

Attach To Contract Document

**New York City Department of Transportation  
Division of Bridges  
Office of Consultant Programs  
REQUEST FOR PROPOSAL  
FOR**

**Total Design and Construction Support Services for Seismic  
Retrofit and Reconstruction of Bridges Operating System of  
Madison Avenue Bridge Over Harlem River  
Boroughs of Manhattan and the Bronx  
Contract HBX664S  
Pin: 84108MBBR278**

**Addendum # 3  
December 16, 2008**

**This Addendum Is Hereby Made Part of the Contract Documents**

**NOTE:**

**Attached please find:**

- 1. Addendum No. 3**
- 2. Question and Answers from Pre-Proposal Conference Dated October 21, 2008**
- 3. Acknowledgement Receipt**
- 4. RFP- Figure 1.**
- 5. Sign in Sheets (Pre-proposal Conference)**
- 6. SR-1 to SR-33**

**Addendum No. 3**

**Total Design and Construction Support Services for Seismic  
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**Addendum # 3  
December 16, 2008**

This is ADDENDUM #3 for the above referenced Request for Proposals, of which you have obtained a copy.

- 1) REFER TO:       Section VII A, of the RFP**  
**ADD:         SR-1 to SR-33 (attached)**

**Questions from the Pre-Proposal Conference for  
TD/CSS for Seismic Retrofit and Construction of Bridge Operating Systems of  
Madison Avenue Bridge over Harlem River  
Boroughs of Manhattan and the Bronx  
Contract No. HBX664S  
PIN: 84108MBBR278**

1. Is the DBE participation required or encouraged?  
ANS: The DBE goal is 11%.
2. Are hourly rates to be used in Proposal to be current rates or rates projected to time of Notice to Proceed?  
ANS: The proposed Average rates should be for the fiscal year in which the original proposal was submitted. In the case, the average hourly rate should be for FY'2009.
3. Page SR-16, target Date 7 states that the consultant shall submit a Draft BRPR; is this correct? (Same for Target Date 7).  
ANS: Delete all references to Draft BRPR and Final BRPR in all "SR" pages. Substitute them with Geotechnical Report, Seismic Assessment Report and Bridge Operating System Evaluation and Recommendation Reports.
4. According to the scope of work the stated goals are to A) Assess the Bridge's Seismic vulnerability and B) evaluate the Bridge's Operating Systems, see SR-3 and SR-4. Yet the RFP includes a section of General requirements that require an In-depth inspection, Bridge Deck Evaluation, Concrete Cores, Bridge Line Based Rating, Accident Reports, and preparation of BRPR. These general requirements are what one would expect for a typical bridge rehabilitation project, not for a Seismic Assessment and evaluation of the Bridge's Operating System. It appears that these general requirements do not apply to this project that should be deleted. Please Clarify.  
ANS: The following items listed in the the GR Pages are not part of the scope of work of this contract:  
1) In-depth inspection, 2) Bridge Deck Evaluation, 3) Concrete Cores, Bridge Line Based Rating, 3) Accident Reports, and 4) preparation of BRPR.
5. A) Is a Full Survey required?  
ANS: No.  
B) Is ROW (Right of Way) work required?  
ANS: No

6. When can we expect Figure 1 and a clarification?

ANS: Figure 1 is attached herewith. Note that the sole purpose of Figure-1 is to identify project limits.

7. Page SR-9 calls for including "spatial variation of seismic ground motion..." This requirement indicates time history analysis method. However Page SR-10 requests "using the CQC Method", which eludes spectrum analysis method. Which analysis method does DOT want the consultant to adopt, since they require different levels of effort?

ANS: DOT requests the adoption of Site specific Time History analysis and Combine Response Components by SRSS or CQC Method.

8. A) NY PE registration required for Project Manager and Project Engineer only?

ANS: Yes, the staff having ASCE Level IV and above must have PE License as per ASCE Guide Lines. The remaining qualified staff may have specialized qualifications for this specific project.

B) Can these individuals have their applications pending at the time of proposal submission?

ANS: It has been done but we do not encourage it.

C) For task leaders identified on Org Chart, would professional registration in their respective disciplines in any State be sufficient?

ANS: Any engineering title with ASCE grade IV and above shall have a valid NYSPE license.

9. It is our understanding that fee proposal should only be estimated to the completion of preliminary plans (tasks 1 through 10) as per SR-13.

A) Should it be done by tasks or only Total Preliminary Phase?

ANS: The Proposal must be done for each of the tasks for the preliminary design phase (4T1 Forms must be filled out for each task by Prime and Subs.)

B) If the estimate is only to completion of preliminary phase are you including the Agreement of the Final Design and CSS Phase as Budgetary Allowances and if so would you share those values?

ANS: In response to the RFP the Proposers shall submit cost proposals only for Preliminary Design Phase. The FD and CSS amounts are set by the Department and allowed to all proposers, see page SR-25 (attached) ∴ Proposes shall submit cost proposals only for Preliminary Design Phase. The Final Design and CSS amount are set/budgeted by the Dept. and allowed to all proposers.

10. On page 3, under C Anticipated Payment Structure, it is indicated that DOT will

Consider different payment structures after award of contract. Does this include Lump Sum? Clarify?

ANS: DOT will consider proposals to structure payments in a different manner but , however DOT reserves the right to select any payment structure that is in the City's best interest during negotiation with the winning firm.

11. On Page 6 (Cost A & B), If we are only estimating to completion of preliminary plans do we need to submit Cost A & B?

ANS: Yes, you have to submit Cost Proposals A & B.

12. On Page 6 of the RFP, Any guidance on Incentive/disincentive, schedule?

ANS: Yes, fill out the incentive/disincentive form with recommendations or if the firm has no no recommendations, say NONE.

13. Cost Proposal Forms 4T A and 4T B:

A) What is the budgetary allowance?

ANS: It is for soil testing, borings, specialty consultants, MPT etc.

**B)** Why does form 4TA have \$20,000 for Total Out of Pocket Expense and Form 4TB have \$40,000? Clarify.

ANS: The \$40,000 is Incorrect, Adjust the number to \$20,000 on Form 4TB

14. Can you quantify the number of Flag Repairs anticipated for Task 8? Is there a budgetary allowance? Additional design related services will be provided as requested by the Department. Can you quantify this requirement or is there a budgetary allowance? Will a CCR be initiated to cover effort?

ANS: Currently there are no outstanding flags. We anticipate total of five safety and/or structural flags. This is to be included in your submission and cost.

15. According to Preliminary Design (GR-1), Table 1 (SR-15), target date includes submission of BRPR (see target dates 7&8) and procedures for BRPR included as attachment, yet task 2 (SR-6) calls for detailed operating system report, task 3 (SR-7) geotechnical report and task 7 (SR-10) calls for a Seismic Assessment Report. Please clarify if BRPR is required?

ANS: Not Required.

16. On Page SR-3 the requirements for structure performance are provided. Can you clarify performance requirements for the operating machinery?

ANS: Operating machinery shall follow same performance requirements as the structural components for lower and upper earthquake limits.

17. Will the City have a peer review panel? (Regards to the Seismic assessment report?)

ANS: Yes.

18. Do we get a copy of the Sign in Sheet?

ANS: Yes, see attached Sign in Sheet.

19. What is the extent of the Task 4 Vibration Measurements on Structure? Are the measurements limited to the swing span, or do they also include the flanking spans and/or approach ramps? We suggest that it is only necessary to conduct vibration measurements of the swing span.

ANS: Vibration measurements only on swing span.

20. Please provide the bridge data sheets that are typically included in the NYCDOT RFP's.

ANS: Bridge Data Sheet (BDS) is not necessary and will not be available. All information typically available on BDS has been given in other documents such as plans and specs which are available for review by appointment.

21. Is the inclusion of photos in the technical proposal permitted?

ANS: Only on the cover of your proposal

22. Are the embankment approaches (long retaining wall structure on both sides) and abutments part of the seismic scope?

ANS: Yes.

23. Page SR-2: Five (5) reports are referenced. It is stated that these previously prepared reports will be made available to all consultants preparing the RFP. Question: In what form will the reports be made available and how can we obtain the reports? We request that the reference documents be made available in CD format in order to facilitate review among the members of our project team.

ANS: In regard to the reports referred to on page S.R.2 they are referring to the plans and specs for the Madison Avenue project. Firms may make an appointment by calling the Agency Authorized Contact person: Paul-Michael Kazas at 212-442-7654. Each firm has one hour. No copies, pictures may be made. The firm may take notes and sign a confidentiality statement. If there is no scheduling conflict the firm may go beyond the hour. If there is a scheduling conflict and the firm requires additional time the firm may schedule another appointment.

24. Page SR-4: Under Evaluation of Bridge's Operating System the 6th bullet refers to Review of existing O&M Manuals. Question: Are the existing O&M Manuals available for review by the consultants during the RFP preparation period?

ANS: Yes there are existing O & M manuals for review and again you can make an appointment to review the same as denoted hereinabove.

THE CITY OF NEW YORK  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF BRIDGES

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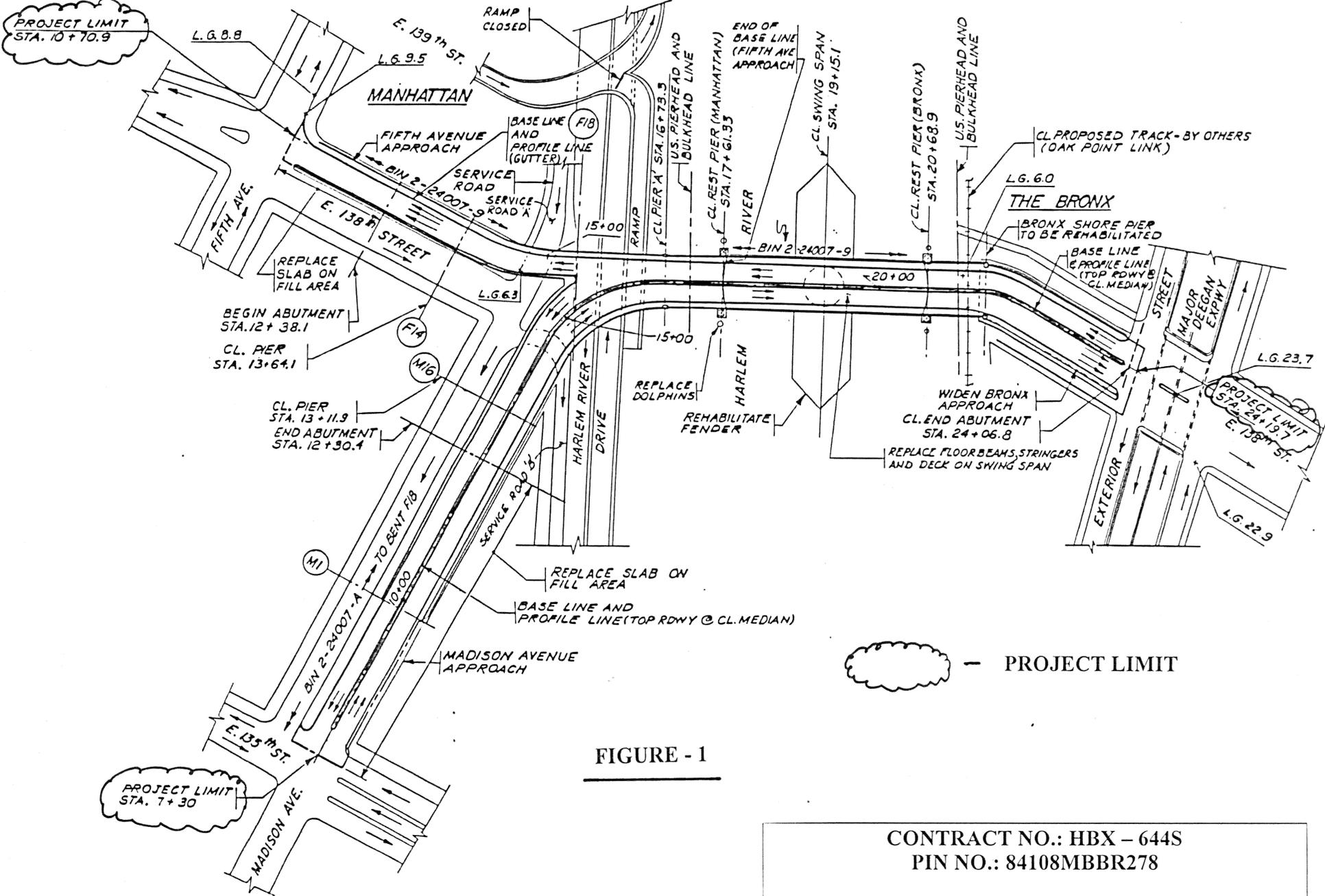
**Addendum # 3**  
**December 16, 2008**

TOGETHER WITH ALL WORK INCIDENTAL THERETO

I, \_\_\_\_\_  
(NAME AND TITLE)

\_\_\_\_\_  
A duly authorized representative of  
(NAME OF PROPOSERS)

\_\_\_\_\_  
Acknowledge receipt of Addendum No. 3 dated December 16 2008 for the Pin No.  
84108MBBR278 for which Proposals will be received by 2:00 PM on December 29, 2008.



