AMENDMENT OF SOLICITATION / MODIFICATION OF CONTRACT

1. Contract Number	Page of Pages
	1 | 1

2. Amendment/Modification Number	3. Effective Date	4. Requisition/Purchase Request No.	5. Solicitation Caption
003	See Box 16C		**FY-15 Citywide Bridge Inspections**

6. Issued by: Code	7. Administered by (If other than line 6)
District Department of Transportation Office of Contracting and Procurement 55 M Street, SE, 7th Floor Washington, DC 20003	

8. Name and Address of Contractor (No. street, city, county, state and zip code)		
ALL PROSPECTIVE VENDORS	X	9A. Amendment of Solicitation No. **DCKA-2015-Q-0023**
		9B. Dated (See Item 11)
		10A. Modification of Contractor/Order No.
Code ____ Facility ____		10B. Dated (See Item 13)

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers ☐ is extended ☒ is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment: (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) BY separate letter or fax which includes a reference to the solicitation and amendment number. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such may be made by letter or fax, provided each letter or telegram makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. Accounting and Appropriation Data (If Required):

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTORS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14

	A. This change order is issued pursuant to (Specify Authority): The changes set forth in Item 14 are made in the contract/order no. in item 10A.
	B. The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data etc.) set forth in item 14, pursuant to the authority of 27 DCMR, Chapter 36, Section 3601.2.
	C. This supplemental agreement is entered into pursuant to authority of:
	D. Other (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not ☒ is required to sign this document and return _1_ copies to the issuing office.

14. Description of Amendment/Modification (Organized by UCF Section headings, including solicitation/contract subject matter where feasible.)

Solicitation No.: **DCKA-2015-Q-0023** is hereby amended as follows:

1. Due to inclement weather, the pre-proposal meeting scheduled for Tuesday, February 16, 2015 has been rescheduled to Monday, February 23, 2015 at 10:00am, located at DDOT Headquarters, 55 M Street, Suite 748, Washington, DC 20003.
2. The scope of work for the subject solicitation is hereby incorporated by this amendment. See attached.

15A. Name and Title of Signer (Type or print)		16A. Name of Contracting Officer Courtney Lattimore Contracting Officer	
15B. Name of Contractor (Signature)	15C. Date Signed	16B. District of Columbia (Signature of Contracting Officer)	16C. Date Signed 2/18/15

ATTACHMENT J.1.3 - SCOPE OF SERVICES
FY 2015 CITYWIDE CONSULTANT BRIDGE INSPECTION

A. GENERAL REQUIREMENTS

Work under this contract consists of performing detailed condition inspections and evaluations of all highway and pedestrian bridges, and tunnels and underpasses, under the ownership of the District of Columbia in accordance with the DDOT Bridge Inspection Manual of Procedures and the National Bridge Inspection Standards (NBIS). Safety inspections of railroad owned bridges crossing District streets shall also be performed. Selected inspections of culverts and overhead sign structures shall be performed as needed via contract modifications.

Included is scheduling of inspections within the prescribed time interval, conducting inspections in accordance with the schedule, preparation of inspection reports, verification and/or updating of inventory data, providing means of access to all portions of the structure, traffic control and other miscellaneous tasks necessary to complete the required inspections. Also included is notification of DDOT of any conditions that may require prompt attention, performing requested load rating calculations, making recommendations for repairs and/or rehabilitation required to maintain and preserve the safe and efficient operation of the bridges, design of temporary supports to correct deficiencies and monitoring of temporary supports at required intervals.

All regular bridge inspections shall include a review of the existing available information to be aware of the structural performance and history of the bridge. This review shall include the most recent inspection reports, load rating analyses (if available), as-built plans and any history of structural alterations, repairs, rehabilitation or maintenance.

DDOT will furnish the Consultant with existing bridge drawings, prior inspection reports, current inventory data and load ratings on each bridge. If electronic files are not available, the documents will be picked up by the Consultant, copied and returned to the DDOT office by the Consultant, as needed. At the beginning of the contract, the District will provide current copies of the bridge inspection reports for all bridges in electronic format and blank report forms for use in preparing future reports. These documents will form the basis for future reports. Modifications to the report format may be made with the permission of DDOT. Obtain copies of relevant FHWA and AASHTO bridge inspection guidelines by contacting the respective organization. Field verify the existing bridge plans to assure that they accurately reflect the actual field conditions.

Please be advised that it is DDOT policy to not reimburse consultant's expenses regarding lodging, per deim, airfare and travel to the work site without the express approval of the Chief Engineer. Mileage in the commission of duties after arrival at the work site is reimbursable.

B. LIST OF STRUCTURES TO BE INSPECTED

It is the Consultant's responsibility to schedule inspections, monitor the progress of work and take necessary actions to keep inspections on schedule. A list of highway, pedestrian and railroad-owned bridges is provided in Appendix A of this document. A current schedule of

recent inspection dates will be provided. The District will also furnish a copy of the SI&A (Structure Inventory and Appraisal) Report for each bridge prior to the inspection. A marked-up copy of the SI&A Report shall be provided with the inspection report. Inspections shall be conducted in the general order of priority beginning with the least current inspection date.

