Torres Rojas, Genara

From: gbuzzoni@globalterminals com
Se[illegible] Wednesday, January 16, 2013 3:23 PM
[illegible] Duffy, Daniel
[illegible] Torres Rojas, Genara; Van Duyne, Sheree
[illegible]e Freedom of Information Online Request Form

Information:

First Name: guy
Last Name: buzzoni
Company: global terminal
Mailing Address 1: 302 port jersey boulevard
Mailing Address 2:
City: jersey city
State: NJ
Zip Code: 07305
Email Address: gbuzzoni@globalterminals.com
Phone: 2017064101
Required copies of the records: Yes

List of specific record(s):
bid abstract and construction drawings and specifications for PANYNJ fender repair contract [illegible] for fender repairs at NJMT and NY[illegible] [illegible] PDF of the requested information.

THE PORT AUTHORITY OF NY & NJ

FOI Administrator

February 15, 2013

Mr. Guy Buzzoni
Global Terminal
302 Port Jersey Boulevard
Jersey City, NJ 07305

Re: Freedom of Information Reference No. 13698

Dear Mr. Buzzoni:

This is a response to your january 16, 2013 request, which has been processed under the Port Authority's Freedom of Information Code (the "Code") for copies of records related to the bid abstract and construction drawings and specifications for Port Authority fender repair Contract No. MFP654.141 for fender repairs at NJMT and NYMT.

Material responsive to your request and available under the Code can be found on the Port Authority's website at http://www.panynj.gov/corporate-information/foi/13698-C.pdf. Paper copies of the available records are available upon request.

Certain material responsive to your request is exempt from disclosure pursuant to exemptions (1) and (4) of the Code.

Please refer to the above FOI reference number in any future correspondence relating to your request.

Very truly yours,

Daniel D. Duffy
FOI Administrator

225 Park Avenue South
New York, , NY 10003
T: 212 435 3642 F: 212 435 7555

PRELIMINARY BID RESULTS

CONTRACT: **MFP-654.141**
TITLE: **NEW YORK & NEW JERSEY MARINE TERMINALS – MULTI-FACILITY FENDER SYSTEM REHABILITATION VIA WORK ORDER**
BID DATE: **SEPTEMBER 30, 2010**
ENG'S EST: **$ 5,000,000 (PUB AD)**

	Contractor	Estimated Total Amount
1.	R.B. Conway & Sons, Inc. Melville, NY	$ 5,521,950
2.	Simpson & Brown, Inc. Cranford, NJ	$ 5,822,505
3.	D'Onofrio General Contractors Corp. Brooklyn, NY	$ 6,236,609
4.	Trevcon Construction Co, Inc. Liberty Corner, NJ	$ 7,522,850

THE PORT AUTHORITY OF NY & NJ

0P05651141

#
C.M.

NEW YORK & NEW JERSEY MARINE TERMINALS

MULTI-FACILITY FENDER SYSTEM REHABILITATION VIA WORK ORDER

CONTRACT MFP-654.141

SEPTEMBER 2010

This proposal is not complete unless bidder's Signature appears on page 22

CONFORMED

THE PORT AUTHORITY OF NY & NJ

COMMISSIONERS

Anthony R. Coscia, Chairman
Virginia S. Bauer
Michael J. Chasanoff
Stanley E. Grayson
H. Sidney Holmes III
Henry R. Silverman, Vice-Chairman
Raymond M. Pocino
Anthony J. Sartor
David S. Steiner

EXECUTIVE STAFF

Christopher O. Ward, Executive Director
William Baroni, Jr., Deputy Executive Director
Ernesto L. Butcher, Chief Operating Officer
Darrell Buchbinder, General Counsel
David B. Tweedy, Chief of Capital Planning
A. Paul Blanco, Chief Financial Officer
Louis J. LaCapra, Chief Administrative Officer
Francis J. Lombardi, Chief Engineer
Michael Fabiano, Acting Chief Technology Officer
Stephen Sigmund, Chief of Public and Government Affairs
Michael B. Francois, Chief of Real Estate and Development
Robert E. VanEtten, Inspector General
Michael Fedorko, Director, Public Safety Department
Karen E. Eastman, Office of the Secretary