 - PROJECT LIMIT

**FIGURE - 1**

CONTRACT NO.: HBX - 644S  
 PIN NO.: 84108MBBR278

**SEISMIC RETROFIT AND RECONSTRUCTION OF  
 BRIDGE OPERATING SYSTEM OF  
 MADISON AVENUE BRIDGE OVER HARLEM  
 RIVER**

Total Design & Construction Support Services for  
 Seismic Retrofit and Reconstruction of Bridge Operating System  
 of Madison Avenue Bridge over Harlem River  
 Contract No. HBX644S  
 PIN: 84108MBBR278

Pre-Proposal Conference  
 SIGN - IN SHEET

Tuesday, October 21, 2008 @ 10:30am  
 8<sup>th</sup> Floor Conference Room

PLEASE PRINT NAME:	REPRESENTING:	TELEPHONE #:
GEORGE TANTIK	AECOM	212-763-4542
GABE FEDRKO	BTHAYER ASSOC.	516 364-0660
Patrick Waterman	TYLIN	585 359-0280
STEVE BENNETT	PB	212-465-5793
Ken Larsson	MATRIX ENGINEERING	979-240-1800
MAHENDRA PATEL	SJM ENG. (DBE)	212-840-9044
BRENDAN O'HEA	HARDESTY & HANOVER	908-208-2632
Sena Kumarasena	HNTB	617-257-4656
Eric Kelly	HNTB	212 594-9717
Suzy Nikolov	MRLE	917 339 9381
JAMES GW	MRC	917 339 3776
FRED HASSEL	Gannett Fleming	212 967 9833 x5234
SAM Summerville	Weidinger	212 367-3062
DI YE	Weidinger	212 367 2811
JERMAINE PERRY	SI ENGINEERING	212-354-5939
SARWAT IZHAR	DBE/WBET/MBE SI ENGINEERING, P.C.	212-354-5939.
S A R Z O U M A N I D I S	PARSONS	212-266-8370
ANDREW SANDON	AMMANN + WHITNEY	212-492-5141
Sue Bayat	Entech	646 722 0000

**Total Design & Construction Support Services for  
Seismic Retrofit and Reconstruction of Bridge Operating System  
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SIGN - IN SHEET

Tuesday, October 21, 2008 @ 10:30am  
8<sup>th</sup> Floor Conference Room

PLEASE PRINT NAME:	REPRESENTING:	TELEPHONE #:
Kimberly Toscano	TOSCANO CLEMENTS TRAYLOR ABE	631-392-1400
BRIAN EDNIE	LECKWOLD, KESSLER & BARRETT	516 938-0600
Tom Spoth	Parsons	212 266 8394
TOM JAWORSKI	HMMANN-WHITNEY	212.462.8504
DAVID NYARKO	Parsons Brinckerhoff	212-465-5534
Peter DAVIS	HDR	973 474 5010
Ahim BAYCORA	AECOM	212-653-9287
KEITH GRIESSING	HARDESTY & MANOVER	646.428.8524
NAZRUL SIDDIQUE	NS ENGINEERS, P.C.	732-254-1163

## II. SPECIFIC REQUIREMENTS

### A. PROJECT COORDINATION

INCLUDED HEREUNDER ARE THE MAJOR TASKS AND SERVICES WHICH SHALL BE PROVIDED BY THE CONSULTANT FOR THE PROJECT BRIDGE(S) AND BE PERFORMED DURING PRELIMINARY DESIGN AND FINAL DESIGN:

1. The Consultant shall assemble and review all record data for the project. The Consultant shall conduct formal interviews with all governmental and non-governmental personnel, as directed by the Commissioner and as required for the efficient and thorough completion of the project, in order to ascertain all existing concerns, issues, problems and programs directly related to the project. The Consultant shall fully coordinate all activities under the project with all Federal/State/City Agencies, public/private utilities or organized groups which, in the opinion of the Commissioner and/or the Consultant, are necessary for the development of a fully coordinated Project. The Consultant shall assemble and review all available reports, designs, surveys, maps, plans, documents, maintenance records, traffic counts, alignment maps, as-built drawings, construction photographs and accident records related to the bridge, including the latest NYCDOT and NYSDOT Bridge Inspection and Condition Reports, and Bridge Inventory Listing, from the Department as required during the course of this contract. Requirements of private and public utilities shall be requested by the Consultant at the onset of the project so that they may be received in time for incorporation into the Draft BRPR.
2. The Consultant shall submit, for approval, the names and experience portfolios of all key persons, subcontractors, and subconsultants proposed for use in connection with the Project prior to start of work (including Project Manager, Project Engineer and key designers). Members of Consultant's staff who perform any work pursuant to this contract shall meet the following criteria in conformance with the New York State Engineering Licensure Statute. All Engineering positions shall be staffed by Engineers as described below. No technician/technologist can fill an Engineering position; however an Engineer may fill any technician/technologist position.

In accordance with the American Society of Civil Engineers (ASCE) guidelines, ASCE titles are to be used for Engineers who have graduated from an Accreditation Board for Engineering and Technology (ABET) recognized engineering program. ASCE defines nine (9) Engineering grades, i.e. ASCE I/II through ASCE IX. ASCE IV and above requires a New York State Professional Engineer (PE) license. ASCE grades are applicable to all Engineering disciplines.

The National Institute for Certification in Engineering Technologies (NICET) titles are allowed but cannot substitute ASCE titles. However, ASCE titles may replace NICET titles. NICET titles (i.e. NICET I, II, III, IV) were developed to certify various levels of technical competence. The role of NICET certified technicians and technologists is to assist engineers in discharging their responsibilities.

Any violation of the above requirements may result in disqualification and removal of the Consultant from the project. In addition, sanctions may be imposed by the New York State Professional Engineering Licensure Board. Violation of the Engineering Licensure Law is a serious offense and carries maximum penalty of four (4) years of jail time.

Sufficient staffing shall be provided to complete the work on schedule. Emphasis shall be placed on the Consultant's performance evaluations with respect to scheduled timely submissions. Evaluations will be used in selection of Consultants for future work.

The Project Manager shall have a minimum of five (5) years of direct bridge design experience and ten (10) years of overall experience in the bridge engineering field, wherein he or she shall be

familiar with NYSDOT and NYCDOT Standards. The Project Engineer shall have a minimum of three years of direct bridge design experience and five (5) years of overall experience in the bridge engineering field, wherein he or she shall be familiar with NYSDOT & NYCDOT Standards. Both the Project Manager and Project Engineer shall be licensed Professional Engineers in the State of New York and have accredited Bachelor's Degrees in Civil Engineering. The Project Manager, Project Engineer, and the majority of the design staff must continuously work out of the same office and that office must be located within the tri-state area.

The Consultant shall have a local area code phone number. If the Consultant resides outside the five boroughs, he or she must provide either a NYC tie line or toll free 800 number. The phone number shall be in operation for the extent of the contract and shall be available at the time of execution of the contract. The expense of this shall be included in the Consultant's overhead.

The following information is required for all of the Consultant's employees that require access to the work area and who have not been screened pursuant to security zone/exclusionary area requirements: name, date of birth, alien registration number and social security number. The information will be submitted to the Coast Guard for background screening purposes. Social security numbers will not be submitted if a written request is received along with the information that the social security number is not to be submitted. Failure to submit a social security number may result in a delay in the Coast Guard's assessment which may prevent access to restricted areas within the work area.

3. The Consultant shall inspect the site(s) and become familiar with the general and specific nature of the Project and the surrounding area. The Preliminary Design Limits shall be as specified in the Project Bridge Data Sheet(s). Regarding Wingwall/Retaining Wall Reconstruction: the extent of reconstruction shall be 20 feet beyond the end of the Wingwall/Retaining Wall, unless otherwise noted. In the event that this substructure element is part of a continuous retaining wall system (as is encountered in railroad cuts), then the limit of reconstruction shall be 20 feet beyond the end of the adjacent abutment.
4. The Consultant shall obtain, and become familiar with, all applicable Departmental Design Directives, Standard Details, Administrative Procedural Bulletins and guidelines for the prosecution of the work/services under the various elements of the project. These shall include, but not be limited to, the latest editions including all amendments, of the following New York State Department of Transportation (NYSDOT) and New York City Department of Transportation (NYCDOT) documents, and American Association of State Highway and Transportation Officials (AASHTO) and Federal Highway Administration (FHWA) manuals:

NYCDOT Procedures for Bridge Reconstruction Projects (revised 1/04) including:

Appendix A: BRPR Format and Requirements

Appendix B: Substandard Features Checklist

Appendix C: Presentation of Ratings

Appendix D: In-Depth Inspection Form and Bridge Inspection & Condition Report

Appendix E: Preliminary Plan Review Checklist

Appendix F: Field Survey Requirements

NYCDOT Requirements for the Preparation of Engineering Drawings and Documents, Section 1A

NYCDOT Requirements for the Microfilming of Engineering Drawings and Documents, Section 2B & 2C

NYCDOT Detailed Instructions for the Computerized Indexing of Engineering Drawings and Documents for Microfilming, Section 3

NYCDOT Street Lighting Standards

NYCDOT Uniform Land Use Review Procedure

NYC Specifications for Title Examinations and Reports on Street/Railroad Intersections

NYC Specifications for Title Examinations and Reports on Privately-Owned Tax Lots

NYCDEP Water Supply and Sewer Standards

Electric Code of the City of New York

National Electric Code  
NYSDOT Engineering Bulletins and Engineering Instructions  
NYSDOT Highway Design Manual, Volumes 1 and 2  
NYSDOT Standard Specifications  
NYSDOT Steel Construction Manual  
NYSDOT Geometric Design Policy for Bridges  
NYSDOT Prestressed Concrete Construction Manual  
NYSDOT Manual of Uniform Traffic Control Devices  
NYSDOT Uniform Code of Bridge Inspection  
NYSDOT Bridge Inspection Manual  
NYSDOT Bridge Inventory and Inspection System Manual  
NYSDOT Specifications for In-Depth Bridge Inspection  
NYSDOT Specification for Diving Inspection of Bridges  
NYSDOT Rating Criteria for Diving Inspection of Bridges  
NYSDOT Engineering Instructions for Load Ratings  
NYSDOT Bridge Deck Evaluation Procedure Manual  
NYSDOT Standard Detail for Highway Bridges, Bridge Design Data Sheets and Guideline Drawings  
NYSDOT Right of Way Mapping Procedure Manual  
NYSDOT Manual of Administrative Procedure (MAP)  
NYSDOT Interim Guide to Metric Design  
NYSDOT Metric Conversion Guidelines. Structures Division  
AASHTO Standard Specifications for Highway Bridges, as amended by NYSDOT  
AASHTO Standard Specifications for Movable Highway Bridges  
AASHTO Manual for Condition Evaluation of Bridges  
AASHTO Guide for the Development of Bicycle Facilities  
AASHTO Guide to Metric Conversion  
AISC Metric Properties of Structural Shapes  
ASTM Standard Specifications  
FHWA Bridge Inspector's Manual for Movable Bridges  
FHWA Seismic Design and Retrofit Manual for Highway Bridges  
FHWA Seismic Retrofitting Guidelines for Highway Bridges

5. The Consultant shall develop an initial Progress Report (Bar Chart Schedules and Written Text), and update them monthly in accordance with Section V, Progress Reporting of this Contract. The Progress Report for Final Design shall also include a list of Contract Drawings showing the estimated percent of completion of each drawing.
6. The Consultant shall interview Departmental Maintenance, Inspection, and Engineering personnel, as appropriate, to determine the location and extent of all problems and issues in the Project.
7. The Consultant shall interview the appropriate personnel to determine the requirements for gaining access to the site for the purpose of performing the proposed contractual work.
8. The Consultant shall interview additional interested parties, as deemed appropriate by the Commissioner, to determine if the project will impact on their activities.
9. As directed by the Commissioner, the Consultant shall arrange all meetings and participate/function as Chairperson at all meetings and conferences required in the performance of contractual work, including any/all required follow-up meetings and/or actions.
10. The Consultant shall prepare draft and final minutes for all meetings and conferences required in the performance of contractual work. The draft minutes shall be prepared and distributed to the NYCDOT Project Manager and Engineer within two (2) business days of the meeting. Upon receiving comments on the draft minutes, the Consultant shall revise the minutes, as appropriate, and shall distribute final minutes within five (5) business days.

