.06345
28	29	C	1.46802
29	31	D	2.66132
30	32	D	5.67005
31	33	D	3.85118
32	30	D	1.78831
33	34	D	3.81081
34	35	D	3.4722
35	36	D	3.06432
36	37	D	5.35661
37	38	D	1.94921
38	39	D	2.76785
39	40	D	5.00022
40	41	E	3.28059
41	42	E	1.52873
42	43	E	2.14765
43	44	E	4.65474
44	45	E	3.63508
45	46	E	4.66776
46	47	E	2.13092
47	48	E	1.29133

48	49	E	2.82489
49	50	E	3.28341
50	51	E	2.86368
51	52	E	2.97217
52	53	E	1.97631
53	54	E	2.94215

Bridge NO. 924153

Table C.3.2826: Bridge NO. 924153 Index Values

Bridge Surface Condition Index:	86.77157
Image Quality Index:	14.03643

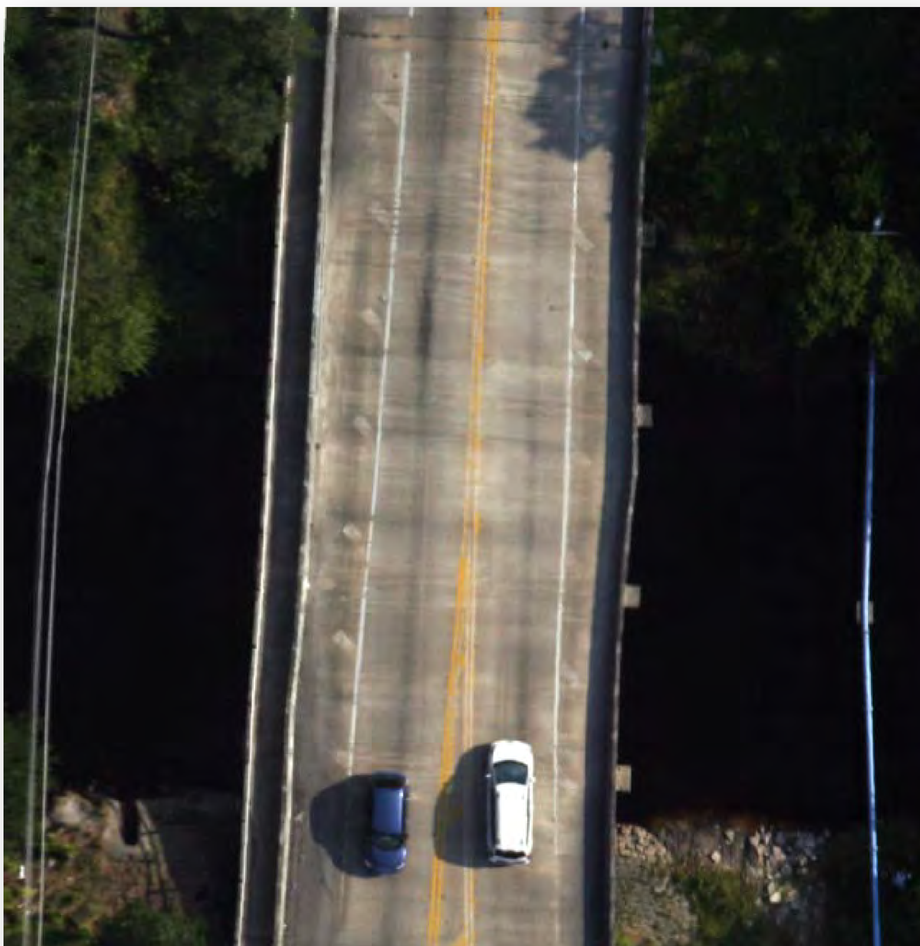


Figure C.3.20: Bridge NO. 924153 Blank Image

Figure C.3.21: Bridge NO. 924153 Obstruction Image

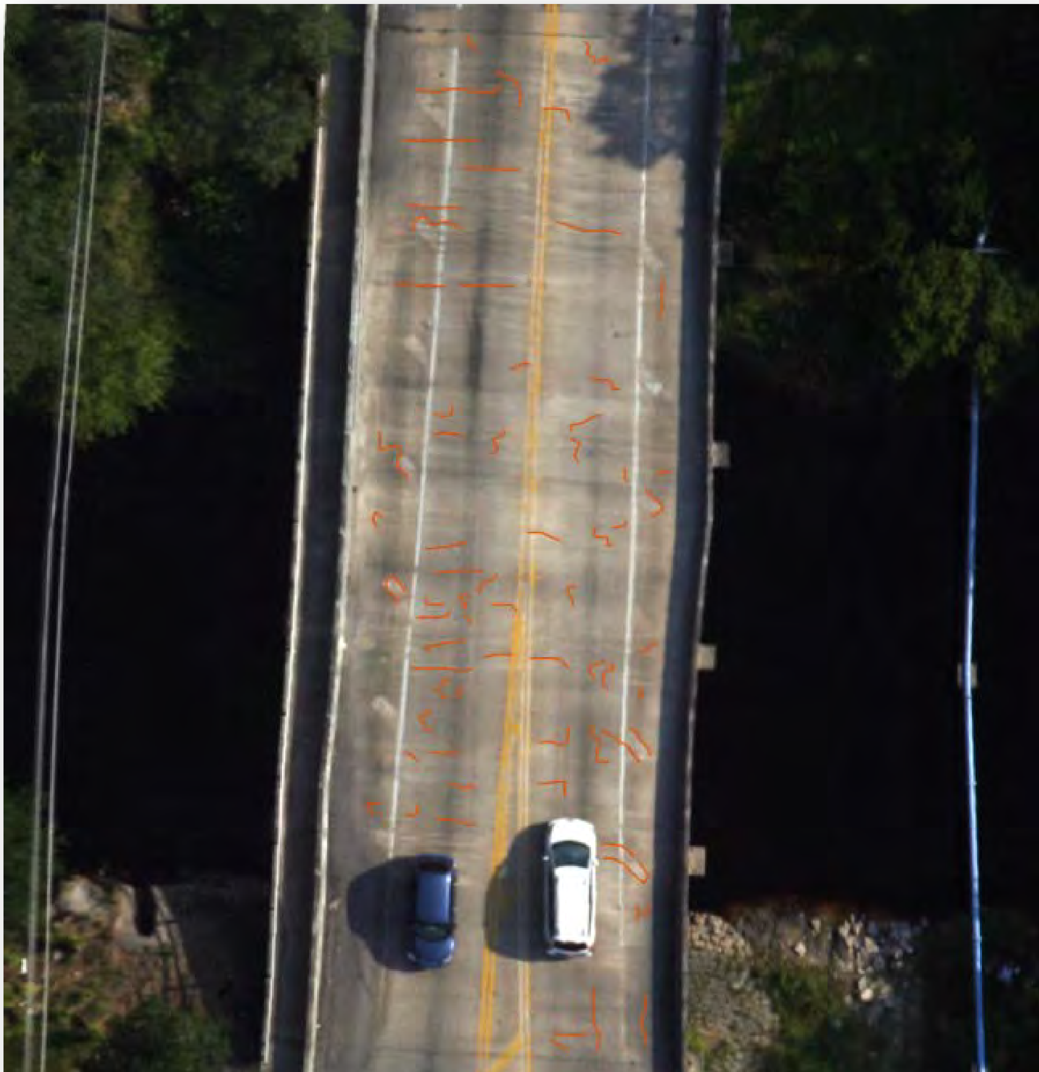


Figure C.3.22: Bridge NO. 924153 Crack Image

Table C.3.29: Bridge NO. 924153 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	1615.44	8	563.8276062	1	0.760736565
1	B	1358.13	23	107.4123176	13.22843	1.838944178
2	C	1688.79	23	138.8609924	8.570801	1.483938934
3	D	1506.23	8	121.0950012	1	0.577561032
4	E	983.398	7	298.4249878	0.471229	1.021938073

Table C.3.30: Bridge NO. 924153 Crack Extraction

	Crack Extraction	
FID	Span	Length
0	A	8.784493
1	A	5.033885
2	A	2.718705
3	A	7.045361
4	A	1.900901
5	A	2.425281
6	A	5.135944
7	A	10.45655
8	B	5.46142
9	B	2.650198
10	B	3.365608
11	B	2.124544
12	B	4.173927
13	B	5.066459
14	B	7.298939
15	B	1.87246
16	B	5.425875
17	B	4.267064
18	B	3.275028
19	B	6.339776
20	B	3.937676
21	B	5.691688
22	B	8.625865
23	B	2.28985
24	B	1.965056
25	B	1.843958
26	B	6.292982
27	B	7.410125
28	B	5.564462
29	B	4.155821
30	B	5.347734
31	C	4.947217
32	C	1.717088
33	C	3.866421
34	C	2.23698
35	C	5.812148
36	C	5.809633
37	C	6.720698
38	C	3.85873
39	C	3.763179
40	C	3.682134
41	C	3.263716
42	C	7.486265
43	C	3.537427
44	C	4.706103
45	C	4.462515

46	C	2.053334
47	C	2.108686
48	C	4.478344
49	C	3.64096
50	C	4.568045
51	C	9.977199
52	C	5.172231
53	C	5.43295
54	D	3.012261
55	D	4.719949
56	D	7.181688
57	D	8.944412
58	D	6.876925
59	D	9.165696
60	D	5.696669
61	D	7.348114
62	E	7.935143
63	E	10.28678
64	E	12.45893
65	E	7.166258
66	E	4.690064
67	E	6.495567
68	E	2.678111

Table C.3.3127: Bridge NO. 924153 Obstruction Analysis

Obstruction Analysis				
FID	Obstruction ID	Span	Type	Area
0	1	A	Shadow	107.126
1	2	A	Shadow	130.959
2	3	A	Shadow	107.286
3	4	A	Car	94.7666
4	5	A	Car	123.69
5	6	B	Shadow	98.2307
6	7	B	Shadow	1.78868
7	8	B	Car	7.39294
8	9	C	Shadow	138.861
9	10	D	Shadow	121.095
10	11	E	Shadow	298.425

Bridge NO. 924510

Table C.3.32: Bridge NO. 924510 Index Values

Bridge Surface Condition Index:	76.76515
Image Quality Index:	86.67142

Figure C.3.2317: Bridge NO. 924510 Blank Image

Figure C.3.24: Bridge NO. 924510 Obstruction Image

Figure C.3.25: Bridge NO. 924510 Crack Image

Table C.3.33: Bridge NO. 924510 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	1368.69	24	0	12.19531	1.753501523
1	B	1480.41	32	58.98289871	17.62127	2.25125861
2	C	1434.77	38	131.3434982	23.23485	2.915392617

Table C.3.34: Bridge NO. 924510 Crack Extraction

Crack Extraction			
FID	Crack ID	Span	Length
0	1	A	5.7113
1	2	A	10.0446
2	3	A	3.87438
3	4	A	2.95014
4	5	A	6.10799
5	6	A	1.962
6	7	A	2.99199
7	8	A	3.69837
8	9	A	3.18868

9	10	A	4.5737
10	11	A	6.91934
11	12	A	4.24906
12	13	A	7.49003
13	14	A	4.27052
14	15	A	4.00038
15	16	A	3.27271
16	17	A	1.61789
17	18	A	5.30593
18	19	A	6.54413
19	20	A	8.33777
20	21	A	6.85359
21	22	A	4.12999
22	24	A	2.27378
23	23	A	4.03467
24	25	B	7.32956
25	26	B	4.46062
26	27	B	5.75022
27	28	B	7.73378
28	29	B	5.36217
29	30	B	6.15113
30	31	B	3.66006
31	32	B	3.29574
32	33	B	5.0335
33	34	B	4.61555
34	35	B	1.68246
35	36	B	3.6914
36	37	B	4.50345
37	38	B	4.3768
38	39	B	2.52426
39	40	B	5.6056
40	41	B	3.62268
41	42	B	6.08645
42	43	B	2.52904
43	44	B	2.76457
44	45	B	4.02132
45	46	B	4.01332
46	47	B	3.27436
47	48	B	6.01699
48	49	B	2.37314
49	50	B	3.10749
50	52	B	4.02816
51	53	B	3.63124
52	51	B	4.46056
53	54	B	1.99204
54	55	B	1.2586
55	56	B	2.53492
56	57	C	2.42151
57	58	C	3.14164
58	59	C	5.29417

59	60	C	3.76729
60	61	C	4.97341
61	62	C	2.59102
62	63	C	4.43861
63	64	C	3.2952
64	65	C	3.18788
65	66	C	3.65393
66	67	C	5.1146
67	68	C	4.53872
68	69	C	7.94396
69	70	C	3.97568
70	71	C	1.72573
71	72	C	1.63728
72	73	C	1.64687
73	74	C	5.5512
74	75	C	2.69072
75	76	C	1.76989
76	77	C	1.03465
77	78	C	2.01335
78	79	C	2.78424
79	80	C	5.08418
80	81	C	3.80465
81	82	C	2.53569
82	83	C	1.40406
83	84	C	1.86559
84	85	C	1.74252
85	86	C	3.73529
86	87	C	6.38425
87	88	C	2.47623
88	89	C	1.90165
89	90	C	1.67342
90	91	C	2.10084
91	92	C	1.59784
92	93	C	4.05136
93	94	C	3.53066

Table C.3.35: Bridge NO. 924510 Obstruction Analysis

Obstruction Analysis				
FID	Obstruction ID	Span	Type	Area
0	1	B	shadow	58.9829
1	2	C	shadow	72.9127
2	3	C	shadow	58.4308

C.4 Iowa
Bridge NO. 3826

Table C.4.1: Bridge NO. 3826 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	72.17329

Figure C.4.118: Bridge NO. 3826 Blank Image

Figure C.4.2: Bridge NO. 3826 Obstruction Image

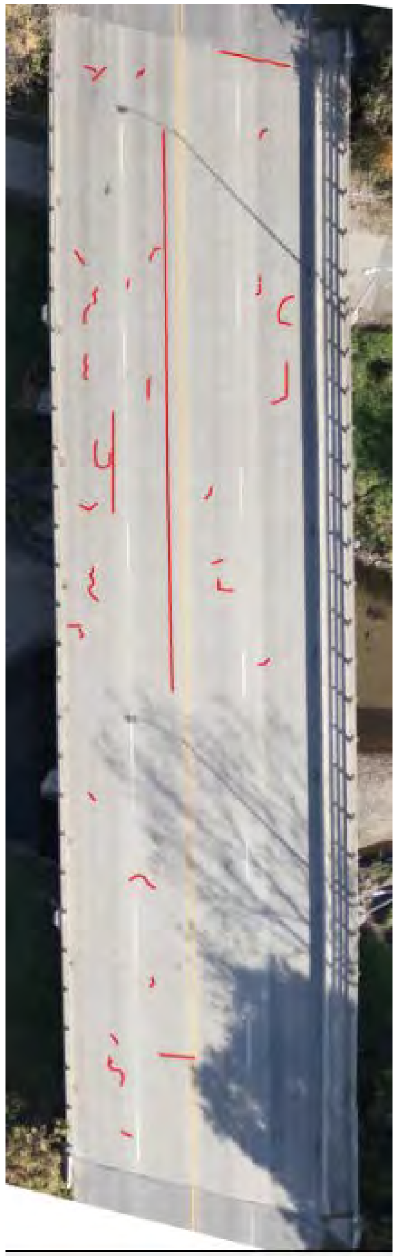


Figure C.4.3: Bridge NO. 3826 Crack Image

Table C.4.2: Bridge NO. 3826 Span Area

Span Area						
FID	**Span**	**Area**	**# Cracks**	**Obstruction Area**	**DV**	**Crack Density**
0	**A**	**24690.74**	**35**	**6870.619499**	**1**	**0.196407216**

Table C.4.3: Bridge NO. 3826 Crack Extraction

	Crack Extraction	
FID	Span	Length
0	A	10.10536
1	A	161.6114
2	A	3.486731
3	A	3.123406
4	A	3.22726
5	A	6.072067
6	A	4.601921
7	A	5.167928
8	A	20.40071
9	A	3.436572
10	A	3.728978
11	A	2.865777
12	A	2.760269
13	A	3.126323
14	A	3.00501
15	A	4.786026
16	A	3.399471
17	A	3.733343
18	A	11.77505
19	A	3.005852
20	A	8.950628
21	A	6.991745
22	A	11.56572
23	A	14.20321
24	A	13.06714
25	A	14.67422
26	A	28.7929
27	A	7.776395
28	A	6.046858
29	A	3.273757
30	A	1.548005
31	A	2.036083
32	A	5.975467
33	A	2.40981
34	A	1.811894

Table C.4.4: Bridge NO. 3826 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	6782.72
1	A	72.36872
2	A	15.5309

Bridge NO. 12491

Table C.4.5: Bridge NO. 12491 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	93.31686

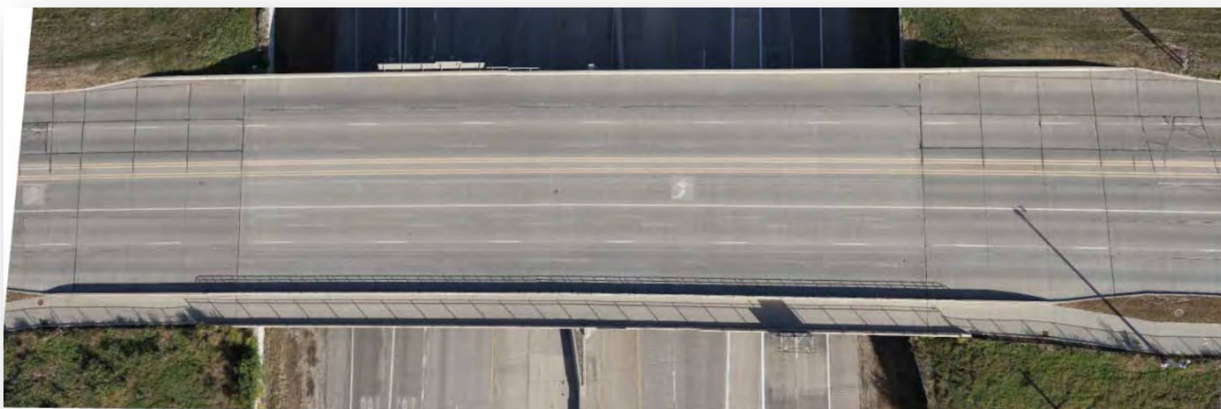


Figure C.4.4: Bridge NO. 12491 Blank Image

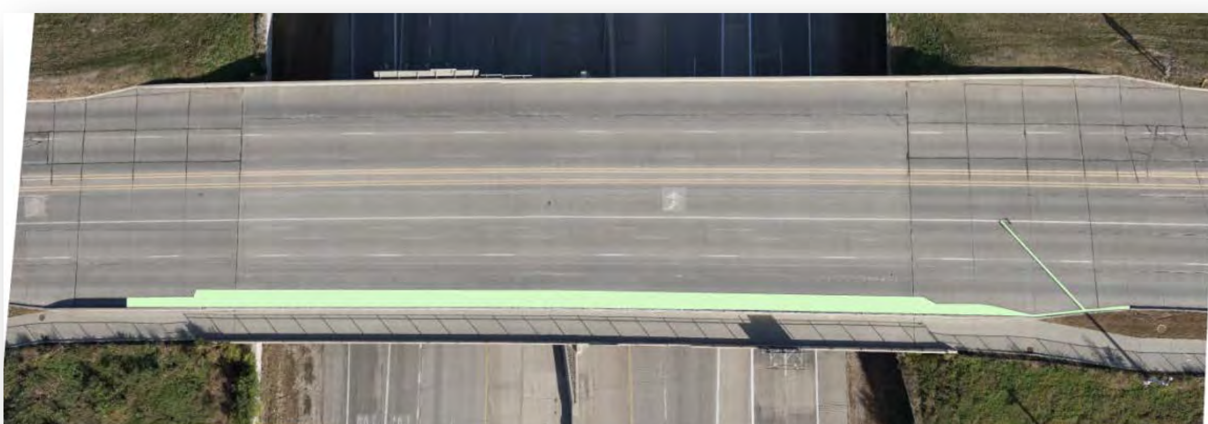


Figure C.4.519: Bridge NO. 12491 Obstruction Image

Figure C.4.6: Bridge NO. 12491 Crack Image

Table C.4.6: Bridge NO. 12491 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	49962.28	55	3339.050244	1	0.117966934

Table C.4.7: Bridge NO. 12491 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	24.94435
1	A	49.58049
2	A	49.15463
3	A	50.8809
4	A	51.09969
5	A	51.52858
6	A	98.16373
7	A	94.8855
8	A	312.6432
9	A	7.235987
10	A	101.5935
11	A	105.5758
12	A	98.08633
13	A	96.13504
14	A	81.80227
15	A	26.66198
16	A	61.49741
17	A	36.38276
18	A	108.1688
19	A	52.21206

20	A	45.25817
21	A	99.3967
22	A	67.99997
23	A	8.103269
24	A	7.292365
25	A	2.450875
26	A	8.743841
27	A	2.943067
28	A	18.49496
29	A	14.15183
30	A	10.11475
31	A	6.464936
32	A	10.84511
33	A	16.79114
34	A	3.586608
35	A	4.705693
36	A	6.986609
37	A	5.654014
38	A	3.2758
39	A	3.726799
40	A	8.767122
41	A	7.923343
42	A	10.64038
43	A	6.212228
44	A	15.85899
45	A	10.48483
46	A	7.930998
47	A	7.065703
48	A	2.850913
49	A	2.803701
50	A	4.483074
51	A	8.975726
52	A	4.64615
53	A	16.31919
54	A	6.765581

Table C.4.8: Bridge NO. 12491 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	3339.05

Bridge NO. 41300-10

Table C.4.928: Bridge NO. 41300-10 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	83.74424

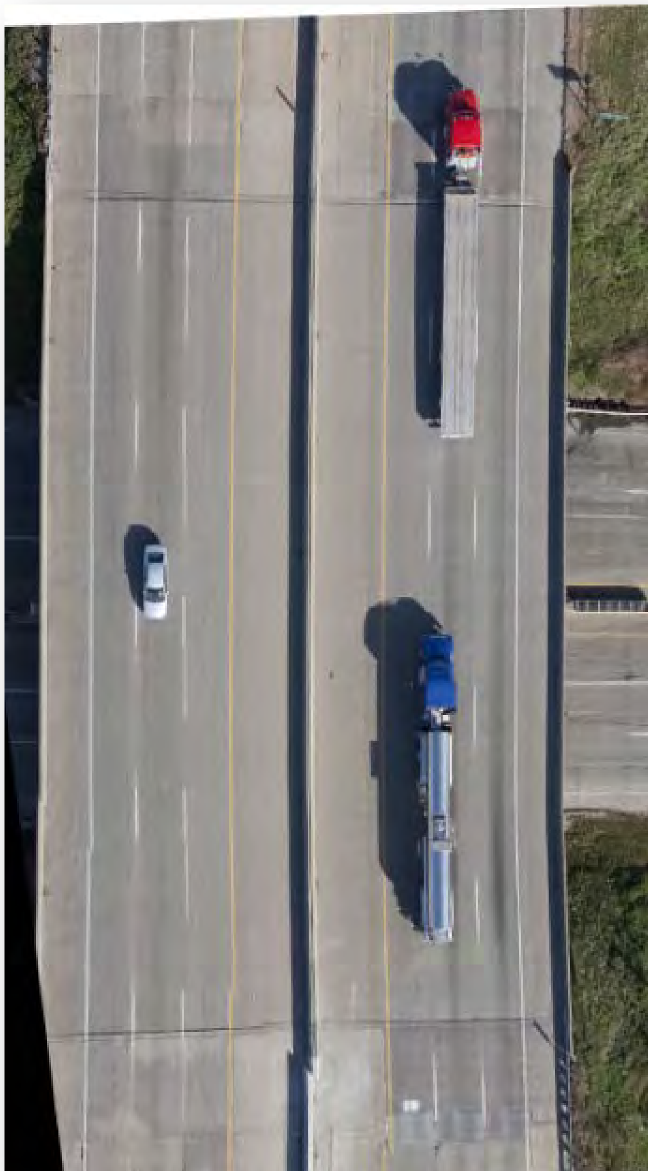


Figure C.4.7: Bridge NO. 41300-10 Blank Image

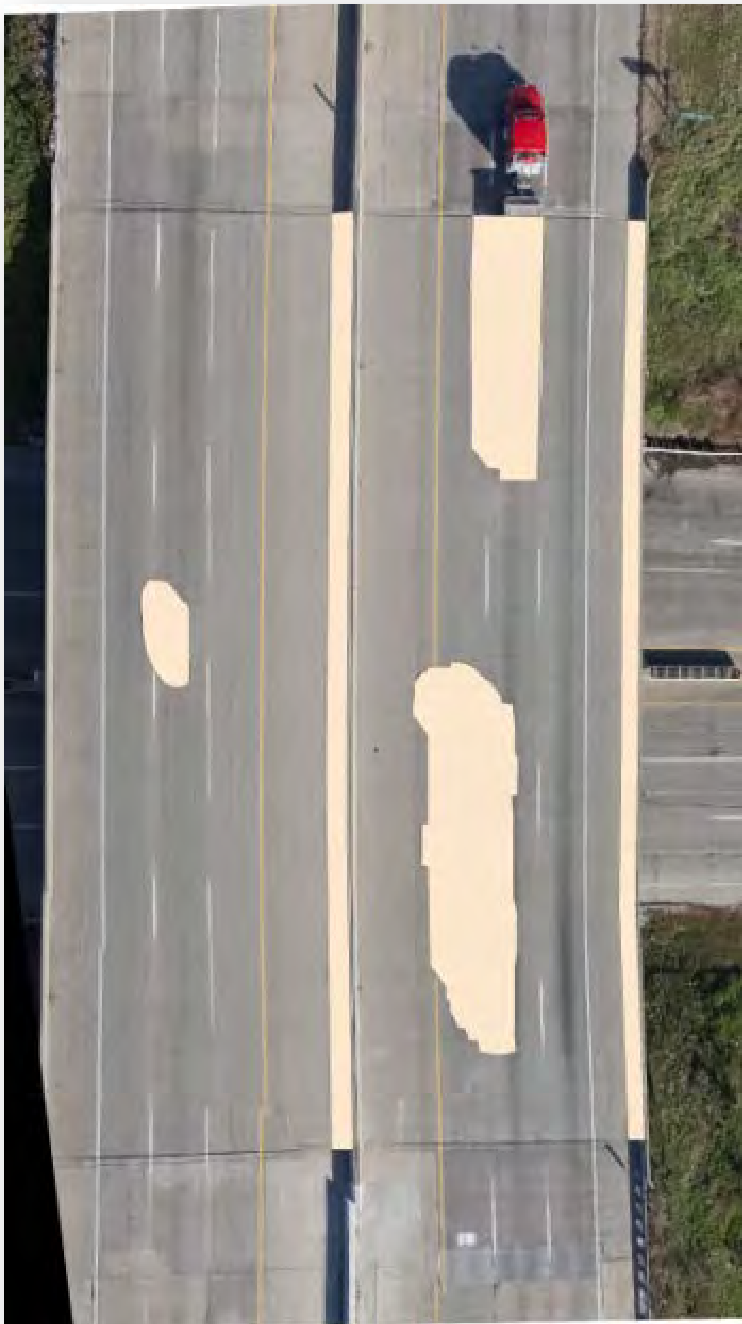


Figure C.4.8: Bridge NO. 41300-10 Obstruction Image

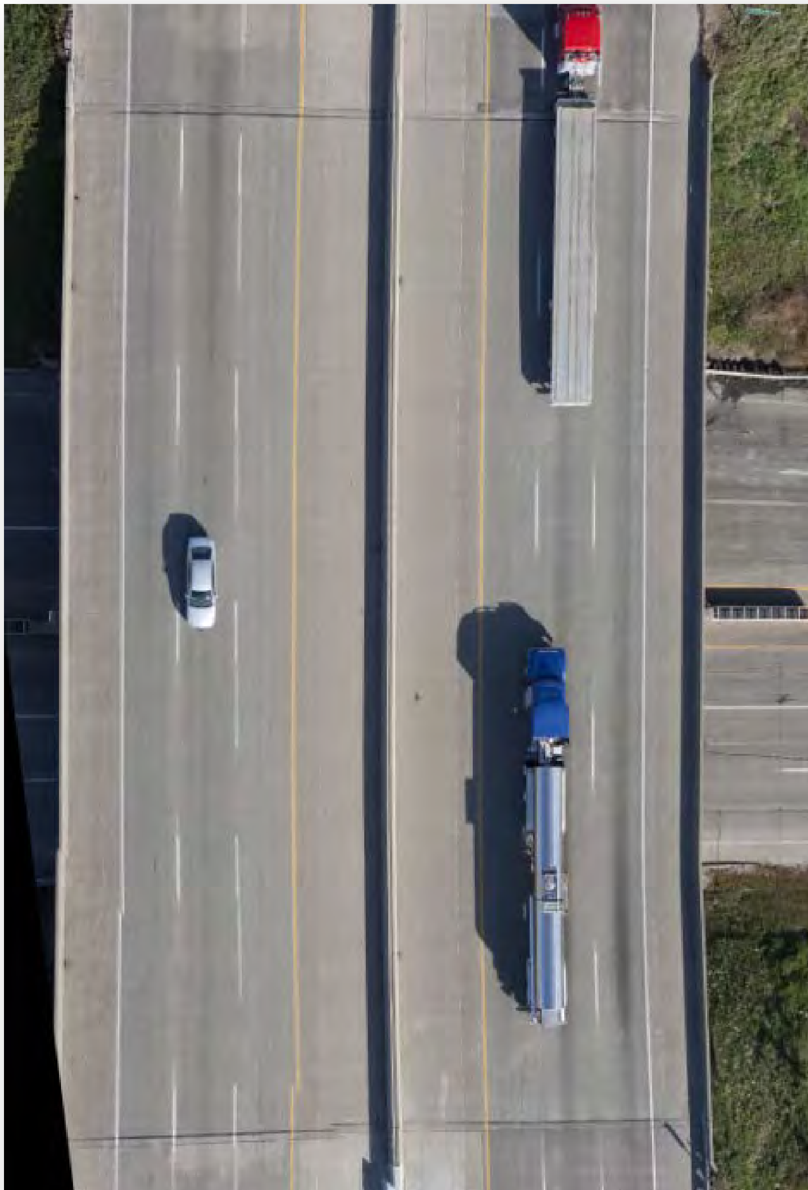


Figure C.4.920: Bridge NO. 41300-10 Crack Image

Table C.4.10: Bridge NO. 41300-10 Span Area

Span Area						
FID	**Span**	**Area**	**# Cracks**	**Obstruction Area**	**DV**	**Crack Density**
0	**A**	**47822.06**	**38**	**7773.837306**	**1**	**0.094885616**