C. GENERAL SERVICES PROVIDED BY THE CONSULTANT

1. TYPES OF INSPECTIONS

a) Routine Inspection

This is the regularly scheduled inspection that each bridge receives within the prescribed interval throughout its life. In most cases an inspection has been completed within the last two years and the inspection report and documentation is available. However, if the bridge is either new, reconstructed or has just been added to the District's inventory, more extensive office and field work will be required to obtain the SI&A information from the plans to produce a report. In the case of new bridges that have not been entered into the AASHTO Bridge Management (BrM, formerly Pontis) database, provide the NBI data elements as well as the National Bridge and Bridge Management Elements, including related defects for each condition state. Maintain and update, as needed, an Excel spreadsheet, provided by DDOT, for all scheduled bridge inspections showing previous, current and future inspections for the life of the contract.

b) Supplemental (or Partial) Inspection

This is an unscheduled inspection requested by the District. It may include in-depth work beyond the scope of a routine inspection such as structural monitoring, non-destructive testing, laboratory analysis and instrumentation focusing either on the entire structure or specific components as defined in the request.

c) Special Inspection

A special inspection is a unique inspection effort targeted at special situations or conditions and may be performed to obtain greater detail than would have normally occurred during a routine inspection. A special inspection may also be performed to monitor the condition of a specific bridge detail or element on a regular basis.

2. ROUTINE, SUPPLEMENTAL OR SPECIAL INSPECTIONS

In a routine inspection, thoroughly inspect all bridge elements including the foundations above grade that support the substructure elements. Clean members and remove rust as needed to assess their condition. Observe all overhead and ground mounted signs, light standards, utility poles and overhead wires in the vicinity of the structure; provide photographs and an assessment of damage. If a supplemental or special inspection is being performed, inspect only the specified areas/members; however, report any other observed deficiencies on or adjacent to the bridge that may pose a threat to public safety.

Clearly record all inspection field notes on the DCBMS forms, as described in the District's Bridge Inspection Manual of Procedures, prepare sketches and obtain photographic documentation. Identify precisely any problem areas and all areas of section loss if they might impact the members strength. Report NBI condition ratings (Items 58 through 62), and the percentage of the total quantity of each element in each BrM condition state.

On all bridges, provide a quantified assessment of the condition of the roadway approaches, the railing and approach guiderail, overhead sign structures, signs, lighting standards and electrical service, utilities and any miscellaneous items on the structure.

Equipment and Traffic Control – When the standard traffic control drawings in Section 616 of the DDOT Standard Drawings apply, they may be used, subject to DDOT approval. When roadway configurations are such that no standard drawing applies or when multiple lane closures are needed, prepare traffic control plans (TCP's) that will be needed for inspections sufficient to meet the requirements of the FHWA Manual on Uniform Traffic Control Devices (MUTCD) and submit them for review and approval. Obtain approvals prior to beginning inspections. Arrange for snoopers, rigging, inspection cranes, platform lift trucks, ladders, boats, etc. The use of a bucket boat, safety boat or skiff is strongly encouraged when working over water to minimize interference with highway traffic or when the risk of falling is high. Ensure the safety of the inspectors and the public at all times. Provide any needed traffic control, including arrow boards, drums, cones, unless otherwise indicated.

At least two weeks prior to any scheduled inspection, prepare a list of proposed inspections that will require lane closures for submittal to the Project Manager. The information shall include bridge number, location, the specific travel lanes affected and hours of operation. If a standard drawing is being used, note the identification number and include a copy of the standard drawing. The schedule will be compared to other planned events during that period for conflicts. If a conflict exists, certain inspections may have to be rescheduled. For inspections of bridges over major waterways, notify and coordinate with the U.S. Coast Guard and the D.C. Harbor Master. For bridge inspections that impact National Park Service (NPS) land, contact the appropriate NPS person. Provide notes on all persons contacted and their telephone numbers.

Bridges Over Railroad Property – Where bridges pass over railroads, contact and coordinate with the railroad company representatives, as required, and make all arrangements to gain access to their property for inspection of portions of District bridges that cannot be reached from District property. Obtain required certifications for entry, pay all fees for railroad protective services and comply with all railroad directives while on their property. It may be necessary to work at night for short time intervals to inspect bridges where the tracks cannot be closed during the day or that are affected by railroad electrification. Record in the inspection report the company(s) contacted, key contact personnel, their telephone numbers, required permits and related expenses. All project-related expenses incurred by the Consultant to comply with the requirements of railroad

companies shall be reimbursed by the District.

Safety Inspections of Railroad-Owned Bridges - The substructure and the underneath portions of the superstructure of railroad-owned bridges over public streets and highways shall receive a safety inspection to identify any potential hazards to the pedestrian and highway traffic under the bridge. All potential hazards shall be immediately reported to DDOT.

Insurance Requirements - In addition to Workers Compensation Insurance and Liability Insurance, the Consultant will need additional insurance to satisfy the requirements of railroad companies when inspecting bridges over railroads. The additional cost of said insurance shall be reimbursed by the District.

Fracture Critical Members - Identify locations and provide descriptions of all observed fracture critical members (FCM). FCMs and their condition shall be identified specifically in the inspection reports. Discuss inspection frequency and procedures for inspection of each FCM member (Fracture critical members are tension members whose failure will probably result in a collapse of a portion or the entire bridge). Fracture critical members not listed in Appendix B shall be reported to the District for addition to the list.