11. As directed by the Commissioner, the Consultant shall prepare and distribute all correspondence necessary in connection with the performance of the Contract.
12. The Consultant shall attend, liaison, schedule and coordinate all meetings held during the progress of the contract between the City, the local Community Board(s), merchant groups, schools, community organizations and/or other bona fide interested parties and shall provide other community liaison services as deemed necessary by the Commissioner. The Consultant's employee assigned this responsibility shall be trained in this area, and approved by the Department for this work. This employee shall be designated the "liaison officer" for the project.
13. The Consultant shall analyze the expressed needs and concerns of the parties contacted, and shall address those needs/concerns. Upon approval by the Commissioner, the Consultant shall develop and pursue a course of action and/or strategy to resolve those issues. Upon approval of the Commissioner, the Consultant shall communicate the resolutions to the aforementioned parties. The performance of the contract work includes any and all follow up actions.
14. The Consultant shall coordinate and meet with the Local Community Board(s), the railroads and other parties as may be designated by the Commissioner, or as required for the efficient completion of the project. The Consultant shall identify and resolve all requirements, conditions and issues as presented by said parties. The minimum quantities and types of such meetings will be as follows:

Preliminary Design

- One (1) All Agency Plan Review
- Two (2) OCMC
- One (1) Landmarks Commission
- One (1) Art Commission
- Three (3) Community Boards/Organizations

Final Design

- Two (2) All Agency Plan Review
- Three (3) OCMC
- Three (3) Landmarks Commission
- Three (3) Art Commission
- Four (4) Community Boards/Organizations
- Two (2) NYSDOT
- One (1) Pre-Bid
- One (1) Preconstruction

Meetings with the Department and all other affected parties (public and private utilities, railroads, permit agencies, etc.) including all ULURP and Land Use related meetings will occur as required and will not be separately enumerated.

15. The Consultant shall obtain timely approval letters from all affected parties including private utilities, railroads, all City Agencies, Community Boards, OCMC, NYSDOT, FHWA, etc. during both Preliminary and Final Design. The costs incurred by the railroad entity in reviewing the design shall be reimbursed to that entity through the Force Account Agreement made between the Consultant and the entity.
16. In Preliminary Design, the Consultant is responsible to coordinate with all work required by private parties (non City-owned utilities, railroads and others) and City Agencies, as applicable.
17. In Final Design, the Consultant shall review and provide appropriate recommendations for all work (including Plans, Specifications, and Estimates including Force Account Estimates) prepared by private parties (non City-owned utilities, railroads, and others). The Consultant shall incorporate the approved work into the Contract Documents. The design of the supports for the private utilities shall be the responsibility of the Consultant. The Consultant shall design and incorporate into the Contract Documents, the maintenance of the applicable services during construction. The Consultant shall also be responsible for and provide for in the Contract Documents, the permanent reinstallation of any affected railroad facilities including electrification modifications (as per railroad requirements). Amtrak requires that all the design for electrification modifications (catenary

support, catenary relocation, bonding and grounding, etc.) be performed by a qualified consultant. Amtrak maintains a list of consulting firms that meet Amtrak's requirements.

18. In Final Design, the Consultant shall design and incorporate into the Contract Document (Plans, Specifications, and Estimates) all work required by the City Agencies. The work shall include, but not be limited to: the maintenance of existing utility services during construction; new utility installation and supports; street lighting; traffic signals; traffic signs; roadway striping; drainage; etc.
19. Prior to the submission of the Draft BRPR it shall be the Consultant's responsibility to determine which permits are required for the completion of the design and construction. The Consultant shall start the permit application process in Preliminary Design. During Final Design it shall be the Consultant's responsibility to complete the permit applications; process the applications; and to ensure that the Contract Documents fully comply with the permit requirements. All approvals for the Department shall be obtained prior to PS&E. Permits may be required from the following agencies, amongst others: the Army Corps of Engineers, Coast Guard, New York State Department of Environmental Conservation, New York City Department of Parks and Recreation, etc. The Consultant shall be responsible for ensuring that the Contract Documents identify any permits that the Contractor shall be required to obtain in order to complete the work, and to ensure that the Contract Documents provide for complying with the permit requirements.

In conjunction with complying with an agency's requirements, the Consultant shall perform, as required, sampling and testing (of river sediment; water; soil; asbestos; etc.); prior approval of the Department is required. The Consultant, complying with all applicable City/State/Federal regulations, shall retain the services of a qualified contractor to obtain the samples. The Consultant, complying with all applicable City/State/Federal regulations, shall retain the services of a qualified testing laboratory to perform the tests on the samples.

20. Prior to the submittal of the Consultant's proposal the Consultant shall review the available plans of the bridge(s). Where plans are not available, or the available existing plans are inadequate, the Consultant shall perform the field work (take measurements, etc.) of the existing structure to the extent necessary, in order to provide the required design services. The Consultant shall provide for performing all necessary field work in his proposal.
21. The Consultant shall perform all contractual work using International System (metric) units of measurement.

## B. PRELIMINARY DESIGN

INCLUDED HEREUNDER ARE THE FOLLOWING MAJOR TASKS & SERVICES WHICH SHALL BE PROVIDED BY THE CONSULTANT FOR THE PROJECT BRIDGE(S) AND BE PERFORMED AS PART OF PRELIMINARY DESIGN:

### 1. IN-DEPTH INSPECTION

The Consultant shall perform an in-depth field inspection of the project bridge(s) in accordance with the NYSDOT Uniform Code of Bridge Inspection and NYSDOT Specifications for In-Depth Bridge Inspection. In addition, the Consultant shall perform field surveys by a New York State Licensed Land Surveyor, as specified and to the extent necessary to meet the requirements of the Contract.

#### a. Preparation for Inspection & Field Survey

- 1) The Project Bridge Data Sheet(s) state the availability of the plans from which each of the project bridge(s) was constructed. Where plans are stated as being available, the Consultant shall determine the location of such plans, and shall arrange to obtain the plans from the appropriate Agency or Department.

- a) Where the plans are available, the Consultant shall obtain a copy of the plans, which the Consultant shall then research, put in chronological order, and inventory as per specifications of the NYCDOT. Upon receipt of the existing plans, the Consultant shall send a copy to the Department.
  - b) Where the plans are not available, the Consultant shall take field measurements of the existing structure to the extent necessary (this may involve additional removal of concrete encasement at sample locations, if applicable) in order to provide the required Ratings and prepare the Preliminary Plans.
- 2) The Consultant shall review all available plans and reports and shall coordinate/reconcile this data with the existing conditions of the bridge as identified through the Consultant's inspection and survey.
  - 3) The Consultant shall prepare schedules and coordinate all activities with the Department.
  - 4) The Consultant shall coordinate all activities of the subcontractors, suppliers, and subconsultants.
  - 5) The Consultant shall obtain all permits required.
  - 6) The Consultant shall develop and prepare a plan for the maintenance and protection of all traffic (vehicular, rail, waterway, pedestrian) during his Inspection & Field Survey. The Consultant shall coordinate with the Office of Construction Management Coordination (OCMC) and other appropriate parties, such as railroad, and Coast Guard, on the proposed maintenance plan(s). All appropriate required approvals shall be obtained by the Consultant prior to the commencement of inspection.
  - 7) Where force account labor is required during the inspection, the Consultant shall obtain the force account labor, entry permits and necessary insurance, and enter into a Force Account Agreement, if required, with the appropriate transportation entity. In either case, the force account overhead rate used shall be in accordance with current New York City standards for this type of work, and these rates shall receive prior concurrence from the Department before work proceeds.

The Consultant shall be responsible for ensuring that payment to the railroad is appropriately made; the railroad is only entitled to receive payment for days when flagmen were at the site simultaneously with the Consultant.

- 8) The Consultant shall adhere to the NYSDOT's EB 94-034 "Lead Containment Protocol for Bridge Inspection Projects". The Consultant shall be responsible for the proper containment, collection, labeling, disposal, and worker safety protection in connection with any waste generated by the inspection. The Department shall arrange for a temporary storage site (accumulation point), located within the City of New York. The Consultant shall accumulate the waste at the designated site. The Consultant shall perform all work in conformance with State, Federal, and City rules and regulations.

The Consultant shall notify the Borough President's office, via a letter, of a pending bridge inspection activity whenever waste (paint chips/ debris, etc.) may be generated as a consequence of the inspection process. The notification shall be made at least 14 days prior to the start of the work.

If the Consultant's inspection work includes abrasive blasting, the Consultant shall notify the Borough President's office and the local community of the nature of the work at least 30 days prior to starting the abrasive blasting activity. The community notification procedure shall be in conformance to the City's current regulations. It shall include the preparation and distribution of pamphlets describing the nature of the work, similar to the requirements for notification during bridge reconstruction projects.

The Consultant shall use one container for the waste generated at each individual bridge site. The one container shall be used for storage, transport, etc.. A one gallon container of a durable material, having a sealable top (to prevent leakage), shall be used.

b. Performance of Inspection & Field Survey

- 1) The Consultant shall perform a field survey in accordance with Appendix F of the NYCDOT Procedure for Bridge Reconstruction Projects. The limits of this survey shall be as specified in the project bridge data sheet(s).
- 2) The Consultant shall obtain the permissible work hours for the Inspection and Field Survey from OCMC and all other appropriate parties. It may be necessary to work off peak hours and weekends.
- 3) The Consultant shall provide the necessary traffic controls as required by OCMC to close those lanes/sections of the bridge needed to perform the inspection. It is anticipated that one lane closure will be permitted during off-peak hours.
- 4) Where inspection is done over water or railroad tracks, the Consultant shall set up additional traffic controls where it have been determined to be necessary as a result of preparations made, and approvals received, under the Specific Requirements, Section II (B)(1)(a), subsections 6 and 7, of the Contract.
- 5) Concrete Coring and/or Steel Sampling Program

The Consultant shall perform a Coring Program for the project bridge(s), as defined below and as stated in the Project Bridge Data Sheet(s). The Consultant shall determine the need for a Steel Sampling Program for the project bridge(s). If required, the Consultant on a contingency basis which shall be approved by the Department prior to its use shall perform a Steel Sampling Program as defined below.

- a) The Consultant shall submit a coring and/or steel sampling Location Plan and Testing Program(s) to the Department for prior approval. The Testing Program submittal(s) shall describe the types, methods and purposes of tests to be conducted; Coring and/or steel sampling operation shall conform to traffic controls as previously stipulated herein under the Specific Requirements, Section II (B)(1)(b), subsections 2,3, and 4 of the Contract for In-Depth Inspection.
- b) The Consultant, complying with all applicable City/State/Federal regulations, shall retain the services of a qualified concrete coring contractor and/or Steel Sampling Contractor to obtain the required Core and/or Steel Samples.
- c) The Consultant, complying with all applicable City/State/Federal regulations, shall retain the services of a qualified testing laboratory to perform the approved tests on the concrete cores and/or Steel Samples.
- 6) Concrete Encasement Removal Program (for those bridges having concrete encased steel members as indicated in the Project Bridge Data Sheet(s)).

The Consultant shall perform a Concrete Encasement Removal Program as defined below:

- a) The Consultant shall submit a concrete encasement removal Location Plan (and sections) to the Department for prior approval. The removal shall be in conformance with the NYSDOT Specifications For In-Depth Inspection. The program submittal shall describe the proposed methods of removal. The removal operation shall conform to traffic controls as previously stipulated herein under the Specific Requirements, Section II (B) (1) (b), subsection 3 of the Contract for In-Depth Inspection.
- b) The Consultant, complying with all applicable City/State/Federal regulations, shall retain the services of a qualified contractor to perform the work.

7) Underwater Inspection (for waterway bridges only)

The Consultant shall determine the need for underwater diving inspections based upon visual inspections and his/her review of the latest Underwater Inspection report, which shall be made available from the Department. If required, the Consultant, on a contingency basis which shall be approved by the Department prior to use, shall make provisions to supplement the record data. These provisions shall include, but not be limited to, an underwater diving inspection of the bridge substructure and the preparation of a diving inspection report.

- a) The Consultant shall perform a detailed underwater inspection for the substructure in accordance with the NYS Specification for Diving Inspection of Bridges.
- b) The Consultant, complying with all applicable City/State/Federal regulations, shall retain the services of a qualified diver to perform a complete underwater inspection of the substructure. The diver shall be a New York State Licensed Professional Engineer.