Table C.4.1129: Bridge NO. 41300-10 Crack Extraction

	Crack Extraction	
FID	Span	Length
0	A	28.02938
1	A	1.952043
2	A	7.15749
3	A	4.070008
4	A	2.546192
5	A	10.24952
6	A	5.53318
7	A	2.18245
8	A	4.392096
9	A	11.91497
10	A	8.296182
11	A	3.090734
12	A	4.147293
13	A	9.749469
14	A	9.116792
15	A	4.331429
16	A	42.36347
17	A	39.01203
18	A	52.4799
19	A	9.55425
20	A	52.59185
21	A	9.678374
22	A	4.154673
23	A	12.35711
24	A	21.33318
25	A	7.562342
26	A	8.685947
27	A	9.161271
28	A	30.58871
29	A	12.17532
30	A	8.423044
31	A	6.601574
32	A	24.13894
33	A	7.832703
34	A	8.645228
35	A	12.97852
36	A	6.720908
37	A	5.684505

Table 30: Bridge NO. 41300-10 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	1540.82
1	A	1418.66
2	A	1723.63
3	A	365.0908
4	A	2725.638

Bridge NO. 42300-10

Table C.4.13: Bridge NO. 42300-10 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	92.2567

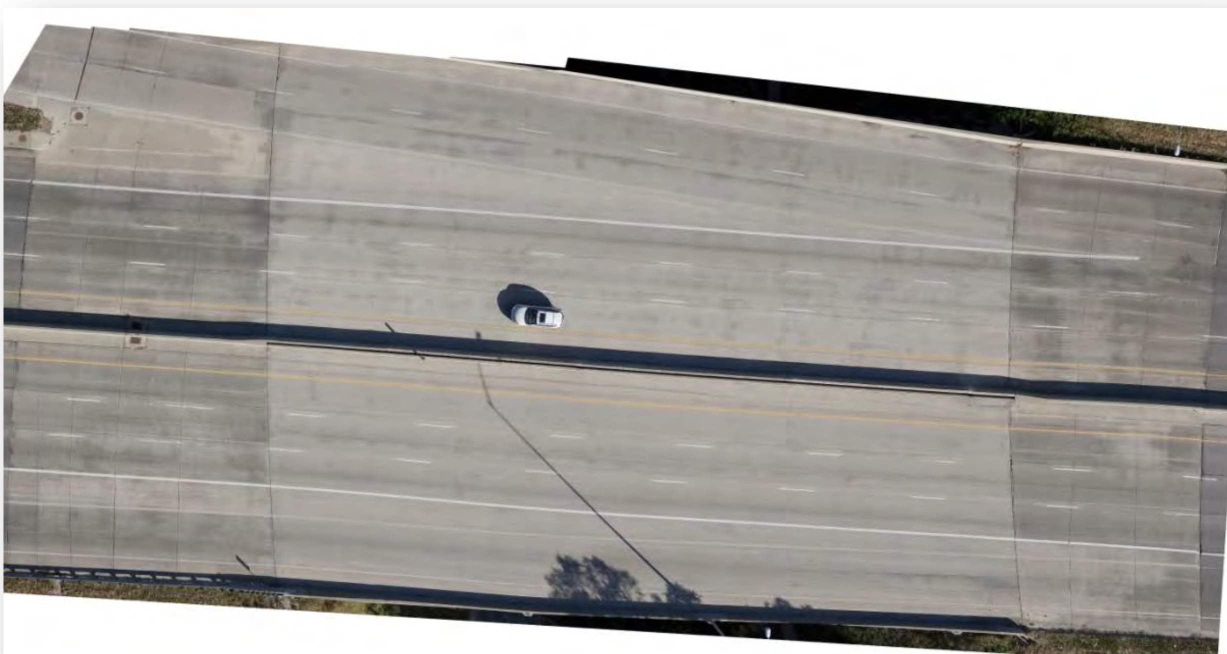


Figure C.4.10: Bridge NO. 42300-10 Blank Image

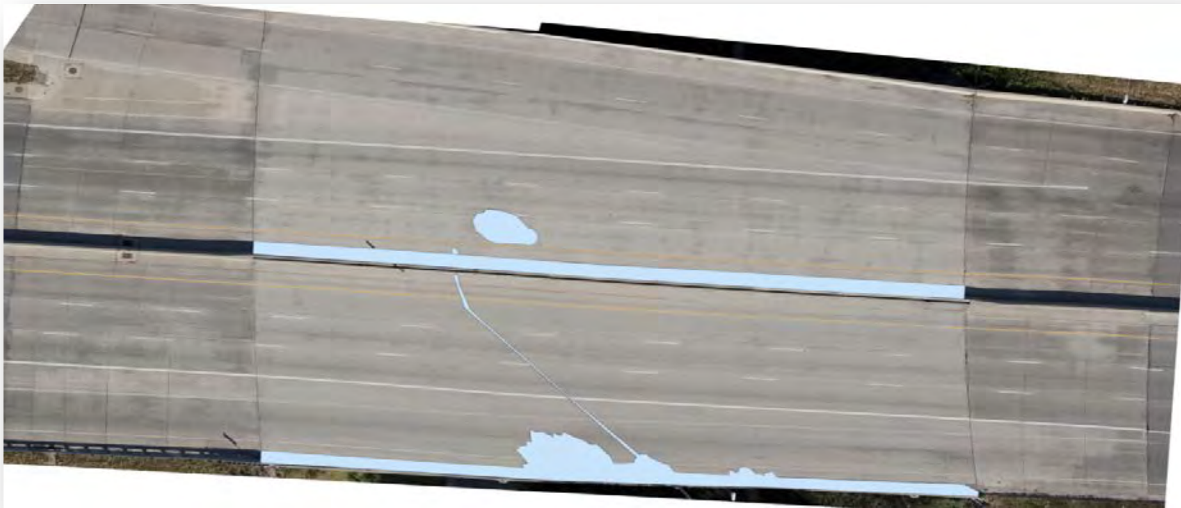


Figure C.4.11: Bridge NO. 42300-10 Obstruction Image

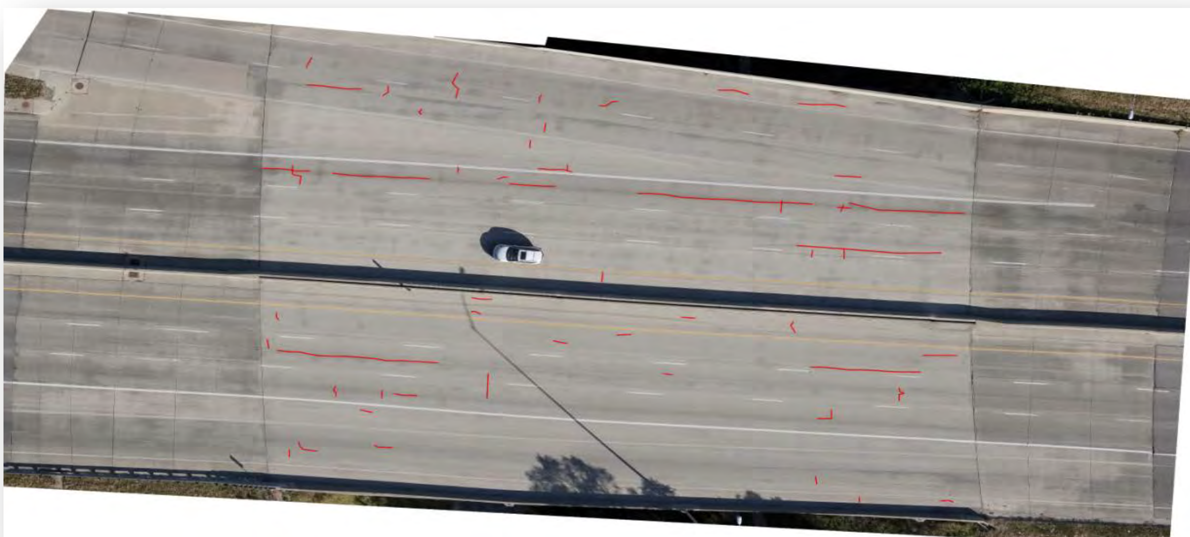


Figure C.4.12: Bridge NO. 42300-10 Crack Image

Table C.4.14: Bridge NO. 42300-10 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	65121.03	54	5042.517029	1	0.089882381

Table C.4.15: Bridge NO. 42300-10 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	5.382224
1	A	13.68482
2	A	5.31258
3	A	12.07817
4	A	3.610873
5	A	4.251765
6	A	3.880826
7	A	3.19603
8	A	23.58091
9	A	2.104516
10	A	14.50388
11	A	20.08653
12	A	19.74118
13	A	4.006469
14	A	2.891695
15	A	41.46701
16	A	3.607742
17	A	4.400628
18	A	68.98477
19	A	11.88404
20	A	9.720374
21	A	3.758065
22	A	5.104332
23	A	5.6299
24	A	3.45742
25	A	9.897316
26	A	7.999981
27	A	8.328254
28	A	4.077428
29	A	5.580189
30	A	5.277041
31	A	2.405162
32	A	3.635819
33	A	5.806397
34	A	47.02373
35	A	14.58129
36	A	10.22194
37	A	3.509316
38	A	5.869849
39	A	6.020415
40	A	3.188824
41	A	4.509678
42	A	61.79752
43	A	5.730032
44	A	3.238048
45	A	49.51887

46	A	5.580189
47	A	74.85194
48	A	4.681771
49	A	20.58003
50	A	13.42747
51	A	8.182695
52	A	11.59045
53	A	8.728217

Table C.4.16: Bridge NO. 42300-10 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	2055.288
1	A	344.1392
2	A	7.581254
3	A	2635.508

Bridge NO. 42381-91

Table C.4.17: Bridge NO. 42381-91 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	89.8075

Figure C.4.13: Bridge NO. 42381-91 Blank Image

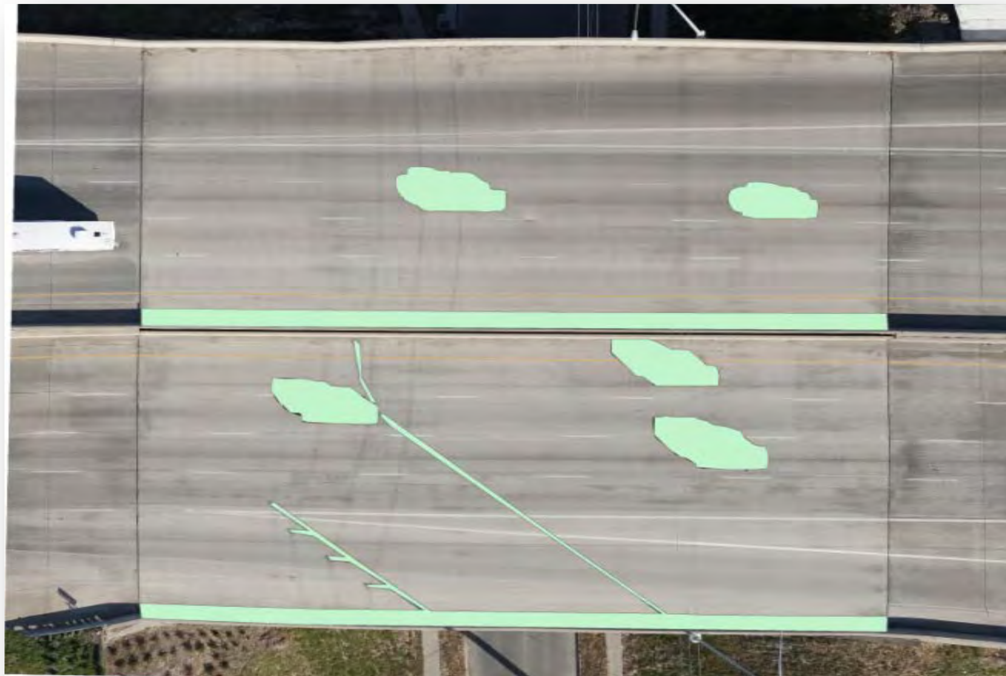


Figure C.4.14: Bridge NO. 42381-91 Obstruction Image

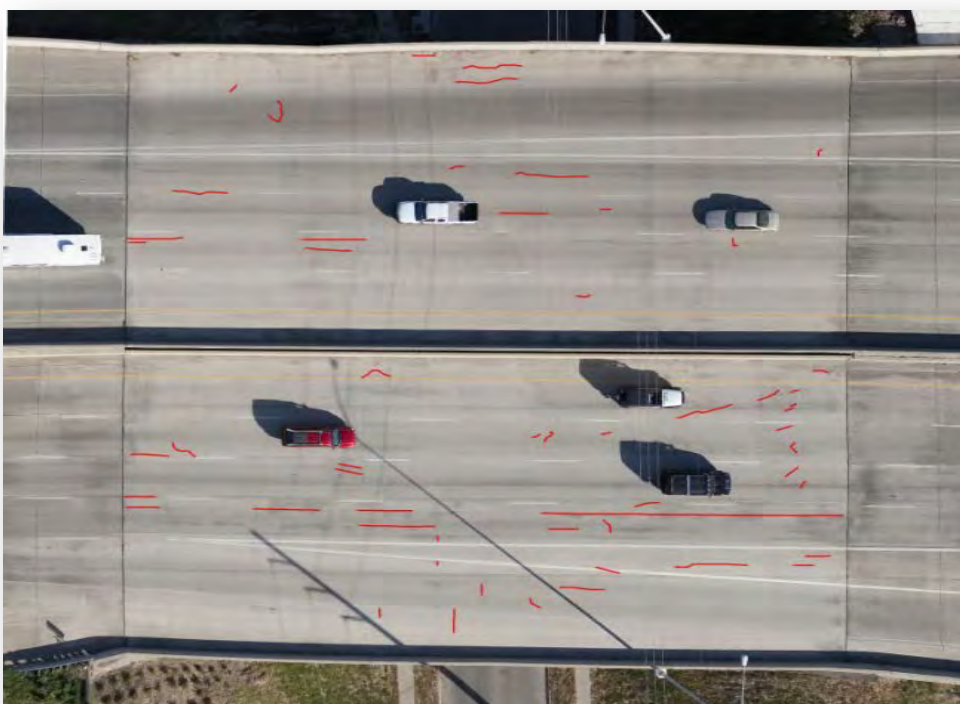


Figure C.4.15: Bridge NO. 42381-91 Crack Image

Table C.4.18: Bridge NO. 42381-91 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	52830.95	55	5384.7957	1	0.115920889

Table C.4.19: Bridge NO. 42381-91 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	3.136056
1	A	17.37676
2	A	18.95134
3	A	18.4047
4	A	6.770836
5	A	4.385573
6	A	16.67652
7	A	5.107824
8	A	4.43511
9	A	14.49371
10	A	3.207238
11	A	3.017388
12	A	3.933497
13	A	17.50924
14	A	7.481328
15	A	1.907292
16	A	2.878563
17	A	2.551057
18	A	4.178953
19	A	4.699207
20	A	4.826941
21	A	5.210387
22	A	2.933813
23	A	2.855824
24	A	2.684752
25	A	6.058117
26	A	7.486254
27	A	92.31463
28	A	7.501888
29	A	8.909787
30	A	4.276318
31	A	5.059336
32	A	3.328145
33	A	1.306653
34	A	1.781799
35	A	16.75918
36	A	20.08076
37	A	8.326085
38	A	6.828938

39	A	11.31775
40	A	9.384141
41	A	9.978074
42	A	13.36839
43	A	7.362853
44	A	9.849927
45	A	5.423637
46	A	22.37711
47	A	8.870488
48	A	5.683285
49	A	22.95238
50	A	10.45311
51	A	19.27037
52	A	13.82344
53	A	13.21991
54	A	22.60124

Table C.4.20: Bridge NO. 42381-91 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	458.5273
1	A	322.264
2	A	415.0046
3	A	501.6534
4	A	431.1258
5	A	1696.876
6	A	34.98507
7	A	1524.359

Bridge NO. 42401

Table C.4.21: Bridge NO. 42401 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	90.65071

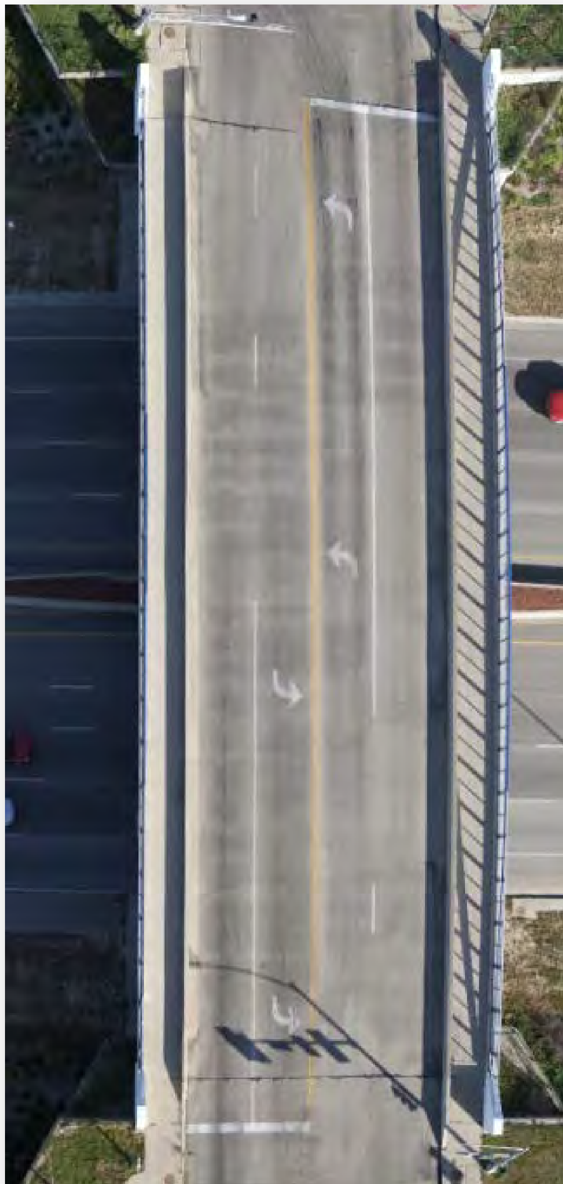


Figure C.4.16: Bridge NO. 42401 Blank Image

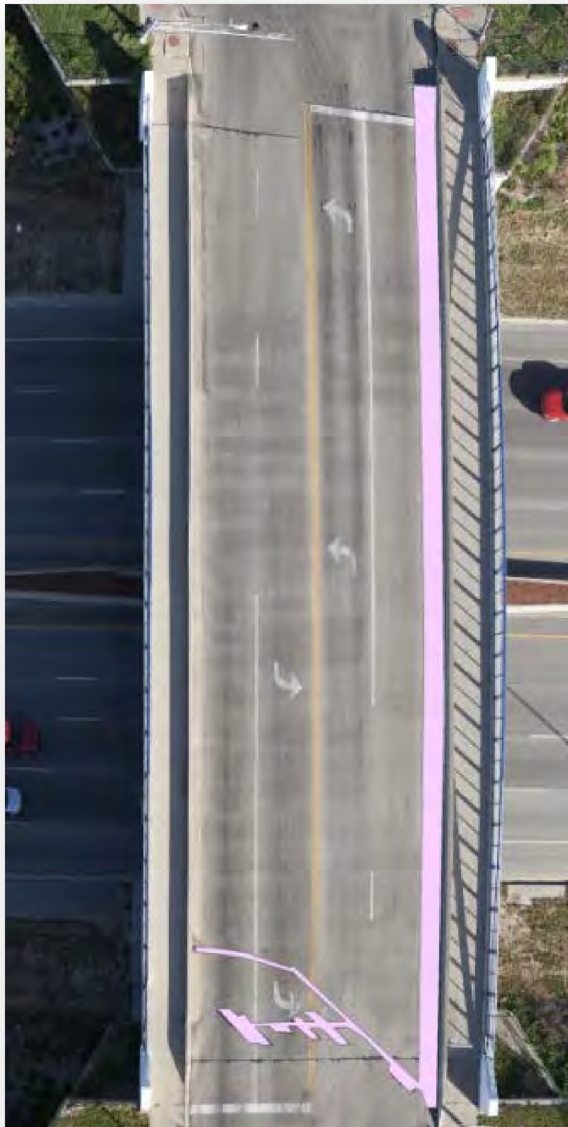


Figure C.4.17: Bridge NO. 42401 Obstruction Image

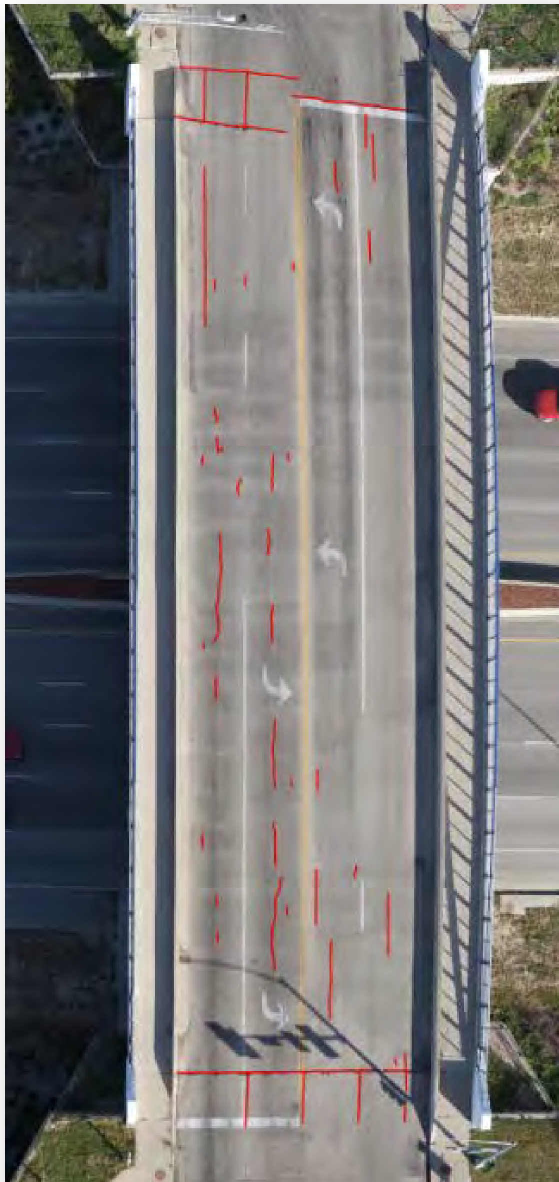


Figure C.4.18: Bridge NO. 42401 Crack Image

Table C.4.22: Bridge NO. 42401 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	22248.04	46	2080.032695	1	0.228084016

Table C.4.23: Bridge NO. 42401 Crack Extraction

	Crack Extraction	
FID	Span	Length
0	A	56.35409
1	A	7.571937
2	A	14.44917
3	A	14.80112
4	A	15.51206
5	A	27.04556
6	A	1.937007
7	A	12.66612
8	A	18.93864
9	A	1.968764
10	A	2.993557
11	A	2.993557
12	A	5.987113
13	A	10.44484
14	A	31.70019
15	A	1.937007
16	A	7.483568
17	A	2.465282
18	A	4.234185
19	A	6.463785
20	A	32.08756
21	A	32.56778
22	A	34.1772
23	A	15.51206
24	A	14.61666
25	A	8.66603
26	A	9.360367
27	A	12.9339
28	A	8.925772
29	A	45.83753
30	A	2.822968
31	A	1.931504
32	A	2.313706
33	A	4.53819
34	A	10.22049
35	A	1.664196
36	A	4.699143
37	A	1.337195
38	A	3.50499
39	A	15.82431
40	A	22.54479
41	A	17.75581
42	A	3.0017
43	A	1.58811
44	A	10.55317
45	A	4.606494

Table C.4.24: Bridge NO. 42401 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	2080.033

Bridge NO. 42761

Table C.4.25: Bridge NO. 42761 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	83.36243

Figure C.4.19: Bridge NO. 42761 Blank Image

Figure C.4.20: Bridge NO. 42761 Obstruction Image

Figure C.4.21: Bridge NO. 42761 Crack Image

Table C.4.26: Bridge NO. 42761 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	12995.91	29	2162.202582	1	0.267683129

Table C.4.27: Bridge NO. 42761 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	14.32926
1	A	14.63273
2	A	23.95218
3	A	16.08194
4	A	12.47127
5	A	1.380255
6	A	15.17269
7	A	1.956308
8	A	2.760509
9	A	1.016361
10	A	11.36326
11	A	11.07305
12	A	5.941984
13	A	10.03414
14	A	15.38259
15	A	26.017
16	A	6.595259
17	A	5.38413
18	A	5.434445
19	A	4.966951
20	A	22.28709
21	A	8.452494
22	A	2.548004
23	A	3.04788
24	A	3.350688
25	A	4.214764
26	A	3.089764
27	A	6.889995
28	A	2.598431

Table C.4.28: Bridge NO. 42761 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	2162.203

Bridge NO. 605405

Table C.4.29: Bridge NO. 605405 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	86.06091

Figure C.4.22: Bridge NO. 605405 Blank Image

Figure C.4.23: Bridge NO. 605405 Obstruction Image

Figure C.4.24: Bridge NO. 605405 Crack Image

Table C.4.30: Bridge NO. 605405 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	11598.48	26	1616.721512	1	0.260475271

Table C.4.31: Bridge NO. 605405 Crack Extraction

Crack Extraction		
FID	**Span**	**Length**
0	A	12.56476
1	A	8.939257
2	A	0.804569
3	A	1.421659
4	A	5.436454
5	A	8.117337
6	A	11.61813
7	A	10.97447
8	A	15.40354
9	A	5.190306
10	A	3.416538
11	A	5.998254
12	A	4.310037
13	A	6.381474
14	A	11.49082
15	A	10.70685
16	A	6.606401
17	A	8.336161
18	A	7.017598
19	A	9.37791
20	A	11.06057
21	A	6.057112
22	A	15.01838
23	A	7.997294
24	A	7.574783
25	A	6.328019

Table C.4.32: Bridge NO. 605405 Obstruction Analysis

Obstruction Analysis		
FID	**Span**	**Area**
0	A	1616.722

Bridge NO. 608345

Table C.4.33: Bridge NO. 608345 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	87.86522