Load Posting - Document the condition, location, load limit and number of load limit signs at all posted bridges. Report all missing signs to the Project Manager. Report inadequate notice to truckers of load posted bridges. Recommend load postings for bridges based upon current load ratings.

Clearances - Verify existing underclearances and lateral clearances for inclusion in the DCBMS database. Make corrections where needed. Recommend Low Clearance (W12-2) signs at appropriate locations.

Bridge Lists - Provide and maintain the following information in list format for the use of DDOT as well as a summary of all the lists at the end of the contract period:

- A list of bridges recommended for special inspections. This list shall include bridges having fracture critical members or critical elements whose condition could not be rated with confidence while exercising a reasonable standard of care for the routine inspection. This list shall also include bridges that require underwater, or scour inspections not on current lists. The Consultant shall verify NBI Item 113.

- A list of preventive maintenance repair items that should be performed in a timely manner. The items should be referenced to the ongoing preventive maintenance contract. These should be non-critical items that need not be reported to the immediate attention of the District. Preventive maintenance repair items shall be included by type, size and location in the "Recommendations" section of the individual bridge inspection reports.

- A list of all bridges that have a condition rating of 4 or less for any component. Any

bridge with a rating of 4 or less shall be brought to the District's attention immediately, verbally and in writing.

A list of bridges that are not properly posted for load or height restrictions with the needed materials to update the sign installations. The list shall include the bridge number, the types and quantities of signs needed and the quantity of posts and sets of hardware needed and their locations.

A list of bridges that are found to have overheight load damage or that have had repairs to damage from overheight loads. The extent of damage shall be documented on the Bridge Inspection Report. The DCBMS database shall be updated as necessary.

A list of bridges with pin and hanger connections or girder tiedowns. Give the bridge number and a description and location of the connections. Photographs shall be placed in the file.

Photographs - Provide digital color photographs to supplement field inspection notes and drawings and to document conditions. The photographs shall be sufficiently clear, properly identified, dated and indexed. Include views of the overall bridge plus its side elevation, the approach roadway and its alignment, any defects and structural details. Include photographs in the electronic file that are not provided in the report.

Closed Structures - Inspect closed bridges to assure that the physical barriers are maintained and that public safety is not jeopardized. Assess the physical integrity of the structure and any potential hazards to the public on or beneath the structure.

3. UPDATING INVENTORY DATA

The DDOT Project Manager shall be responsible for updating data in the bridge inventory in the District's Bridge Management System (DCBMS). Plans or sketches shall also be reviewed to determine if any modifications to the structure have been made since the last inspection. When modifications have taken place, copies of the plans for the modification shall be placed in the bridge folder. If these plans are not available, the modifications shall be indicated in red on the existing plans or sketches in-lieu of plans, as appropriate. Any sketches and/or modifications to plans shall be signed and dated. The existing bridge inventory in the DCBMS shall be modified to reflect the identified changes. Modification of the bridge inventory shall follow the guidelines in the District's Bridge Inspection Manual of Procedures.

In addition to items 58 through 62, the following NBI items shall be updated for each bridge in the inventory:

ITEM	DESCRIPTION
36	Traffic Safety Features
67	Structural Evaluation

68	Deck Geometry
69	Underclearances
70	Bridge Posting
71	Waterway Adequacy
72	Approach Roadway Alignment

Updating NBI Item 36, Traffic Safety Features, requires field inspection of each traffic safety feature to identify all safety deficiencies and which traffic safety features no longer satisfy AASHTO Standards.

4. SCOUR INSPECTION AND EVALUATION

Inspect all underwater bridge components above the mudline in minor waterways (e.g., piers, abutments, footings, piles, etc.) visually or by feel (e.g., probing) for condition, scour, integrity, safe load capacity, etc. When specifically requested, bridges on major waterways will require specialized underwater inspection, on a five year cycle, as described in D.

Conduct an evaluation of the site to determine the risk from scour. Determine the hydrology and hydraulics of a site. Investigate the scour potential and determine structure stability. Propose countermeasures appropriate for conditions.

Plot cross section profiles as described in the District's Manual of Procedures. Profile data shall be input into the database of the DCBMS. Print hard copies of the current profiles. These hard copies shall be signed, dated, and included in the bridge folder. Past and present data shall be reviewed to assist in determining if any problems are developing.

Note evidence that an underwater inspection by a professional diver is warranted, with reasons in the recommendation section of the inspection report.

5. FRACTURE CRITICAL INSPECTIONS

Create and maintain a file of bridges that require fracture critical inspections. The file may be established using the DDOT list and expanded as inspections proceed. The file shall include the location and copy of the specific fracture critical detail and the frequency at which it is inspected. The file shall be provided to DDOT with updates whenever they occur.

Bridges that have been identified with fracture critical features are listed in Appendix B. If features on other bridges are noted, notify the District so that they may be added to the list. Perform an in-depth inspection of these features during the routine inspection, or at the recommended frequency, according to the guidelines in the District's Bridge Inspection Manual of Procedures. An acceptable level of inspection for steel members should detect loss of rivets or bolts, fatigue cracks, the extent of rust, section loss and bent or damaged members. If necessary, an appropriate nondestructive testing method

that will readily determine the extent of damage shall be incorporated in the inspection.