8) The Consultant shall make a VHS video tape (or the DVD equivalent) of all areas inspected, with particular attention given to deteriorated and flagged conditions. Video tape shall be in color, narrated and contain views of the approaches, adjacent properties, both bridge elevations, and the bridge itself from both approaches. Video tape shall be of professional quality. Submission of the video tape shall be made concurrent with the Draft BRPR. The video shall include concrete encasement removal operations.

9) Upon completion of the inspection, all temporary equipment shall be removed and the site left in a neat and orderly manner.

c. Flagged Conditions

- 1) The Consultant shall immediately inform the NYCDOT Director of Flags and the NYCDOT Project Manager of any unsafe and/or flagged conditions found during the course of the inspection.
- 2) Such information shall be communicated immediately by telephone followed by written notification to the NYCDOT Director of Flags. Written notification shall include drawings showing the location(s) of the condition(s) and recommended repair and/or support details; photos of the condition(s) and load ratings of the affected structural member(s).

d. Soils Investigation Program

The Consultant shall research and review the available subsurface data and determine the need for additional Soils Investigation for seismic analysis and foundation design. The Consultant shall perform a Soils Investigation Program, if required and approved by the Department, prior to the submittal of the Draft BRPR. The Consultant shall perform the subsurface exploration, testing and obtain all necessary information regarding local geology and seismicity in order to satisfy the seismic and foundation preliminary design aspects for all reconstruction / replacement schemes included in the Draft BRPR. If required, the Consultant shall perform a Soil Investigation Program as defined below:

- 1) The Consultant shall submit his Soils Investigation Program(s) and related specifications, to the Department for prior approval. The Program submittal(s) shall describe the types, methods and purposes of tests to be conducted. Soils Investigation shall include subsurface exploration, and its operations shall conform to traffic control, requirements as stipulated herein under the Specific Requirements of the Contract.
- 2) The Consultant, complying all applicable City/State/Federal regulations shall retain the services of a qualified Soils Investigation contractor to obtain the required soils samples, to conduct in situ field testing and installation of geotechnical instrumentation.
- 3) The Consultant, complying with all applicable City/State/Federal regulations shall retain the services of a qualified testing laboratory to perform the approved tests on the soils.
- 4) The budgetary allowances allocated for Soil Investigation shall be used to cover the cost for drilling and testing (Items 2 and 3 as indicated above.)

2. BRIDGE RECONSTRUCTION PROJECT REPORT(S) (BRPR)

a. The Consultant shall prepare a Bridge Reconstruction Project Report (BRPR), in accordance with the latest edition of the NYCDOT Procedure for Bridge Reconstruction Projects. The BRPR shall contain the following:

- 1) Traffic Study
  - a) The Consultant shall determine the projected traffic (20 years, or as specified,) design speed, and the Design Hour Volume (DHV) one-way and two-way.
  - b) The Consultant shall provide new Traffic (vehicular and pedestrian), Classification and Turning Movement Counts (see Project Bridge Data Sheet for requirements).
  - c) The Consultant shall obtain the functional classification from the NYCDOT to be utilized in determining/analyzing applicable geometric and substandard features.
  - d) Accident Report
- 2) Traffic Maintenance Plans.
- 3) Planning Statement.
- 4) Hydraulic Report

The Consultant, complying with all applicable City/State/Federal regulations, shall conduct a complete hydraulic study within the project area and its vicinity. The Consultant's inspection findings and evaluation of the condition of the underwater substructure and his/her hydraulic study, together with his/her recommendation, shall be included in the Draft BRPR.

5) Geotechnical Foundation Report

The Consultant shall compile the findings of the Soils Investigation Program and/or available subsurface data and produce a Geotechnical Foundation Report for submission to the Department. The report shall include the subsurface exploration results, geotechnical design parameters for various subsurface materials, soil profile(s), design analysis, evaluation and recommendations. The report shall be part of the BRPR.

The Consultant shall establish the site specific ground motion if required by the Project Data Sheet(s) and as defined in the Seismic Assessment Section. These ground motions at the bridge site shall be established after appropriate input from an experience Seismologist who shall have a minimum of ten years of experience with the local seismic environment.

6) Foundation Design Requirements.

7) Statements of Hazardous Material (Asbestos, Lead Paint, etc.)

8) Substandard Features.

- a) The Substandard Features Checklist in the NYCDOT Procedures for Bridge Reconstruction Project Report shall show what the standard feature should be and the appropriate reference from which it was obtained, what the existing feature consists of, and what the actual action proposed is.
- b) The Consultant shall submit a separate justification write-up for each retained substandard feature documenting the Consultant's reasons for retaining the feature. In addition, the Consultant shall submit a separate justification write-up documenting his reasons for merely improving a Substandard Feature, as opposed to fully eliminating the Substandard Feature. Reasons for retention or improvement shall be backed by an accident study, cost of eliminating substandard feature, traffic study, environmental impact, etc.

9) In-depth Inspection Report.

10) Load Ratings.

- a) The Consultant shall perform a load rating for each and every member of the structure, both as-built and as-inspected conditions, in accordance with the Load Rating requirements of the NYCDOT Procedure for Bridge Reconstruction Projects, and also in accordance with current NYSDOT requirements for level one (1) load ratings. Each member shall be rated for both Inventory and Operating Conditions using each of the following types of loadings in all cases: MS18, M18, type 3, type 3S2, and type 3-3. All MS and M ratings shall include both the equivalent MS and M truck and total load in metric tons. As-built load ratings shall include existing dead loads.
- b) All members and connections shall be rated initially by the Allowable Stress method (Working Stress). Each and every member that does not meet the minimum required inventory rating for each vehicular type shall be re-rated using the Load Factor Method.

- c) The results of the Bridge Load Rating(s) shall be incorporated into the Bridge Reconstruction Project Report(s).

#### 11) Bridge Deck Evaluation Report

#### 12) Seismic Assessment

The Consultant shall study the bridge for conformance to seismic requirements as specified in City/State/Federal guidelines and standards.

The Consultant should refer to Bridge Data Sheet to determine if site specific ground motion is required at the project site. If required, the Consultant shall evaluate the bridge for two levels of seismic hazards, as defined in the NYCDOT Procedures for Bridge Reconstruction Projects.

Multimode analysis shall be performed and the evaluation of member capacity shall be by the load factor method. The design forces for foundations including footings, pile caps and piles shall be the lesser of: a) the forces determined in AASHTO Division I-A article 4.7.2 with  $R=1.0$  (unreduced seismic forces obtained from analysis) or; b) the forces at the bottom of the columns corresponding to column plastic hinging as determined in AASHTO Division I-A article 4.8.2.

In metropolitan areas where traffic congestion is likely to occur, the Consultant shall consider the probability of a large live load being on the bridge during an earthquake and provide adequate capacity (Earthquake load combination shall include a minimum of 50% of the live load without impact).

All reconstruction alternative schemes for the bridge shall include seismic retrofitting.

#### 13) Plans and Sections

#### 14) Land Use Assessment

The Consultant shall perform the following so that he/she can make a determination as to whether temporary and/or permanent easements and/or acquisitions and/or a ULURP (Uniform Land Use Review Procedure) process will be required for construction (including staging and access) and maintenance purposes; as well as identify any existing encroachments.

- a) The collection, research and review of all pertinent data (existing and legal grades, mapped R.O.W. lines, etc.) relative to the project, as well as to the map change, the limits of which may extend beyond the limits of the project.
- b) The obtaining of supplemental survey information, as required.
- c) Last owner title search of parcels adjacent to bridge and approaches, and if ULURP is deemed necessary, of all properties within the limits of the map change (i.e. alignment, grades, easements). For publicly-owned parcels, the Consultant shall determine agency management and ownership jurisdiction.
- d) For publicly-owned parcels, the Consultant shall determine whether a Section 4f Evaluation is required (see FHWA Technical Advisory T 6640.8A). If required, the Consultant shall follow the requirements as outlined in this advisory.

- e) Preparation of a R.O.W. plans (strip map) showing legally adopted street lines as documented on final section and/or the latest alteration maps. Existing topography, property line monumentation, and baselines shall be tied to the bridge elements and this shall be shown on the R.O.W plan together with the correct location of the existing property lines and highway boundaries positioned accurately to a degree in keeping with the map scale. Property owner's names shall be shown together with existing easements and rights of way and total acreages of property. All means of access to the property shall be shown.
- f) The findings of the Land Use Assessment shall be included/discussed in the Bridge Reconstruction Project Report, including the R.O.W. plan.
- g) Preparation of Title Examinations and Reports on all parcels adjacent to bridge and approaches. (Contingency money for this work provided under, Fees and Payments Section III)

15) Recommendations, Estimates and Conclusions:

- a) The Consultant shall provide six feasible alternative solutions for rehabilitating / reconstructing / replacing the bridge. All members must be designed to meet the minimum inventory load requirements of each of the aforementioned five vehicular types. The Consultant shall be responsible for investigating the feasibility of obtaining MS23 live loading for each alternative. The Consultant shall discuss the feasibility (advantages and disadvantages) of obtaining MS23 live loading for each alternative. The Consultant shall recommend one of the six alternatives. The Consultant's recommendation shall include/address live load capacity as well.
- b) The Consultant shall provide Itemized estimates for the cost of construction of the six alternative solutions.
- c) The Consultant shall include a discussion of any reports which have been previously prepared on the condition of and/or any recommendations proposed for the bridge.
- d) The Consultant shall indicate the proposed design criteria for each alternative; wherein such criteria shall include, but not be limited to, the following: materials (including grade and type), allowable stresses for new and remaining existing bridge elements.

16) Original Color Photos

17) Video Tape (or DVD equivalent)

a. Draft Bridge Reconstruction Project Report:

The Consultant shall submit three (3) Draft Bridge Reconstruction Project Reports which shall incorporate all of the above items. The Department will coordinate all comments and forward them to the Consultant for implementation/incorporation by the Consultant into the Final BRPR(s).

b. Final Bridge Reconstruction Project Report:

The Consultant shall furnish four (4) copies of the Final Bridge Reconstruction Project Report to the Department for approval as per the Time of Completion Schedules (in the Scope of Services section of this contract). In conjunction with the submission of the Final Documents, the Consultant shall also submit four (4) copies of the Final BRPR to the New York City Department of Records and Information Services, Acquisitions Unit.

### 3. PRELIMINARY PLANS

- a. Upon notice from the Department to proceed with the selection of the reconstruction scheme (not necessarily one presented in the Draft BRPR), the Consultant shall prepare Preliminary Plans, based on the approved scheme for either rehabilitating, reconstructing or replacing the structure. The Preliminary Plans shall show sufficient details to ensure constructability of the proposed scheme, including all existing and proposed utilities, and seismic retrofitting; acquaint affected parties with the project and project components; serve as an instrument for initial approval by affected parties; and serve as a basis for the development of the final Contract Documents. Large scale partial cross sections showing dimensions between utilities and structural members shall be provided for both the existing and proposed conditions. In addition, the Consultant shall provide detailed MPT drawings. The estimated number of drawings in the Preliminary Plans for each of the Project Bridge(s) is specified in the Project Bridge Data Sheet(s); this is not necessarily the maximum number. The Preliminary Plans shall also include a separate detailed Right-of-Way plan and itemized scope of work. The Preliminary Plan submission shall also include an up to date itemized cost estimate.
- b. The Consultant shall submit three (3) sets of the Draft Preliminary Plans to the Department for review. Upon incorporation of all comments received from the Department, the Consultant shall resubmit three (3) sets of the revised Preliminary Plans to the Department for approval.
- c. The Consultant shall submit sets of the Preliminary Plans to all other affected agencies (written receipts required), as determined by the Commissioner, for their review. An all-agency conference and a separate OCMC meeting will subsequently be held to receive their comments, at which the Consultant shall attend. All comments as approved by the Commissioner shall be incorporated into the Preliminary Plans.
- d. The Consultant shall submit six (6) sets of the approved Preliminary Plans to the Commissioner, as per the Scope of Work, Time of Completion Schedule, Table I.
- e. Construction Duration

Once the maintenance and protection of traffic scheme has been agreed upon by the Department (both Bridge Design and OCMC's office), the Consultant shall evaluate whether or not the project warrants additional efforts to mitigate the impact of the construction on the public. Such efforts would include construction contract provisions to: ensure a project's timely completion; to shorten the total duration; and to minimize traffic delays.

The Consultant shall consider and address in his evaluation, the project's significance with respect to: vehicular traffic; public safety; the community (quality of life, businesses, pedestrians, etc.); program needs (scheduling of other effected projects, etc.); other means of transportation (railroad, waterway, etc.); the project's complexity; coordination with others (railroads, utilities, etc.); etc.