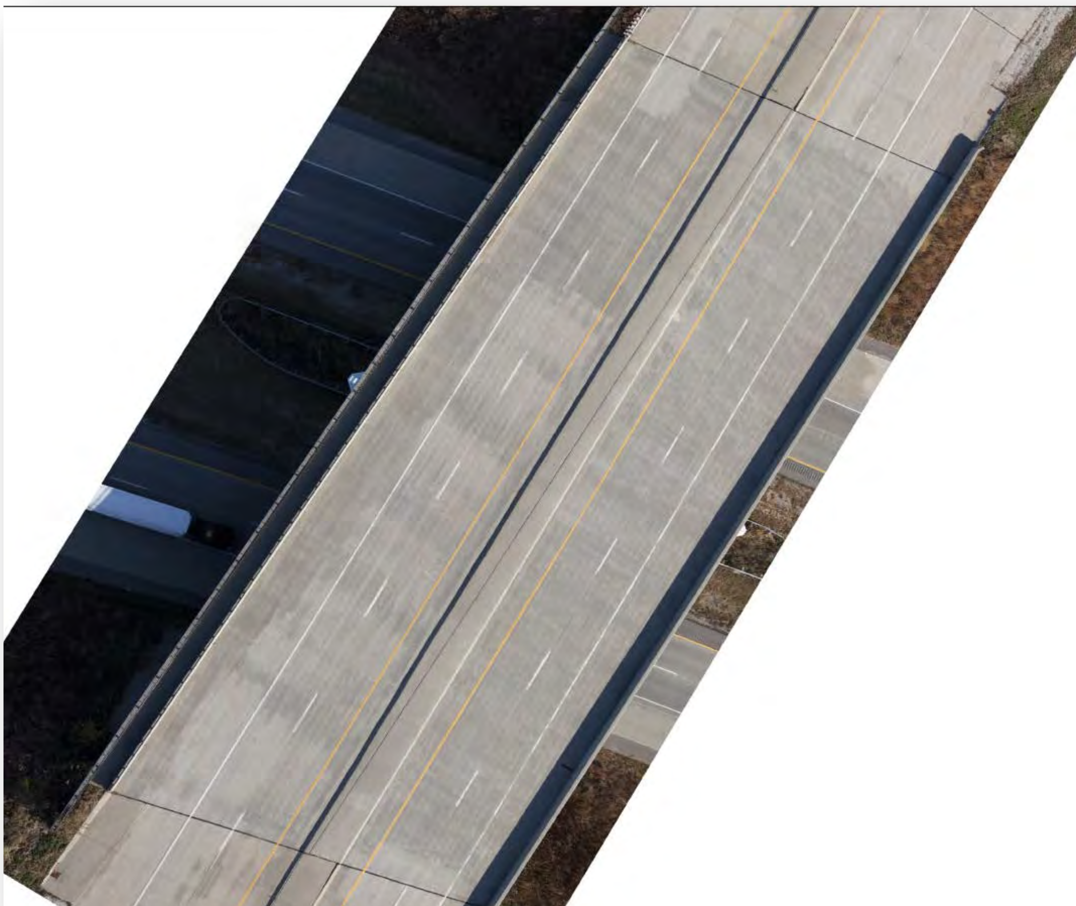


Figure C.4.25: Bridge NO. 608345 Blank Image

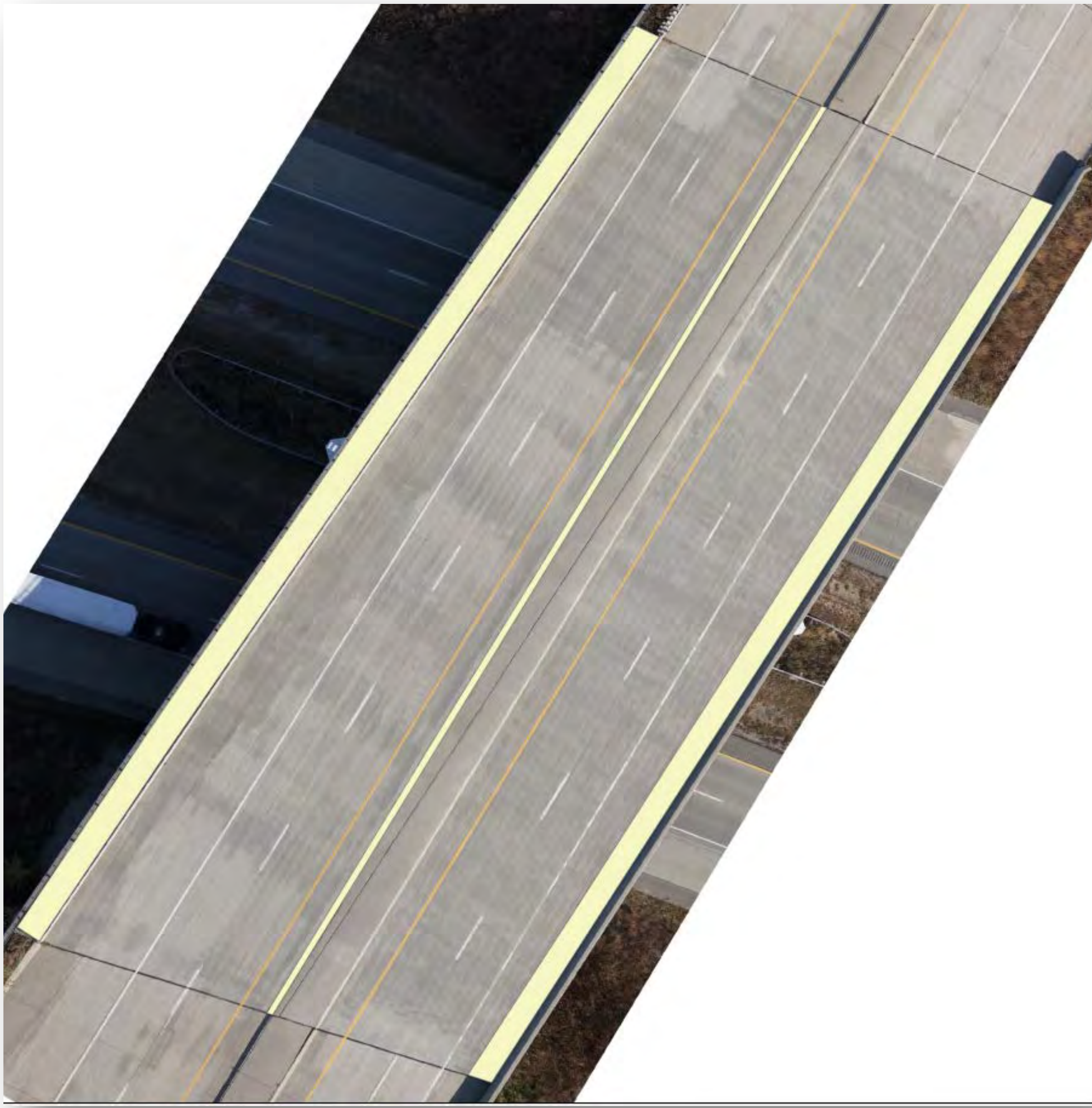


Figure C.4.26: Bridge NO. 608345 Obstruction Image

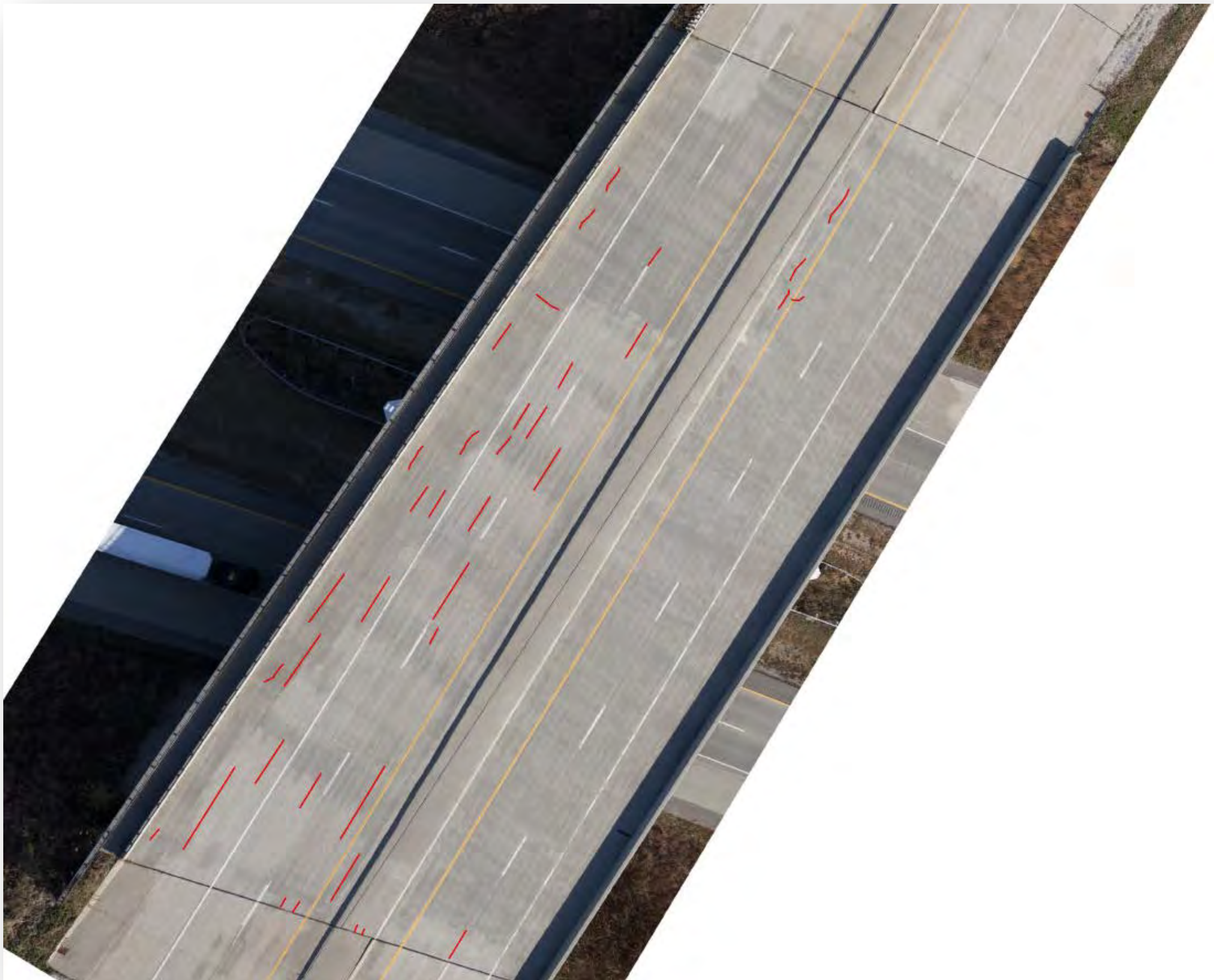


Figure C.4.27: Bridge NO. 608345 Crack Image

Table C.4.34: Bridge NO. 608345 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	48651.13	37	5903.71028	1	0.086554924

Table C.4.35: Bridge NO. 608345 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	13.60911
1	A	29.06788
2	A	33.13301
3	A	17.75022
4	A	21.68591
5	A	20.29376
6	A	22.7669
7	A	5.876566
8	A	17.89783
9	A	18.56056
10	A	11.08715
11	A	13.56802
12	A	10.10259
13	A	10.68616
14	A	16.85043
15	A	7.57806
16	A	9.927733
17	A	12.66303
18	A	9.728892
19	A	13.60911
20	A	10.64571
21	A	7.07698
22	A	13.52712
23	A	9.172198
24	A	7.494453
25	A	4.343679
26	A	8.217916
27	A	9.190975
28	A	9.335666
29	A	10.22485
30	A	9.12148
31	A	8.968537
32	A	4.530358
33	A	1.981281
34	A	2.512214
35	A	4.221009
36	A	3.323982

Table C.4.36: Bridge NO. 608345 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	2843.053
1	A	2408.876
2	A	651.7812

Bridge NO. 608575

Table C.4.37: Bridge NO. 608575 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	87.46897

Figure C.4.28: Bridge NO. 608575 Blank Image

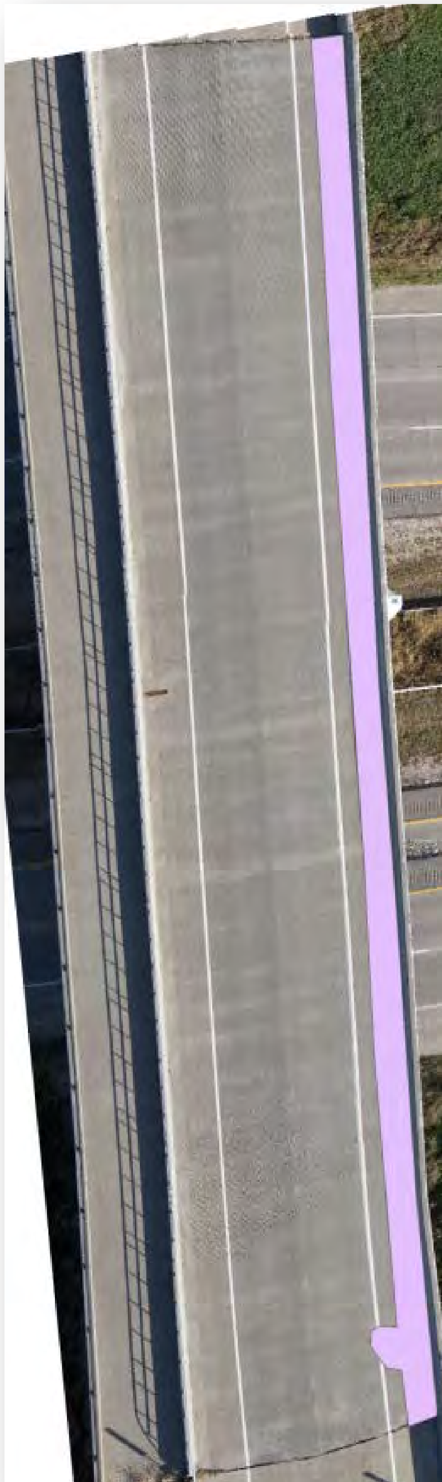


Figure C.4.29: Bridge NO. 608575 Obstruction Image

Figure C.4.30: Bridge NO. 608575 Crack Image

Table C.4.3831: Bridge NO. 608575 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	20597.97	24	2581.137421	1	0.133208787

Table C.4.39: Bridge NO. 608575 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	10.29601
1	A	16.78484
2	A	15.01426
3	A	9.593918
4	A	17.69351
5	A	16.57487
6	A	17.03897
7	A	12.0849
8	A	5.139498
9	A	9.955013
10	A	10.16043
11	A	3.779999
12	A	9.546326
13	A	7.620312
14	A	4.767486
15	A	2.850488
16	A	14.58075
17	A	3.880819
18	A	3.967015
19	A	2.843932
20	A	3.429384
21	A	12.21704
22	A	7.13752
23	A	4.442265

Table C.4.40: Bridge NO. 608575 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	2581.137

Bridge NO. 608580

Table C.4.41: Bridge NO. 608580 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	84.38267

Figure C.4.31: Bridge NO. 608580 Blank Image

Figure C.4.32: Bridge NO. 608580 Obstruction Image

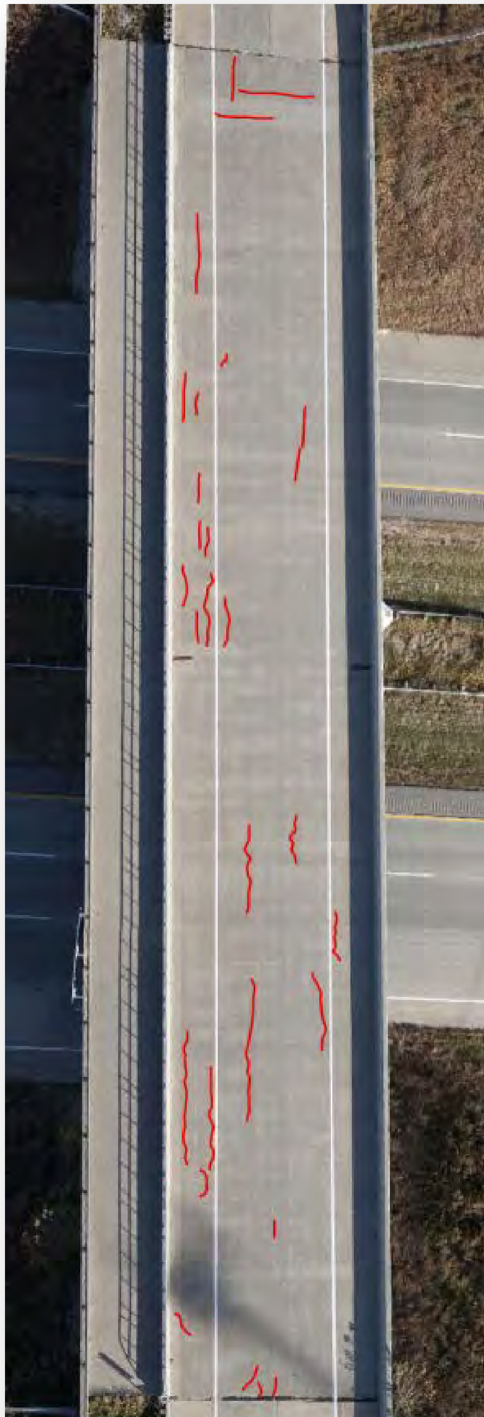


Figure C.4.33: Bridge NO. 608580 Crack Image

Table C.4.42: Bridge NO. 608580 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	22680.61	30	3542.106258	1	0.156752062

Table C.4.4332: Bridge NO. 608580 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	8.124147
1	A	4.521388
2	A	5.087241
3	A	8.066326
4	A	4.600623
5	A	9.403434
6	A	42.23962
7	A	30.84921
8	A	39.68073
9	A	23.45123
10	A	15.12279
11	A	26.96454
12	A	15.38375
13	A	14.13993
14	A	8.864992
15	A	11.77974
16	A	22.0177
17	A	8.462657
18	A	7.733134
19	A	8.384632
20	A	6.231572
21	A	13.8606
22	A	4.119341
23	A	11.70874
24	A	9.850491
25	A	22.92423
26	A	16.83817
27	A	12.39784
28	A	21.41504
29	A	0.379377

Table C.4.44: Bridge NO. 608580 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	2683.806
1	A	805.1317
2	A	53.16832

Bridge NO. 608660

Table C.4.45: Bridge NO. 608660 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	96.43992

Figure C.4.3421: Bridge NO. 608660 Blank Image

Figure C.4.35: Bridge NO. 608660 Obstruction Image

Figure C.4.36: Bridge NO. 608660 Crack Image

Table C.4.46: Bridge NO. 608660 Span Area

Span Area						
FID	**Span**	**Area**	**# Cracks**	**Obstruction Area**	**DV**	**Crack Density**
0	**A**	**14124.49**	**13**	**200.2414143**	**1**	**0.09336232**
1	**B**	**17847.06**	**24**	**368.8653968**	**1**	**0.137313988**

Table C.4.47: Bridge NO. 608660 Crack Extraction

Crack Extraction		
FID	Span	Length
0	B	11.31069
1	B	19.66382
2	B	11.73009
3	B	10.59459
4	B	4.878698
5	B	5.297468
6	B	9.132346
7	B	22.55291
8	B	9.037606
9	B	13.71576
10	B	14.33755
11	B	17.83582
12	B	2.648645
13	A	19.44448
14	A	2.941421
15	A	11.29521
16	A	5.975887
17	A	3.405181
18	A	2.653619
19	B	16.51442
20	B	15.84658
21	B	7.020036
22	B	20.77978
23	B	9.302059
24	B	8.258117
25	B	11.02651
26	B	14.07313
27	B	13.95632
28	B	22.88312
29	B	14.36238
30	A	14.43829
31	A	15.90935
32	A	17.7269
33	A	6.315308
34	A	9.121602
35	A	14.83362
36	A	13.06589

Table C.4.48: Bridge NO. 608660 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	192.0677
1	A	8.173686
2	B	368.8654

C.5 North Carolina
Bridge NO. 590376

Table C.5.1: Bridge NO. 590376 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	93.37725

Figure C.5.1: Bridge NO. 590376 Blank Image

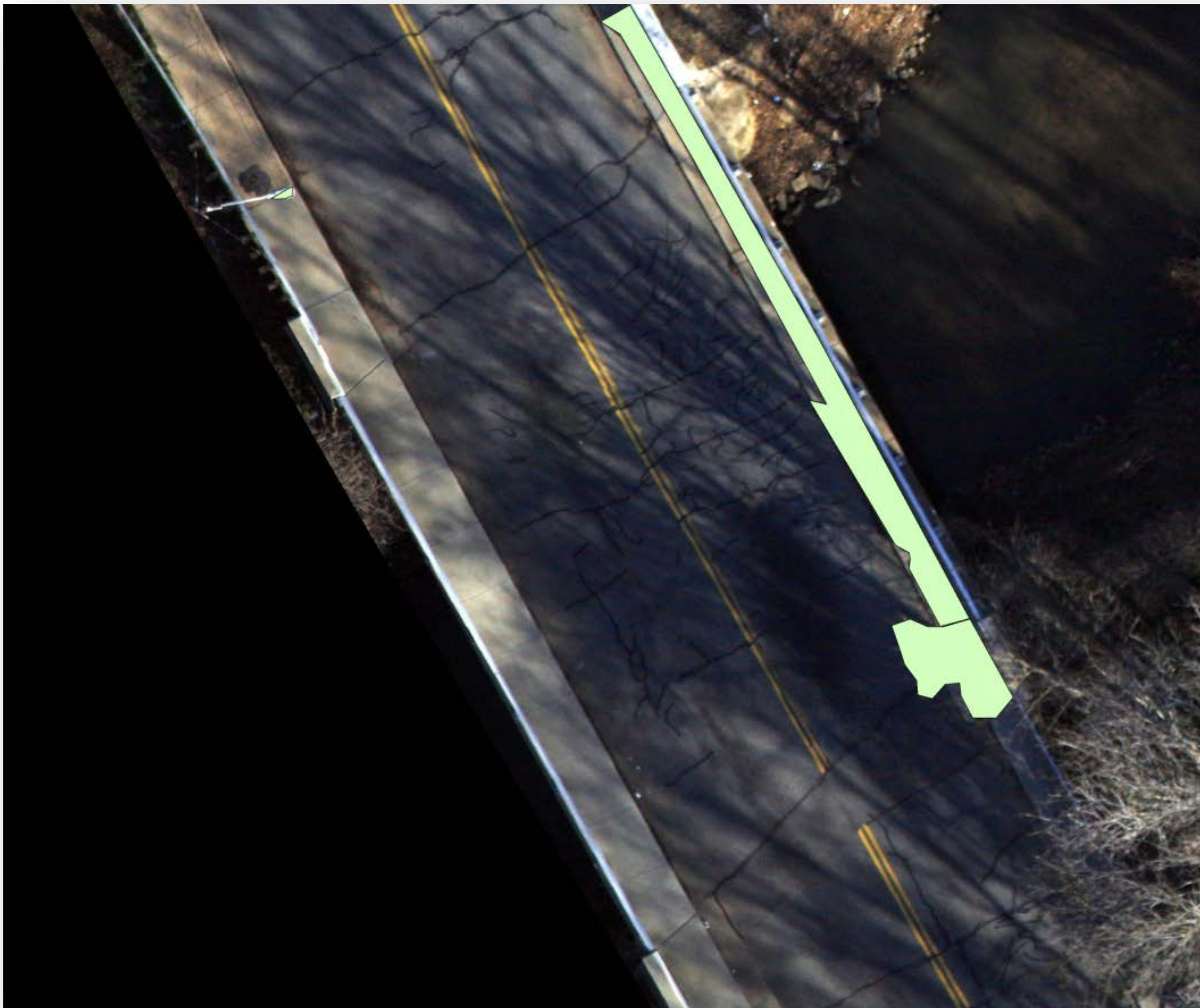


Figure C.5.2: Bridge NO. 590376 Obstruction Image

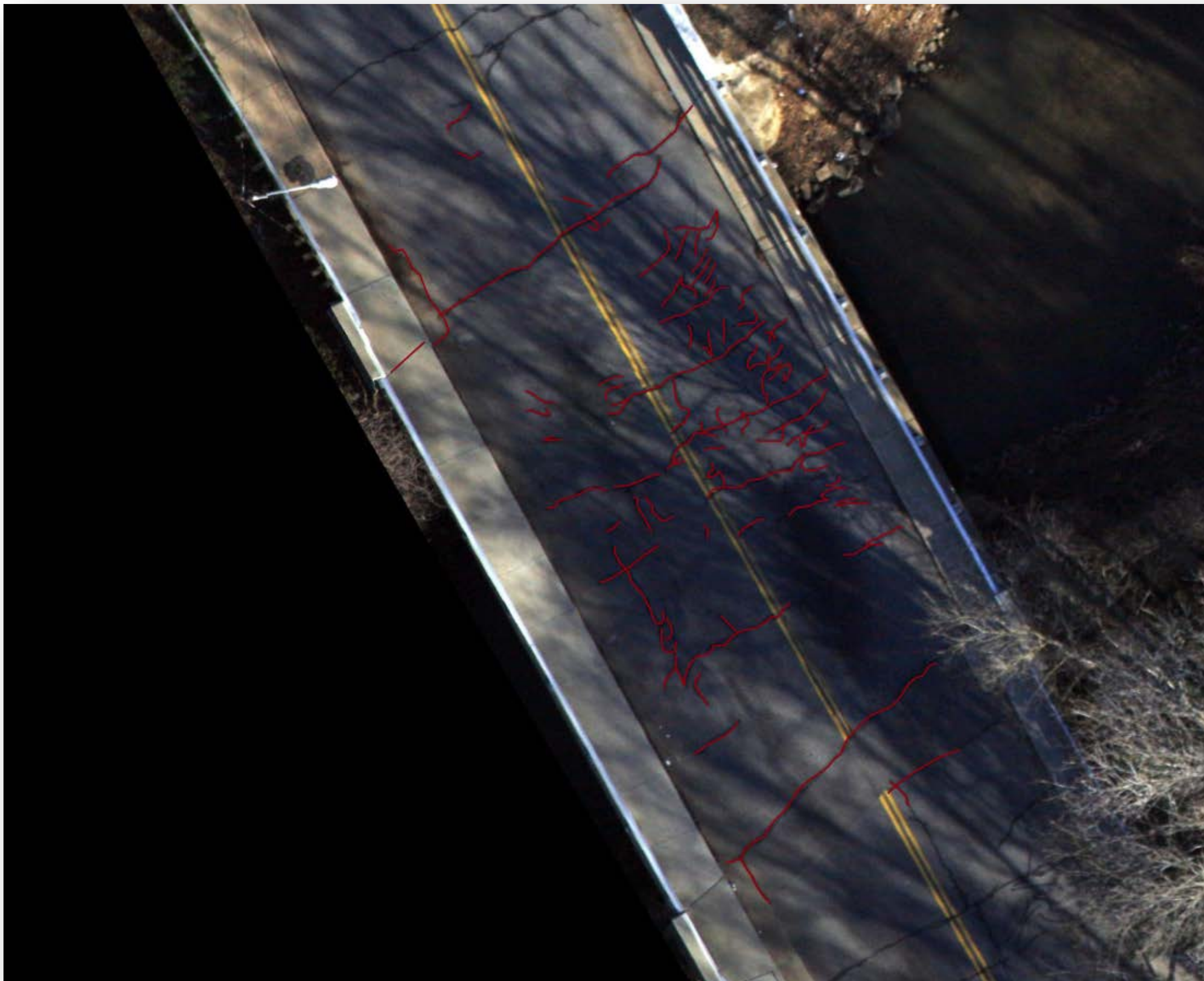


Figure C.5.3: Bridge NO. 590376 Crack Image

Table C.5.2: Bridge NO. 570376 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	32111.05	77	2126.634719	1	0.256800046

Table C.5.333: Bridge NO. 590376 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	34.52477
1	A	83.4096
2	A	7.96576
3	A	10.47863
4	A	18.30234
5	A	26.1611
6	A	7.316103
7	A	9.449772
8	A	19.68469
9	A	9.812854
10	A	8.099723
11	A	6.883089
12	A	6.066658
13	A	23.57346
14	A	6.874195
15	A	11.49185
16	A	7.009787
17	A	8.619181
18	A	8.880731
19	A	57.20662
20	A	5.170825
21	A	7.780417
22	A	7.802418
23	A	9.571266
24	A	8.790591
25	A	20.19824
26	A	7.652139
27	A	20.80793
28	A	9.253781
29	A	4.144203
30	A	4.621852
31	A	16.26222
32	A	16.26199
33	A	43.26539
34	A	3.23811
35	A	4.961671
36	A	26.23646
37	A	4.744084
38	A	7.373574
39	A	6.153666
40	A	22.39102
41	A	15.56037
42	A	8.892753
43	A	11.92261
44	A	47.73108
45	A	13.21704

46	A	11.77966
47	A	14.24854
48	A	12.49923
49	A	19.43441
50	A	5.074899
51	A	9.315892
52	A	31.93113
53	A	12.84576
54	A	8.234357
55	A	20.52431
56	A	4.229895
57	A	7.259842
58	A	53.49055
59	A	6.586354
60	A	10.79691
61	A	10.81342
62	A	5.901248
63	A	24.07909
64	A	16.96639
65	A	13.68707
66	A	12.61959
67	A	16.33741
68	A	90.16432
69	A	15.0723
70	A	25.07963
71	A	9.456134
72	A	13.38668
73	A	39.43569
74	A	3.045536
75	A	9.423358
76	A	9.612712

Table C.5.4: Bridge NO. 590376 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	585.1952
1	A	10.94758
2	A	1530.492

Bridge NO. 590108

Table C.5.5: Bridge NO. 590108 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	85.41189

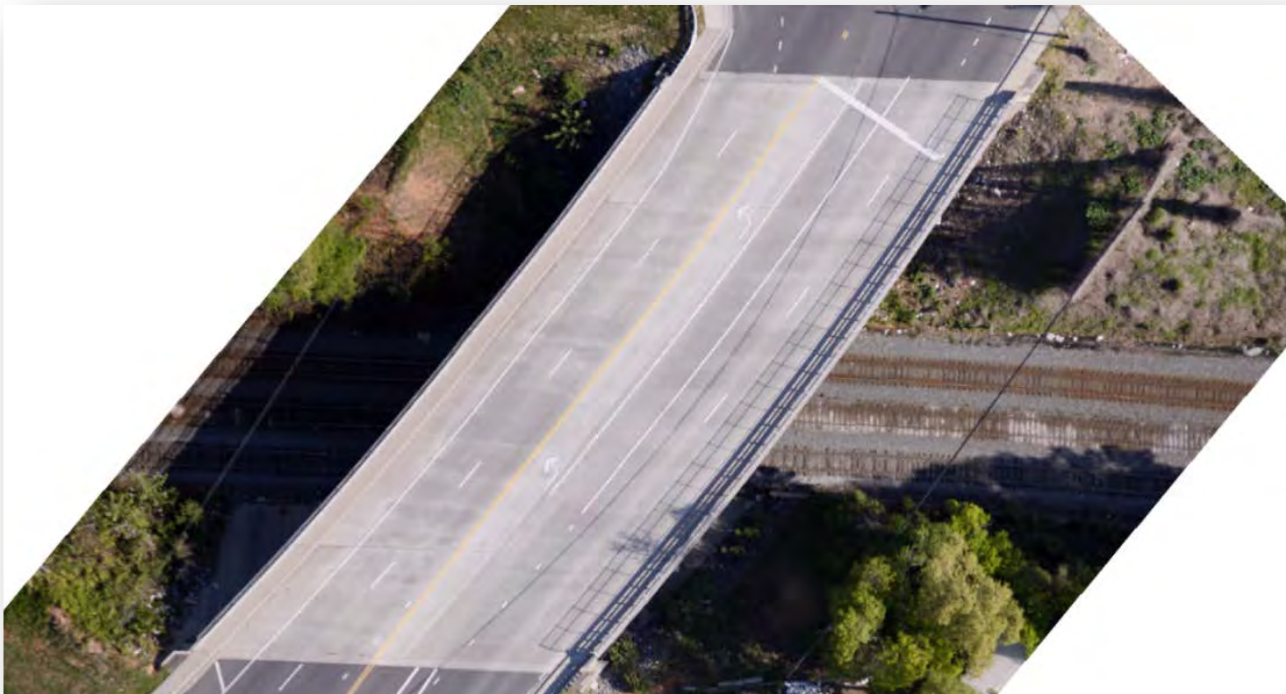


Figure C.5.4: Bridge NO. 590108 Blank Image

Figure C.5.5: Bridge NO. 590108 Obstruction Image

Figure C.5.622: Bridge NO. 590108 Crack Image

Table C.5.634: Bridge NO. 590108 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	197277.3	70	28779.03148	1	0.041543442

Table C.5.7: Bridge NO. 590108 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	36.58852
1	A	12.77362
2	A	53.81182
3	A	61.72358
4	A	20.59249
5	A	18.84597
6	A	30.40436
7	A	58.80147
8	A	40.38609
9	A	27.95358
10	A	33.41719
11	A	21.32024

12	A	33.382
13	A	90.59964
14	A	50.49244
15	A	62.50302
16	A	83.38777
17	A	49.55922
18	A	35.16384
19	A	38.40841
20	A	25.55912
21	A	74.69522
22	A	26.91057
23	A	27.83683
24	A	24.43133
25	A	34.9343
26	A	64.90243
27	A	43.38829
28	A	38.80421
29	A	24.51064
30	A	63.4798
31	A	28.99203
32	A	20.77825
33	A	38.16479
34	A	31.29292
35	A	25.6384
36	A	20.57387
37	A	6.112804
38	A	19.30753
39	A	18.26664
40	A	20.19561
41	A	17.0754
42	A	9.973684
43	A	13.36445
44	A	16.35349
45	A	21.91092
46	A	40.60045
47	A	16.81587
48	A	30.20951
49	A	16.30986
50	A	15.63921
51	A	16.82774
52	A	28.45282
53	A	16.70979
54	A	22.88899
55	A	25.19534
56	A	16.38811
57	A	12.15388
58	A	24.73061
59	A	36.60855
60	A	16.85146
61	A	19.2335

62	A	30.99037
63	A	27.27874
64	A	13.95977
65	A	42.46054
66	A	29.17949
67	A	16.32518
68	A	12.52592
69	A	19.63927

Table C.5.8: Bridge NO. 590108 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	28779.03

Bridge NO. 590049

Table C.5.9: Bridge NO. 590049 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	63.37484

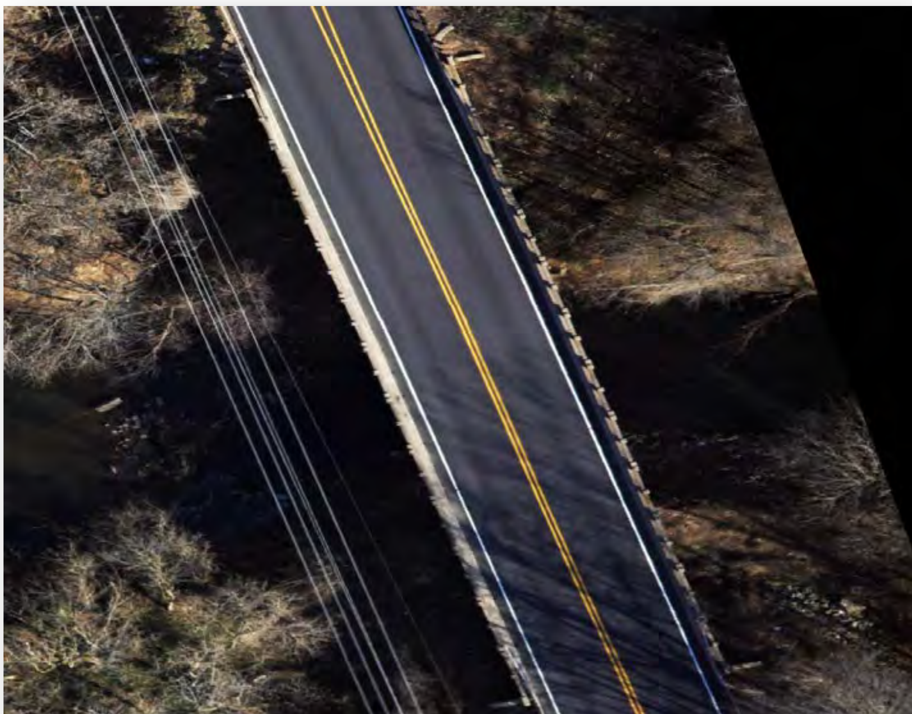


Figure C.5.723: Bridge NO. 590049 Blank Image

Figure C.5.8: Bridge NO. 590049 Obstruction Image

Figure C.5.9: Bridge NO. 590049 Crack Image

Table C.5.1035: Bridge NO. 590049 Span Area

Span Area						
FID	**Span**	**Area**	**# Cracks**	**Obstruction Area**	**DV**	**Crack Density**
0	**A**	**53873.62**	**31**	**19731.29972**	**1**	**0.090796399**