A detailed sketch, or photocopy, of each fracture critical member shall be included. Cracks, nicks or gouges, areas of corrosion, and suspicious areas shall be shown on the detailed sketch.

The DCBMS database shall be updated with the information from these inspections. Load ratings and appraisals shall account for reported conditions.

D. UNDERWATER BRIDGE INSPECTIONS [Due in 2016]

(1.) GENERAL - Perform underwater inspections at five (5) year intervals on the bridges listed in Appendix C. The inspections can be performed at the same time as the regular NBI inspection or separately. The approximate number of piers and abutment faces is listed. Also include substructures that will be underwater at the high flood level even though they may not be underwater at the time of inspection.

Investigate all structural elements between the high water line and the mudline, including concrete, steel and timber structures for any indications of corrosion, erosion, settlement, spalling, cracking, scouring, marine borer attack or other deterioration. Any conditions of current flow or change in the river bottom profile or any condition of the underwater portions of the structure not shown on the plans shall also be investigated and documented. Pilings may be cast-in-place concrete, precast concrete, steel or timber. Piers and abutments below the water line shall be examined for deterioration and/or movement. Dolphins, fenders and bulkheads shall be examined for deterioration, marine attack and damage by vessels. The river bottom around the piers and abutments shall be examined for scour holes and unintended exposure of pilings.

Included shall be a hands-on inspection of fendering systems at bridges which have a U.S. Coast Guard permit for navigational clearances. Thoroughly evaluate the adequacy of the systems for the type of vessels navigating that portion of the waterway. If it is found that the system is inadequate to protect the bridge piers from collisions with these vessels, provide recommendations for their improvement.

The actual inspection shall be performed by certified divers under the supervision of a Registered Professional Engineer, both of whom shall meet the qualifications specified in the Code of Federal Regulations - 23 Highways - Part 650 - Subpart C.

Be aware that highway and pedestrian traffic over, as well as marine traffic under and/or through the referenced structures must be maintained during the life of the contract. The Consultant shall provide video recordings of all underwater inspections.

The DCBMS database will be updated by the DDOT Bridge Engineer with the findings of the underwater inspection. Load ratings and appraisals shall account for reported conditions.

In addition, conduct a shoreline-to-shoreline survey of the riverbed along the bridge alignment and provide three (3) plotted profiles with elevations at 50-foot intervals, located along the centerline of the structure (midpoint between fascias) and one parallel profile at each bridge fascia. The survey shall include the pier footing outlines with elevations taken at each corner, the high/low tide elevations, the highest flood level and the location of any existing utility lines on or above the channel bed.

(2.) PUBLICATIONS - All inspections shall be performed in accordance with guidance from the following publications:

- AASHTO "Manual for Bridge Evaluation".
- AASHTO Manual for Bridge Element Inspection
- FHWA "Bridge Inspector's Training Manual".
- FHWA "Underwater Inspection of Bridges", Report No. FHWA-DP-80-1, 1989.
- FHWA "Advanced Bridge Inspection Methods: Applications and Guidelines", Report No. FHWA-TS-89-017.
- Department of Labor, Occupational Safety and Health Administration (OSHA), "Commercial Diving Operation", July 22, 1977, as effective October 20, 1977.
- District of Columbia Register, Special Edition, D.C. Rules and Regulations, Title 11-B, Minimum Wage and Industrial Safety Board, Chapter IX, "Diving Operations", April 1, 1971.

(3.) PERSONNEL QUALIFICATIONS - The actual inspections shall be conducted by a certified diver, who for safety purposes, shall be accompanied and/or assisted during all diving operations by a second approved diver. Both divers shall meet the qualifications specified in the Code of Federal Regulations - 23 Highways - Part 650 - Subpart C.

1. They shall possess and produce upon request valid credentials showing successful completion of a regular training course given by a nationally recognized diving authority.

2. They shall possess at least five (5) years of experience in underwater inspections and shall present to DDOT a resume and record of these inspections, to include underwater inspection of bridge piers and concrete structures.

The supervision and coordination of the underwater inspection shall be conducted by a Registered Professional Engineer (PE), registered in the United States and possessing a minimum of five (5) years experience in similar work. The PE shall be at the dive site for the duration of each dive and shall be responsible for all engineering aspects of the field work. The PE may be a member of the dive team.

Submit to the DDOT Project Manager detailed resumes and histories of inspection work performed by both the divers and the Registered Professional Engineer. Each resume shall include a statement of professional status, educational background and work experience demonstrating how the individuals meet the requirements for this work. The description of work experience shall show the length of service and clearly explain in detail the relevant duties and responsibilities of each assignment.

The review of the resumes and histories by DDOT will be the determining factor as to the acceptability of these individuals to perform the work. The use of substitute divers or Professional Engineers whose resumes and histories are not included in the submittal shall not be permitted without prior qualification and the express written permission of DDOT. No inspections shall take place unless the designated divers and Professional Engineer or the approved substitutes are present for work at the site location.

(4.) EQUIPMENT - Supply all equipment necessary to successfully complete the required inspections. This shall include, but not necessarily be limited, to the following: Air System; Standby Air System; Hat or Helmet; Radio; Spare Radio; Compressor; Mechanics Tools; Diving Ladders; Flags; Buoys; Air Horn; Life Jackets; Diving Light and Tools, the last including Hammers, Scrapers, Knives, Probes, Grinders, Mechanical Brushes, Water Pumps and Power Sources for these necessary fixtures and attachments. If the Contractor's operations require the use of a work barge, such shall be provided at no additional cost to the District.