If the Consultant's evaluation indicates that the project warrants additional efforts to mitigate the impact of the construction on the public, the Consultant shall investigate the various methods as they pertain to the project and make a recommendation of one method (or a combination thereof). Such methods shall include, but not be limited to the following:

Cost plus time bidding (A + B bidding); lane rental; incentive/disincentive clauses; time related contract provisions such as interim milestone dates or contract completion dates with significant liquidated damage provisions; the use of Critical Path Method (CPM) scheduling as a bid item; etc.

Any project estimated to cost more than \$20 million must include the use of Critical Path Method (CPM) scheduling as a bid item.

The Consultants discussion shall include but not be limited to the following for each particular method: advantages and disadvantages; its practicality; estimated construction duration; bar chart schedule; estimated construction cost; estimated road user costs; associated payments and assessments; etc..

The Consultant's evaluation and recommendation shall be submitted to the Department. The Department will make a determination on whether or not to implement a time related construction contract provision. If the Department decides to employ such a provision, the Final Design Consultant shall accordingly incorporate the provision into the Final Contract Documents.

- f. Uniform Land Use Procedure (ULURP): If it is determined that a ULURP is required for any purpose other than legal grade changes, the Consultant shall immediately initiate the required ULURP. (Contingency money for this work provided under, Fees and Payments, Section III of the Contract)

In conjunction with any required ULURP, the Consultant shall perform the following:

- 1) Preliminary Mapping
  - a) The Consultant shall prepare preliminary ULURP application drawings (Area Map, Preliminary Alteration Map, Acquisition Map) suitable for submission to the Department of City Planning for Pre-application review. The drawings will be prepared in accordance with the instructions of the Office of NYCDOT's Land Use Coordination, the office of the Borough President, and the Department of City Planning Technical Review Unit.
  - b) The Consultant shall modify the ULURP drawings as required until approval (sign off) is obtained from the Department of City Planning Technical Review Unit.
  - c) Upon receipt of "sign off" the Consultant will provide NYCDOT's Office of Land Use Coordination with 55 sets of prints of the ULURP Drawings and of drawings selected from the contract plans.
- 2) Engineering Assistance: The Consultant shall assist the City with his/her engineering expertise during the mapping procedure. This shall include, but not be limited to the following:
  - a) Participate in all conferences, meetings, and Public Hearings on the mapping, upon the request of the Bureau of Bridges or the Office of Land Use Coordination, to present the engineering background necessary.
  - b) Prepare reports, documentation, drawings or backup material necessary to advance the proceedings.
- 3) Final Map Preparation: The Consultant may be required to modify the Preliminary Alteration Map in accordance with the instructions of the Office of the Borough President, so that it is acceptable for approval by the Borough President as the Final Alteration Map.
- 4) Surveys: In preparing the Maps for the ULURP Application, the Consultant shall utilize all information as contained in the plotted Topographic and Utility Surveys. The Consultant shall supplement this information with field trips, additional surveys and searches for information as may be required.

- 5) Final Documents: Upon completion of ULURP (Adoption of Map(s)), the Consultant shall hand-deliver to the Commissioner the following:
  - a) One complete set of every Map, in ink, on reproducible drafting film (or other reproducible material as specified by the Office of Borough President).
  - b) All notes, studies, designs, analysis, drawings, calculations, data, etc. used in the preparation of Map(s).
  - c) Copies of all correspondence to and from all agencies (City, State, Federal), Utilities, Community Planning Boards, and all other having jurisdiction or interest in project or area.
  - d) Original survey notes and plotted survey tracings. All original Topographic Survey information shall be dated, signed and certified by a licensed surveyor. The License Seal of the Surveyor and/or Registered Professional Engineer shall be shown on all plans, tracings and tabulations sheets.

#### 4. FINAL DOCUMENTS

- a. For the Project Bridge(s) upon completion and approval of the Bridge Reconstruction Project Report(s) and Preliminary Plan(s), the Consultant shall prepare and hand deliver to the Commissioner the following final documents, which shall be labeled, bound, and indexed in an orderly fashion:
  - 1) A complete set of the plotted Survey and the Preliminary Plans on reproducible drafting film. In addition, if any drawings were prepared using CADD, the Consultant shall also submit to the Department two (2) copies of the CADD diskettes.
  - 2) Six (6) sets of prints of the plotted Survey and the approved Preliminary Plans.
  - 3) Six (6) copies of the completed Final Bridge Reconstruction Project Report.
  - 4) Original design calculations and Bridge Load Ratings. The submission of computerized calculations must include, but is not limited to, diskettes and written details of all programming information and results.
  - 5) Originals/copies of all correspondence and data pertinent to the project. All correspondence shall be numbered, bound, and submitted with a typed index.
  - 6) Videotapes (or DVD equivalent) of all inspections.
  - 7) The Consultant's certification that all applicable Departmental Standards, Directions, Rules, Regulations, and Guidelines have been conformed to.
  - 8) All materials shall be packaged and delivered to the Commissioner in temporary file-type cartons, together with an index.
  - 9) This submission shall be subject to Departmental review and approval.
- b. The Consultant shall submit four (4) copies of the Final Bridge Reconstruction Project Report (BRPR) to the New York City Department of Records and Information Services, Acquisitions Unit.

## C. FINAL DESIGN

INCLUDED HEREUNDER ARE THE MAJOR TASKS AND SERVICES WHICH SHALL BE PROVIDED BY THE CONSULTANT FOR THE PROJECT BRIDGE(S) AND BE PERFORMED AS PART OF FINAL DESIGN:

### 1. PREPARATION OF ADVANCED PLANS (includes plans, specification books, special specifications, and itemized estimates).

a. The Final Design Scope of Work shall be defined as shown on the Approved Preliminary Plans and shall include the following requirements:

- 1) The elimination (or improvement, at a minimum) of all Substandard Features (including stopping sight distances).
- 2) The bridge project(s) should coordinate, as necessary, with any adjacent public/private agency projects currently anticipated regardless of the scheduled construction fiscal years, as concurred by NYCDOT.
- 3) The incorporation of all work proposed by private parties and public agencies (utilities, railroads, etc.) and as concurred by the NYCDOT.

b. Deficient Conditions

All deficient conditions noted in the BRPR, and any commented on by the NYCDOT during the course of the Preliminary Design, shall be addressed in the Final Design to the satisfaction of the NYCDOT and in compliance with standard design requirements.

c. Field Re-Inspection and Survey as Required:

The Consultant shall re-inspect the structure in order to update repair details (due to possible further deterioration); to document any additional interim repairs which were made to the structure; to obtain any information needed to calculate the final load ratings; and/or to obtain information to facilitate the maintenance and protection of traffic scheme. These re-inspection updates may be required up until the approval of the PS&E submission depending on the condition of the bridge(s) involved. The Consultant shall submit a re-inspection report (including photographs) to the Department. The Consultant shall provide any additional survey data required during the course of Final Design. In addition, the Consultant is required to re-survey the vertical and horizontal clearances for bridges over railroads. All surveying shall be performed by a New York State Licensed Land Surveyor. The Consultant shall perform his inspection and field survey in accordance with the applicable requirements of Preliminary Design; including the requirements pertaining to Flagged Conditions.

d. Uniform Land Use Procedure (ULURP):

If it is determined that a ULURP is required for the purpose of legal grade changes, the Consultant shall immediately initiate the required ULURP and shall perform all associated tasks as per the requirements included under the Specific Requirements Preliminary Design, Section II (B)(3)(f), subsections 1 through 5 of the Contract. (Contingency money for this work provided under, Fees and Payments Section III)

The Consultant understands and agrees that in order for the project work to efficiently proceed, it may be necessary for the Consultant to retain the services of subconsultants specialized in the area of real property appraisal, evaluation and title examination. In such circumstances, the selection of the subconsultant, as well as the proposed scope of work to be performed by the subconsultant, and the proposed fees to be paid the subconsultant shall be approved in advance by the Department after consultation with the City's Law Department. (Contingency money for this work provided under, Fees and Payments Section III)

e. Soils Investigation Program

The Consultant shall review the available subsurface data / Geotechnical Foundation Report assembled during the Preliminary Design and determine if additional Soils Investigation is required. The Consultant may perform his recommended Soils Investigation only if requested by the Consultant and authorized by the Department.

- 1) The Consultant shall perform his Soils Investigation Program in accordance with the applicable requirements of Preliminary Design.
  - 2) The Consultant shall compile the findings of the Soils Investigation Program and produce a Soils Investigation Report for submission to the Department. The report shall include the subsurface exploration results, geotechnical design parameters for various subsurface materials, soil profile(s), design analysis, evaluation, and recommendations.
- f. Prior to the start of Design, the Consultant shall submit its proposed design criteria to the Commissioner for review and approval; wherein such criteria shall include, but not be limited to, the following: materials (including grade and type), allowable stresses for new and remaining existing bridge elements.
- g. All new bridge decks are to be designed for MS23 using the allowable stress method (working stress). If during the design process, the Consultant finds that compliance with this requirement has an adverse impact, the Consultant shall describe the impact and submit its recommendation to the City.
- h. Load Ratings of the reconstructed and/or new structure shall be calculated for each of the following five vehicle types, set forth in 1) below, shall be provided on the plans.
- 1) The Consultant shall perform a load rating of all members of the structure in accordance with current NYSDOT requirements for Level One (1) load rating. Each member shall be rated for both Inventory and Operating conditions using each of the following types of loadings in all cases: MS23 or MS18, as specified in the approved Preliminary Design; M18; type 3; type 3S2; and type 3-3. All MS and M ratings shall include both the equivalent MS and M truck and total load in metric tons.
  - 2) The Allowable Stress ( Working Stress) method shall be used, unless conditions necessitate alternative methods. All alternative methods are subject to the approval of the Department.
  - 3) All members must be designed to meet the minimum inventory load requirements of each of the aforementioned vehicular types.
- i. Seismic Design shall be performed. The Load Factor Method shall be used. Multimode analysis shall be performed. The design forces for foundations including footings, pile caps and piles shall be the lesser of: a) the forces determined in AASHTO Division I-A article 4.7.2 with R=1.0 (unreduced seismic forces obtained from analysis) or; b) the forces at the bottom of the columns corresponding to column plastic hinging as determined in AASHTO Division I-A article 4.8.2.

In metropolitan areas where traffic congestion is likely to occur, the Consultant shall consider the probability of a large live load being on the bridge during an earthquake and provide adequate capacity (Earthquake load combination shall include a minimum of 50% of the live load without impact).

- j. Maintenance and Protection of Traffic shall be included in the plans. The "Approved Preliminary Plans" shall be used as the initial basis for the design; however, due to the involvement of others, changes in the Maintenance of Traffic scheme may be required. It shall be the Consultant's responsibility to incorporate all approved changes into the scheme.
- k. If the project includes a special construction contract provision to mitigate the impact of the construction on the public, as determined during the Preliminary Design, it shall be the Consultant's responsibility to incorporate the specified provision into the Contract Documents (plans; specifications; and estimate). These construction contract provisions may include but are not limited to the following: cost plus time bidding (A + B bidding); lane rental; incentive/disincentive clauses; time related contract provisions such as interim milestone dates or contract completion dates with significant liquidated damage provisions; the use of Critical Path Method (CPM) scheduling as a bid item; etc. In Final Design, the Consultant shall also investigate various methods to compress the construction duration; such as: expanded mandatory work hours ; minimum number of work crews; minimum number of locations of work; mandatory work sequence; etc.. It shall be the Consultant's responsibility to prepare all necessary contract requirements (contractual stipulations; road user costs; associated payments and assessments; etc.).
- l. Construction Schedule

A construction schedule shall be submitted by the Consultant together with its Advance Plan Submission.

The Consultant shall prepare a construction schedule which enumerates all pertinent construction tasks. The schedule shall take into account any railroad or other restrictions. The Consultant shall subsequently forward the schedule to the railroad in conjunction with the Consultant obtaining, reviewing and commenting on the Railroad License Agreement (Force Account) cost estimate.

If the project includes a special construction contract provision to mitigate the impact of the construction on the public, as determined during the Preliminary Design, the construction schedule prepared shall be in conformance with Critical Path Method (CPM) scheduling techniques. The Consultant shall prepare the CPM schedule such that it's level of detail is roughly equivalent to one work activity for each \$100,000 of the estimated construction cost. Exceptions to this requirement regarding the level of detail (i.e., number of activities) will be reviewed by the Department upon request by the Consultant. The critical activities shall be identified by the Consultant. In addition, the Consultant shall also submit a Time - Scaled Logic Diagram which shall show the sequence and interdependence of activities required for the complete performance of the construction work.

In conjunction with developing the CPM schedule, the Consultant shall also evaluate compressing the construction duration and make recommendations on incorporating the compressed schedule into the Contract Documents.