Table C.5.11: Bridge NO. 590049 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	9.543146
1	A	6.355319
2	A	9.792375
3	A	16.97761
4	A	6.60692
5	A	20.75511
6	A	9.119863
7	A	7.127384
8	A	8.751426
9	A	10.83541
10	A	6.75632
11	A	11.0659
12	A	17.27205
13	A	16.62119
14	A	15.13774
15	A	15.07997
16	A	5.540402
17	A	17.20998
18	A	11.86061
19	A	9.969459
20	A	14.11864
21	A	10.83727
22	A	9.482423
23	A	13.60807
24	A	12.07252
25	A	7.613025
26	A	11.33569
27	A	7.998527
28	A	9.685515
29	A	9.785884
30	A	12.42257

Table C.5.12: Bridge NO. 590049 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	19731.3

Bridge NO. 590084

Table C.5.13: Bridge NO. 590084 Index Values

Bridge Surface Condition Index:	64.39063
Image Quality Index:	57.63625

Table C.5.14: Bridge NO. 590084 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	1169.944	15	0	5.396303	1.282112309
1	B	2454.006	39	0	10.05945	1.589238112
2	C	2498.082	23	30.84744795	1	0.932217797
3	D	1759.934	23	255.6844513	9.220396	1.529001536
4	E	1130.016	35	98.94339694	26.53894	3.39452385
5	F	2398.371	90	184.5682513	30.45518	4.065402714
6	G	2423.383	117	153.5259114	35.60937	5.154509039
7	H	1704.303	46	99.24255414	22.86332	2.865935738

Table C.5.15: Bridge NO. 590084 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	4.318621
1	A	3.358791
2	A	6.454385
3	A	5.743517
4	A	2.371759
5	A	1.865869
6	A	2.97527
7	A	2.333714
8	A	2.846608
9	A	2.515417
10	A	6.765072
11	A	4.222131
12	A	1.276612
13	A	1.84355
14	A	1.610722
15	B	2.164839
16	B	3.397655
17	B	3.323103
18	B	3.808073
19	B	2.50171
20	B	3.922856
21	B	2.431839
22	B	2.274476
23	B	1.942267
24	B	2.445565
25	B	2.012003

26	B	4.377147
27	B	2.142461
28	B	2.740759
29	B	1.710815
30	B	3.62624
31	B	1.282087
32	B	2.552579
33	B	2.420273
34	B	2.795826
35	B	2.422793
36	B	2.017417
37	B	4.372694
38	B	1.762627
39	B	2.35458
40	B	1.717573
41	B	1.29329
42	B	2.273061
43	B	4.318188
44	B	1.139396
45	B	1.125638
46	B	1.335646
47	B	2.007936
48	B	1.857165
49	B	0.92807
50	B	2.713302
51	B	2.003304
52	B	2.545118
53	C	5.563937
54	C	3.269862
55	B	1.920747
56	C	3.232703
57	C	1.497753
58	C	4.357904
59	C	2.415366
60	C	2.357017
61	C	1.971651
62	C	1.827212
63	C	2.380619
64	C	1.853359
65	C	1.966992
66	C	2.322006
67	C	1.743661
68	C	4.409765
69	C	3.885322
70	C	2.526845
71	C	2.366201
72	C	1.945781
73	C	2.043097
74	C	2.57535
75	C	2.056034

76	C	1.568566
77	D	2.693424
78	D	2.148976
79	D	0.395463
80	D	1.682336
81	D	3.171905
82	D	2.413832
83	D	5.426203
84	D	1.30427
85	D	3.04041
86	D	3.347678
87	D	1.17092
88	D	2.554897
89	D	2.452648
90	D	5.250594
91	D	2.645166
92	D	2.097143
93	D	5.736151
94	D	4.551273
95	D	1.691576
96	D	1.886704
97	D	2.604312
98	D	5.724856
99	D	3.022095
100	E	4.058499
101	E	2.937985
102	E	3.110287
103	E	3.635316
104	E	2.49399
105	E	3.883323
106	E	3.409711
107	E	3.719063
108	E	1.875951
109	E	2.933277
110	E	1.875837
111	E	5.301443
112	E	2.587356
113	E	2.988497
114	E	1.748201
115	E	2.940326
116	E	9.728089
117	E	3.107923
118	E	1.990848
119	E	3.388449
120	E	3.357091
121	E	1.440757
122	E	4.082584
123	E	2.692459
124	E	3.337014
125	E	3.556116

126	E	1.776969
127	E	4.919486
128	E	3.931387
129	E	6.074485
130	E	3.893791
131	E	2.188502
132	E	2.943324
133	E	2.278859
134	E	3.263054
135	F	6.69293
136	F	6.906997
137	F	14.42304
138	F	2.646819
139	F	3.297106
140	F	3.144034
141	F	4.606967
142	F	4.866235
143	F	2.90053
144	F	5.281882
145	F	1.301331
146	F	2.208314
147	F	3.656265
148	F	2.948538
149	F	2.42341
150	F	1.960366
151	F	1.752848
152	F	2.149328
153	F	2.593781
154	F	3.558285
155	F	6.974278
156	F	4.92734
157	F	1.695002
158	F	2.241613
159	F	3.164849
160	F	8.56849
161	F	1.67931
162	F	18.51186
163	F	2.106498
164	F	2.688638
165	F	2.493176
166	F	2.405747
167	F	1.729881
168	F	3.634118
169	F	2.484458
170	F	6.202351
171	F	3.46192
172	F	4.79459
173	F	4.734373
174	F	4.411406
175	F	0.320819

176	F	4.176742
177	F	3.652885
178	F	1.60673
179	F	2.530324
180	F	4.033491
181	F	1.008786
182	F	1.396318
183	F	2.414272
184	F	1.881474
185	F	1.575803
186	F	3.132996
187	F	2.284063
188	F	2.263741
189	F	1.22304
190	F	3.010674
191	F	2.335043
192	F	2.169935
193	F	1.723229
194	F	2.515562
195	F	2.765728
196	F	3.711824
197	F	1.785578
198	F	1.609472
199	F	5.752673
200	F	2.665048
201	F	2.316005
202	F	2.66842
203	F	2.75903
204	F	3.198458
205	F	3.396731
206	F	2.8589
207	F	2.802073
208	F	2.697365
209	F	2.542416
210	F	2.321029
211	F	3.48739
212	F	4.990997
213	F	4.462124
214	F	4.330392
215	F	4.038302
216	F	5.178254
217	F	1.903134
218	F	3.381368
219	F	1.495834
220	F	2.029905
221	F	4.535092
222	F	2.864776
223	F	3.264282
224	F	2.96363
225	G	3.054225

226	G	2.327152
227	G	1.924024
228	G	1.257408
229	G	4.805981
230	G	6.435358
231	G	3.091475
232	G	3.309479
233	G	1.946797
234	G	1.856783
235	G	3.086032
236	G	2.351748
237	G	1.547543
238	G	1.871397
239	G	2.867572
240	G	1.030393
241	G	2.370696
242	G	1.920471
243	G	2.346733
244	G	2.140637
245	G	1.459207
246	G	1.588546
247	G	3.449299
248	G	4.289768
249	G	3.817971
250	G	2.785995
251	G	3.684858
252	G	2.508875
253	G	2.806585
254	G	1.511363
255	G	2.67126
256	G	1.780684
257	G	1.362348
258	G	4.112216
259	G	1.851281
260	G	0.481101
261	G	0.979379
262	G	1.242965
263	G	0.711833
264	G	0.888692
265	G	3.107182
266	G	2.725426
267	G	2.794963
268	G	4.138337
269	G	2.88101
270	G	1.413086
271	G	2.143594
272	G	5.787671
273	G	3.914114
274	G	1.617888
275	G	3.182378

276	G	2.354254
277	G	1.954718
278	G	11.57202
279	G	3.252412
280	G	1.233508
281	G	4.467573
282	G	3.754404
283	G	2.014614
284	G	3.56711
285	G	2.320494
286	G	1.64999
287	G	4.013444
288	G	2.084431
289	G	6.096124
290	G	2.645531
291	G	2.823153
292	G	5.894126
293	G	2.203878
294	G	2.66802
295	G	4.235976
296	G	2.28652
297	G	4.719894
298	G	3.53255
299	G	3.22845
300	G	4.224979
301	G	5.865323
302	G	3.587262
303	G	3.89759
304	G	1.944074
305	G	3.037419
306	G	3.457137
307	G	2.015547
308	G	1.886531
309	G	1.601448
310	G	2.064506
311	G	3.787234
312	G	7.613252
313	G	1.911054
314	G	5.792989
315	G	3.986408
316	G	5.124743
317	G	2.005018
318	G	1.380797
319	G	1.825833
320	G	2.236143
321	G	2.537528
322	G	3.248137
323	G	1.614662
324	G	2.155063
325	G	1.677583

326	G	1.635291
327	G	1.459842
328	G	1.660561
329	G	0.564725
330	G	1.708583
331	G	2.264168
332	G	2.445159
333	G	2.817546
334	G	4.124266
335	G	4.350392
336	G	4.310778
337	G	2.586556
338	G	2.657096
339	G	2.673271
340	G	2.870036
341	G	3.657353
342	H	3.274797
343	H	1.794496
344	H	2.385203
345	H	2.213664
346	H	2.757995
347	H	4.141095
348	H	3.035315
349	H	4.108832
350	H	1.514942
351	H	3.149268
352	H	2.998738
353	H	4.058722
354	H	4.51076
355	H	2.678055
356	H	8.166402
357	H	2.391485
358	H	6.07661
359	H	1.91258
360	H	5.458175
361	H	3.105504
362	H	2.509683
363	H	3.912625
364	H	3.87139
365	H	1.721718
366	H	4.024785
367	H	4.017746
368	H	10.21569
369	H	2.80302
370	H	2.37711
371	H	14.23455
372	H	2.04316
373	H	3.795466
374	H	2.910311
375	H	1.916002

376	H	1.454465
377	H	5.161979
378	H	2.274339
379	H	1.71615
380	H	1.718479
381	H	2.796124
382	H	2.070764
383	H	3.67932
384	H	2.229656
385	H	1.300593
386	H	2.86145
387	H	4.008413

Table C.5.16: Bridge NO. 590084 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	C	30.84745
1	D	66.27945
2	D	189.405
3	E	98.9434
4	F	184.5683
5	G	153.5259
6	H	99.24255

Bridge NO. 590059

Table C.5.17: Bridge NO. 590059 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	49.06035

Figure C.5.10: Bridge NO. 590059 Blank Image

Figure C.5.11: Bridge NO. 590059 Obstruction Image

Figure C.5.12: Bridge NO. 590059 Crack Image

Table C.5.18: Bridge NO. 590059 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	15765.6	25	8030.941109	1	0.323220429

Table C.5.19: Bridge NO. 590059 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	14.67286
1	A	5.830097
2	A	30.19396
3	A	14.45446
4	A	28.19181
5	A	8.845794
6	A	9.493113
7	A	4.520629
8	A	13.33151
9	A	5.073119
10	A	4.136762
11	A	6.83049
12	A	9.841833
13	A	8.144104
14	A	17.99346
15	A	12.30816
16	A	7.909197
17	A	11.25128
18	A	10.83143
19	A	4.986115
20	A	7.87536
21	A	10.6327
22	A	9.93655
23	A	16.2972
24	A	9.490879

Table C.5.20: Bridge NO. 590059 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	8030.941

Bridge NO. 590038

Table C.5.21: Bridge NO. 590038 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	21.33616

Figure C.5.13: Bridge NO. 590038 Blank Image

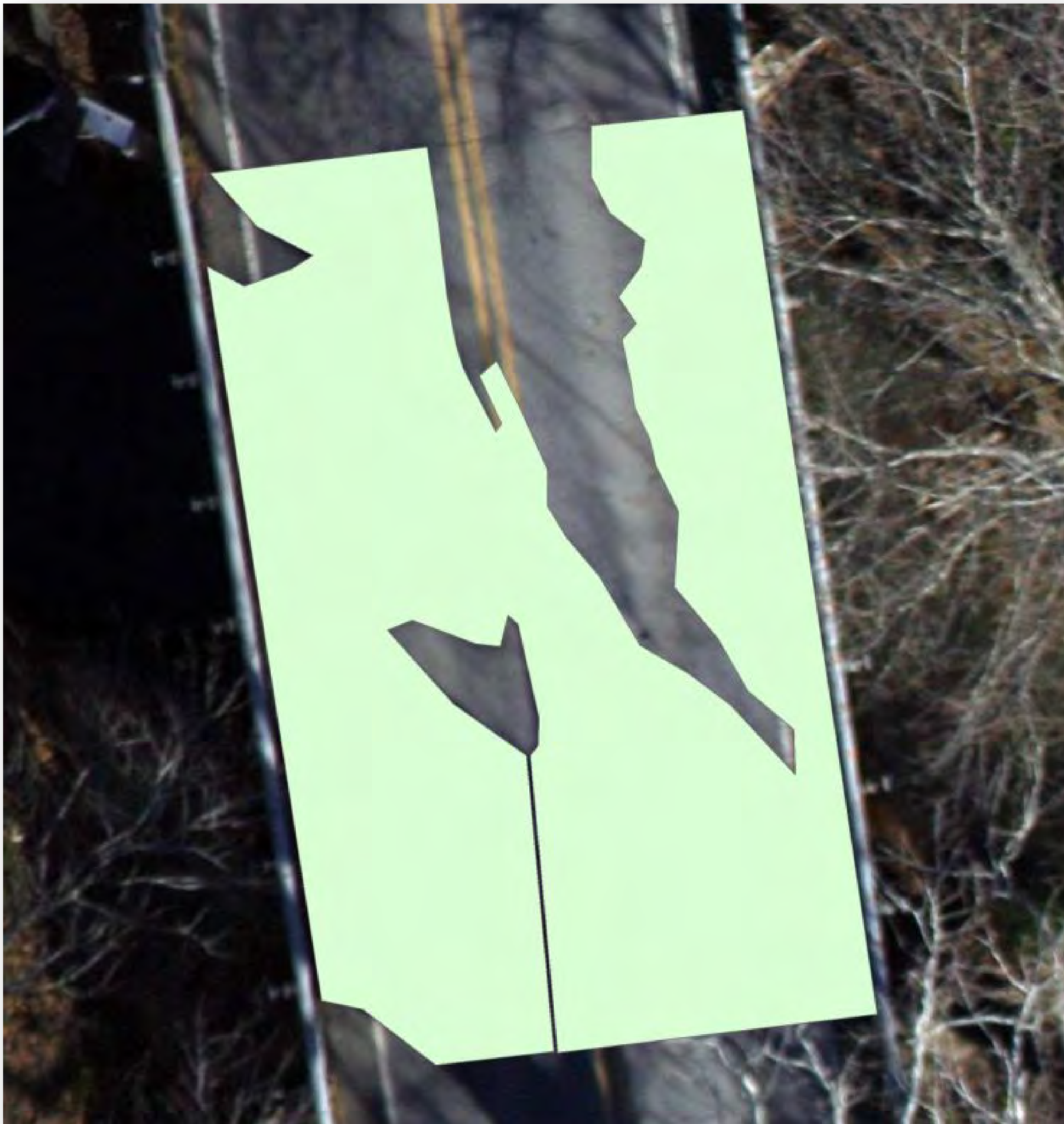


Figure C.5.14: Bridge NO. 590038 Obstruction Image

Figure C.5.15: Bridge NO. 590038 Crack Image

Table C.5.22: Bridge NO. 590038 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	10810.96	18	8504.317922	1	0.780354606

Table C.5.23: Bridge NO. 590038 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	5.986916
1	A	5.613604
2	A	11.6527
3	A	4.238947
4	A	11.73337
5	A	6.975397
6	A	6.847759
7	A	4.474174
8	A	4.16948
9	A	7.321036
10	A	4.800335
11	A	3.534711
12	A	4.445044
13	A	8.076115
14	A	6.292064
15	A	4.197917
16	A	12.15879
17	A	5.137195

Table C.5.24: Bridge NO. 590038 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	8504.318

Bridge NO. 590165

Table C.5.25: Bridge NO. 590165 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	92.64201

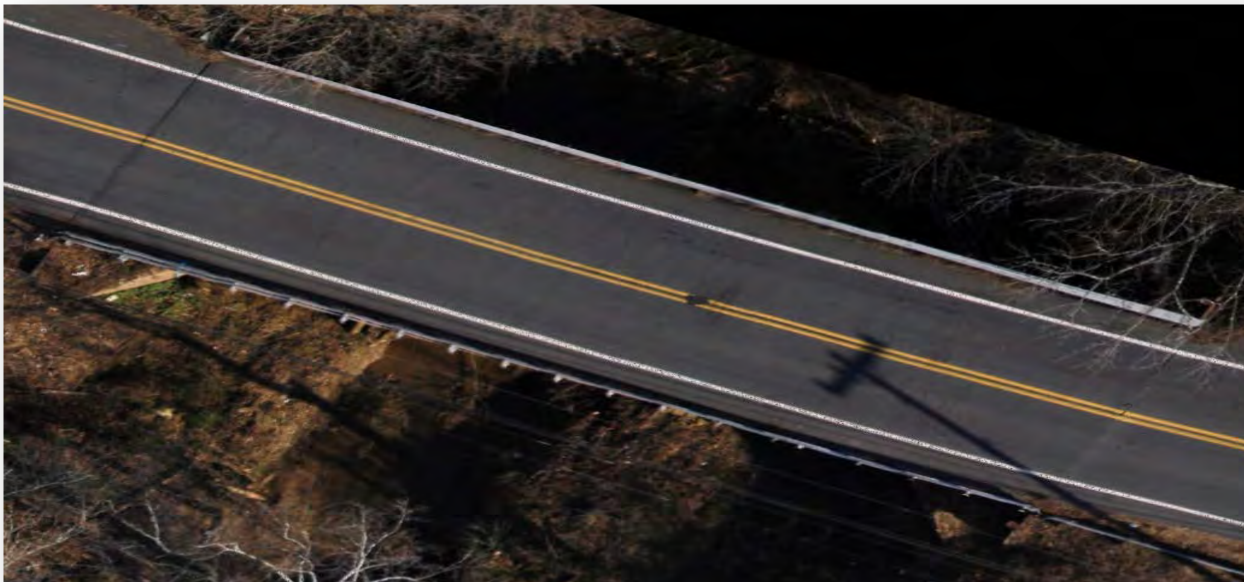


Figure C.5.16: Bridge NO. 590165 Blank Image

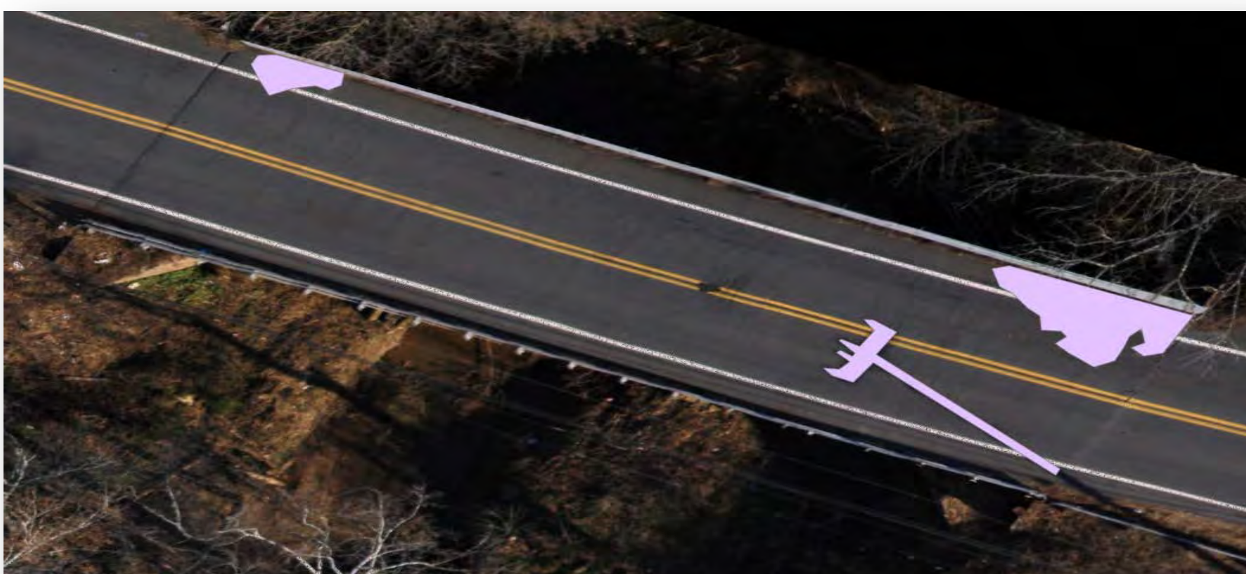


Figure 24: Bridge NO. 590165 Obstruction Image

Figure C.5.18: Bridge NO. 590165 Crack Image

Table C.5.26: Bridge NO. 590165 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstrcution Area	DV	Crack Density
0	A	24702.53	83	1817.610105	1	0.362684276

Table C.5.27: Bridge NO. 590165 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	28.19245
1	A	19.11356
2	A	20.58537
3	A	19.47063
4	A	6.750282
5	A	6.788218
6	A	9.559375
7	A	7.387593
8	A	17.60915
9	A	8.102534
10	A	15.86114
11	A	5.277237
12	A	5.43218

13	A	5.953172
14	A	19.0584
15	A	7.116931
16	A	15.33558
17	A	7.886146
18	A	5.671707
19	A	8.544665
20	A	14.50486
21	A	11.46448
22	A	16.11
23	A	10.74043
24	A	6.756931
25	A	16.25338
26	A	9.040016
27	A	6.068816
28	A	5.792883
29	A	8.316023
30	A	17.63112
31	A	8.669943
32	A	4.946096
33	A	12.42913
34	A	5.775384
35	A	5.298845
36	A	10.87644
37	A	18.31319
38	A	8.18527
39	A	7.470004
40	A	19.7497
41	A	12.31785
42	A	41.46458
43	A	13.12738
44	A	16.57614
45	A	29.2551
46	A	9.756248
47	A	36.30278
48	A	11.33247
49	A	13.48438
50	A	16.57184
51	A	8.478176
52	A	10.24382
53	A	5.288766
54	A	8.639848
55	A	7.633316
56	A	21.57235
57	A	13.05277
58	A	25.06822
59	A	13.98414
60	A	9.993765
61	A	8.948629
62	A	7.745886

63	A	17.31324
64	A	13.6026
65	A	32.82859
66	A	16.50119
67	A	11.40761
68	A	5.478315
69	A	16.6816
70	A	13.09784
71	A	5.856647
72	A	3.996954
73	A	14.7263
74	A	8.909565
75	A	4.600685
76	A	10.50282
77	A	10.9594
78	A	15.36865
79	A	1.674169
80	A	3.803486
81	A	8.526744
82	A	3.968007

Table C.5.28: Bridge NO. 590165 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	283.0317
1	A	406.2861
2	A	1128.292

Bridge NO. 590161

Table C.5.29: Bridge NO. 590161 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	71.30836

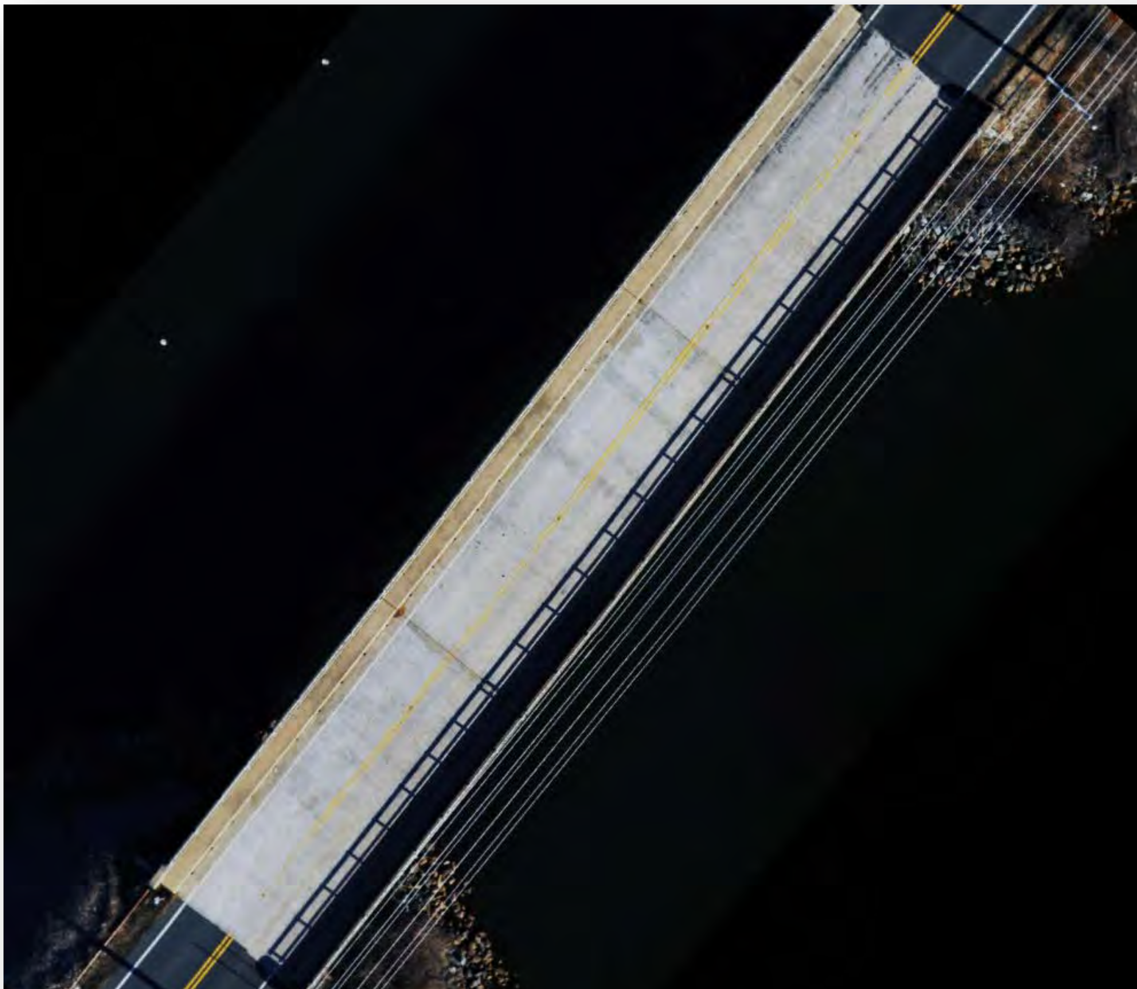


Figure C.5.19: Bridge NO. 590161 Blank Image

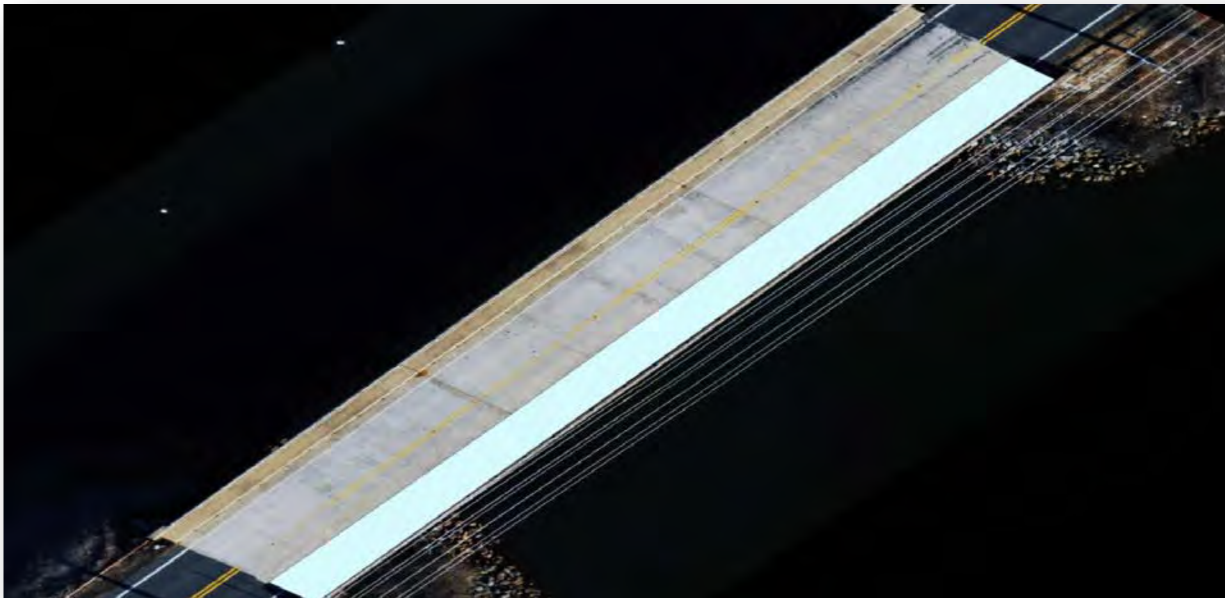


Figure C.5.20: Bridge NO. 590161 Obstruction Image

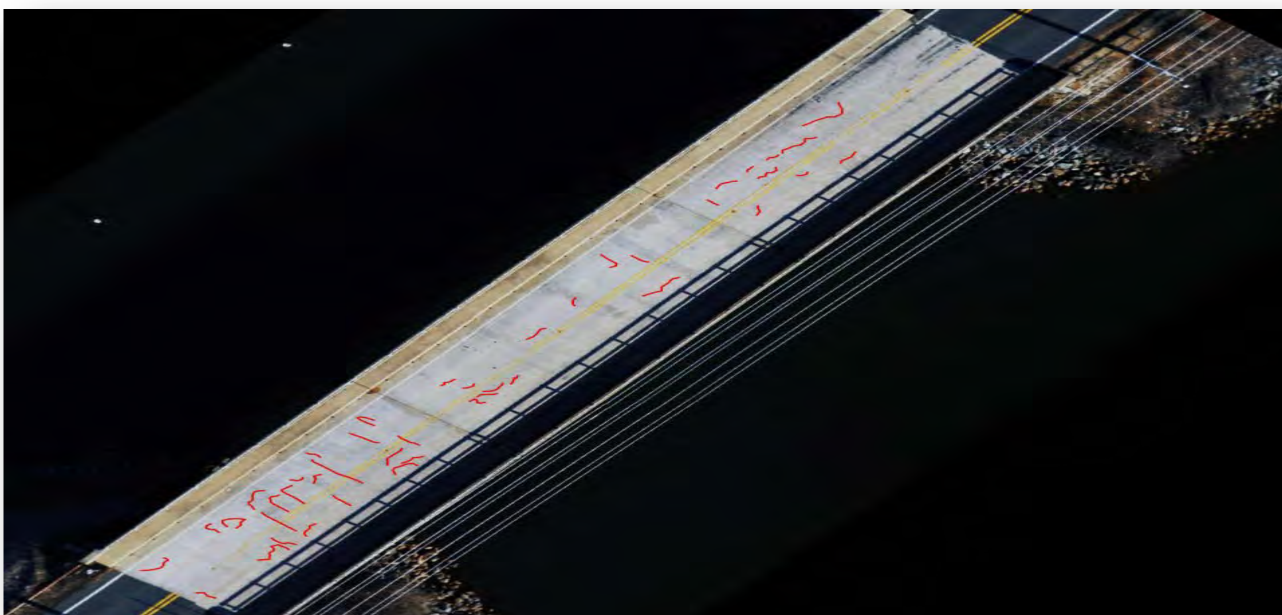


Figure C.5.21: Bridge NO. 590161 Crack Image

Table 36: Bridge NO. 590161 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	60873.17	43	17465.51252	1	0.09906087