Unless otherwise authorized, all diving inspection work shall be performed by divers who have continuous surface supplied air and continuous voice communication between the divers and the topside crew. Voice communications shall be so arranged that the Engineer will be able to listen to the conversation between the two parties. Communications shall also be arranged such that the Engineer will be able to enter into the conversation at any time to ask questions or request clarification. The loss of this communication shall be cause for termination of the inspection operation and no subsequent inspections shall be performed until this communication is restored.

Supply a 16 foot (min.) power boat with a minimum 40 horsepower engine for the use of the Engineer for the duration of this project; and this boat shall be in a clean and safe condition with gear neatly and properly stowed and have the necessary equipment for meeting the U.S. Coast Guard inspection requirements and shall meet with the approval of DDOT as to seaworthiness and intended use for this project.

(5.) INSPECTION PROCEDURES - Submit to DDOT two (2) copies of the schedule, procedures and equipment to be used at least five (5) days in advance of the proposed inspection date. The schedule shall accommodate any current construction activities on the bridges to be inspected. All underwater bridge inspection shall be performed under the observation of the Engineer or his authorized representative.

Project operations shall be coordinated and conducted such that no construction activities are being performed directly above the personnel engaged in the inspection work.

Supply all equipment, labor and materials required for the successful completion of the work

described herein.

(6.) GENERAL INSPECTION DATA TO BE COLLECTED - A description of the data to be collected includes, but is not limited to the following:

Voids - Any and all voids encountered in concrete and masonry units during the diving inspection shall be measured and the location documented. The void shall be described with width, length and depth measurements with documentation both in the diving notes and the drawings of the unit. Furthermore, the condition of the material adjacent to the void shall be noted to aid in the determination if a major problem exists and if the void could easily propagate.

Holes - Holes encountered during the diving inspection shall be measured for size and depth and the location documented. Also noted shall be a written description of the problem such as the loss of fill in a bulkhead system or settling of a row of masonry.

Impact Damage - In the course of the diving inspection, substructure units shall be examined for impact damage. If a fender system is in place, impact damage may be limited to the system; however, any damage found in the structural unit that is caused by impact shall be treated and documented separately.

Loss of Section - Loss of cross sectional area of any structural units shall be documented. Loss of section would be primarily be noted on timber, concrete and steel structures. Particular attention shall be paid to tidal areas.

Displacement - Displacement of structural members or fender members shall be documented. Details of the displacement shall be noted in the diving inspection notes.

Missing Elements - If elements of the structural unit are found to be missing, they shall be noted and described in detail in the diving inspection notes. If the missing element is adjacent to the structural unit, such as a fallen stone, the location shall be noted.

Previous Repairs - If signs of previous repairs to substructure units are noted, they shall be inspected. A description of the effectiveness of the repair, as well as its condition, shall be given, if possible.

Scour/Erosion - All units shall be inspected for scour and erosion. Inspection by the diver shall include an area within six feet of the substructure and shall include documentation of any irregular bottom contours near the unit as well as any undermining of the unit.

Loss of Fill - If the inspection of abutments and bulkheads reveals holes with loss of fill material behind the structure, the extent of loss shall be documented in the notes.

Marine Growth - As the inspection proceeds, a description of marine growth and the efforts required in cleaning shall be noted.

Debris - If the diver encounters excessive debris during the inspection, the type and extent shall

be documented.

(7.) INSPECTION OF CONCRETE AND MASONRY STRUCTURES - The diver shall inspect all surfaces of the concrete unit in contact with the water. In addition to the items described in (E), the following items shall be inspected:

Cracks - All cracks located during the diving inspection shall be measured for depth, width, length and location. The cracks shall be mapped on the drawing of the unit as well as described in the diver's notes. Any crack found propagating below the river bed shall be specifically noted.

Spalls - Spalling found in the concrete units shall be described and documented with size and location noted on the drawing and in the diver's notes.

Exposed Reinforcing Steel - Any exposed reinforcing steel found during the diving inspection shall be documented. Data shall include their length, condition and location and shall be noted on the drawing as well as the diver's notes.

Soft Concrete - If any soft, punky concrete is encountered during the inspection, the diver shall inspect the unit completely for all areas of unsound concrete. The location and extent of these areas shall be noted on the drawing and in the diver's notes.

Sulphate Attack - If the concrete in tidal zone areas is found to have been exposed to water with high sulphate content and has signs of loss and deterioration of cement, the condition shall be documented.

Honeycombing - If during the inspection, the diver finds signs of honeycombing: aggregate without sufficient cement content, the condition shall be noted in the diver's notes and the extent shown on the drawing.

Rust Spots - Rust spots appearing on the concrete surface shall be noted.

Grout Loss in Stone Masonry - In the inspection of masonry units, each joint that is below the high water line shall be inspected. If grout is found to be missing, the joint shall be probed and the depth of missing grout measured at least every five (5) feet along the horizontal joints and once in each vertical joint. This data shall be included in the diver's notes and shown on the drawing of the unit.