The Consultant's compression evaluation shall include but not be limited to: expanded mandatory work hours (nighttime, weekends, longer shifts, etc.); minimum number of work crews; minimum number of locations of work; mandatory work sequence; etc. The Consultant shall present the advantages and disadvantages of the various compression methods as well as to provide appropriate justification for his recommendation (including cost estimates) to the Department.

If the project does not include a special construction contract provision, the Consultant may submit his schedule in the form of a bar chart.

The Consultant's schedule (CPM or bar chart ) shall graphically show the activities necessary to complete the work, and the sequence in which each activity is to be accomplished as planned by the Consultant and in accordance with current construction practices. Activities shown on the schedule shall include but are not necessarily limited to:

1. Project mobilization;
2. Submittals and approvals of Shop Drawings and Samples;
3. Procurement and delivery of equipment and critical materials;
4. Fabrication of special material and equipment, and their installation and testing;
5. Final cleanup;
6. Final inspection and testing;
7. Holiday shutdown - and interdependence;
8. Railroad activities;
9. Maintenance and protection of traffic work;
10. Earthwork/ demolition work/ substructure work/ superstructure work/ highway work/ drainage work/ etc.;
11. Utility work;
12. Painting;
13. All activities that affect progress, with required dates for completion.

The Consultant's schedule submission (CPM or bar chart) shall include at a minimum: description of the activities; work days per week, number of shifts per day, number of hours per shift; major equipment used; work location; major activity constraints; indicate activities not performed by the contractor; etc.

The Consultant shall submit his construction schedule (including his compression recommendations, as required) for review and comment to the Department. The Consultant shall revise, update and resubmit his construction schedule, as required.

Upon approval by the Department, the Consultant shall provide for and incorporate the schedule into the Contract Documents (plans, specifications, and estimate). This includes the preparation of all necessary contract requirements.

m. Special Specifications

The Consultant shall prepare Special Specifications and submit them as early as possible for approval by the Department. Special Specifications shall be required if the latest issue of NYCDOT and NYSDOT Standard Specifications with current additions and modifications, including any Engineering Instruction (E.I.) and State Special Specifications ( as per the current NYSDOT Control Report), does not cover particular items included in the scope(s) of work of the subject bridge(s).

- 1) The Consultant shall use State Standard and Special Specification items. If State Specifications are not applicable, the Consultant may use existing NYC approved specification items, which

will be supplied by the Department. It shall be the Consultant's responsibility to convert State Special and NYC approved specification items from English to SI (metric) units.

- 2) The procedure for preparing and obtaining new special City specifications approval shall include the following:
  - a) After determining that there are no current applicable State or City Specifications, the Consultant shall prepare any special specifications required and shall submit them for approval to the Department, and all affected parties.
  - b) After approval by the Department, the item numbers will be assigned. The Consultant shall then incorporate the special specifications into the Specification Book portion of the contract documents.

n. Specification Book

The Consultant shall prepare and assemble the Specification Book, which shall include the proposal for Bids, Bid Agreement, and Specifications in accordance with the Department's standard format and specific requirements. This task shall include all necessary work such as preparation of the Bid Schedule and Special Provisions; writing all technical items; typing-in necessary information on proposal pages; and assembling the Specification Book for use in the review submittal.

- o. Drawing Requirements shall be in accordance with NYCDOT Requirements for the Preparation of Engineering Drawings and Documents, Section 1A.

p. Advanced Plans Submission

- 1) For the project bridge(s), the Consultant shall prepare the Advanced Plans Submission, including plans, specification books, special specifications and itemized estimates, the completeness of which shall be not less than 90% of a Final Bid Submission. The Contract Limits of the project bridge(s) shall be determined during the course of the Final Design and shall be subject to the review and approval of the Commissioner.
- 2) The Advanced Plans Submission shall be prepared in accordance with all applicable documents listed in Section (A) (4) of the Specific Requirement Section of this Contract. The Advanced Plans Submission shall be submitted to the Department for review prior to being submitted to the other affected parties. Five (5) sets of Advanced Plans Submission documents are required by the Department for its review. After approval by the Department, the Consultant shall submit sets of the Advanced Plans Submission for the project bridge(s) to all affected agencies (written receipts required), as determined by the Commissioner, for their review. An All-Agency conference and a separate OCMC meeting will subsequently be held to receive the agencies comments which the Consultant shall attend. All comments as approved by the Commissioner shall be incorporated by the Consultant into the Final Plans. The total number of sets of Advance Plans submission documents produced shall not exceed sixty (60) sets, except for the specification books, the total of which shall be ten (10) copies.

The Consultant shall submit Forty (40) required sets of the Capital Project Estimate(s) (itemized estimates) after the Advanced Plans Submission is approved. The Itemized Estimates shall be prepared in accordance with Departmental requirements and as follows:

- a) On a "per item number" basis for the entire construction project, plus on an "individual bridge" basis for construction projects involving more than one bridge.

- b) Separated by budget lines, on a "per item number" basis, for the entire construction project; and separated by budget lines on an "individual bridge" basis for construction projects involving more than one bridge.
- c) The Consultant shall input his Capitol Project Estimate into the Department's computer system. The Department shall make available to the Consultant a computer terminal with access to a menu driven program. This is required to ensure agreement with the Department's item data base; as well as to subsequently generate a computer printout of the submitted bids.

The Consultant shall perform the necessary data entry (items; quantities; budget codes; etc.). The terminal will be made available between 9 AM and 4 PM on City working days. The Consultant shall be responsible for verifying that the computer generated item lists have the correct item descriptions and units. Should any discrepancy be discovered in the item lists, it shall be immediately corrected by the Consultant in consultation with the NYCDOT Project Manager and the Department's Bridges and Roadway's Information System group.

The Consultant shall be responsible for ensuring that the data entered is complete and approved, as necessary, by the involved parties ( with respect to: budget codes; shared costs; item numbers; etc.). If there are any subsequent changes in related item lists (ie., the Capitol Project Estimate; the Bid Schedule (B-Sheets)), prior to the start of advertisement, the Consultant shall update the computer entries . The Consultant shall also immediately update the computer entries if an addendum to the Bid Documents is issued.

## 2. PREPARATION OF FINAL CONTRACT BID DOCUMENTS

### a. Final Plans Submission

- 1) For the project bridge(s) the Consultant shall prepare the Final Plans Submission (including plans, specification Book(s), and itemized estimate(s)), the completeness of which shall be not less than 100% of a contract Bid Document submission incorporating all comments made on the Advanced Plan Submission as approved by the Department.
- 2) The Final Plans Submission shall consist of ten (10) sets of the above documents submitted to the Department for review. The specification book(s) shall include the special specifications. The itemized estimate(s) shall be in accordance with the Advance Plans submission requirements. An All-Agency conference will subsequently be held to receive the agencies comments, which the Consultant shall attend. All comments as approved by the Commissioner shall be incorporated by the Consultant into the P.S. & E. Submission.

### b. P.S. & E. Submission

- 1) For the project bridge(s), the Consultant shall prepare the P.S.& E. Submission includes plans, specification book(s) and itemized estimate(s).
- 2) The P.S. & E. Submission shall consist of twenty (20) sets submitted for review to the affected parties as approved by the Department. The specification book(s) shall include the special specifications and only ten (10) copies shall be submitted for review. The itemized estimate(s) shall be prepared in accordance with the Advance Plans Submission requirements.

- c. The Contract Bid Documents Submission: Upon the approval of the P.S. & E. including the incorporation of all approved comments, the Consultant shall hand-deliver to the Commissioner the following:

- 1) Two hundred fifty (250) half size and twenty (20) full size sets of bound paper prints of the Contract Plans for the project bridge(s). Printing shall be one-sided.
  - 2) One (1) original of the Consultant's Itemized Estimate for each of the project bridge(s), including the required City agency budget code breakdown(s).
  - 3) Two hundred fifty (250) complete bound books of specifications, collated, with boiler plate, for the construction project. Printing shall be two-sided.
3. BID ANALYSIS (INCLUDING MICROFILMING AND INDEXING SERVICES, AND DELIVERY OF FINAL CONTRACT DOCUMENT RECORDS)
- a. The Consultant, at the commencement of the bidding period for every ensuing construction contract, shall obtain a copy of the Invitation to bid.
  - b. The Consultant shall provide, to the satisfaction of the Commissioner, all services required during the bidding period in order to ensure that questions from prospective bidders are answered in a uniform/timely fashion, including attending the Pre-Bid Meeting(s).
  - c. During the bidding period, the Commissioner shall make known to the Consultant, and the Consultant shall make known to the Commissioner, any ambiguities or inconsistencies in the Bid Documents. The Consultant shall investigate all such problems and shall deliver to the Commissioner an analysis and/or recommendation concerning the resolution of all such problems.
  - d. Where the Commissioner deems that an Addendum to the construction contract is necessary, the Consultant shall prepare and hand-deliver said Addendum to the Commissioner within twenty-four (24) hours of notification and shall notify and deliver via overnight mail and/or FAX machine a copy of the addenda to all prospective bidders immediately upon receiving direction to do so from the Commissioner.
  - e. The Consultant shall attend the opening of bids and commence the review and analysis of the bids in accordance with currently applicable Departmental Standards. In general, this shall include the reviewing of the computer printout of the submitted bids, the analyzing of unit prices and lump sum items to determine the appropriateness of costs with respect to the associated work items, the determining of apparent unbalanced and penny-bid items, the checking of item quantities as directed, and the re-checking of quantities and lump sum items for low bid items that are 15% or more above the Consultant's Estimate. If required, the Consultant shall prepare a "Case II" or a "Savings" analysis, whichever applies, in accordance with the latest NYSDOT procedures.
  - f. The Consultant shall formally recommend to the Department, within twenty-four (24) hours of the receipt of the bid tabulation, an acceptable low bidder.
  - g. Within forty-eight (48) hours of the receipt of the bid tabulation, the Consultant shall submit comments on the reviewed computer printout of the submitted bids, in accordance with currently applicable Departmental Procedures.
  - h. In conjunction with the Uniform Code of Bridge Inspection, the Consultant shall prepare the NYSDOT's Level I Load Rating Summary, Level II Load Rating input forms, and update the Bridge Inventory Sheets for the reconstructed bridge (as per the design shown in the Contract Bid Documents submission).

The Consultant shall submit these items (Level I Load Rating Summary, the Level II Load Rating input forms, and Updated Bridge Inventory Sheets) to the NYSDOT's Region 11 Bridge Planning and Management Group, and send copies to the Department.

i. Microfilming and Indexing

In accordance with NYCDOT Requirements for the microfilming of, Detailed Microfilming of, and Computerized Indexing of Engineering Drawings and Documents, the Consultant shall assemble all appropriate project documentation and shall microfilm said documentation. This shall include, but not be limited to, the following:

- 1) The Consultant shall Microfilm and Index all Contract Documents and back-up information, as prepared and compiled in connection with this Project, including the existing Plans and all survey documents, in accordance with currently applicable Departmental Standards and Procedures.
- 2) The Consultant shall provide a computerized index, which shall be a chronological listing, including an abstract of document content for the central project file, said Index to be incorporated into the microfilm presentation.
- 3) All records shall be kept in a complete, comprehensively indexed central project file, which the Consultant shall maintain. This file shall contain all letters, reports, minutes, files notes, sketches, computations, telephone messages, diaries, surveys, marked-up drawings, worksheets, data, research records, computer outputs, payments, problem reports, applications, renderings, and permits. Additionally, the central project file shall be kept in a format in accordance with currently applicable Departmental Standards and Procedures, which in general shall mean a format which shall facilitate the indexing of the required records.

4. FINAL CONTRACT DOCUMENT RECORDS

The Consultant shall hand deliver the following Final Contract Document Records to the Commissioner after the Bid Analysis, Microfilming and Indexing are complete and in accordance with the time of completion schedule of this contract:

- a. The complete set of original (Permanent) Final Contract Bid Documents for the Project Bridge(s). These documents shall include plans, specification book(s) (including special specifications, proposal for bids, bid agreement) and itemized estimate(s). In addition, if any drawings were prepared using CADD, the Consultant shall also submit to the Department two (2) copies of the CADD diskettes.
- b. All project files, microfilm, and index of project files.
- c. Original design calculations and Bridge Load Ratings. The submission of computerized calculations must include, but is not limited to, diskettes and written details of all programming information and results.
- d. Originals/copies of all correspondence and data pertinent to the project. All correspondence shall be numbered, bound, and submitted with a typed index.
- e. The Consultant's certification that all applicable Departmental Standards, Directions, Rules, Regulations, and Guidelines have been conformed to.
- f. All materials shall be packaged and delivered to the Commissioner in temporary file-type cartons together with a typed index.

g. This submission shall be subject to Departmental review and approval.