Table C.5.30: Bridge NO. 590161 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	7.472789
1	A	24.02447
2	A	12.74871
3	A	8.831415
4	A	6.715406
5	A	12.47098
6	A	5.588498
7	A	15.55921
8	A	6.757005
9	A	7.162179
10	A	13.53018
11	A	7.169929
12	A	12.78485
13	A	9.492893
14	A	10.60105
15	A	10.48338
16	A	9.746807
17	A	18.91825
18	A	12.70729
19	A	15.97097
20	A	17.04617
21	A	12.54302
22	A	18.71094
23	A	31.53103
24	A	7.747133
25	A	7.455987
26	A	10.22689
27	A	22.45954
28	A	20.8003

29	A	21.70895
30	A	22.64308
31	A	11.91332
32	A	26.44857
33	A	12.5318
34	A	20.33644
35	A	11.11961
36	A	28.04654
37	A	13.57417
38	A	13.39387
39	A	10.01857
40	A	15.57403
41	A	25.41134
42	A	32.22242

Table C.5.31: Bridge NO. 590161 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	17465.51

Bridge NO. US21 St. 2004

Table C.5.32: Bridge NO. US21 St. 2004 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	94.65993

Figure C.5.22: Bridge NO. US21 St. 2004 Blank Image

Figure C.5.23: Bridge NO. US21 St. 2004 Obstruction Image

Figure C.5.24: Bridge NO. US21 St. 2004 Crack Image

Table C.5.33: Bridge NO. US21 St. 2004 Span Area

Span Area						
FID	**Span**	**Area**	**# Cracks**	**Obstruction Area**	**DV**	**Crack Density**
0	**A**	**48540.67**	**42**	**2592.104198**	**1**	**0.091406544**

Table C.5.34: Bridge NO. US21 St. 2004 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	153.0261
1	A	14.06315
2	A	19.65347
3	A	12.97051
4	A	12.97973
5	A	17.12723
6	A	19.02163
7	A	14.72192
8	A	7.015688
9	A	5.242772
10	A	2.612551
11	A	14.5263
12	A	7.104052
13	A	9.985533
14	A	23.06427
15	A	11.38267
16	A	21.04929
17	A	33.08268
18	A	13.88923
19	A	10.77747
20	A	16.0112
21	A	17.22718
22	A	12.69474
23	A	23.76343
24	A	10.49124
25	A	6.090108
26	A	8.644711
27	A	6.964256
28	A	28.01871
29	A	20.20404
30	A	11.84789
31	A	29.46245
32	A	30.01191
33	A	12.72299
34	A	19.45107
35	A	15.16837
36	A	17.15212
37	A	22.81808
38	A	13.14385
39	A	3.679487
40	A	9.725215
41	A	22.76123

Table C.5.35: Bridge NO. US21 St. 2004 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	2592.104

Bridge NO. US21 St. 21

Table C.5.36: Bridge NO. US21 St. 21 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	93.94299

Figure C.5.25: Bridge NO. US21 St. 21 Blank Image

Figure C.5.26: Bridge NO. US21 St. 21 Obstruction Image

Figure C.5.27: Bridge NO. US21 St. 21 Crack Image

Table C.5.37: Bridge NO. US21 St. 21 Span Area

Span_Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	47786.35	49	2894.425632	1	0.109151023

Table C.5.38: Bridge NO. US21 St. 21 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	286.7112
1	A	88.70978
2	A	124.5382
3	A	44.94116
4	A	21.19956
5	A	15.87562
6	A	13.99342
7	A	8.69033
8	A	14.18385
9	A	9.609706
10	A	7.29603
11	A	13.23558
12	A	6.050751
13	A	9.044843
14	A	7.917554
15	A	7.426872
16	A	2.38063
17	A	24.97089
18	A	12.37769
19	A	11.30834
20	A	6.088774
21	A	6.079276
22	A	19.12864
23	A	8.851578
24	A	6.829063
25	A	4.539239
26	A	13.7711
27	A	8.357513
28	A	11.32899
29	A	5.653817
30	A	34.53426
31	A	20.02585
32	A	6.553766
33	A	8.693528
34	A	8.206382
35	A	8.768836
36	A	12.17382
37	A	4.553561
38	A	6.312568
39	A	5.852088
40	A	7.901208

41	A	8.864883
42	A	13.4391
43	A	15.72712
44	A	12.48441
45	A	18.83441
46	A	10.71209
47	A	7.215745
48	A	10.85663

Table C.5.39: Bridge NO. US21 St. 21 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	1266.505
1	A	1627.921

Bridge NO. Wilmington

Table C.5.4037: Bridge NO. Wilmington Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	72.01279

Figure C.5.28: Bridge NO. Wilmington Blank Image

Figure C.5.29: Bridge NO. Wilmington Obstruction Image

Figure C.5.30: Bridge NO. Wilmington Crack Image

Table C.5.41: Bridge NO. Wilmington Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	14661.27	12	3928.779302	1	0.111810071
1	B	14611.44	19	3925.235377	1	0.177799255
2	C	15013.85	20	4172.634041	1	0.184481169
3	D	15107.16	37	4146.281946	1	0.337564183
4	E	15088.07	47	4127.400294	1	0.428806033
5	F	14964.84	48	4174.586635	1	0.444845719
6	G	14767.25	47	4108.722653	1	0.440961559
7	H	15235.92	36	4205.596729	1	0.326373018
8	I	15250.33	44	4116.229321	1	0.395182476
9	J	15187.04	50	4124.971108	1	0.451995135
10	K	15297.89	36	4143.342636	1	0.322738469
11	L	15993.48	49	4353.491314	1	0.420962467
12	M	15608.7	54	4242.952755	1	0.475111908
13	N	15955.54	86	4249.312032	1	0.734651527
14	O	16212.45	52	4455.192641	1	0.44228004
15	P	16083.45	52	6104.757024	1	0.521110082

Table C.5.42: Bridge NO. Wilmington Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	29.46042
1	A	9.317086
2	A	9.522069
3	A	17.53025
4	A	16.72863
5	A	18.89807
6	A	11.93683
7	A	16.42862
8	A	18.08503
9	A	14.60186
10	A	17.38289
11	A	7.799507
12	B	9.102029
13	B	15.95743
14	B	6.381567
15	B	5.633575
16	B	14.37861
17	B	13.0735
18	B	29.17146
19	B	5.025108
20	B	12.88264
21	B	19.07178
22	B	24.8971
23	B	14.76224

24	B	21.87098
25	B	20.08764
26	B	11.74569
27	B	7.880272
28	B	18.19953
29	B	8.652989
30	B	12.38041
31	C	8.825004
32	C	8.400182
33	C	11.84948
34	C	17.62198
35	C	17.93512
36	C	5.120638
37	C	8.374865
38	C	11.13653
39	C	9.253841
40	C	23.74784
41	C	8.610543
42	C	5.565525
43	C	6.745507
44	C	10.99991
45	C	7.835481
46	C	6.887996
47	C	9.863637
48	C	5.538457
49	C	12.66985
50	C	19.71293
51	D	8.08676
52	D	6.724511
53	D	8.121209
54	D	16.52293
55	D	14.39292
56	D	7.551017
57	D	9.901211
58	D	14.23631
59	D	25.54852
60	D	18.46821
61	D	10.98883
62	D	11.74099
63	D	9.097724
64	D	7.095794
65	D	9.350396
66	D	10.80051
67	D	3.810337
68	D	26.14911
69	D	5.736685
70	D	25.22091
71	D	20.66696
72	D	5.441306
73	D	9.550169

74	D	11.6151
75	D	9.537049
76	D	13.23721
77	D	21.72162
78	D	17.34131
79	D	19.6863
80	D	9.167023
81	D	22.63457
82	D	8.405116
83	D	9.285
84	D	10.03927
85	D	14.61658
86	D	13.67785
87	D	8.949239
88	E	13.56574
89	E	12.5134
90	E	21.77543
91	E	18.08529
92	E	13.88001
93	E	12.62687
94	E	9.564667
95	E	12.78946
96	E	11.44912
97	E	29.00609
98	E	11.20891
99	E	14.04313
100	E	18.26858
101	E	22.13994
102	E	9.185496
103	E	5.731086
104	E	13.06302
105	E	8.500999
106	E	6.633092
107	E	8.400228
108	E	9.827609
109	E	6.864651
110	E	8.175305
111	E	13.19675
112	E	7.941388
113	E	11.78748
114	E	13.30425
115	E	13.61375
116	E	12.77333
117	E	9.009572
118	E	13.89799
119	E	10.29367
120	E	5.583958
121	E	14.42961
122	E	8.579638
123	E	7.95896

124	E	15.41176
125	E	16.76352
126	E	13.84608
127	E	8.570413
128	E	10.59532
129	E	14.34621
130	E	13.87348
131	E	14.04269
132	E	15.70135
133	E	6.861139
134	E	11.92607
135	F	14.79187
136	F	13.65437
137	F	27.34823
138	F	9.918864
139	F	7.963507
140	F	7.574722
141	F	13.40697
142	F	15.63134
143	F	12.0203
144	F	9.457252
145	F	11.63412
146	F	11.67148
147	F	12.90673
148	F	38.90635
149	F	6.73765
150	F	17.26756
151	F	35.0786
152	F	6.984329
153	F	15.94263
154	F	9.066437
155	F	18.66846
156	F	19.61233
157	F	13.68819
158	F	13.00421
159	F	3.256394
160	F	4.952659
161	F	6.050597
162	F	15.50676
163	F	17.60165
164	F	15.38101
165	F	5.512203
166	F	5.76346
167	F	4.946113
168	F	6.116933
169	F	7.640775
170	F	6.546339
171	F	20.89251
172	F	13.8644
173	F	7.84869

174	F	11.15484
175	F	6.647896
176	F	12.25105
177	F	8.844003
178	F	12.82213
179	F	9.927138
180	F	13.02657
181	F	5.491612
182	F	9.45694
183	G	9.350017
184	G	3.678874
185	G	8.725632
186	G	7.114103
187	G	9.822773
188	G	8.939867
189	G	9.531829
190	G	10.88551
191	G	16.9756
192	G	15.20095
193	G	8.191619
194	G	7.139202
195	G	10.055
196	G	7.886493
197	G	8.594392
198	G	12.31672
199	G	14.6874
200	G	20.53219
201	G	12.09236
202	G	11.33757
203	G	6.253685
204	G	7.504575
205	G	13.56853
206	G	10.91864
207	G	9.748342
208	G	9.943684
209	G	32.05508
210	G	12.59237
211	G	17.99761
212	G	13.21653
213	G	15.88242
214	G	17.47761
215	G	15.07429
216	G	7.1833
217	G	8.250041
218	G	15.3951
219	G	25.19362
220	G	17.98704
221	G	5.775572
222	G	7.236421
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224	G	11.29416
225	G	13.38949
226	G	18.12187
227	G	12.77929
228	G	9.568603
229	G	10.31757
230	H	10.0127
231	H	16.67834
232	H	8.043229
233	H	15.11843
234	H	29.18387
235	H	15.55178
236	H	8.33798
237	H	11.2431
238	H	11.11249
239	H	19.4295
240	H	16.00173
241	H	10.926
242	H	19.59188
243	H	12.17167
244	H	6.914224
245	H	9.350064
246	H	9.852262
247	H	10.83019
248	H	10.65018
249	H	9.082063
250	H	12.24686
251	H	11.89417
252	H	22.39897
253	H	13.63056
254	H	40.06821
255	H	11.60835
256	H	24.04991
257	H	17.94488
258	H	7.563281
259	H	24.47675
260	H	10.24143
261	H	15.31603
262	H	3.993442
263	H	13.24111
264	H	7.54793
265	H	12.02052
266	I	32.67466
267	I	25.52311
268	I	8.761832
269	I	13.8696
270	I	9.829146
271	I	10.59591
272	I	16.87637
273	I	21.65218

274	I	17.57772
275	I	30.36441
276	I	12.76898
277	I	23.32545
278	I	4.518426
279	I	23.31681
280	I	10.02999
281	I	6.197866
282	I	20.19774
283	I	8.247006
284	I	10.73892
285	I	22.59843
286	I	29.11139
287	I	5.810851
288	I	13.71406
289	I	6.144492
290	I	7.526024
291	I	30.12154
292	I	8.411849
293	I	15.95335
294	I	9.968778
295	I	17.62618
296	I	14.67342
297	I	10.28909
298	I	15.53162
299	I	6.066075
300	I	9.509229
301	I	6.410921
302	I	12.46859
303	I	7.067834
304	I	15.18685
305	I	22.66349
306	I	28.97812
307	I	21.89576
308	I	28.42078
309	I	7.971032
310	J	10.01147
311	J	10.05518
312	J	11.76704
313	J	8.034231
314	J	9.497725
315	J	3.644821
316	J	7.548288
317	J	16.60397
318	J	21.58533
319	J	8.031217
320	J	5.983218
321	J	11.99681
322	J	12.25767
323	J	5.528421

324	J	9.489615
325	J	6.25374
326	J	8.184878
327	J	6.391714
328	J	4.937
329	J	11.11033
330	J	37.87457
331	J	11.32086
332	J	14.84579
333	J	7.230617
334	J	14.78849
335	J	11.44963
336	J	8.568991
337	J	8.346733
338	J	19.47974
339	J	11.89567
340	J	22.3156
341	J	7.384997
342	J	21.06775
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344	J	9.894391
345	J	12.67078
346	J	17.83476
347	J	8.432584
348	J	7.372752
349	J	15.45111
350	J	8.549919
351	J	12.14532
352	J	23.77159
353	J	6.117352
354	J	10.7244
355	J	5.47159
356	J	22.63646
357	J	9.031678
358	J	22.53013
359	J	12.35129
360	K	13.35855
361	K	5.166547
362	K	5.690221
363	K	7.664277
364	K	27.36361
365	K	28.82903
366	K	25.09917
367	K	11.87397
368	K	14.87509
369	K	19.14756
370	K	7.35567
371	K	11.68397
372	K	10.95953
373	K	8.317462

374	K	10.51601
375	K	18.65256
376	K	16.82923
377	K	29.89278
378	K	12.30742
379	K	10.39039
380	K	10.18543
381	K	30.74798
382	K	27.44851
383	K	6.377929
384	K	25.43536
385	K	12.13078
386	K	10.2394
387	K	14.69842
388	K	12.88871
389	K	12.01565
390	K	15.40511
391	K	9.751118
392	K	9.607124
393	K	5.421083
394	K	5.104254
395	K	22.69515
396	L	21.55018
397	L	35.7795
398	L	6.042286
399	L	5.193406
400	L	10.49915
401	L	14.21359
402	L	13.54575
403	L	6.352881
404	L	16.96627
405	L	11.81135
406	L	13.31251
407	L	9.09936
408	L	13.50371
409	L	16.87883
410	L	7.547412
411	L	10.77963
412	L	4.960445
413	L	15.17457
414	L	22.26351
415	L	9.905011
416	L	7.538731
417	L	10.27464
418	L	12.6487
419	L	20.42302
420	L	12.63002
421	L	7.264541
422	L	19.98315
423	L	9.230971

424	L	15.77456
425	L	8.137033
426	L	9.130435
427	L	8.84766
428	L	14.8531
429	L	18.37983
430	L	5.827345
431	L	13.10226
432	L	10.20973
433	L	16.96892
434	L	10.14639
435	L	12.45464
436	L	15.00351
437	L	11.83639
438	L	20.296
439	L	9.584584
440	L	18.04282
441	L	8.945535
442	L	7.6277
443	L	2.836716
444	L	6.599085
445	M	7.123572
446	M	10.38824
447	M	6.221386
448	M	16.40441
449	M	4.590095
450	M	13.84744
451	M	9.861675
452	M	9.705013
453	M	3.933679
454	M	7.268555
455	M	10.45123
456	M	6.124557
457	M	9.130236
458	M	7.448336
459	M	16.2162
460	M	8.320139
461	M	10.40206
462	M	5.487184
463	M	10.06253
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465	M	21.30114
466	M	11.7608
467	M	13.23122
468	M	4.910127
469	M	12.01575
470	M	14.29995
471	M	22.23346
472	M	15.95875
473	M	13.6962

474	M	1.97838
475	M	2.588759
476	M	9.847775
477	M	8.434902
478	M	9.522898
479	M	16.40789
480	M	13.03687
481	M	8.274683
482	M	10.942
483	M	10.96985
484	M	10.15985
485	M	12.90198
486	M	8.691408
487	M	7.825199
488	M	4.5633
489	M	12.37955
490	M	13.25059
491	M	3.661505
492	M	5.577027
493	M	12.65849
494	M	7.677738
495	M	6.875283
496	M	9.15106
497	M	5.549922
498	M	9.153981
499	N	8.116923
500	N	9.17523
501	N	8.16134
502	N	6.653874
503	N	6.342797
504	N	18.83787
505	N	11.16193
506	N	25.74344
507	N	8.163478
508	N	3.078894
509	N	6.249709
510	N	6.827076
511	N	8.27171
512	N	11.26537
513	N	7.853555
514	N	7.686441
515	N	6.980954
516	N	7.760758
517	N	13.29346
518	N	5.100925
519	N	7.64856
520	N	12.4421
521	N	5.70242
522	N	11.64953
523	N	6.639499

524	N	7.917845
525	N	13.23728
526	N	13.87381
527	N	10.89514
528	N	5.334876
529	N	4.904286
530	N	4.555795
531	N	4.825598
532	N	8.825129
533	N	13.67415
534	N	10.77406
535	N	4.905985
536	N	4.263315
537	N	4.596042
538	N	4.191145
539	N	5.502778
540	N	11.69083
541	N	8.675402
542	N	14.68861
543	N	12.6882
544	N	6.846286
545	N	13.68466
546	N	8.36775
547	N	19.008
548	N	13.92865
549	N	18.08169
550	N	14.90077
551	N	15.44987
552	N	10.9169
553	N	22.91639
554	N	10.94249
555	N	10.11029
556	N	9.898576
557	N	8.23009
558	N	10.06774
559	N	13.84337
560	N	29.36223
561	N	5.609088
562	N	7.391768
563	N	8.089349
564	N	9.592367
565	N	4.18842
566	N	11.71519
567	N	11.08418
568	N	8.237692
569	N	6.334303
570	N	3.898478
571	N	10.03891
572	N	4.784026
573	N	6.870151

574	N	2.680016
575	N	4.136572
576	N	7.121144
577	N	16.01891
578	N	10.47988
579	N	6.166342
580	N	8.881035
581	N	3.611719
582	N	3.85667
583	N	4.712546
584	N	3.078788
585	O	5.379166
586	O	12.91519
587	O	11.93
588	O	1.306932
589	O	2.925081
590	O	8.135538
591	O	5.089392
592	O	8.194025
593	O	7.676735
594	O	10.52619
595	O	6.882994
596	O	4.354855
597	O	8.23522
598	O	7.834466
599	O	13.12653
600	O	14.49385
601	O	9.19059
602	O	17.01832
603	O	7.264135
604	O	5.83204
605	O	6.217893
606	O	2.303186
607	O	10.95708
608	O	6.924269
609	O	8.949058
610	O	6.612459
611	O	10.61714
612	O	7.141151
613	O	7.989019
614	O	6.039765
615	O	3.746439
616	O	7.504374
617	O	3.280645
618	O	8.165199
619	O	2.535903
620	O	8.575067
621	O	3.911576
622	O	9.566777
623	O	8.325079

624	O	7.179577
625	O	9.107195
626	O	11.98437
627	O	28.13123
628	O	24.69567
629	O	19.84223
630	O	7.904529
631	O	8.220803
632	O	11.10955
633	O	15.9442
634	O	11.56318
635	O	14.2124
636	O	9.319602
637	P	7.352591
638	P	5.14264
639	P	11.60896
640	P	18.49998
641	P	11.03871
642	P	15.91041
643	P	23.94499
644	P	8.252521
645	P	15.31157
646	P	10.86052
647	P	15.48741
648	P	13.136
649	P	6.285696
650	P	9.205388
651	P	12.50441
652	P	4.795512
653	P	14.14464
654	P	7.446942
655	P	15.62449
656	P	8.059806
657	P	5.561769
658	P	23.69745
659	P	8.530838
660	P	22.65488
661	P	22.7706
662	P	8.000733
663	P	17.84572
664	P	6.985934
665	P	6.255733
666	P	6.369974
667	P	6.105685
668	P	10.43313
669	P	10.44821
670	P	5.243756
671	P	8.909014
672	P	14.34117
673	P	16.37639

674	P	11.30427
675	P	7.706568
676	P	8.53216
677	P	6.302649
678	P	8.610874
679	P	19.40526
680	P	8.161844
681	P	5.230338
682	P	18.20443
683	P	18.28797
684	P	19.61352
685	P	18.2446
686	P	7.872071
687	P	22.62156
688	P	7.729363

Table C.5.43: Bridge NO. Wilmington Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	2809.059
1	A	1119.72
2	B	1125.331
3	B	2799.905
4	C	2944.453
5	D	2888.863
6	D	1257.419
7	C	1228.181
8	E	1301.45
9	E	2825.951
10	F	2869.239
11	F	1305.348
12	G	1253.85
13	G	2854.872
14	H	2983.091
15	H	1222.506
16	I	1149.018
17	I	2967.211
18	J	2922.739
19	J	1202.232
20	K	1242.093
21	K	2901.25
22	L	3032.869
23	L	1320.622
24	M	1232.938
25	M	3010.015
26	N	2956.285
27	N	1293.027
28	O	1412.508
29	O	3035.984

30	**P**	**4838.582**
31	**O**	**6.701182**
32	**P**	**1266.175**

North Carolina 2nd Flyover
Bridge NO. 1190447

Table C.6.1: Bridge NO. 1190447 Index Values

Bridge Surface Condition Index:	**84.96854**
Image Quality Index:	**20.34974**

Figure C.6.1: Bridge NO. 1190447 Blank Image

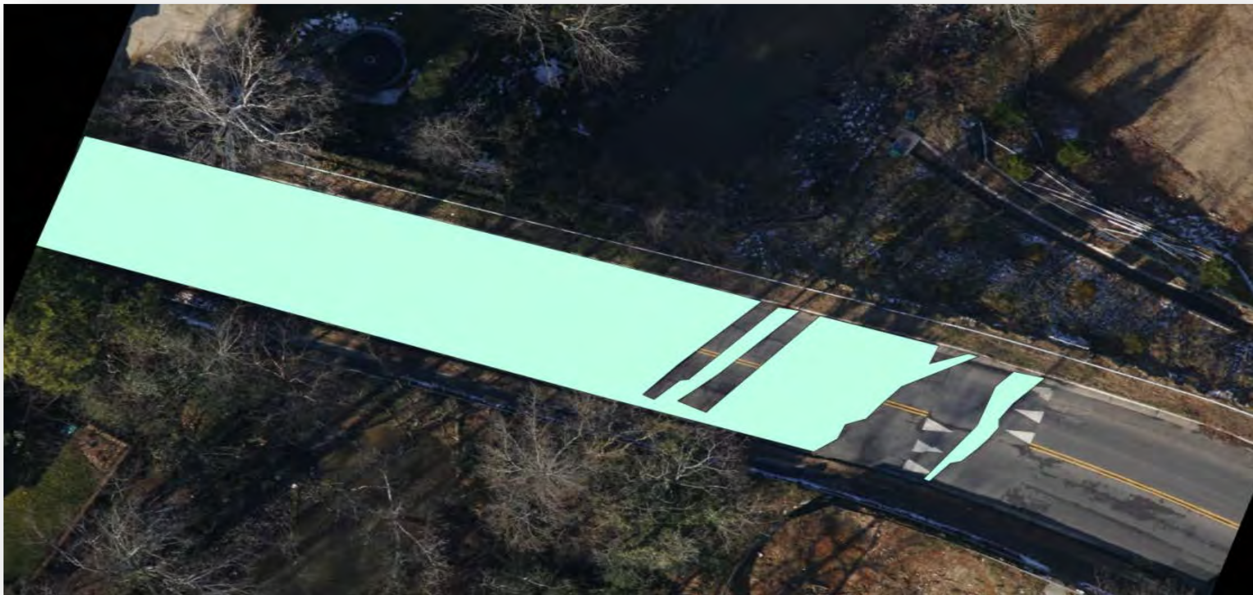

Figure C.6.2: Bridge NO. 1190447 Obstruction Image

Figure C.6.3: Bridge NO. 1190447 Crack Image

Table C.6.2: Bridge NO. 1190447 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	9837.21	40	7835.363533	15.03146	1.998155228

Table C.6.3: Bridge NO. 1190447 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	5.083705
1	A	4.389837
2	A	1.738878
3	A	3.972624
4	A	3.676176
5	A	3.971068
6	A	2.49469
7	A	4.678503
8	A	4.587472
9	A	1.925058
10	A	3.075057
11	A	11.88555
12	A	11.07128
13	A	2.229319
14	A	6.567675
15	A	2.932129
16	A	1.080146
17	A	3.051934
18	A	2.738849
19	A	5.556414
20	A	2.636431
21	A	0.923879
22	A	1.512224
23	A	0.749825
24	A	8.305318
25	A	2.567938
26	A	2.830506
27	A	3.045442
28	A	1.573638
29	A	3.480797
30	A	5.011296
31	A	2.265611
32	A	3.74629
33	A	4.421777
34	A	4.7838
35	A	3.104645
36	A	2.18871
37	A	2.714387
38	A	6.467477
39	A	5.783915

Table C.6.4: Bridge NO. 1190447 Obstruction Image

Obstruction Analysis		
FID	Span	Area
0	A	7649.201
1	A	186.1621

Bridge NO. 374000000001790223 (Structure # From NBI Data Format)

Table C.6.5: Bridge NO. 374000000001790223 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	78.91087

Figure C.6.4: Bridge NO. 374000000001790223 Blank Image

Figure C.6.5: Bridge NO. 374000000001790223 Obstruction Image

Figure C.6.6: Bridge NO. 374000000001790223 Crack Image

Table C.6.6: Bridge NO. 374000000001790223 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	32706.8	25	6897.580597	1	0.096864595

Table C.6.7: Bridge NO. 374000000001790223 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	16.27393
1	A	26.12629
2	A	14.96857
3	A	30.1002
4	A	40.88418
5	A	32.20723
6	A	8.810458
7	A	13.39935
8	A	15.42926
9	A	23.97619
10	A	17.76145
11	A	22.73269
12	A	12.98657
13	A	40.1346
14	A	11.49873
15	A	27.34676
16	A	21.93081
17	A	31.53315
18	A	19.18413
19	A	22.88853
20	A	28.95641
21	A	12.03975
22	A	29.92272
23	A	47.39683
24	A	37.59014

Table C.6.8: Bridge NO. 374000000001790223 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	4927.04
1	A	1970.54

Bridge NO. 374000000000970028 (Structure # From NBI Data Format)

Table C.6.9: Bridge NO. 374000000000970028 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	100

Figure C.6.7: Bridge NO. 374000000000970028 Blank Image

Figure C.6.8: Bridge NO. 374000000000970028 Crack Image

Table C.6.10: Bridge NO. 374000000000970028 Span Area

Span_Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	38892.66	54	0	1	0.138843687

Table C.6.11: Bridge NO. 374000000000970028 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	5.131588
1	A	7.266053
2	A	6.129316
3	A	4.742219
4	A	26.94159
5	A	5.007068
6	A	4.653698
7	A	11.52103
8	A	11.34786
9	A	5.943387
10	A	5.873769
11	A	7.549541
12	A	14.37229
13	A	7.591827
14	A	6.815313
15	A	14.44848
16	A	6.771066
17	A	9.07906
18	A	4.865664
19	A	8.451437
20	A	12.28495
21	A	20.24231
22	A	4.807835
23	A	11.38011
24	A	12.56573
25	A	12.45894
26	A	7.530731
27	A	11.20331
28	A	4.703101
29	A	5.003368
30	A	11.73232
31	A	11.67446
32	A	7.919219
33	A	11.89651
34	A	12.62144
35	A	6.107493
36	A	6.602856
37	A	5.350921

38	A	5.9243
39	A	5.521124
40	A	6.301143
41	A	8.967865
42	A	4.950535
43	A	5.546703
44	A	4.574511
45	A	10.80703
46	A	2.878659
47	A	4.69474
48	A	11.51308
49	A	12.15594
50	A	5.651336
51	A	4.505268
52	A	6.747204
53	A	5.427247

Bridge NO. US21

Table C.6.12: Bridge NO. US21 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	73.80305

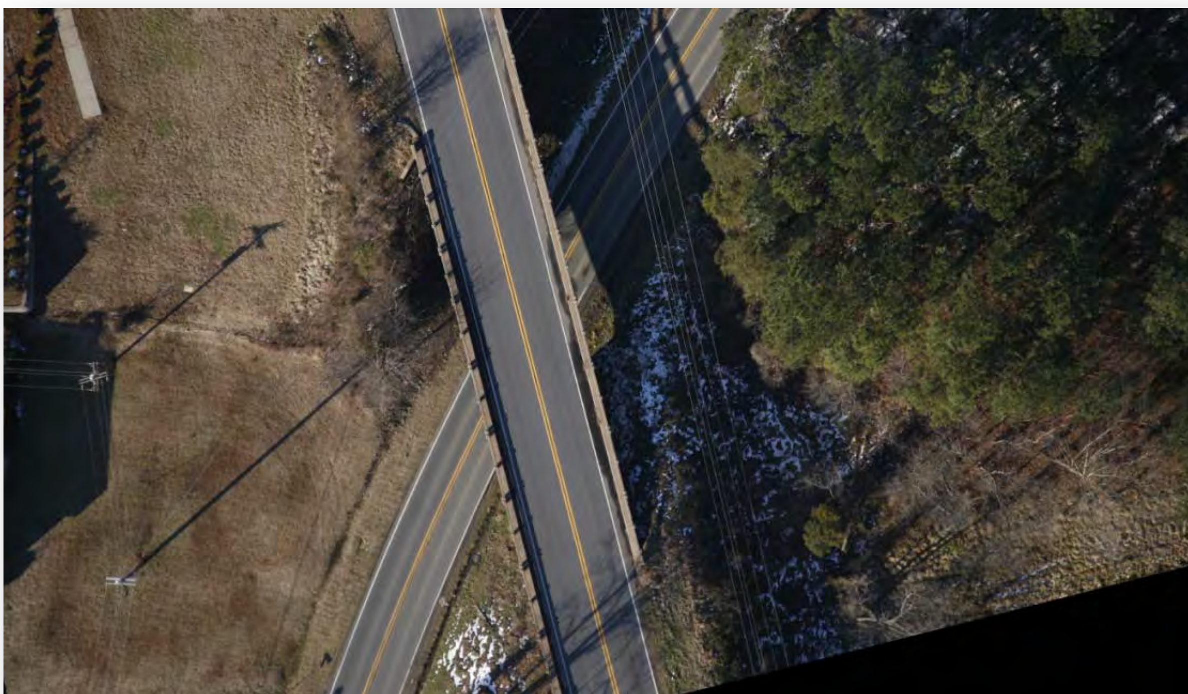

Figure C.6.9: Bridge NO. US21 Blank Image

Figure C.6.10: Bridge NO. US21 Obstruction Image

Figure C.6.11: Bridge NO. US21 Crack Image

Table C.6.13: Bridge NO. US21 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	47863.17	125	12538.68917	1	0.353862267