(8.) INSPECTION OF TIMBER SUBSTRUCTURES - The inspection of timber units shall include the following items:

Splitting - Any serious splitting of the timber substructure shall be documented. Only minor ice damage or splitting of the outermost surface need not be detailed, but splitting that is determined to be of structural significance shall be measured and detailed.

Marine Borers - If signs of marine borer activity are evident on the timber substructure, this condition shall be documented. If noted, incremental borings shall be taken to determine the

extent of activity and an estimate of cross sectional loss.

Rot - An estimate of the extent and location of rot in the timber substructure shall be made. This estimate will be based upon the result of probings made with a sharp, ice pick-type device. The amount of penetration into the timber structure shall determine the extent of rot present.

Fasteners - Fasteners visible to the inspector shall be examined and any deterioration or damage noted.

(9.) CRITICAL FINDINGS - Bridges exhibiting deficiencies (critical findings) which may pose immediate danger to public safety or which will require prompt maintenance shall be brought to the immediate attention of the Chief Engineer or the Chief, Asset Management Division. Deficiencies will generally be found in the following categories:

- Bridges with deficiencies in fracture critical members; or
- Bridges with scour and/or hydraulic problems; or
- Bridges with condition ratings of 3 or less for the superstructure or substructure or an appraisal rating of 3 or less for waterway adequacy; or
- Bridges with deficiencies which have already or will soon result in a substantial reduction in safe load capacity.

As part of the initial notification, provide a detailed written report of the deficiency supplemented with drawings, sketches and photographs as is necessary to illustrate the problem. In most cases, that portion of the inspection report dealing with the deficient feature will be adequate.

(10.) REPORTS - Upon completion of the inspection on each bridge, submit one printed copy of a written final report and one electronic copy to DDOT, including all necessary scaled drawings describing in detail any defects in the underwater concrete, exposed or deteriorated piles, scour and other deficiencies. Said drawings shall be dimensioned and use coordinates which can be referenced to the bridge piers in order that the deficiencies can be located at a future date. Also, included in this report will be the three (3) plotted profiles from the riverbed survey. During the inspection, special attention shall be directed to the previously mentioned inspection items to which reference shall also be made in the report.

(11.) STRUCTURES TO BE INSPECTED – When directed, underwater inspections shall be performed on the bridges listed in Appendix C. The approximate number of piers and abutment faces is listed. The Consultant shall also include substructures which will be underwater at the high flood level even though they may not be underwater at the time of inspection.

All structural elements between the high water line and the mudline, including concrete, steel and timber structures shall be investigated for any indications of corrosion, erosion, settlement, spalling, cracking, scouring, marine borer attack or other deterioration. Any conditions of

current flow or change in the river bottom profile or any condition of the underwater portions of the structure not shown on the plans shall also be investigated and documented. Pilings may be cast-in-place concrete, precast concrete, steel or timber. Piers and abutments below the water line shall be examined for deterioration and/or movement. Dolphins, fenders and bulkheads shall be examined for deterioration, marine attack and damage by vessels. The river bottom around the piers and abutments shall be examined for scour holes and unintended exposure of pilings.

The actual inspection shall be performed by certified divers under the supervision of a Registered Professional Engineer, both of whom shall meet the qualifications specified in the Code of Federal Regulations - 23 Highways - Part 650 - Subpart C.

Be aware that highway and pedestrian traffic over, as well as marine traffic under and/or through the referenced structures must be maintained during the life of the contract. Provide video recordings of all underwater inspections.

The DCBMS database will be updated with the findings of the underwater inspection. Load ratings and appraisals shall account for reported conditions.

In addition, conduct a shoreline to shoreline survey of the riverbed along the bridge alignment and provide three (3) plotted profiles with elevations at 50 foot intervals, located along the centerline of the structure (midpoint between fascias) and one parallel profile at each bridge fascia. The survey shall include the pier footing outlines with elevations taken at each corner, the high/low tide elevations, the highest flood level and the location of any existing utility lines on or above the channel bed.

E. STRUCTURAL ANALYSIS AND LOAD RATING

When requested by DDOT, perform or update the structural analysis and load ratings using the LRFR or load factor method, whichever applies. Compute Inventory and Operating ratings using the AASHTO LRFR configuration.

Use conventional methods of analysis unless more complex and refined methods are specified or warranted and specifically directed by the District. Identify the structural components or members that govern the ratings. Define any section losses and/or other deficiencies on these members. Include a table of stresses and a rating summary in the report.

All computations are to be in accordance with current AASHTO Specifications. Update existing computations accordingly. The rating calculations shall consider and reflect the structural condition of the bridge elements including section loss, steel cracks, loss of connections, damaged or misalignment of members. The Consultant shall include a narrative report describing how any of these deficiencies were incorporated into the load rating calculations.

Calculate the load ratings, use data available from inspection files and report, supplemental field information and testing data. When no data or drawings (or sketches) are available, calculate load rating entirely on field measurements.

Perform a structural analysis of the substructure only if its structural adequacy is in question or it is at risk due to scour as a result of the field inspection findings or its unusual component makeup.

Provide emergency retrofit schemes, as directed, to any critical conditions uncovered.