#### D. CONSTRUCTION SUPPORT SERVICES

INCLUDED HEREUNDER ARE THE MAJOR TASKS AND SERVICES WHICH SHALL BE PROVIDED BY THE CONSULTANT FOR THE PROJECT BRIDGE(S) AND BE PERFORMED DURING CONSTRUCTION SUPPORT SERVICES:

1. The Consultant shall provide Specialized Engineering Services, Plant Inspection Services, Materials Testing Services, Shop Drawing Review Services, and Design Services in accordance with the Contract Documents and the Referenced Design Specifications with a staff commensurate with the level of construction activity until completion and final acceptance of the Construction Contract work. In the event of a work stoppage or a winter shutdown, or as situation warrants, the Consultant shall reduce his work force appropriately or as directed by the Commissioner. Forms 4T-1 and 4T-2 of the Specific Requirements indicates the approximate level of competence required of the staff, together with estimated durations of employment.
2. The Consultant agrees to provide, as required by the Commissioner and to his/her satisfaction, Shop Drawing Review Services. The Consultant shall be responsible for the review and approval of all shop drawings as required by the Contract Documents. Shop Drawings shall be reviewed for their conformance with the Contract Documents and any changes to the details or specifications as approved by NYCDOT. The Contract Documents include the Plans and Specifications along with all other referenced material in the Contract. The Consultant shall appropriately stamp all reviewed shop drawings with a stamp indicating "designations of acceptance" which conform to the contract documents and as approved by the Commissioner. Processing of Shop Drawings shall comply with directions given by the Commissioner. The Consultant may be required to coordinate his Shop Drawing review with other agencies as required by the contract documents or agencies as designated by the Commissioner.

All drawings prepared by the Contractor (including Sub-Contractors, Fabricators, Manufacturers, Erectors, etc.) to facilitate construction as required by the Contract Documents shall be termed Shop Drawings.

Such Shop Drawings shall include, but not be limited to the following:

- |                                              |                                               |
|----------------------------------------------|-----------------------------------------------|
| 1. Structural Steel Drawings                 | 8. Bridge Railing Drawings                    |
| 2. Prestressed/Precast Concrete Drawings     | 9. Bridge Bearing Drawings                    |
| 3. Shop/Plant Repair Procedures and Drawings | 10. Temporary Jacking and/or Shoring Drawings |
| 4. Heat Curving/Cambering Drawings           | 11. Cofferdam/Sheeting Drawings               |
| 5. Erection and Transportation Drawings      | 12. Demolition/Removal Drawings               |
| 6. Expansion Joint System Drawings           | 13. Machinery Drawings/Catalog Cut            |
| 7. Steel Reinforcement Drawings              | 14. Electrical Drawings/Catalog Cut           |

As part of Shop Drawings Review Services the Consultant also agrees to review and provide comments on any calculations required by the contract documents or by the Commissioner to be submitted by the contractor or his engineer.

3. The Consultant shall review the Contractor's Removal Plan to ascertain if they adequately identify and address safety conditions and that the demolition operation does not subject the structure to any stress in excess of the structures' ability to support.

4. The Consultant shall attend liaison, progress, coordination and other such meetings when required by the Department. When required by the Department, the Consultant shall analyze, review and provide recommendations on all changes in materials, design or proposed work, particularly as they may apply to "Value Engineering" that is proposed by the Contractor.
5. Prior to commencement of work Shop Drawing Review and/or Erection Drawing Review Services, the Consultant shall submit to the Commissioner for review and approval, the names, grades, and experience of the personnel who it is anticipated will be utilized on these services. In no event shall the Consultant perform Drawing Review Services without prior written authorization by the Commissioner or his duly authorized representative.
6. The Consultant agrees to provide Interim (Semi-Annual) Inspection of the portion of the project bridge(s) open to traffic as per the Department's Interim Inspection requirements.
7. In the event the Department decides to provide Resident Engineering and Inspection Services with in-house personnel, the following shall be performed by the Consultant:
  - a. The Consultant shall have the in-house specialized capability or shall have a specialized subconsultant to handle the Department's Air-Monitoring Protocol.
  - b. The Consultant shall prepare, furnish, index, and microfilm complete sets of accurate shop, working, and record as-built drawings, catalog sheets, technical bulletins, manuals, diagrams, other printed matter, etc. as required which shall show the work as actually installed in compliance with the provisions of the Microfilming requirements.

### III. FEES AND PAYMENTS

INCLUDED HEREUNDER ARE THE MAJOR PROVISIONS/REQUIREMENTS APPLICABLE TO PRELIMINARY DESIGN, FINAL DESIGN, AND CONSTRUCTION SUPPORT SERVICES:

#### A. FEE

In full payment for all services to be rendered hereunder, the City shall pay to the Consultant and the Consultant agrees to accept a fee not to exceed:

Preliminary Design	\$ _____	
Final Design	<u>\$4,460,000.00</u>	Budgetary amounts*
Construction Support	<u>\$1,100,000.00</u>	Budgetary amounts*

*\* Fees for Final Design and Construction Support are estimates based on information currently available to the Department. Should the scope of work develop during the Preliminary Design phase indicate that more work will be required for Final Design and Construction Support than is currently anticipated, any proposed fees for Final Design and Construction Support in excess of the amounts above are subject to the approval of the office of Management and Budget.*

If the Consultant is designated to complete all three (3) services, the total not-to-exceed fee is \$ \_\_\_\_\_.

#### B. BASIS

The payment for the services rendered herein shall be made on the basis of total direct technical office salary costs of the Consultant attributable to the contract times a technical office multiplier, plus direct reimbursement for Principals' Time and certain out-of-pocket expenses.

## C. DEFINITIONS

### 1. Direct Technical Office Salary Cost

Direct technical office salary cost shall include only engineering, surveying and drafting salaries, exclusive of Principals' Time, and shall be derived from direct individual salaries, not including overtime premium pay, vacation pay, holiday pay, social security, unemployment insurance, worker's compensation, sick pay or other fringe benefits. Any salary increases prior to or during the contract period shall be within parameters as established in the Engineer Pay Index of the U.S. Bureau of Labor Statistics-Employment Cost Index for Professional Specialty and Technical Workers-Wages and Salaries. <sup>1</sup>

**1 THE ANNUAL EMPLOYMENT COST INDEX PERCENT INCREASE TIMES THE TOTAL YEARLY SALARY COST OF ALL CURRENT EMPLOYEES WORKING ON THAT PROJECT FOR THE PRIOR YEAR, BECOMES A POOL OF MONEY FROM WHICH VARIOUS RAISES MAY BE GRANTED. THE MAXIMUM SALARY INCREASE PER PERSON IS LIMITED TO THE ANNUAL EMPLOYMENT COST INDEX PLUS 50% OF THE INDEX. THE TOTAL OF INDIVIDUAL RAISES SHALL NOT EXCEED THE POOL MONEY PER CONTRACT YEAR.**

### 2. Technical Office Multiplier

The technical office multiplier shall be applied to the direct technical office salary costs of the Consultant in connection with the project, and shall be considered as including provisions for indirect costs and profit.

### 3. Principals' Time

Principals of the firm, such as partners or owners, shall be compensated for their time, to the extent that they perform services other than administrative or supervisory services, as follows:

- a. The rate of compensation for Principals' Time shall not exceed One Hundred Dollars (\$100.00) per hour, to be based on actual draw.
- b. The Principals participating in the Project shall provide the Commissioner with a demonstration certifying his/her actual draw from the firm on an average weekly basis. Where said rate exceeds Fifty Dollars (\$50.00) per hour, the principal participating in the project shall provide the Commissioner with a notarized statement by a certified public accountant that such rate does not exceed the principals' annual direct compensation, excluding profit, computed on an hourly rate. The amount payable for Principals' Time shall not be included in the technical salary cost base and is not subject to any multiplier.
- c. The Principals participating in the Project shall maintain a daily log of their participation, which shall be available for inspection by the Commissioner and the Comptroller of the City.
- d. The Commissioner shall certify that direct participation by the Principals is essential to the effective and economic completion of the Project.
- e. The total compensation for the Principals' Time shall not exceed Thirty-Five Percent (35%) of the total not to exceed fee as stated hereinbefore.

- f. In the event that a Principal assumes the specific assignment of responsibilities normally allocated to a technical member of the project team, said Principal shall be compensated at a rate corresponding to the technical salary commensurate with that assignment times an adjusted (where appropriate) multiplier, said multiplier to be established by Department's Engineering Audits Bureau to avoid duplication of indirect expenses. (Adjusted multiplier is calculated by decreasing 10% from multiplier).
- g. The words "the Principals" or "the Principals of the firm" are understood to mean those individuals in a firm who possess legal responsibility for its management. They may be owners, corporate officers, associates, partners, etc. With respect to a corporation, a principal is further defined as that person who owns ten (10) percent or more of the voting stock.

4. Out-Of-Pocket Expense.

Out-of-pocket expenses shall be limited to:

- a. The cost of acquiring, on a per diem basis, the services of other experts or engineers as may be required for the performance of the Consultant's services.
- b. The cost of retaining the services of a qualified contractor, or contractors, to provide for Concrete Coring and Concrete Core Testing Services, Concrete Encasement Removal, Steel Sampling, Underwater Inspection, Soils Investigation and Testing Services, and Permit Application Fees and related Sampling and Testing Services, as required.
- c. The cost of any Force Account expenditure(s) and/or Force Account Agreement(s) that may be required for the performance of the Consultant's In-Depth Inspection(s). (For Definition, See III.C.5)
- d. The costs of the use of motor vehicles, owned by the Consultant or employees of the Consultant or leased and maintained by the Consultant and used specifically for and only for the performance of this contract, shall be compensated on a direct mileage basis in accordance with the standards as established for reimbursement allowances for City personnel.
- e. The cost of procurement of copies of documents, data sheets, drawings and reports for reference and information.
- f. The cost of printing and duplication.
- g. The cost of photographic film, developing and printing.
- h. The cost of renting other materials or equipment, or acquiring services specifically for, and applicable only to, this project may be submitted for direct payment as out-of-pocket costs. This shall not include the purchase of general tools or office supplies whether expendable or reusable.

Out-of-Pocket expenses shall be subject to audit by the Department. Consequently, the Consultant shall maintain, and submit to the Department as part of his/her monthly payment voucher, time and material records for all out-of-pocket expenses incurred during that month and submitted for reimbursement in connection with the services herein contained.

5. Force Account Work

Force Account Work refers to the non-DTL expenses associated with having railroad entity personnel assist in the inspection of facilities above or below active railroad lines. Force Account Work also refers to the non-DTL expenses associated with having railroad entity personnel perform a technical review of the Plans.

6. Indirect Costs and Overhead

- a. Indirect Costs shall include costs of a general nature which could be applied to the Consultant's entire operation and which are not readily attributable to any one project. These shall include: fringe benefits, taxes, insurance premiums, postage, office supplies, motor vehicles, equipment, office machine and computer rentals, depreciation on purchased equipment, maintenance and operation costs, recruitment, temporary facilities, consultant fees, overhead (see below) and any such costs as are necessary to conduct the Consultant's operations with the exception of those cost items which are submitted for direct payment as out-of-pocket expenses.
- b. Overhead includes that portion of the Consultant's administrative, clerical and financial costs which are applicable to operations, including, but not limited to: rent, utilities, salary costs of administrative and clerical work (including administrative services of the Principal and Technical Typing), fringe benefits, payroll expenses, taxes, insurance, legal and professional fees, bank service charges, depreciation, office supplies and equipment, maintenance, etc.

D. PAYMENTS

- 1. During the course of the Contract, all payments, including the final payment, shall be paid to the Consultant on a monthly basis as they occur, as follows:
  - a. Payment shall be made based on direct technical office salaries of the Consultant and all Professional subcontractors in connection with the project, times a technical office multiplier of:

<b><u>Overhead</u></b>	<b><u>Profit</u></b>
<b><u>A</u></b>	<b><u>B</u></b>
_____	_____
_____	_____

\*SAID MULTIPLIER WAS ESTABLISHED BY THE CONSULTANT IN ITS "REQUEST FOR PROPOSAL" SUBMISSION AND HAS BEEN ACCEPTED BY THE DEPARTMENT SUBJECT TO THE REVIEW AND AUDIT PROVISIONS AS CONTAINED HEREIN.