Table C.6.14: Bridge NO. US21 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	8.578807
1	A	15.88149
2	A	7.255971
3	A	3.998341
4	A	9.473285
5	A	15.43147
6	A	7.46961
7	A	15.59408
8	A	4.966635
9	A	6.132104
10	A	11.86483
11	A	2.829507
12	A	9.525924
13	A	8.940182
14	A	11.64246
15	A	1.590015
16	A	6.338232
17	A	13.61666
18	A	12.58351
19	A	6.038555
20	A	7.418165
21	A	14.62694
22	A	8.260087
23	A	17.00766
24	A	18.82456
25	A	13.41588
26	A	10.28356
27	A	12.69827
28	A	9.244907
29	A	14.8612
30	A	11.12793
31	A	4.240068
32	A	6.409021
33	A	4.627723
34	A	5.380531
35	A	4.649758
36	A	13.19091
37	A	5.852596

38	A	6.176175
39	A	12.28197
40	A	10.29378
41	A	10.15017
42	A	11.92002
43	A	8.395362
44	A	3.968565
45	A	12.80725
46	A	22.66314
47	A	9.441704
48	A	7.050701
49	A	10.08166
50	A	14.1199
51	A	6.659213
52	A	6.54182
53	A	7.2435
54	A	8.129575
55	A	3.169341
56	A	5.792833
57	A	8.852362
58	A	13.57637
59	A	7.172801
60	A	9.340283
61	A	5.024232
62	A	13.73803
63	A	5.607706
64	A	8.129582
65	A	9.911064
66	A	7.208365
67	A	12.77077
68	A	3.760094
69	A	9.99696
70	A	4.893681
71	A	7.285711
72	A	4.479321
73	A	15.18791
74	A	10.49027
75	A	8.401779
76	A	7.49994
77	A	9.800874
78	A	15.43183
79	A	16.84124
80	A	11.56654
81	A	8.01743
82	A	15.39085
83	A	2.529037
84	A	10.83864
85	A	8.126718
86	A	12.83709
87	A	15.47095

88	A	7.325379
89	A	8.20877
90	A	18.07936
91	A	8.396004
92	A	2.767548
93	A	3.927557
94	A	7.020712
95	A	15.79107
96	A	8.214217
97	A	17.76523
98	A	6.14554
99	A	7.692527
100	A	8.264278
101	A	11.39044
102	A	5.255051
103	A	12.03573
104	A	9.070395
105	A	29.22053
106	A	12.79631
107	A	3.656893
108	A	9.660071
109	A	21.18314
110	A	16.72592
111	A	8.202277
112	A	7.515258
113	A	10.68291
114	A	10.45024
115	A	11.89788
116	A	9.769133
117	A	12.75643
118	A	18.82749
119	A	2.230021
120	A	9.071426
121	A	13.29314
122	A	8.384687
123	A	11.5453
124	A	21.90102

Table C.6.15: Bridge NO. US21 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	10767.55
1	A	445.6763
2	A	1325.467

North Carolina 3rd Flyover
Bridge NO. 590084

Table C.7.1: Bridge NO. 590084 Index Values

Bridge Surface Condition Index:	63.44904
Image Quality Index:	100

Figure C.7.1: Bridge NO. 590084 Blank Image

Figure C.7.2: Bridge NO. 590084 Crack Image

Table C.7.2: Bridge NO. 590084 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	2184.004	14	0	1	0.64102446
1	B	2908.28	11	0	1	0.378230474
2	C	2928.564	2	0	1	0.068292865
3	D	1501.866	3	0	1	0.199751514
4	E	1515.79	37	0	19.37813	2.440970829
5	F	2839.491	125	0	32.18348	4.402197735
6	G	2913.376	99	0	26.56193	3.39811983
7	H	2229.267	120	0	36.55096	5.382935546

Table C.7.3: Bridge NO. 590084 Crack Extraction

Crack Extraction		
FID	Span	Length
0	D	9.799333
1	D	7.428369
2	D	5.704793
3	C	37.72489
4	C	5.565752
5	B	23.06782
6	B	10.14335
7	B	18.28561

8	B	10.38661
9	B	10.54224
10	B	4.716288
11	B	8.645469
12	B	5.292638
13	B	2.84378
14	B	3.893154
15	B	4.115933
16	A	30.29744
17	A	7.705063
18	A	4.1214
19	A	4.748941
20	A	2.698499
21	A	1.943381
22	A	4.740356
23	A	3.487272
24	A	2.480124
25	A	5.992597
26	A	4.825963
27	A	5.767206
28	A	2.972059
29	A	5.366279
30	E	7.78933
31	E	4.030455
32	E	1.596184
33	E	28.97747
34	E	11.6242
35	E	3.939271
36	E	1.269442
37	E	2.269072
38	E	4.988983
39	E	1.347323
40	E	1.708235
41	E	1.633857
42	E	2.064967
43	E	5.371642
44	E	2.507607
45	E	0.82174
46	E	3.615703
47	E	3.542652
48	E	4.22918
49	E	1.21913
50	E	2.271786
51	E	3.613027
52	E	2.29908
53	E	0.559018
54	E	1.702143
55	E	2.399898
56	E	5.407592
57	E	1.879834

58	E	1.597148
59	E	1.253695
60	E	1.032709
61	E	0.915982
62	E	0.918194
63	E	1.637975
64	E	0.54067
65	E	2.201294
66	F	2.882996
67	F	1.842585
68	F	0.68293
69	F	1.351079
70	F	3.510015
71	F	0.865096
72	F	2.430628
73	F	2.881938
74	F	3.244304
75	F	4.479036
76	F	1.380036
77	F	1.303032
78	F	2.727255
79	F	2.912145
80	F	2.95475
81	F	4.430433
82	F	1.765826
83	F	3.504361
84	F	2.397659
85	F	1.128109
86	F	1.401307
87	F	0.592984
88	F	1.300788
89	F	1.384877
90	E	1.338856
91	F	3.500497
92	F	1.301537
93	F	2.208042
94	F	1.117444
95	F	1.382698
96	F	4.97895
97	F	2.451585
98	F	2.616641
99	F	1.154521
100	F	1.492423
101	F	2.429116
102	F	2.485966
103	F	3.084341
104	F	1.316941
105	F	1.938959
106	F	2.105056
107	F	1.408645

108	F	1.712634
109	F	1.533632
110	F	1.376319
111	F	1.109771
112	F	1.301017
113	F	3.788664
114	F	6.527349
115	F	5.665541
116	F	4.257206
117	F	2.270795
118	F	2.613805
119	F	3.226945
120	F	1.331123
121	F	1.910484
122	F	1.939155
123	F	4.788355
124	F	2.358865
125	F	13.5057
126	F	2.219964
127	F	2.041193
128	F	5.015979
129	F	3.717855
130	F	6.184437
131	F	9.309839
132	F	5.761228
133	F	2.67813
134	F	5.837622
135	F	1.750478
136	F	2.733332
137	F	1.406561
138	F	1.92084
139	F	2.192989
140	F	21.39245
141	F	2.350017
142	F	1.268895
143	F	2.522935
144	F	0.450023
145	F	5.307156
146	F	1.199045
147	F	13.59401
148	F	1.985892
149	F	2.603834
150	F	2.381025
151	F	2.502652
152	F	4.608767
153	F	1.113344
154	F	2.430053
155	F	5.212695
156	F	22.47377
157	F	2.853559

158	F	1.679743
159	F	1.181506
160	F	2.277989
161	F	3.397661
162	F	2.014557
163	F	1.607659
164	F	7.272612
165	F	2.241986
166	F	3.678372
167	F	2.195156
168	F	3.141459
169	F	3.011002
170	F	3.559892
171	F	4.705444
172	F	6.354738
173	F	1.726285
174	F	1.240027
175	F	1.352955
176	F	2.156489
177	F	1.817184
178	F	1.319399
179	F	2.996625
180	F	1.959479
181	F	1.303581
182	F	1.696461
183	F	2.061722
184	F	0.992951
185	F	2.816735
186	F	2.053764
187	F	2.262384
188	F	1.053623
189	F	2.992671
190	F	5.614731
191	F	1.118365
192	G	5.197911
193	G	3.382768
194	G	2.377381
195	G	3.821012
196	G	1.83446
197	G	2.445068
198	G	6.77753
199	G	17.13425
200	G	5.846917
201	G	2.507797
202	G	4.03919
203	G	4.269144
204	G	1.930095
205	G	1.276174
206	G	1.046069
207	G	2.45362

208	G	2.298162
209	G	1.929284
210	G	4.62803
211	G	3.609433
212	G	1.195746
213	G	6.247065
214	G	2.20282
215	G	2.088515
216	G	3.574686
217	G	1.485504
218	G	1.858521
219	G	1.344194
220	G	1.090426
221	G	1.193974
222	G	1.446974
223	G	1.678341
224	G	4.762621
225	G	1.746177
226	G	3.044373
227	G	8.998909
228	G	3.130926
229	G	4.736337
230	G	4.587328
231	G	1.525986
232	G	1.449798
233	G	2.238217
234	G	15.63269
235	G	1.98485
236	G	5.999937
237	G	3.127694
238	G	2.219316
239	G	2.025057
240	G	4.192316
241	G	3.086568
242	G	4.077766
243	G	3.098878
244	G	3.63209
245	G	2.616345
246	G	3.247607
247	G	5.324448
248	G	3.720755
249	G	9.156223
250	G	7.306367
251	G	2.473203
252	G	1.551803
253	G	2.082919
254	G	5.731354
255	G	1.194183
256	G	5.140212
257	G	1.555359

258	G	1.645765
259	G	3.071741
260	G	3.075357
261	G	9.229735
262	G	1.927423
263	G	2.846792
264	G	3.553632
265	G	1.45472
266	G	2.038604
267	G	2.347605
268	G	3.303331
269	G	8.395814
270	G	2.40114
271	G	3.848062
272	G	6.202158
273	G	2.945099
274	G	4.875032
275	G	3.412616
276	G	5.36506
277	G	3.7659
278	G	5.357273
279	G	2.890069
280	G	3.235904
281	G	2.608695
282	G	1.508657
283	G	1.373592
284	G	2.854844
285	G	1.229935
286	G	3.207611
287	G	2.258166
288	G	2.203502
289	G	4.597087
290	G	6.930423
291	H	3.113422
292	H	3.562112
293	H	1.75856
294	H	3.446119
295	H	3.991683
296	H	5.607832
297	H	0.951201
298	H	2.053739
299	H	4.348738
300	H	2.583701
301	H	3.172372
302	H	4.944687
303	H	1.93632
304	H	6.825776
305	H	3.360834
306	H	3.237678
307	H	5.905792

308	H	5.062887
309	H	1.36016
310	H	3.805001
311	H	3.117638
312	H	6.225705
313	H	6.702167
314	H	3.004165
315	H	4.652085
316	H	3.807132
317	H	2.410979
318	H	1.07439
319	H	5.58476
320	H	3.975504
321	H	1.764895
322	H	5.424473
323	H	3.507101
324	H	1.653924
325	H	0.208553
326	H	1.69595
327	H	2.08751
328	H	3.249848
329	H	1.122608
330	H	0.751103
331	H	3.227025
332	H	2.21692
333	H	2.869885
334	H	5.165471
335	H	3.144366
336	H	0.521382
337	H	1.117675
338	H	2.197636
339	H	2.747406
340	H	4.574123
341	H	0.862767
342	H	0.735336
343	H	1.794079
344	H	1.608491
345	H	1.259192
346	H	1.304695
347	H	1.978264
348	H	2.160023
349	H	2.550925
350	H	4.024994
351	H	2.158111
352	H	2.306233
353	H	1.341234
354	H	2.188409
355	H	2.221083
356	H	3.984233
357	H	4.919101

358	H	3.373109
359	H	1.898323
360	H	5.374499
361	H	2.118225
362	H	1.790354
363	H	3.541673
364	H	1.429255
365	H	4.054722
366	H	3.477859
367	H	2.074332
368	H	4.291163
369	H	6.059472
370	H	3.912205
371	H	2.216172
372	H	6.296051
373	H	5.507195
374	H	4.052445
375	H	4.590885
376	H	7.394145
377	H	1.941118
378	H	5.001161
379	H	3.470682
380	H	4.97784
381	H	7.085483
382	H	6.270871
383	H	2.570402
384	H	1.793957
385	H	4.416025
386	H	3.321008
387	H	2.579086
388	H	1.883389
389	H	1.002951
390	H	1.605369
391	H	0.21143
392	H	0.45747
393	H	4.332256
394	H	2.283824
395	H	5.644055
396	H	4.24053
397	H	1.935543
398	H	4.207267
399	H	4.305956
400	H	1.732865
401	H	3.23443
402	H	2.031523
403	H	2.462266
404	H	4.110392
405	H	2.280237
406	H	2.683321
407	H	2.825807

408	H	1.770711
409	H	2.621295
410	H	0.850266

Bridge NO. 590376

Table C.7.4: Bridge NO. 590376 Index Values

Bridge Surface Condition Index:	63.83609
Image Quality Index:	100

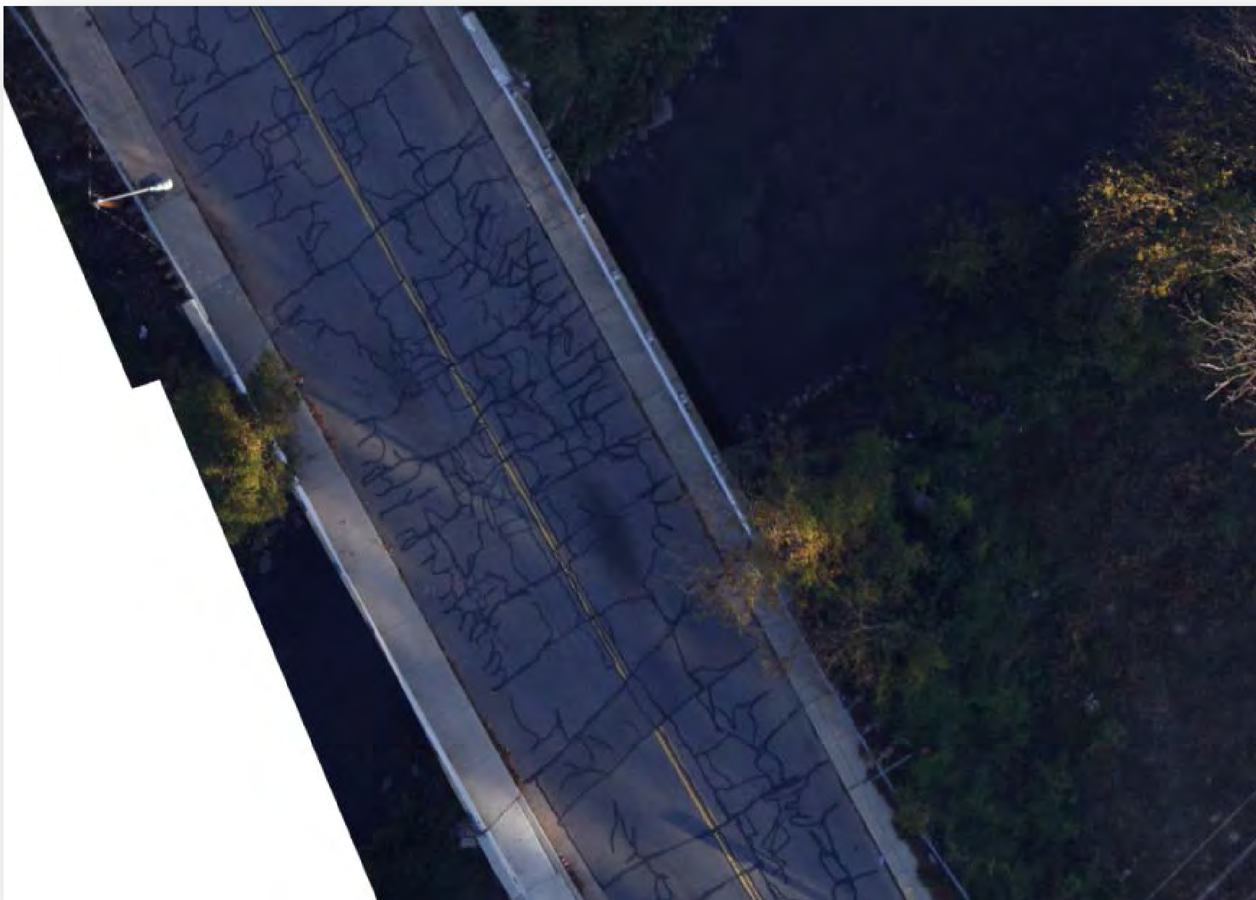

Figure C.7.3: Bridge NO. 590376 Blank Image

Figure C.7.4: Bridge NO. 590376 Crack Image

Table C.7.5: Bridge NO. 590376 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	434.96	12	0	22.0366	2.758874651
1	B	3177.101	168	0	36.16391	5.287839586
2	C	526.2675	14	0	21.24607	2.660244076

Table C.7.6: Bridge NO. 590376 Crack Extraction

Crack Extraction		
FID	Span	Length
0	B	37.49974
1	A	34.05624
2	A	3.522037
3	A	6.921126
4	A	3.196185
5	A	3.558686

6	A	2.881858
7	A	6.213525
8	A	6.532449
9	A	7.467499
10	A	5.026077
11	B	5.321109
12	B	5.498754
13	B	6.122571
14	B	4.835724
15	B	1.521008
16	B	15.56117
17	B	11.0766
18	B	8.376816
19	B	13.18761
20	B	8.576017
21	B	1.611142
22	B	6.425937
23	B	5.822138
24	B	3.335621
25	B	6.651565
26	B	14.07711
27	B	1.836895
28	B	11.44519
29	B	12.28215
30	B	1.893715
31	B	6.323219
32	B	7.163745
33	B	7.240044
34	B	6.087891
35	B	3.177405
36	B	3.008555
37	B	7.186442
38	B	3.506355
39	B	11.60028
40	B	8.412961
41	B	4.860597
42	B	5.771718
43	B	6.274832
44	B	5.191896
45	B	10.53485
46	B	7.907807
47	B	1.180212
48	B	1.711875
49	B	1.816259
50	B	3.98134
51	B	3.700329
52	B	4.977525
53	B	2.411483
54	B	9.831709
55	B	8.008418

56	B	12.48442
57	B	16.54496
58	B	3.855151
59	B	2.424778
60	B	2.879443
61	B	10.01068
62	B	2.337309
63	B	4.610081
64	B	0.536539
65	B	9.892428
66	B	7.354354
67	B	3.931376
68	B	8.811483
69	B	4.324658
70	B	7.044597
71	B	6.463393
72	B	10.93951
73	B	5.811067
74	B	3.074795
75	B	3.131455
76	B	4.84469
77	B	17.76548
78	B	5.999724
79	B	5.864398
80	B	4.138376
81	B	11.07365
82	B	5.220633
83	B	2.794281
84	B	26.80506
85	B	7.672222
86	B	13.81934
87	B	2.770111
88	B	10.29919
89	B	1.986335
90	B	15.42484
91	B	1.297714
92	B	10.83155
93	B	9.020297
94	B	4.317488
95	B	7.672249
96	B	12.30274
97	B	5.281979
98	B	7.975978
99	B	2.845107
100	B	5.196539
101	B	1.97376
102	B	2.696576
103	B	8.304207
104	B	3.639882
105	B	7.297304

106	B	10.89773
107	B	11.5779
108	B	1.473944
109	B	2.920063
110	B	2.537013
111	B	2.565518
112	B	2.144405
113	B	12.6002
114	B	9.006248
115	B	1.848622
116	B	10.39455
117	B	2.326502
118	B	2.690983
119	B	3.134804
120	B	4.273416
121	B	3.748381
122	B	11.72583
123	B	3.307996
124	B	1.937807
125	B	1.470829
126	B	4.661019
127	B	8.093739
128	B	3.1871
129	B	2.239263
130	B	5.434476
131	B	7.928155
132	B	14.11946
133	B	9.623429
134	B	6.649601
135	B	3.05612
136	B	3.648402
137	B	11.76094
138	B	17.85101
139	B	3.786246
140	B	2.619215
141	B	14.37379
142	B	2.132238
143	B	10.80846
144	B	12.95925
145	B	39.45195
146	B	16.8581
147	B	6.253338
148	B	24.3327
149	B	10.61367
150	B	26.04065
151	B	7.519096
152	B	7.990032
153	C	11.25449
154	C	7.694452
155	C	28.35003

156	C	1.845509
157	C	7.744166
158	C	11.20668
159	C	1.22471
160	C	11.67018
161	C	4.648878
162	C	8.666458
163	C	15.13782
164	B	1.697041
165	C	4.361036
166	C	5.688393
167	C	3.436832
168	B	7.267447
169	B	2.216433
170	B	1.378373
171	B	2.957475
172	B	1.813881
173	B	2.923442
174	B	1.544927
175	B	2.496679
176	B	1.214208
177	B	1.758513
178	B	1.834478
179	B	2.78407
180	B	1.899027
181	B	3.010558
182	B	0.612313
183	B	0.968867
184	B	1.07403
185	B	1.488936
186	A	10.05552
187	A	1.184547
188	B	3.641222
189	B	9.091398
190	B	1.029706
191	B	7.143663
192	B	1.20605
193	B	1.842916

New York
Bridge NO. 1005220

Table C.8.1: Bridge NO. 1005220 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	94.94586

Figure C.8.1: Bridge NO. 1005220 Blank Image

Figure C.8.2: Bridge NO. 1005220 Obstruction Image

Figure C.8.3: Bridge NO. 1005220 Crack Image

Table C.8.2: Bridge NO. 1005220 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	35599.43	42	1799.245471	1	0.124259665

Table C.8.3: Bridge NO. 1005220 Crack Extraction

	Crack Extraction	
FID	Span	Length
0	A	84.46259
1	A	82.61551
2	A	75.33556
3	A	34.08834
4	A	9.835995
5	A	4.160014
6	A	18.56479
7	A	11.00399
8	A	8.072158
9	A	10.90021
10	A	93.77715
11	A	8.46958
12	A	10.29729
13	A	130.9875
14	A	50.36437
15	A	13.94642
16	A	4.859092
17	A	54.52907
18	A	10.16547
19	A	16.96812
20	A	8.069896
21	A	6.813422
22	A	50.88582
23	A	2.261393
24	A	4.066181
25	A	5.45893
26	A	3.922292
27	A	4.477065
28	A	4.919865
29	A	5.540172
30	A	12.81504
31	A	3.808153
32	A	7.326116
33	A	3.575557
34	A	7.354141
35	A	6.283374
36	A	13.4944
37	A	5.844873
38	A	5.45305
39	A	3.277014
40	A	19.4812
41	A	9.518358

Table C.8.438: Bridge NO. 1005220 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	1799.245

Bridge NO. 1006370

Table C.8.5: Bridge NO. 1006370 Index Values

Bridge Surface Condition Index:	94.39891
Image Quality Index:	70.13264

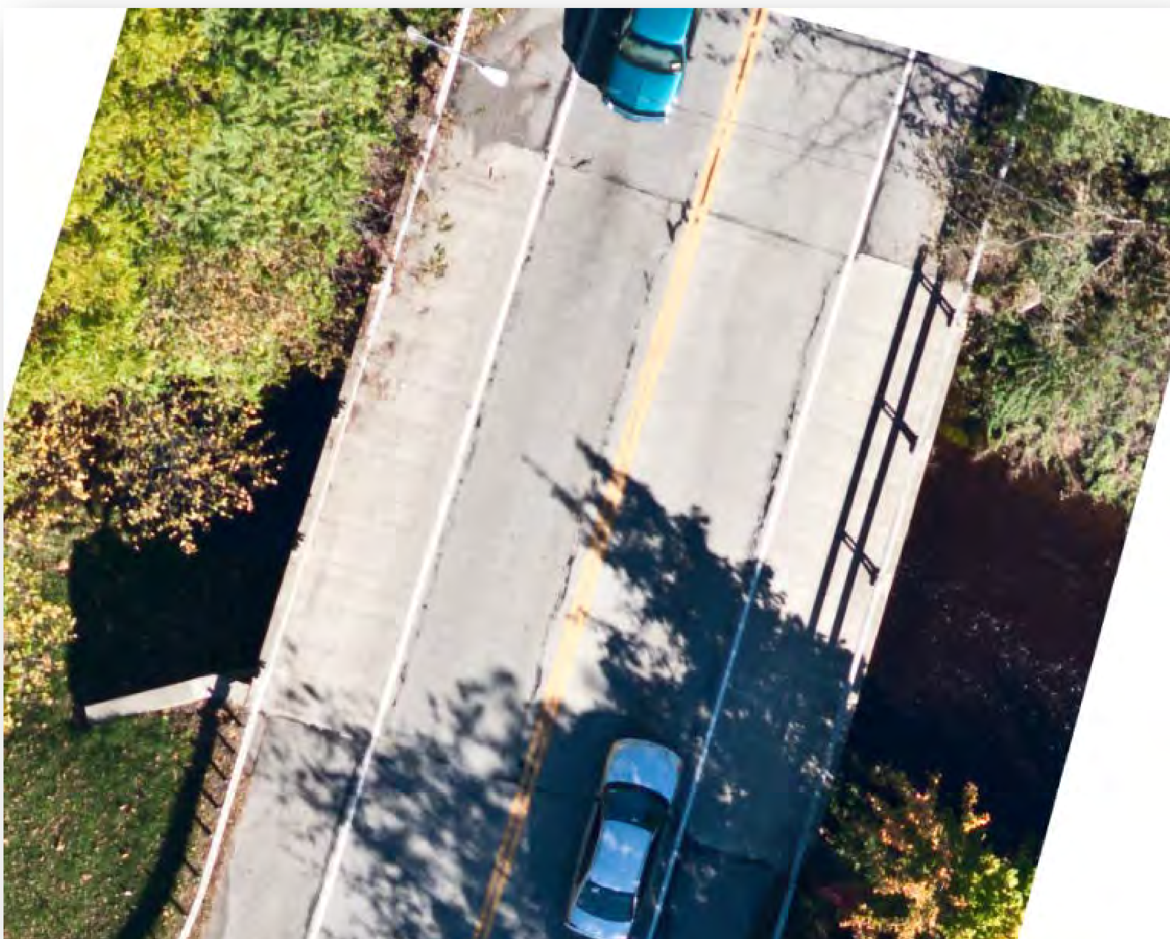

Figure C.8.4: Bridge NO. 1006370 Blank Image

Figure C.8.5: Bridge NO. 1006370 Obstruction Image

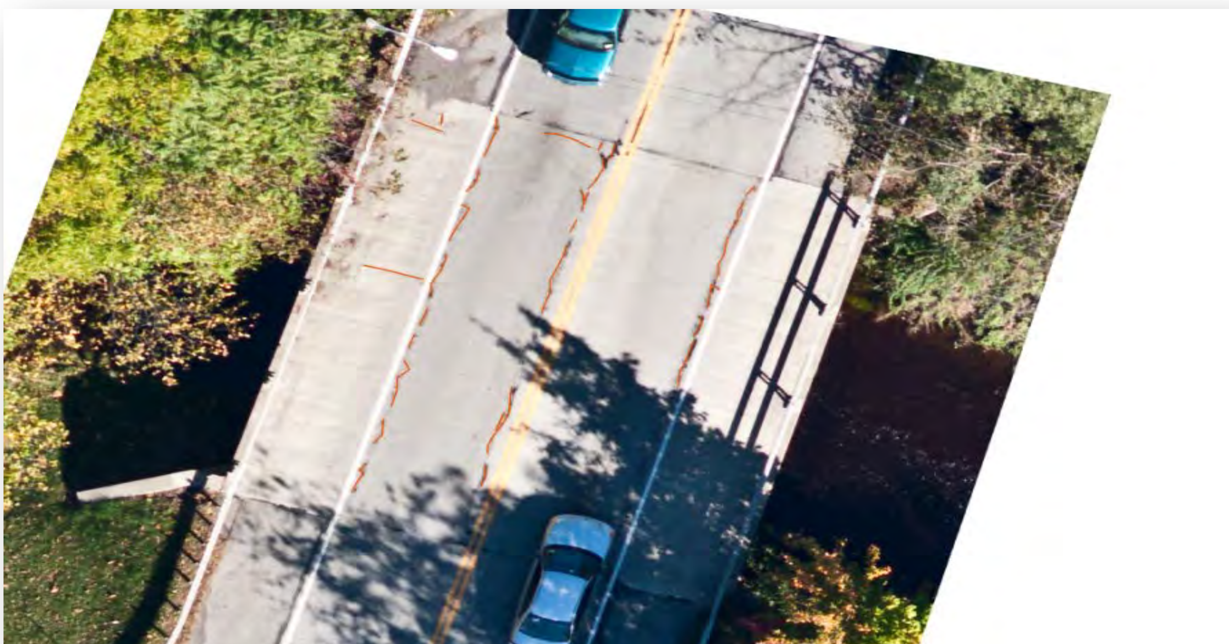

Figure C.8.6: Bridge NO. 1006370 Crack Image

Table C.8.6: Bridge NO. 1006370 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	3305.059	30	987.1337143	5.601091	1.294260892

Table 39: Bridge NO. 1006370 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	5.638953
1	A	3.421914
2	A	5.803272
3	A	6.048391
4	A	2.319421
5	A	1.785341
6	A	7.052937
7	A	3.611181
8	A	4.694064
9	A	3.094889
10	A	9.565648
11	A	9.711652
12	A	1.7195
13	A	2.691008
14	A	4.650769
15	A	2.294329
16	A	1.139322
17	A	5.275542
18	A	1.369294
19	A	4.052602
20	A	5.895197
21	A	3.161209
22	A	0.937972
23	A	2.875589
24	A	6.386681
25	A	6.537007
26	A	3.598847
27	A	1.326493
28	A	2.499479
29	A	1.118209

Table C.8.8: Bridge NO. 1006370 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	915.3513
1	A	30.00128

2	A	29.23056
3	A	3.731906
4	A	4.417441
5	A	4.401215

Bridge NO. 1007140

Table C.8.9: Bridge NO. 1007140 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	-4.6363