F. REPORTING CRITICAL DEFICIENCIES TO OWNER

Critical structural and safety-related deficiencies, including posting, repair and maintenance recommendations and alternatives contained in the current inspection report shall be discussed with the District's Project Manager.
Emphasis shall be placed on discussion of uncorrected critical and other deficiencies brought forward from the previous inspection report. These deficiencies must be highlighted in the current inspection report.

G. EMERGENCY REPORTING

Notify the District's Project Manager immediately whenever a potentially perilous or hazardous condition is observed. Provide written notification in the form of a Critical Finding Report within 24 hours. Examples of such situations could include:

- Distress in primary members to the point where there is doubt that the members can safely carry the loads for which they are designed and partial or complete failure of the bridge is a possibility.

- Scour at or under the pier of a stream bridge is such that significant movement is likely which could cause the bridge to collapse.

- Abutment movement or distress which is so excessive that there is a clear possibility that it may not be capable of supporting the superstructure and partial or complete failure is a possibility.

- Suspected cracks in pins or hangers of two girder/truss bridges.

- Deficiencies in fracture critical members.

- Missing weight restriction signs.

- Any situation where the structural integrity of the bridge is such that its safety is in question.

As part of the initial notification, provide a detailed written report of the deficiency supplemented with drawings, sketches and photographs as is necessary to illustrate the problem. In most cases, that portion of the inspection report dealing with the deficient feature will be

adequate. After field verification by the District's Project Manager, the Consultant may be required to perform tests as stated in Section 1.5 below and propose formal recommendations for immediate action and correction of the deficiency.

Non-Emergency Reporting of Deficiencies – When deficiencies are noted that do not rise to the level of a Critical Finding but should not wait for the report submittal, submit a report in letter format, supplemented with photographs, clearly describing the deficiencies with recommendations for action.

H. MATERIAL SAMPLING AND TESTING OR INSTRUMENTATION

Structural materials evaluation and bridge instrumentation are not a routine part of a bridge inspection. They are to be conducted only when required and justified to eliminate unacceptable engineering uncertainties or to more accurately assess the structure's load carrying capacity.

Obtain the District's Project Manager concurrence before initiating any materials sampling and testing and/or instrumentation program.

I. INSPECTION RELATED SPECIAL STUDIES

When requested, conduct special or unique studies related to bridge inspection or bridge inspection problems as directed. Examples of such studies may include but are not limited to: special or unique bridge load rating analysis and posting; investigation of bridge inspection problems in the field; or special studies related to bridge inspection procedures.

J. SUBMISSIONS

Submit a proposed work schedule showing planned inspection dates for the entire list of bridges within two weeks of Notice-to-Proceed. Update the list monthly as inspections proceed. Submit progress reports, reflecting the work performed during each invoice period, to the District's Project Manager.

Provide a written report clear and detailed to the extent that it can be fully interpreted by DDOT Inspection personnel. Included shall be a location map, the completed SI&A sheet, the inspection form, critical findings, stream cross sections for bridges over minor waterways, operating and inventory rating calculations, photographs, results of any tests or analyses, scale contract drawings as needed from existing plans and inspection notes. Each bridge inspection report shall be signed by the personnel performing the inspection and the supervising Registered Professional Engineer.

The reports, including evaluations, ratings and appraisals, shall also be sealed and signed by the Engineer.

Prior to beginning work, inform the District's Project Manager of the schedule of inspection of their bridge(s) and names of the inspectors.

Submit one printed copy and one electronic copy of each report for acceptance within **Sixty (60) Days** of the completion of each field inspection. All reports shall have color copies of the photographs. Each report shall be signed and sealed by a licensed Professional Engineer knowledgeable of report content. At various times throughout the year, submit electronic copies of all reports accumulated during the period in PDF format. All submissions must be finalized before the contract expiration date.

K. DEADLINES

Be prepared to start work immediately upon receiving notice-to-proceed. All work including the final report submissions shall be completed expeditiously. The inspection due date must maintain the 24 month inspection frequency or other frequency as specified during the scope of work meeting. Inspection reports shall be submitted within 60 calendar days of the date of inspection.

APPENDIX A

LIST OF BRIDGES TO BE INSPECTED

APPENDIX B

BRIDGES REQUIRING FRACTURE CRITICAL INSPECTION

BRIDGE NUMBER	LOCATION	FRACTURE CRITICAL DETAIL
1	Chain Bridge over Potomac River	Two Girder System Pin & Link Assembly
26-1	Klingle Road, N.W. over Rock Creek	Cross Girder System
26-3	Klingle Road Ramp over Rock Creek	Cross Girder System
32	Whitehurst Freeway	Cross Girder System
46	Michigan Avenue, N.E over Park Place	Cross Girder System
53	South Capitol Street over Anacostia River	Swing Span Suspended Spans Pin & Link Assemblies
53	South Capitol Street over Anacostia River – Middle Ramp	Cross Girder System
53	South Capitol Street over Anacostia River – Ramp A	Cross Girder System
53	South Capitol Street over Anacostia River – Ramp B	Cross Girder System
170-1	NB 14th Street, N.W. over Potomac River	Bascule Span (Immobilized)
503(EB)	EB Benning Road over Kenilworth Avenue and CSX Railroad	Cross Girder System Partial Length Cover Plates
503(WB)	WB Benning Road over Kenilworth Avenue and CSX Railroad	Partial Length Cover Plates
529	H Street, N.W. over Railroad	Cross Girder System Pin & Link Assembly
1007	Anacostia Freeway over Good Hope Road	Partial Length Cover Plates
1008	Anacostia Freeway over Howard Road	Partial Length Cover Plates
1009	Anacostia Freeway over Suitland Parkway	Partial Length Cover Plates
1011	SB South Capitol Street over Suitland Parkway	Partial Length Cover Plates
1012	Anacostia Freeway over Firth Sterling	Partial Length Cover Plates
1016	NB Anacostia Freeway over South Capitol Street	Partial Length Cover Plates
1017	SB Anacostia Freeway over South Capitol Street	Partial Length Cover Plates
1019(NB)	NB Anacostia Freeway over Shepherd Parkway	Partial Length Cover Plates
1019(SB)	SB Anacostia Freeway over Shepherd Parkway	Partial Length Cover Plates