- b. For Final Design and Construction Support Services, the profit portion of Consultant's and Subconsultant's accepted multiplier shall be fixed at \_\_\_\_\_. The overhead portion shall be calculated and audited by the Department.
  - c. For approved out-of-pocket costs and allowable time for Principals' services, payments shall be made on the basis of direct reimbursement at cost to the Consultant, with no markup for the Consultant's overhead and profit.
2. The Consultant shall submit to the Commissioner, or his duly authorized representative, but not more than once per calendar month, a certified voucher, and six copies, setting forth in detail the items of work and services performed by the Consultant and the amount of partial payment requested. Vouchers shall be accompanied by statements prepared and certified by the Consultant setting forth the name and title of each of his/her and his/her sub-consultants employees who was engaged in the project during such respective month, the number of hours worked each day, the direct salary and the number of hours worked each day, the direct salary and the compensation attributable to the time for which the voucher is submitted. All vouchers shall be accompanied by a report on the progress of the work properly coded and tabulated to indicate the percentage of completion of each phase of the work. All said vouchers and progress reports shall be subject to review and approval of the Division's designated Project Engineer.
  3. The Commissioner shall review the said voucher and if, in his/her judgment, the work and services therein set forth have been performed, the Commissioner shall endorse his/her approval of payment of said voucher.
  4. Out-of-pocket expenses and compensation for Principals' Time approved by the Commissioner shall be paid at cost to the Consultant, with no markup for the Consultant's overhead and profit.
  5. There shall be a final payment made at the end of each phase (Preliminary Design, Final Design and Construction Support Services) with the release of the associated retainage of the applicable phase.
  6. The last and final payment to the Consultant shall become due and payable upon the actual completion of the work under this contract and the filing by the Consultant with the Commissioner of all records and documents in connection with the contract.
  7. The final voucher shall be accompanied by a statement certifying the total direct technical salary costs of the Consultant attributable to the contract.
  8. The Fee and all payments hereunder shall be subject to review and audit by the Department of Transportation and subject to a post audit by the Comptroller.
  9. The Fee shall not be increased for any reason except as provided herein.
  10. The City shall retain five percent (5%) from each Consultants' partial payment.
  11. Included hereunder are the major provisions/requirements applicable to Construction Support Services only:

- a. The annual daily wage rates, exclusive of applicable weekend/night work differential, shall not exceed the rates as shown on Form 4T-1. However, the Consultant may periodically, but not more than once per contract year, request, in writing to the Department, to have these rates adjusted. This adjustment shall be subject to the approval of the Chief Engineer of Construction and the Engineering Audit Officer, and shall be within the parameters as established in the U.S. Bureau of Labor Statistics Employment Cost Index for Professional Specialty and Technical Workers-Wages and Salaries.
  - b. Partial Payments:
    - 1) The Consultant shall be paid in monthly progress payments based on actual allowable cost incurred during the period in accordance with Fees and Payments, Section III (A) of the Contract. The consultant shall submit a breakdown of costs for each specific task provided with request for payment. Bills are subject to the approval of the Commissioner, or his duly authorized representative.
    - 2) The Consultant shall inform the City and all Sub Contractors and Sub Consultants of the Consultant's schedule for submitting monthly vouchers to the City, said schedule shall be strictly adhered to by the Consultant.
    - 3) All Sub Contractor and Sub Consultant Vouchers received by the Consultant at least ten (10) calendar days prior to a scheduled billing, shall be included in that billing, even if the Consultant does not have other costs to be billed for that period. The Consultant shall inform the Sub Contractor or Sub Consultant of the date the voucher was submitted to the City and the amount included for the sub Contractor or Sub Consultant.
    - 4) The Consultant is required to make partial payments to all Sub Contractors and Sub Consultants within (10) calendar days of receipt of payment from the City.
    - 5) Accounts of the Consultant shall clearly identify the costs of the work performed under this Agreement and shall be subject to periodic and final audit by the City and, on Federally aided Projects, by the Federal Highway Administration. Such audit shall not be a condition of partial payment.
    - 6) The City shall retain five percent (5%) from each Consultant's progress payment.
  - c. The Consultant shall not be entitled to any additional compensation as a result of any sum or sums paid to the Construction Contractor(s) in settlement of claims for additional compensation or of any judgment for damages under the construction contract(s). However, in the event it becomes necessary to re-let the construction contract(s), the Consultant shall be compensated for any additional work required as a result of such re-letting as ordered by the Commissioner, under terms to be agreed upon.
  - d. The Consultant agrees that, in the event the City deems it necessary to cancel the Construction Contract of the project for any cause, he will perform the necessary Construction Support Services to effect the completion of the work described in said contract. For such services, the Consultant shall not receive extra compensation but he shall be compensated in accordance with the terms of this Agreement in the same manner as if the cancellation of such Construction Contract had not occurred.
12. The total length of the Preliminary Design and Final Design Services for the project bridge(s) shall be as stipulated in the Time of Completion Schedule. The total length of Construction Support Services shall be the duration of the Construction Contract of the project bridge(s).

## E. COST LIMITATIONS

### 1. PRELIMINARY DESIGN

The "not to exceed" fee of \$\_\_\_\_\_ shall be apportioned as follows:

- a. The total direct technical office salary costs times the technical office multiplier stated herein plus reimbursement for Principals' Time for services provided hereunder shall not exceed \$\_\_\_\_\_.
- b. The total cost of routine operational out-of-pocket expenses not anticipated to exceed \$ 20,000.00.\*
- c. The cost of out-of-pocket expenses for the Concrete Coring Program shall not exceed \$\_\_\_\_\_,\* the cost of Force Account expenses shall not exceed \$\_\_\_\_\_,\* the cost of Permit Application Fees and related Sampling and Testing shall not exceed \$\_\_\_\_\_.\* Cost of work is subject to Departmental approval. Approval shall be based on competitive low bid process from a minimum of three subconsultants.

*\* The cost limitations for these are budgetary estimates of non-DTL expenses only and have been established to cover work which may reasonably be expected on this project. The actual extent and cost of this work shall be determined during the Consultant's operations in connection with the project, and may or may not exceed the limitations as stated herein. Cost of work is subject to Departmental approval. In the event that the cost of required work exceeds the stated cost limitation for this work, then the condition shall be deemed a change of scope and the Consultant shall, upon concurrence of the Department and of the Office of Management and Budget, make written request for an increase in funds in accordance with standard change-order procedures and in conformance with Appendix A2 Section 6.24.*

- d. The total direct technical office salary cost times the technical office multiplier plus reimbursement for Principals' Time and approved out-of-pocket expenses for services provided in connection with contingent work to provide for flagged conditions, as stated herein, shall not exceed \$\_\_\_\_\_.\*\* Cost of work is subject to Departmental approval. Approval shall be based on competitive low bid process from a minimum of three subconsultants.
- e. The total direct technical office salary cost times the technical office multiplier plus reimbursement for Principals' time and approved out-of-pocket expenses for services provided in connection with contingent work to provide a ULURP process, as stated herein shall not exceed \$\_\_\_\_\_,\*\* and services provided in connection with contingent work to provide Title Examinations and Reports, as stated herein, shall not exceed \$\_\_\_\_\_.\*\* Cost of work is subject to Departmental approval. Approval shall be based on competitive low bid process from a minimum of three subconsultants.

**\*\*** No work shall be performed under these contingency provisions unless the Consultant has demonstrated, in writing, that the work under the contingency provisions is necessary for the prosecution of the services required under this Agreement. The cost limitation for contingency work is a budgetary estimate only and has been established to cover work which may reasonably be expected on this project. The actual extent and cost of this work shall be determined during the Consultant's operations in connection with the project, and may or may not exceed the limitations as stated herein before. Cost of work is subject to Departmental approval. In the event that the cost of required work exceeds the cost limitations as stated for this work, then the condition shall be deemed a change of scope and the Consultant shall, upon concurrence of the Department and the Office of Management and Budget, make written request for an increase in funds in accordance with standard change-order procedures and in conformance with Appendix A2 Section 6.24.

2. FINAL DESIGN

The Final Design fee shall be negotiated at the completion of Preliminary Design, and shall be apportioned at that time. In accordance with the not to exceed fee and technical office multiplier(s) as stipulated herein under section III. (Fees & Payments)

Final Design Services \$4,460,000.00 Budgetary Amount

3. CONSTRUCTION SUPPORT

The Construction Support fee shall be negotiated at the completion of Final Design, and shall be apportioned at that time. In accordance with the not to exceed fee and technical office multiplier(s) as stipulated herein under section III. (Fees & Payments)

Construction Support Services \$1,100,000.00 Budgetary Amount

- 4. Upon approval by the Department, funds may be transferred between tasks as long as the scope or total fee of the Agreement is not exceeded, upon approval of the Department.
- 5. For both partial and final payment purposes (Preliminary and Final Design only), the cost limitations, as herein stated in Form 4T2, shall be adhered to.
- 6. In addition to any other requirements contained herein, the Consultant is advised that all payments due under this contract are subject to various directives issued by the Office of the Comptroller regarding the auditing of payments to consultants. Such directives are:

Directive No. 2 (“Guidelines for Audit of Vouchers Submitted Under Cost Reimbursable Contractual Agreements”); Directive No. 6 (Travel Meals Lodging and Miscellaneous Agency Expenses’); and Directive No. 7 (“Audit of Payment Vouchers Issued Under Contracts for Construction, Equipment and Related Consultant Services”).

Said Directives may be obtained from the Project Engineer.

In addition to any other requirements contained herein, the Consultant is advised that all payments due under this contract are subject to various directives issued by the Office of the Comptroller regarding the auditing of payments to consultants. Such directives are:

Directive No. 2 (Guidelines for Audit of Vouchers Submitted Under Cost Reimbursable Contractual Agreements); Directive No. 6 (Traveling, Meals, Lodging and Miscellaneous Agency Expenses); and Directive No. 7 (“Audit of Payment Vouchers Issued Under Contracts for Construction, Equipment and Related Consultant Services”).

IV. TIME OF COMPLETION

The Consultant shall complete all tasks associated with the Preliminary and Final Design phases of this contract within the time frames listed, for the project bridge(s), of the contract. The total anticipated time of completion is 1,735 Consecutive Calendar Days from Date of Written Notice to Proceed until final completion of the construction contract.

**THE CONSULTANT SHALL COMPLETE ALL TASKS AS LISTED IN SECTION II, HEREIN, AND SHALL SUBMIT TO THE CHIEF ENGINEER ALL DOCUMENTS AS LISTED IN SECTION II, HEREIN, WITHIN THE TIME FRAMES LISTED, FOR THE PROJECT STRUCTURES, IN TABLE 1 OF THE CONTRACT.**

## V. PROGRESS REPORTING (PRELIMINARY AND FINAL DESIGN ONLY)

A. Upon receipt of the Notice to Proceed, the Consultant shall prepare and submit for approval by the Commissioner a detailed, initial Progress Report (Bar Charts, written text, listing of each contract drawing showing the estimated percent of completion of each drawing) for the services required in connection with the project bridge(s). A Progress Report shall be submitted at the Start-up Meeting. The Schedule Bar Chart shall include, but not be limited to, the following: projected dates for completion of In-Depth Inspection and Survey, Concrete Coring and/or Steel Sampling, and Soil Investigation Programs; projected completion/target dates for submission of the Draft Bridge Reconstruction Project Report, Final Bridge Reconstruction Project Report, Draft Preliminary Plans, and Approved Preliminary Plans; projected completion/target dates for submission of the Advanced Plans; projected ULURP completion date; projected submission dates of Final Contract Bid Documents; a detailed listing of all tasks, sub-tasks and milestones required in connection with the Project; the time necessary to complete the various tasks, sub-tasks and milestones; the interrelationship of milestones; the interrelationship and dependency of the various elements of the Bar Chart; and the Project's critical path. All contract times and extensions of time shall be indicated.

B. For the purpose of the Schedule Bar Chart, the date of Notice to Proceed shall be established as the "Anniversary Date".

C. On a monthly "Anniversary Date" basis, the Consultant shall analyze the Project's progress as it relates to the approved Schedule Bar Chart. Additionally, the Consultant shall file with the Commissioner a report on this analysis, which shall include, but not be limited to, the following: actual time used for each element of the work plan network; changes in targeted completion dates for the various elements of the network; the reasons for any delays in the targeted completion dates; the need and justification for any extensions of time; a narrative description of the work performed during the reporting period; a narrative description of the work projected for the next reporting period; a list of contract drawings showing the estimated percent of completion of each drawing; and a revised work plan network which reflects the Project's current status at the end of the instant reporting period.

D. Progress Reports and documentation shall be submitted to the Commissioner, for approval, no later than two (2) working days following the close of the reporting period.

### E. Recoupment of Cost of Design Errors and Omissions

In each instance in which a change order is made necessary because of a consultant design error or omission, DOT shall take appropriate steps to recover from the consultant the costs of the change order to the City in excess of what the work would have cost in the absence of such error or omission.

Neither the Consultant nor any of its Sub-Consultants will perform any legal services under this agreement without the prior written approval of the Department and the Law Department.