Figure C.8.7: Bridge NO. 1007140 Blank Image

Figure C.8.8: Bridge NO. 1007140 Obstruction Image

Figure C.8.9: Bridge NO. 1007140 Crack Image

Table C.8.10: Bridge NO. 1007140 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	6693.009	3	4454.241234	1	0.134002316
1	B	7730.062	29	646.1852357	1	0.409380371
2	C	6927.103	12	637.803677	1	0.190800267
3	D	7541.329	23	212.568353	1	0.313832064
4	E	6557.109	14	1467.624723	1	0.275076961

Table C.8.1140: Bridge NO. 1007140 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	9.188947
1	A	4.672117
2	A	6.556439
3	B	8.508793
4	B	3.089678
5	B	7.125796
6	B	1.048421
7	B	1.364493
8	B	3.124649
9	B	4.185554
10	B	10.39743
11	B	2.660714
12	B	4.043294
13	B	2.622564
14	B	12.2826
15	B	3.727296
16	B	1.702957
17	B	3.418807
18	B	3.430687
19	B	2.753603
20	B	2.339022
21	B	3.664945
22	B	3.999439
23	B	5.107784
24	B	2.177931
25	B	2.901517
26	B	2.432993
27	B	2.497008
28	B	5.773642
29	B	5.047636
30	B	4.879608
31	B	5.062129
32	C	3.518927
33	C	6.44445
34	C	3.44708

35	C	2.328683
36	C	1.94107
37	C	5.174999
38	C	1.999619
39	C	4.486241
40	C	3.376591
41	C	3.163575
42	C	5.169702
43	C	3.897161
44	D	2.465899
45	D	5.39872
46	D	12.79682
47	D	4.490428
48	D	5.566146
49	D	9.11749
50	D	3.756287
51	D	7.26
52	D	5.098232
53	D	4.309252
54	D	3.643262
55	D	3.881405
56	D	5.126193
57	D	16.00469
58	D	9.361504
59	D	4.217085
60	D	7.032597
61	D	7.690862
62	D	3.762601
63	D	5.119745
64	D	5.907705
65	D	1.350695
66	D	2.863431
67	E	3.226446
68	E	3.814424
69	E	5.055295
70	E	1.729971
71	E	10.24544
72	E	6.37284
73	E	7.959285
74	E	4.597412
75	E	6.816153
76	E	3.875409
77	E	2.21928
78	E	2.119131
79	E	1.223263
80	E	4.580826

Table 41: Bridge NO. 1007140 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	4390.9
1	A	59.88883
2	B	309.1053
3	B	335.3083
4	B	1.771673
5	C	1.573019
6	C	315.2565
7	C	317.738
8	E	350.021
9	D	2.897382
10	E	326.5032
11	D	209.671
12	E	420.56
13	E	5.102851
14	E	205.1807
15	E	3.055945
16	E	3.762272
17	E	149.8278
18	E	3.610916
19	A	3.452634
20	C	3.23613

Bridge NO. 1007150

Table C.8.13: Bridge NO. 1007150 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	74.24468

Figure C.8.10: Bridge NO. 1007150 Blank Image

Figure C.8.11: Bridge NO. 1007150 Obstruction Image

Figure C.8.12: Bridge NO. 1007150 Crack Image

Table C.8.14: Bridge NO. 1007150 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	22842.1	34	1171.318188	1	0.156893278
1	B	4545.08	8	1313.609985	1	0.247565348
2	C	22736	35	1818.200443	1	0.167321615

Table C.8.15: Bridge NO. 1007150 Crack Extraction

	Crack Extraction		
FID	Crack ID	Span	Length
0	1	A	11.8809
1	2	A	5.00632
2	3	A	6.41631
3	4	A	7.06647
4	5	A	8.97951
5	6	A	6.95669
6	7	A	13.9289
7	8	A	12.5969
8	9	A	8.19569
9	10	A	5.9553
10	11	A	8.60344
11	13	A	6.36311
12	14	A	12.9527
13	12	A	7.03358
14	15	A	6.02537
15	16	A	6.41152
16	17	A	13.2086
17	18	A	6.61921
18	19	A	7.21846
19	20	A	8.43809
20	21	A	5.4345
21	22	A	6.47975
22	23	A	7.0321
23	24	A	4.97763
24	25	A	2.49635
25	26	A	4.28661
26	27	A	12.021
27	28	A	4.09319
28	29	A	2.52355
29	30	A	4.61177
30	31	A	5.81136
31	32	A	5.46609
32	33	A	2.57621
33	34	A	5.55833
34	35	B	4.69889
35	36	B	3.32102
36	37	B	10.1632
37	38	B	7.64594
38	39	B	6.68461
39	40	B	4.38934
40	41	B	3.67249
41	42	B	4.93585
42	43	C	2.73026
43	44	C	4.47178
44	45	C	4.65392

45	46	C	3.17011
46	47	C	1.29329
47	48	C	8.0626
48	49	C	3.80497
49	50	C	6.8727
50	51	C	9.59526
51	52	C	3.34272
52	53	C	7.57859
53	54	C	9.80752
54	55	C	4.90032
55	56	C	8.04979
56	57	C	8.78625
57	58	C	3.77017
58	59	C	9.06345
59	60	C	6.05752
60	61	C	11.1144
61	62	C	6.13723
62	63	C	9.31829
63	64	C	2.86481
64	65	C	6.65094
65	66	C	4.39988
66	67	C	18.75
67	68	C	7.16822
68	69	C	10.5902
69	70	C	8.19381
70	71	C	14.443
71	72	C	5.88059
72	73	C	4.72341
73	74	C	8.22343
74	75	C	8.81193
75	76	C	10.3307
76	77	C	5.43395

Table C.8.1642: Bridge NO. 1007150 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Span	Type	Area
0	2	A	Car	249.429
1	1	A	Shadow	492.256
2	3	A	Shadow	117.144
3	4	B	Shadow	1313.61
4	5	A	Shadow	311.481
5	6	A	Shadow	1.00819
6	7	C	Shadow	243.718
7	8	C	Shadow	1387.94
8	9	C	Car	137.028
9	10	C	Shadow	49.5145

Bridge NO. 1007260

Table C.8.17: Bridge NO. 1007260 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	82.09667

Figure C.8.13: Bridge NO. 1007260 Blank Image

Figure C.8.14: Bridge NO. 1007260 Obstruction Image

Figure C.8.1525: Bridge NO. 1007260 Crack Image

Table C.8.1843: Bridge NO. 1007260 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	7575.64	27	682.443718	1	0.391690573
1	B	7490.08	16	666.1889267	1	0.234470331

Table C.8.1944: Bridge NO. 1007260 Crack Extraction

Crack Extraction			
FID	Crack ID	Span	Length
0	1	A	4.14026
1	2	A	4.19419
2	3	A	3.01212
3	4	A	3.87917
4	5	A	1.72273
5	6	A	4.28223
6	7	A	3.25473
7	8	A	4.10954
8	9	A	3.92518
9	10	A	6.39229
10	11	A	4.71322
11	12	B	6.27859
12	13	B	9.38977
13	14	B	7.87071
14	15	B	7.12515
15	16	B	6.25232
16	17	B	9.1532
17	18	B	14.3994
18	19	B	5.19514
19	20	B	7.21613
20	21	B	5.6378
21	0	A	4.7333
22	0	A	2.88368
23	0	A	8.4353
24	0	A	3.79374
25	0	A	5.14252
26	0	A	5.0127
27	0	A	3.57105
28	0	A	3.95681
29	0	A	2.84883
30	0	A	3.53844
31	0	A	7.95015
32	0	A	5.13295
33	0	A	4.39953
34	0	A	3.66558
35	0	A	4.41693
36	0	A	7.3369
37	0	B	16.0418
38	0	B	4.66643
39	0	B	19.781
40	0	B	3.23989
41	0	B	3.19391
42	0	B	4.71977

Table C.8.20: Bridge NO. 1007260 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Span	Type	Area
0	1	A	Tree/Shadow	39.7257
1	2	A	Shadow	642.718
2	3	B	Shadow	626.728
3	4	B	Shadow	39.4609

Bridge NO. 1013960

Table C.8.21: Bridge NO. 1013960 Index Values

Bridge Surface Condition Index:	79.09417
Image Quality Index:	94.82248

Figure 26: Bridge NO. 1013960 Blank Image

Figure C.8.17: Bridge NO. 1013960 Obstruction Image

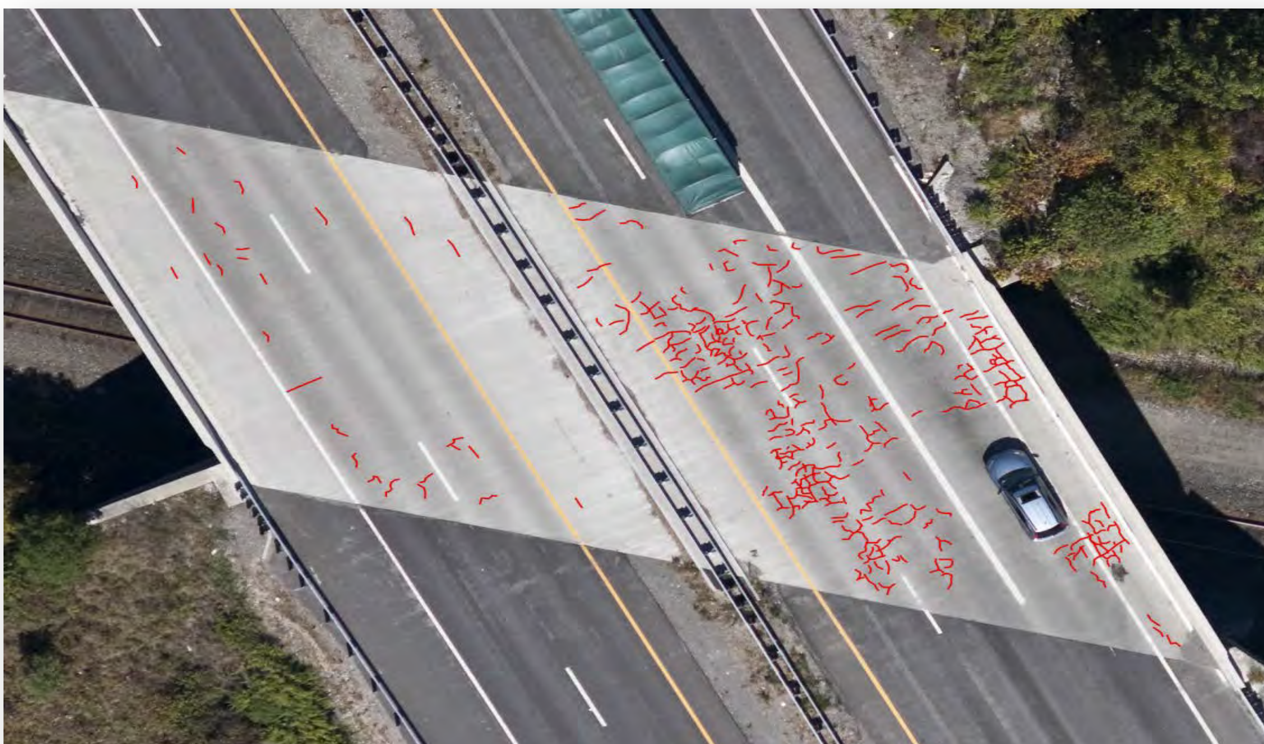

Figure C.8.18: Bridge NO. 1013960 Crack Image

Table C.8.22: Bridge NO. 1013960 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	12644.5	314	654.6711222	20.90583	2.618886418

Table C.8.23: Bridge NO. 1013960 Crack Extraction

Crack Extraction			
FID	Crack ID	Span	Length
0	1	A	3.76429
1	2	A	3.1177
2	3	A	2.54914
3	4	A	4.54407
4	5	A	7.94646
5	7	A	2.00988
6	6	A	5.44496
7	0	A	4.39976
8	9	A	4.21864
9	10	A	2.95519
10	11	A	0.506365
11	12	A	1.49437
12	14	A	2.7592
13	15	A	1.2816
14	16	A	2.35966
15	18	A	3.69369
16	13	A	2.74683
17	17	A	1.31259
18	19	A	2.92056
19	20	A	5.31615
20	21	A	3.08165
21	22	A	2.84544
22	23	A	1.97898
23	25	A	1.59592
24	27	A	1.22856
25	26	A	3.50023
26	24	A	3.63081
27	28	A	2.9501
28	29	A	4.982
29	30	A	2.5549
30	31	A	2.41456
31	32	A	4.74177
32	33	A	3.28198
33	34	A	1.82994
34	35	A	2.77988
35	36	A	2.28618
36	37	A	4.22999
37	39	A	1.069

38	40	A	1.75374
39	38	A	2.78499
40	41	A	2.2542
41	42	A	2.9781
42	43	A	2.15725
43	44	A	1.76152
44	45	A	2.21797
45	46	A	2.72023
46	47	A	1.37085
47	48	A	3.40195
48	49	A	2.56791
49	50	A	8.00937
50	51	A	2.81529
51	52	A	1.34768
52	53	A	1.93547
53	54	A	4.18362
54	55	A	2.11634
55	56	A	2.49668
56	57	A	4.40829
57	59	A	3.53843
58	60	A	2.78943
59	58	A	3.0485
60	61	A	1.84448
61	62	A	2.56565
62	63	A	4.56029
63	64	A	2.42507
64	65	A	1.83532
65	67	A	1.45419
66	68	A	2.94464
67	66	A	3.23436
68	69	A	2.21871
69	70	A	2.43508
70	71	A	2.33272
71	72	A	1.92966
72	73	A	6.9259
73	75	A	4.92313
74	77	A	4.44848
75	74	A	1.36793
76	76	A	4.62274
77	78	A	3.24444
78	79	A	4.63108
79	80	A	2.74353
80	81	A	0.890814
81	82	A	3.37732
82	83	A	2.63563
83	84	A	2.69186
84	85	A	2.18983
85	86	A	3.29796
86	87	A	2.45227
87	89	A	1.92198

88	90	A	3.75308
89	91	A	3.18369
90	88	A	1.21768
91	92	A	1.51043
92	94	A	1.78832
93	93	A	4.7249
94	95	A	2.66379
95	96	A	2.90476
96	97	A	1.0093
97	98	A	2.87334
98	99	A	3.34509
99	101	A	2.11148
100	103	A	2.14779
101	100	A	1.8768
102	102	A	2.08306
103	104	A	2.06697
104	105	A	2.73175
105	106	A	0.720265
106	109	A	2.19058
107	107	A	1.69214
108	108	A	0.455279
109	110	A	5.88882
110	111	A	2.23394
111	112	A	3.17248
112	113	A	2.75514
113	114	A	1.73007
114	115	A	2.09545
115	116	A	1.47199
116	117	A	2.65451
117	118	A	2.078
118	119	A	2.15076
119	120	A	3.53566
120	121	A	1.26973
121	122	A	3.21535
122	123	A	2.2176
123	124	A	3.45188
124	125	A	8.07444
125	126	A	3.84918
126	127	A	14.1108
127	128	A	2.33733
128	129	A	4.46865
129	130	A	1.1586
130	131	A	1.89309
131	132	A	2.70998
132	133	A	4.11754
133	134	A	5.60005
134	135	A	3.65131
135	136	A	1.89222
136	137	A	1.19676
137	138	A	2.26804

138	139	A	2.88707
139	140	A	4.93566
140	141	A	1.32721
141	142	A	1.09886
142	143	A	1.90384
143	144	A	2.45272
144	145	A	1.67753
145	146	A	1.83713
146	147	A	7.51236
147	148	A	3.94634
148	149	A	1.32593
149	150	A	3.95013
150	151	A	5.23115
151	152	A	3.30111
152	153	A	1.84558
153	154	A	2.01636
154	155	A	1.29103
155	156	A	2.49485
156	157	A	3.26148
157	158	A	6.21195
158	159	A	3.07679
159	160	A	2.47968
160	161	A	2.96224
161	162	A	1.127
162	163	A	3.36035
163	165	A	1.9415
164	166	A	3.52496
165	167	A	6.58466
166	164	A	0.930335
167	168	A	6.62965
168	169	A	3.83133
169	170	A	4.05526
170	171	A	1.12016
171	172	A	1.76578
172	173	A	3.30114
173	174	A	2.30057
174	175	A	1.17601
175	177	A	1.59582
176	178	A	9.35937
177	176	A	4.68135
178	179	A	2.78931
179	180	A	1.49265
180	181	A	2.83092
181	182	A	11.5434
182	183	A	3.29991
183	184	A	3.06232
184	185	A	1.48137
185	186	A	6.01923
186	187	A	0.651271
187	188	A	2.83828

188	190	A	1.29185
189	191	A	0.370337
190	189	A	1.5794
191	192	A	1.42508
192	193	A	1.83051
193	194	A	2.18991
194	195	A	2.86294
195	196	A	4.94675
196	197	A	1.31109
197	198	A	1.85289
198	199	A	3.35273
199	200	A	1.23906
200	201	A	4.97775
201	202	A	2.40271
202	203	A	2.1646
203	204	A	3.2295
204	205	A	1.42399
205	206	A	4.16506
206	207	A	2.3209
207	208	A	1.28353
208	209	A	1.31555
209	210	A	0.907247
210	211	A	0.317432
211	212	A	0.67773
212	213	A	3.84326
213	214	A	1.8898
214	215	A	4.59978
215	216	A	2.451
216	217	A	2.01071
217	218	A	2.1937
218	219	A	2.35043
219	220	A	2.3222
220	221	A	2.20163
221	222	A	4.65032
222	223	A	3.70965
223	224	A	1.38635
224	225	A	1.99444
225	226	A	2.69332
226	227	A	2.33845
227	228	A	4.62584
228	229	A	6.64346
229	230	A	1.57251
230	231	A	1.47279
231	232	A	3.51135
232	233	A	2.60736
233	234	A	4.05804
234	235	A	4.78872
235	236	A	3.23442
236	237	A	3.43393
237	238	A	4.26733

238	239	A	6.04594
239	240	A	1.97408
240	242	A	7.14518
241	243	A	1.57208
242	241	A	2.53272
243	244	A	3.48875
244	245	A	4.09536
245	246	A	1.58919
246	247	A	3.10706
247	248	A	6.2304
248	249	A	4.63243
249	250	A	4.84133
250	252	A	3.69904
251	253	A	3.80498
252	251	A	4.32861
253	254	A	4.66623
254	255	A	4.76733
255	256	A	4.76949
256	257	A	5.47201
257	258	A	8.22574
258	260	A	1.91578
259	259	A	2.49926
260	261	A	2.75845
261	262	A	4.3372
262	264	A	1.87658
263	265	A	3.75861
264	263	A	3.31117
265	266	A	2.20613
266	267	A	3.9091
267	268	A	1.76919
268	269	A	2.28912
269	271	A	2.96494
270	272	A	4.65743
271	270	A	5.55626
272	273	A	4.3351
273	274	A	3.45261
274	275	A	3.73367
275	276	A	1.25054
276	277	A	1.22985
277	278	A	2.74783
278	279	A	2.47455
279	280	A	3.40289
280	281	A	3.44366
281	282	A	4.19846
282	283	A	6.45292
283	284	A	2.56148
284	285	A	3.28067
285	286	A	1.92542
286	287	A	3.00012
287	315	A	2.46387

288	314	A	5.20433
289	313	A	3.66933
290	312	A	2.2407
291	311	A	1.50963
292	310	A	3.77752
293	309	A	4.15581
294	308	A	2.89559
295	307	A	3.009
296	306	A	3.63908
297	305	A	3.5135
298	304	A	4.15552
299	303	A	6.50235
300	302	A	2.39941
301	301	A	1.57733
302	300	A	2.07984
303	299	A	2.37663
304	298	A	3.93354
305	297	A	3.10698
306	296	A	1.89542
307	295	A	2.30487
308	294	A	2.40148
309	293	A	2.71457
310	292	A	4.21472
311	291	A	4.17689
312	290	A	3.3626
313	289	A	2.68444

Table C.8.2445: Bridge NO. 1013960 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Span	Type	Area
0	1	A	Patch	32.9695
1	2	A	Erosion	7.28479
2	3	A	Car	152.627
3	4	A	Shadow	28.0718
4	5	A	Train tracks	324.641
5	6	A	Debris	11.5303
6	7	A	Debris	1.36187
7	8	A	Debris	1.55631
8	9	A	Debris	28.8764
9	10	A	Debris	6.36424
10	11	A	Debris	23.3048
11	12	A	Debris	4.66495
12	13	A	Debris	27.0891
13	14	A	Debris	4.32907

Bridge NO. 1014090

Table C.8.25: Bridge NO. 1014090 Index Values

Bridge Surface Condition Index:	81.51363
Image Quality Index:	83.00654

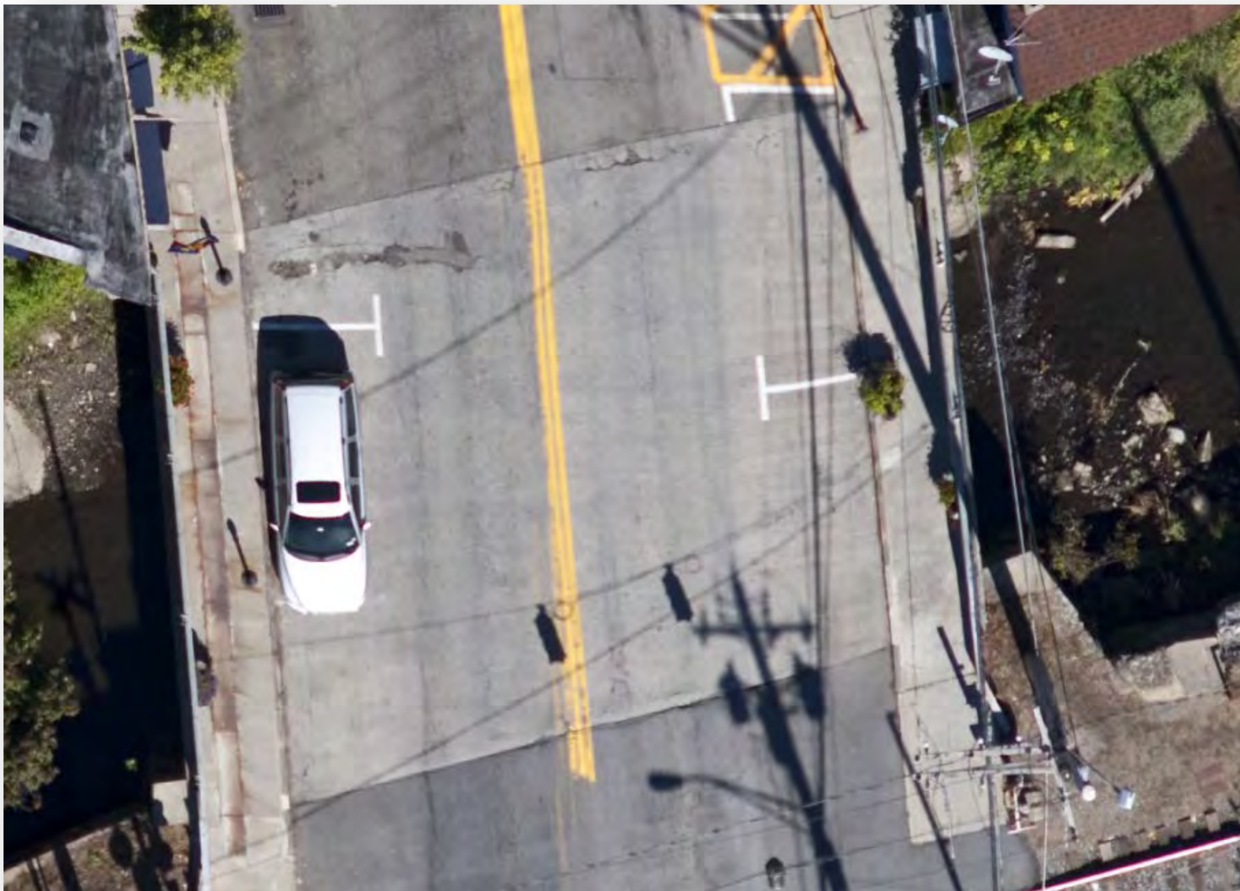

Figure C.8.19: Bridge NO. 1014090 Blank Image

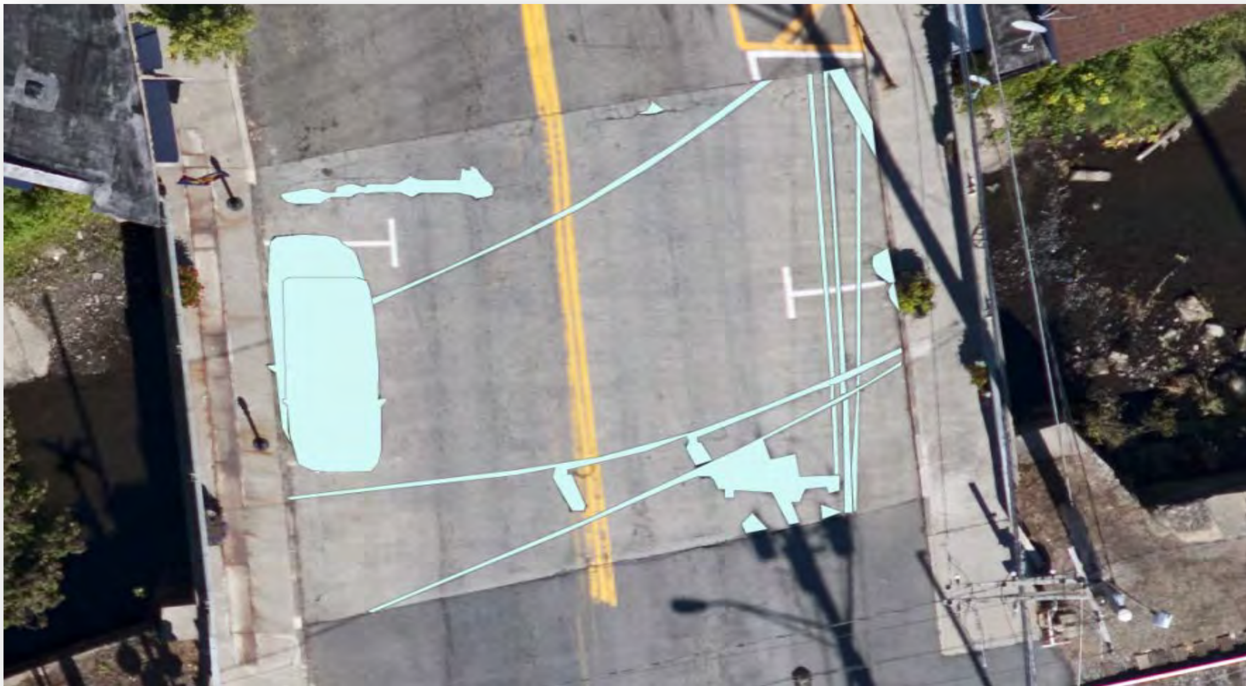

Figure C.8.20: Bridge NO. 1014090 Obstruction Image

Figure C.8.21: Bridge NO. 1014090 Crack Image

Table C.8.2646: Bridge NO. 1014090 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	2622.59	51	445.668728	18.48637	2.342758126

Table C.8.27: Bridge NO. 1014090 Crack Extraction

Crack Extraction			
FID	Crack ID	Span	Length
0	1	A	10.0348
1	2	A	7.86134
2	3	A	1.00702
3	4	A	0.517007
4	5	A	1.06461
5	6	A	5.77655
6	0	A	1.35823
7	8	A	8.18223
8	10	A	1.39012
9	9	A	3.21496
10	11	A	1.41666
11	12	A	1.5196
12	13	A	3.19126
13	14	A	1.01442
14	15	A	1.58803
15	16	A	14.5535
16	17	A	13.7658
17	18	A	4.18164
18	19	A	2.2162
19	20	A	3.38802
20	21	A	0.926744
21	22	A	3.03972
22	23	A	4.58164
23	24	A	2.8127
24	25	A	1.28441
25	26	A	2.94395
26	27	A	1.10113
27	28	A	1.96585
28	29	A	2.09973
29	30	A	3.75966
30	31	A	6.76228
31	32	A	5.9535
32	33	A	3.97215
33	34	A	1.96905
34	35	A	2.51545
35	36	A	2.51219
36	37	A	1.74815
37	38	A	0.945422
38	39	A	2.16894

39	40	A	4.89362
40	41	A	5.87188
41	42	A	5.32475
42	43	A	5.15109
43	44	A	4.35837
44	45	A	3.9745
45	46	A	3.66737
46	47	A	2.34559
47	50	A	0.703673
48	48	A	3.89077
49	49	A	1.5117
50	51	A	3.04128

Table C.8.28: Bridge NO. 1014090 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Span	Type	Area
0	1	A	Powerline	64.6471
1	2	A	Powerline	42.5303
2	3	A	Powerline	2.67286
3	4	A	Powerline	1.50262
4	5	A	Powerline	7.34689
5	6	A	Powerline	0.661668
6	7	A	Powerline	23.5506
7	8	A	Bush	1.39345
8	9	A	Shadow	4.66454
9	10	A	Car	162.264
10	11	A	Shadow	49.2483
11	12	A	Powerline	23.6601
12	13	A	Powerline	13.5291
13	14	A	Powerline	10.4377
14	15	A	Powerline	0.385608
15	16	A	Powerline	5.38536
16	17	A	Powerline	0.558693
17	18	A	Powerline	3.29958
18	19	A	Erosion	26.585
19	20	A	Erosion	1.34525

Bridge NO. 1022310

Table C.8.29: Bridge NO. 1022310 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	60.89387