BRIDGE NUMBER	LOCATION	FRACTURE CRITICAL DETAIL
1026	Anacostia Freeway over Oxon Run Bay	Suspended Span
1102(Ramp C)	Southwest Freeway over Railroad	Pin & Link Assembly
1104	Southwest Freeway over South Capitol Street	Pin & Link Assembly
1104(Ramp C)	Southwest Freeway over South Capitol Street	Pin & Link Assembly
1104(Ramp D)	Southwest Freeway over South Capitol Street	Pin & Link Assembly
1104(Ramp G)	Southwest Freeway over South Capitol Street	Hanger Rod System Cross Girder System
1109	Southeast Freeway over Virginia Ave & Railroad	Pin & Link Assembly Cross Girder System
1113	Southwest Freeway over Washington Channel & Maine Avenue	Cross Girder System Pin & Link Assembly
1113(Ramp E)	Ramp E over Southwest Freeway & Maine Avenue	Cross Girder System Pin & Link Assembly
1114	10th Street Mall (L'Enfant Promenade) over D Street, S.W.	Cross Girder System
1134	I-395 Inbound Ramp over I-395 Outbound Ramp	Partial Length Cover Plate
1134(A-1)	I-395 Inbound Ramp over I-395 Outbound Ramp	Partial Length Cover Plate
1138	D Street, N.W. over I-395	Partial Length Cover Plate
1139	E Street, N.W. over I-395	Partial Length Cover Plate
1139	E Street, N.W. over I-395	Partial Length Cover Plate
1140 (H Street)	H Street, N.W. over I-395	Partial Length Cover Plate
1140(Mass Ave)	Massachusetts Avenue, N.W. over I-395	Partial Length Cover Plate
1141	SB Entrance Ramp to I-395	Partial Length Cover Plate
1200	Theodore Roosevelt Bridge over Potomac River	Two Girder System Pin & Link Assembly Girder Tie-Downs
1200(L. River)	Theodore Roosevelt Bridge over Little River	Two Girder System Pin & Link Assembly
1200(Ramp C)	Ramp C over Little River	Two Girder System Pin & Link Assembly
1200(Ramp D)	Ramp D over Little River	Two Girder System Pin & Link Assembly
1200(Ramp E)	Ramp E over Little River	Two Girder System Pin & Link Assembly
1400	Southeast Freeway over 7th Street, S.E.	Partial Length Cover Plate
1401	Southeast Freeway over 8th Street, S.E.	Partial Length Cover Plate

APPENDIX C

BRIDGES IDENTIFIED FOR UNDERWATER INSPECTION

Underwater inspections shall be performed on the following bridges. The approximate number of piers and abutment faces is listed below. Also include substructures which will be underwater at the high flood level even though they may not be underwater at the time of inspection.

Bridge No.	Location	Piers	Abutment Faces
0001	Chain Bridge over Potomac River, S.W.	1	1
0007	Francis Scott Key Memorial Bridge over Potomac River, S.W.	4	2
0052	Benning Road Bridge over Anacostia River, N.E.	6	2
0053	South Capitol Street Bridge over Anacostia River, S.E. (Frederick Douglas Memorial Bridge)	8	
0054	Pennsylvania Avenue Bridge over Anacostia River, S.E. (John Philip Sousa Memorial Bridge)	7	
0076	New York Avenue Bridge over Anacostia River, N.E.	3	2
0077	Benning Road Bridge over Kingman Lake, N.E.		2
0169-1	Center Highway Bridge over Potomac River, S.W. (Rochambeau Memorial Bridge)	13	
0170-1	Northbound 14th Street Bridge over Potomac River, S.W. (Arland D. Williams Memorial Bridge)	14	
0171-2	14th Street Bridge over Tidal Basin Outlet, S.W.	2	2
0233	East Capitol Street Bridge over Anacostia River, N.E.	18	
1026	Anacostia Freeway Bridge over Oxon Run Bay, S.W.	2	
1113	Southwest Freeway Bridge over Washington Channel, S.W. (Francis Case Memorial Bridge)	20	
1133	Southbound 14th Street Bridge over Potomac River, S.W. (George Mason Memorial Bridge)	13	
1200	Theodore Roosevelt Memorial Bridge over Potomac River, N.W.(including Little River Crossing)	16	
1415	11th Street Bridge over Anacostia River		
1416	Eastbound I-695 over Anacostia River		
1417	Westbound I-695 over Anacostia River		