Figure C.8.22: Bridge NO. 1022310 Blank Image

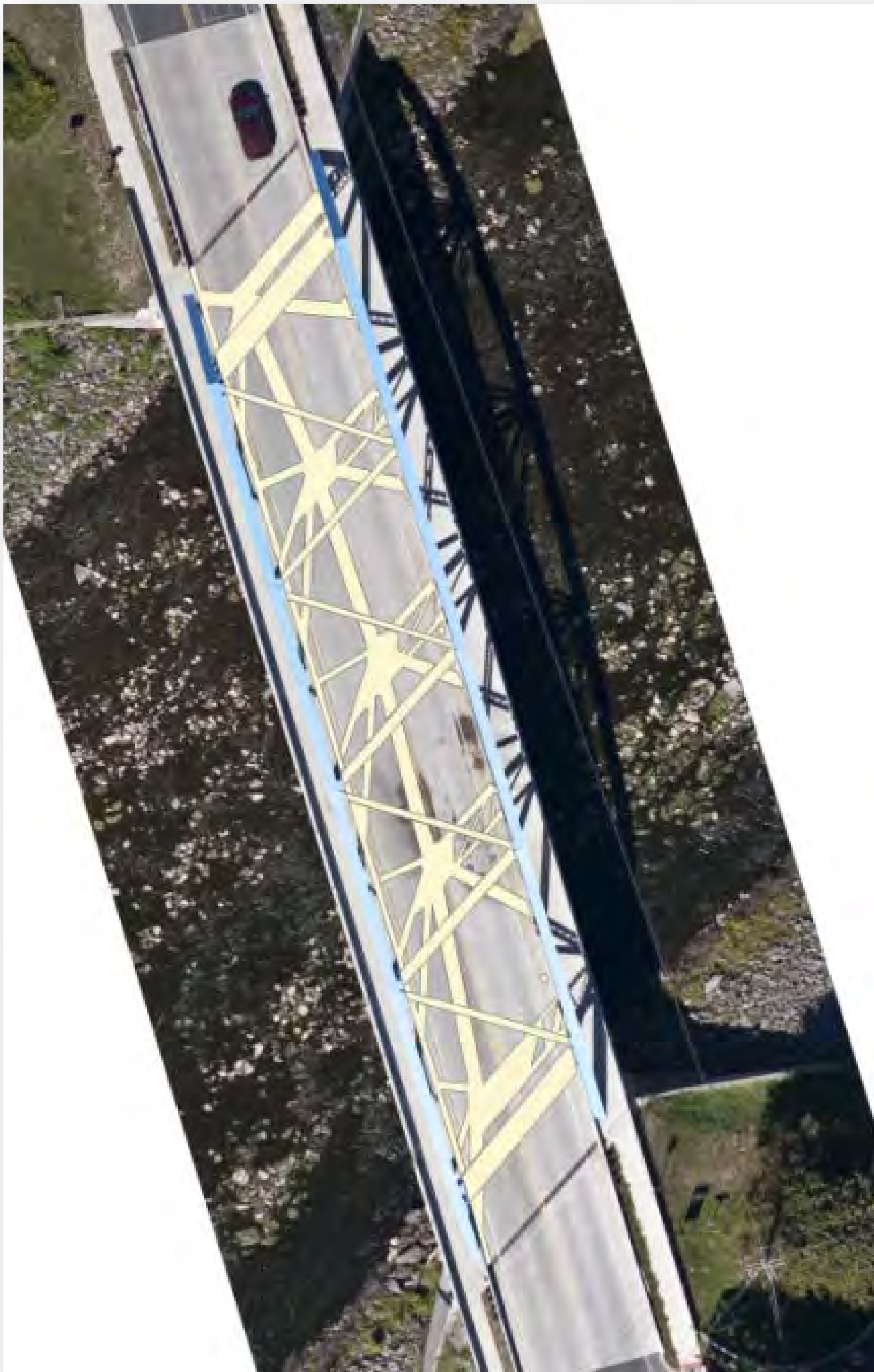

Figure C.8.23: Bridge NO. 1022310 Obstruction Image

Figure C.8.24: Bridge NO. 1022310 Crack Image

Table C.8.30: Bridge NO. 1022310 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	12312.54	31	4814.955434	1	0.413466768

Table C.8.31: Bridge NO. 1022310 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	1.648529
1	A	3.058659
2	A	2.169753
3	A	2.528281
4	A	5.195775
5	A	2.421654
6	A	3.424356
7	A	4.267839
8	A	5.46735
9	A	5.318491
10	A	6.299111
11	A	2.316078
12	A	1.496857
13	A	1.687925
14	A	2.854784
15	A	5.536067
16	A	3.508294
17	A	2.904627
18	A	2.217593
19	A	2.456235
20	A	4.019892
21	A	3.202709
22	A	3.058804
23	A	2.180289
24	A	2.170781
25	A	1.513203
26	A	1.173027
27	A	1.021891
28	A	3.46247
29	A	1.30824
30	A	1.564181

Table C.8.32: Bridge NO. 1022310 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	48.45641
1	A	325.9094
2	A	544.1301
3	A	109.0974
4	A	15.70608
5	A	18.76796
6	A	3.703179
7	A	4.78559
8	A	23.17916
9	A	82.75252
10	A	51.69252
11	A	267.7335
12	A	458.16
13	A	67.68032
14	A	106.0021
15	A	25.44036
16	A	6.123775
17	A	244.4321
18	A	461.1181
19	A	26.36337
20	A	4.058171
21	A	72.45829
22	A	114.7096
23	A	26.59979
24	A	7.029081
25	A	198.4176
26	A	505.5179
27	A	59.87223
28	A	96.86023
29	A	20.89085
30	A	3.671902
31	A	368.7561
32	A	325.6837
33	A	82.55212
34	A	36.64396

Bridge NO. 1026680

Table C.8.33: Bridge NO. 1026680 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	54.379

Figure C.8.25: Bridge NO. 1026680 Blank Image

Figure C.8.26: Bridge NO. 1026680 Obstruction Image

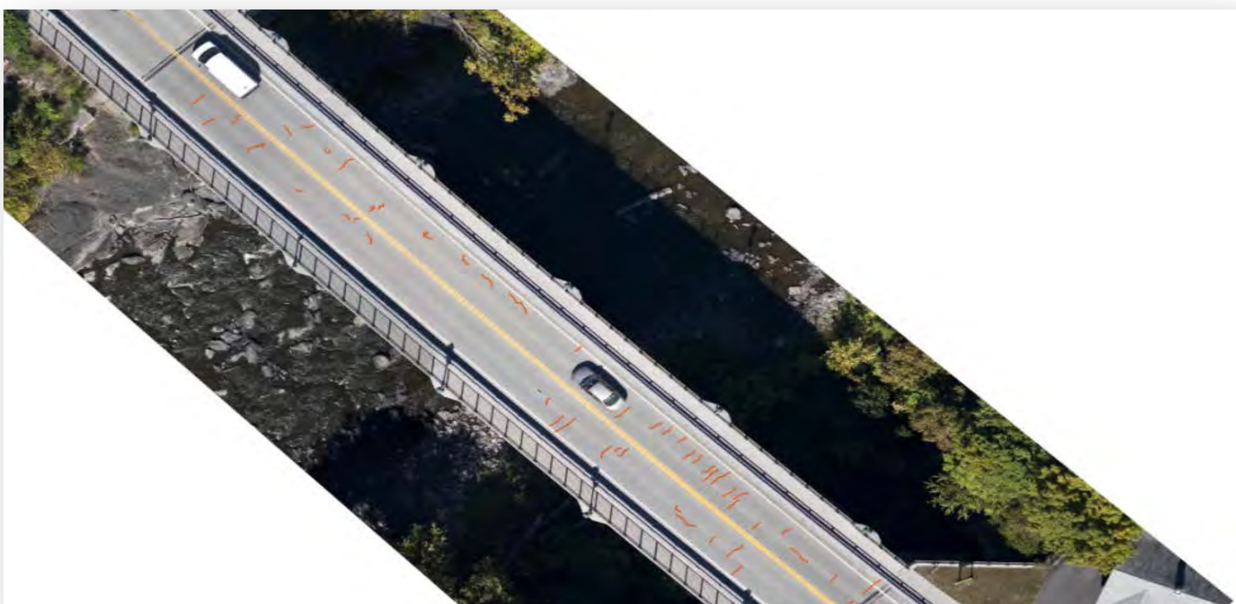

Figure C.8.27: Bridge NO. 1026680 Crack Image

Table C.8.34: Bridge NO. 1026680 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	3346.186	20	221.5328379	1	0.640071113
1	B	2681.156	11	386.8493306	1	0.479447617
2	C	2566.777	8	168.4429988	1	0.333564815
3	D	3224.126	10	571.0751627	1	0.376924597

Table C.8.35: Bridge NO. 1026680 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	12.96329
1	A	5.226356
2	A	8.634649
3	A	3.193811
4	A	5.140273
5	A	3.360962
6	A	3.88701
7	A	3.292687
8	A	5.222134
9	A	5.339456
10	A	5.501424
11	A	3.799372
12	A	8.372191
13	A	4.599674
14	A	5.197388
15	A	6.949884
16	A	8.187758
17	B	6.664615
18	B	6.033167
19	B	8.649831
20	B	3.450086
21	B	2.979531
22	D	6.885691
23	D	5.029012
24	D	3.626813
25	C	5.01519
26	C	6.377984
27	C	6.609339
28	C	3.467884
29	C	4.318937
30	C	1.897458
31	D	3.042537
32	C	4.765616
33	D	2.6338
34	D	3.252648

35	D	7.894711
36	D	4.746555
37	D	5.832761
38	D	4.019458
39	C	11.28911
40	B	4.885632
41	B	4.039098
42	B	3.450374
43	A	5.274366
44	B	6.467753
45	B	2.731097
46	B	4.826884
47	A	8.710817
48	A	6.977974

Table C.8.36: Bridge NO. 1026680 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	221.5328
1	B	170.4947
2	B	216.3546
3	C	168.443
4	D	210.7819
5	D	360.2933

Bridge NO. 1027090

Table C.8.37: Bridge NO. 1027090 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	98.64297

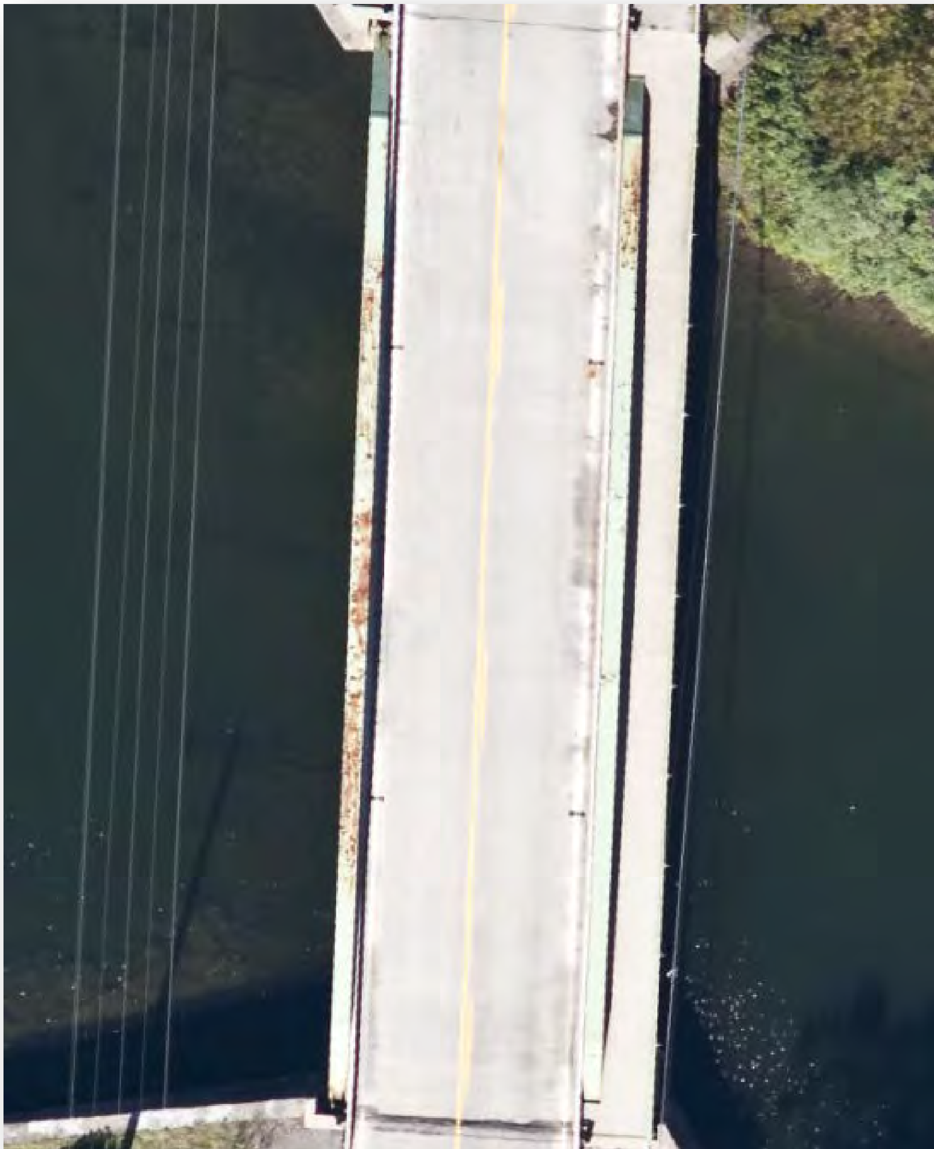

Figure C.8.28: Bridge NO. 1027090 Blank Image

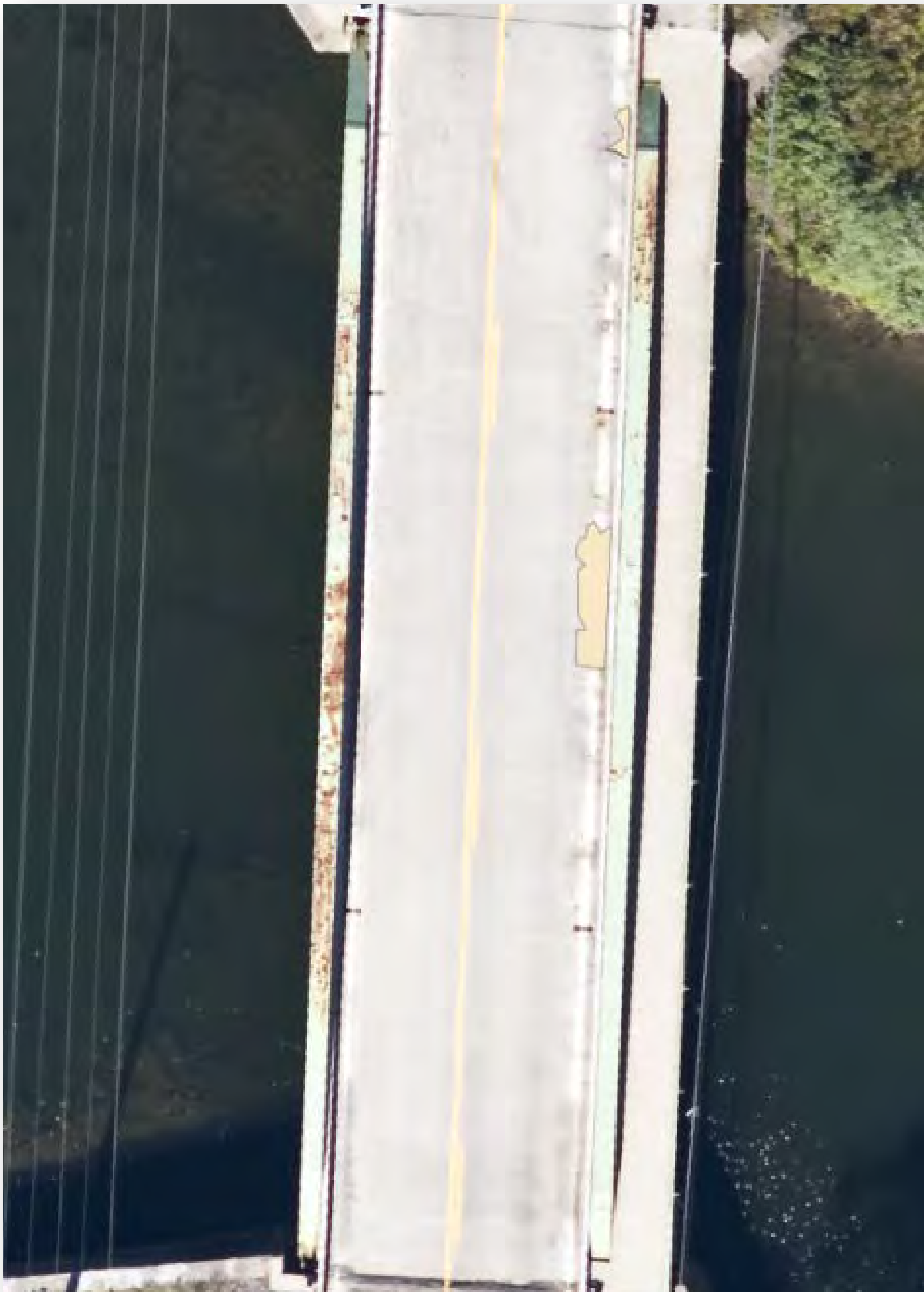

Figure C.8.29: Bridge NO. 1027090 Obstruction Image

Figure C.8.30: Bridge NO. 1027090 Crack Image

Table C.8.38: Bridge NO. 1027090 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	5499.8	53	74.63389015	1	0.976928612

Table C.8.39: Bridge NO. 1027090 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	3.449364
1	A	4.816929
2	A	2.380275
3	A	2.995524
4	A	2.562761
5	A	4.493386
6	A	3.228543
7	A	1.458878
8	A	2.385224
9	A	1.305312
10	A	3.450261
11	A	1.215024
12	A	3.747782
13	A	1.434563
14	A	4.180978
15	A	4.229347
16	A	1.077702
17	A	2.842011
18	A	1.230926
19	A	1.230926
20	A	2.073143
21	A	2.688504
22	A	3.456091
23	A	3.145168
24	A	2.314981
25	A	4.704763
26	A	2.073143
27	A	0.844614
28	A	3.468698
29	A	6.29489
30	A	4.318783
31	A	6.394217
32	A	11.80516
33	A	10.93768
34	A	4.39702
35	A	8.35749
36	A	6.568356
37	A	6.577538
38	A	1.334193

39	A	0.335786
40	A	6.302288
41	A	5.531508
42	A	4.020002
43	A	5.156365
44	A	6.033876
45	A	6.590457
46	A	4.013238
47	A	4.225555
48	A	5.94178
49	A	5.567973
50	A	3.820837
51	A	4.777072
52	A	4.526944

Table C.8.40: Bridge NO. 1027090 Obstruction Analysis

Obstruction Analysis				
FID	**Obs ID**	**Span**	**Type**	**Area**
0	1	A	Patch/Erosion	66.3311
1	2	A	Patch/Erosion	8.30279

Bridge NO. 1034880

Table C.8.41: Bridge NO. 1034880 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	98.03784

Figure C.8.31: Bridge NO. 1034880 Blank Image

Figure C.8.32: Bridge NO. 1034880 Obstruction Image

Figure C.8.33: Bridge NO. 1034880 Crack Image

Table C.8.42: Bridge NO. 1034880 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	6176.28	43	121.1884689	1	0.71014616

Table C.8.4347: Bridge NO. 1034880 Crack Extraction

Crack Extraction			
FID	Crack ID	Span	Length
0	43	A	6.5756
1	1	A	7.67178
2	2	A	6.293
3	3	A	1.67034
4	4	A	7.04539
5	5	A	1.99275
6	0	A	5.9609
7	7	A	2.78982
8	8	A	8.75808
9	10	A	10.3962
10	11	A	2.42193
11	9	A	9.01816
12	12	A	8.55315
13	13	A	1.8372
14	14	A	2.69634
15	15	A	5.03466
16	16	A	1.75317
17	17	A	2.39585
18	18	A	5.72564
19	19	A	5.68371
20	20	A	10.4624
21	21	A	1.82383
22	22	A	3.36992
23	23	A	3.81579
24	24	A	3.70405
25	25	A	4.65139
26	26	A	3.40689
27	27	A	3.92022
28	28	A	2.01934
29	29	A	3.57789
30	30	A	3.65023
31	31	A	3.74288
32	32	A	4.45091
33	33	A	5.1379
34	34	A	3.23934
35	35	A	3.20864
36	36	A	2.18303

37	37	A	5.86881
38	38	A	2.37862
39	39	A	1.99819
40	40	A	1.37432
41	41	A	3.51644
42	42	A	5.07733

Table C.8.44: Bridge NO. 1034880 Obstruction Analysis

Obstruction Analysis				
FID	Obs ID	Span	Type	Area
0	1	A	Tree	116.419
1	2	A	Shadow	4.76947

Bridge NO. 1052841

Table C.8.45: Bridge NO. 1052841 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	73.58577

Figure C.8.34: Bridge NO. 1052841 Blank Image

Figure C.8.35: Bridge NO. 1052841 Obstruction Image

Figure C.8.36: Bridge NO. 1052841 Crack Image

Table C.8.46: Bridge NO. 1052841 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	4591.144	2	132.933156	1	0.044861048
1	B	12125.15	6	432.9777659	1	0.051316403
2	C	12986.88	8	210.8828789	1	0.062617445
3	D	13619	9	292.7696573	1	0.067536003
4	E	14105.25	5	227.5718328	1	0.036029079
5	F	13807.19	5	1001.416406	1	0.039044878
6	G	14074.92	8	385.7736022	1	0.058440468
7	H	13620.18	15	513.9246928	1	0.114449149
8	I	13852.3	5	111.8054209	1	0.036388798

Table C.8.47: Bridge NO. 1052841 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	6.894379
1	A	15.06507
2	B	57.83767
3	B	3.655644
4	B	67.16772
5	B	4.957665
6	B	8.122435
7	B	16.53448
8	C	7.21687
9	C	10.44136
10	C	2.224024
11	C	167.3057
12	C	6.498518
13	C	5.365127
14	C	3.967987
15	C	5.669925
16	D	91.35148
17	D	47.12356
18	D	5.802237
19	D	5.355019
20	D	2.259047
21	D	4.901653
22	D	6.113899
23	D	15.27221
24	D	10.7131
25	E	31.54656
26	E	15.05483
27	E	3.509898
28	E	7.91593
29	E	23.23206
30	F	7.68348

31	F	73.47343
32	F	123.8383
33	F	7.858758
34	F	2.032475
35	G	201.4883
36	G	7.327022
37	G	6.583781
38	G	10.49625
39	G	25.23901
40	G	34.56327
41	G	7.957945
42	G	7.090819
43	H	78.91232
44	H	101.4932
45	H	106.4116
46	H	86.67784
47	H	9.780538
48	H	27.43499
49	H	15.55651
50	H	4.211082
51	H	11.75213
52	H	4.585706
53	H	9.391682
54	H	14.97728
55	H	3.825035
56	H	15.40103
57	H	7.521817
58	I	199.5201
59	I	114.0323
60	I	15.53268
61	I	7.325724
62	I	128.5469

Table C.8.48: Bridge NO. 1052841 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	132.9332
1	B	245.7841
2	D	292.7697
3	C	210.8829
4	E	227.5718
5	F	211.0941
6	F	205.4695
7	F	429.3576
8	F	155.4951
9	G	116.4002
10	G	269.3734

11	H	144.1139
12	H	367.1834
13	H	2.627454
14	I	111.8054
15	B	187.1937

Bridge NO. 1052842

Table C.8.49: Bridge NO. 1052842 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	62.63983

Figure C.8.37: Bridge NO. 1052842 Blank Image

Figure C.8.38: Bridge NO. 1052842 Obstruction Image

Figure C.8.39: Bridge NO. 1052842 Crack Image

Table C.8.50: Bridge NO. 1052842 Span Area

Span Area						
FID	Span	Area	# Cracks	ObstructionArea	DV	Crack Density
0	A	5782.648	9	167.7014654	1	0.160286481
1	B	14091.92	9	435.787245	1	0.065904437
2	C	13888.54	10	0	1	0.072001815
3	D	13332.87	13	657.6033542	1	0.102561944
4	E	13015.09	21	1664.568817	1	0.185013581
5	F	14533.15	25	770.5291852	1	0.181651506
6	G	14368.17	15	663.4533794	1	0.109451369
7	H	14378.82	14	395.8231221	1	0.100121576
8	I	14259.83	17	128.3809436	1	0.120299044

Table C.8.51: Bridge NO. 1052842 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	5.371288
1	A	37.88387
2	A	12.4643
3	A	8.99483
4	A	9.459705
5	A	3.29883
6	A	6.703188
7	A	13.51499
8	A	10.78426
9	B	5.959473
10	B	25.55609
11	B	17.92714
12	B	15.39108
13	B	27.41931
14	B	31.53393
15	B	9.31905
16	B	12.67881
17	B	23.10214
18	C	42.57226
19	C	3.805513
20	C	6.48205
21	C	4.084426
22	C	21.46176
23	C	4.248702
24	C	2.570996
25	C	7.428374
26	C	13.3737
27	C	19.41227
28	D	34.84149

29	D	7.504522
30	D	14.04588
31	D	25.09767
32	D	8.461489
33	D	23.72204
34	D	8.420837
35	D	3.20297
36	D	8.302083
37	D	12.35687
38	D	7.827556
39	D	14.42202
40	D	25.66688
41	E	26.49629
42	E	10.7225
43	E	4.303416
44	E	5.540426
45	E	2.836357
46	E	1.842776
47	E	2.139891
48	E	1.958603
49	E	1.009057
50	E	6.807474
51	E	46.66996
52	E	3.115869
53	E	3.781407
54	E	17.3152
55	E	2.417134
56	E	23.6221
57	E	3.135937
58	E	14.85867
59	E	3.595929
60	E	11.92364
61	E	4.300948
62	F	32.51969
63	F	2.231795
64	F	2.656425
65	F	7.132841
66	F	7.313063
67	F	11.52054
68	F	4.719827
69	F	3.598915
70	F	6.088548
71	F	5.291241
72	F	11.79629
73	F	4.799166
74	F	13.02232
75	F	4.488916
76	F	17.98332
77	F	6.546139
78	F	4.03415

79	F	9.893696
80	F	2.987953
81	F	3.002048
82	F	9.987936
83	F	10.06514
84	F	4.287388
85	F	10.23366
86	F	5.532187
87	G	8.408203
88	G	10.08712
89	G	13.08118
90	G	4.808879
91	G	9.191239
92	G	1.753058
93	G	9.754399
94	G	4.368197
95	G	5.274893
96	G	13.91475
97	G	14.53551
98	G	6.581305
99	G	2.101237
100	G	3.395805
101	G	5.321773
102	H	6.170443
103	H	6.180879
104	H	8.761423
105	H	4.590843
106	H	2.917867
107	H	21.79291
108	H	8.129683
109	H	3.310571
110	H	4.575257
111	H	8.101876
112	H	4.32661
113	H	1.731921
114	H	8.888213
115	H	3.766946
116	I	13.69984
117	I	5.505389
118	I	11.78608
119	I	5.455715
120	I	4.487972
121	I	8.000181
122	I	27.67644
123	I	18.08372
124	I	23.932
125	I	18.3034
126	I	22.85323
127	I	25.41317
128	I	27.80319

129	I	9.382512
130	I	7.505199
131	I	4.673127
132	I	13.65408

Table C.8.52: Bridge NO. 1052842 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	167.7015
1	B	435.7872
2	D	289.8117
3	D	367.7917
4	E	568.0211
5	E	1096.548
6	F	383.5164
7	F	213.8494
8	F	173.1634
9	G	246.5306
10	G	210.0139
11	G	206.9089
12	H	190.645
13	H	205.1782
14	I	7.757998
15	I	120.6229

Bridge NO. 1069749

Table C.8.53: Bridge NO. 1069749 Index Values

Bridge Surface Condition Index:	99
Image Quality Index:	11.18687

Figure C.8.40: Bridge NO. 1069749 Blank Image

Figure C.8.41: Bridge NO. 1069749 Obstruction Image

Figure C.8.42: Bridge NO. 1069749 Crack Image

Table C.8.54: Bridge NO. 1069749 Span Area

Span Area						
FID	Span	Area	# Cracks	Obstruction Area	DV	Crack Density
0	A	13897.5	17	1570.115588	1	0.13790431
1	B	14257.4	12	1006.322487	1	0.09055864
2	C	20401.75	15	2781.51232	1	0.085129365
3	D	12809.43	5	96.36720579	1	0.03932963
4	E	14846.03	11	1080.817388	1	0.079911581
5	F	18207.18	10	1812.369671	1	0.060994896
6	G	17182.29	15	2501.966643	1	0.10217756
7	H	9430.135	10	1693.82157	1	0.129260532
8	I	15607.8	31	940.4673681	1	0.211354047

Table C.8.55: Bridge NO. 1069749 Crack Extraction

Crack Extraction		
FID	Span	Length
0	A	11.93432
1	A	1.853282
2	A	0.842014
3	A	6.287292
4	A	13.07941
5	A	2.778506
6	A	5.49498
7	A	3.767695
8	A	3.273164
9	A	6.307642
10	A	5.90078
11	B	8.434969
12	B	2.027839
13	D	7.016787
14	E	5.74684
15	E	3.487562
16	E	10.68407
17	E	10.76895
18	E	14.59795
19	F	4.260294
20	F	1.948596
21	G	0.803721
22	G	1.136633
23	G	1.684029
24	G	1.431149
25	H	2.377887
26	H	2.290812
27	I	7.303933
28	I	5.532671
29	I	16.74172
30	I	6.793543

31	I	6.16367
32	I	2.651032
33	I	3.927157
34	I	6.744585
35	I	4.687998
36	I	3.552192
37	I	4.442814
38	I	8.576895
39	I	4.699392
40	I	3.912616
41	I	10.61663
42	I	12.3652
43	I	5.561351
44	I	6.240816
45	I	4.5946
46	I	9.867276
47	I	6.401293
48	I	5.873839
49	I	7.021237
50	I	7.365267
51	I	5.954798
52	I	13.13459
53	I	5.52873
54	I	9.041336
55	I	6.192189
56	I	6.864149
57	I	8.591903
58	H	15.33425
59	H	6.345569
60	H	8.313058
61	H	8.759866
62	H	12.82945
63	H	6.621385
64	H	8.146998
65	H	9.280958
66	G	9.568173
67	G	9.360631
68	G	12.94788
69	G	7.187916
70	G	6.974471
71	G	12.34027
72	G	34.84833
73	G	8.234315
74	G	7.686603
75	G	3.360978
76	G	5.646566
77	F	9.870038
78	F	5.510045
79	F	7.64093
80	F	3.66345

81	F	5.85838
82	F	3.201362
83	F	5.787199
84	F	11.25815
85	E	21.99874
86	E	14.13307
87	E	16.97785
88	E	18.94608
89	E	3.904755
90	E	3.979961
91	D	11.32431
92	D	7.002434
93	D	6.909738
94	D	16.24823
95	C	4.870733
96	C	9.45379
97	C	5.062656
98	C	3.127197
99	C	7.404263
100	C	8.18858
101	C	5.124482
102	C	5.586486
103	C	4.845649
104	C	4.17175
105	C	3.212073
106	C	5.459185
107	C	6.626511
108	C	7.425854
109	C	5.432296
110	B	6.596163
111	B	8.597283
112	B	9.778323
113	B	9.928461
114	B	12.70504
115	B	6.880379
116	B	15.91291
117	B	6.875164
118	B	12.69755
119	B	3.905402
120	A	3.951362
121	A	3.798122
122	A	11.30264
123	A	5.939744
124	A	4.501292
125	A	6.972005

Table C.8.56: Bridge NO. 1069749 Obstruction Analysis

Obstruction Analysis		
FID	Span	Area
0	A	1469.709
1	B	415.1622
2	A	46.74877
3	B	148.3392
4	B	423.3035
5	C	382.9238
6	A	53.65829
7	B	4.148218
8	B	3.861475
9	B	11.50796
10	C	692.6353
11	C	575.8269
12	C	960.3064
13	C	3.774257
14	C	9.86038
15	C	156.1854
16	D	96.36721
17	E	373.2643
18	E	419.749
19	E	3.020361
20	F	514.9716
21	E	271.1061
22	F	484.3952
23	E	13.67765
24	F	560.8374
25	F	4.634486
26	G	675.4092
27	F	247.531
28	H	543.5037
29	G	1393.432
30	G	428.0394
31	G	5.086107
32	H	518.2452
33	H	19.7947
34	H	306.4701
35	H	303.0134
36	H	2.794402
37	I	494.8389
38	I	434.0153
39	I	11.6131