Victoria Cross Kelly, Director,
Tunnels, Bridges & Terminals Department

Susan M. Baer, Director,
Aviation Department

Michael P. DePallo, Director,
Rail Transit Department

Richard M. Larrabee, Director,
Port Commerce Department

TABLE OF CONTENTS

ADVERTISEMENT ..... A

INFORMATION FOR BIDDERS 1

1. FORM AND SUBMISSION OF PROPOSALS 1
2. PAPERS ACCOMPANYING PROPOSALS 1
3. QUALIFICATION INFORMATION 3
4. ACCEPTANCE OR REJECTION OF PROPOSAL 5
5. RETURN OF CERTIFIED CHECKS 5
6. WEBSITE POSTINGS OF CONTRACT DOCUMENTS 5
7. DISPOSAL OF CONTRACT DOCUMENTS 6
8. MINORITY AND WOMEN'S BUSINESS ENTERPRISES PROGRAM (MBE/WBE) 6
9. INSPECTION OF SITE 12
10. QUESTIONS BY BIDDERS 13
11. PORT AUTHORITY SECURITY REQUIREMENTS 13
12. PREVAILING RATE OF WAGE CERTIFICATION 14
13. CERTIFICATION OF NO INVESTIGATION (CRIMINAL OR CIVIL ANTI-TRUST), INDICTMENT, CONVICTION, SUSPENSION, DEBARMENT, DISQUALIFICATION, PREQUALIFICATION DENIAL OR TERMINATION, ETC; DISCLOSURE OF OTHER REQUIRED INFORMATION 15
14. NON-COLLUSIVE BIDDING AND CODE OF ETHICS CERTIFICATION; CERTIFICATION OF NO SOLICITATION BASED ON COMMISSION, PERCENTAGE, BROKERAGE, CONTINGENT FEE OR OTHER FEE 18
15. BIDDER ELIGIBILITY FOR AWARD OF CONTRACTS - DETERMINATIONS BY AN AGENCY OF THE STATE OF NEW YORK OR NEW JERSEY CONCERNING ELIGIBILITY TO RECEIVE PUBLIC CONTRACTS 19

PROPOSAL 20

ACKNOWLEDGMENT 23

STATEMENT ACCOMPANYING PROPOSAL 24

BID BOND 25

ACKNOWLEDGMENT 27

FORM OF CONTRACT 28

CHAPTER 1 - GENERAL PROVISIONS

16. DEFINITIONS 28
17. GENERAL AGREEMENT 30
18. WORK ORDERS 31

19. AUTHORITY ACCESS TO RECORDS 31
20. AGENCY FOR RENTAL OF CONSTRUCTION EQUIPMENT 32
21. EXEMPTION FROM NEW JERSEY STATE SALES TAXES 33
22. EXEMPTION FROM NEW YORK STATE AND NEW YORK CITY SALES TAXES 34
23. PERFORMANCE AND PAYMENT BOND 36

CHAPTER II - PRICES AND PAYMENTS

24. UNIT PRICES 38
25. COMPENSATION FOR EXTRA WORK 53
26. COMPENSATION FOR PREMIUM TIME 57
27. COMPENSATION FOR EMERGENCY DELAYS 58
28. MONTHLY ADVANCES 58
29. RELEASE OF MONIES PREVIOUSLY WITHHELD FROM MONTHLY ADVANCES UPON RENDITION OF A CERTIFICATE OF SUBSTANTIAL COMPLETION 59
30. FINAL PAYMENT 60
31. WITHHOLDING OF PAYMENTS 61

CHAPTER III - PROVISIONS RELATING TO TIME

32. TIME FOR COMPLETION AND DAMAGES FOR DELAY 63
33. TERM OF CONTRACT 63
34. EXTENSIONS OF TIME 64
35. IDLE SALARIED MEN AND EQUIPMENT 66
36. DELAYS TO CONTRACTOR 67
37. CANCELLATION FOR DELAY 68

CHAPTER IV - CONDUCT OF CONTRACT

38. AUTHORITY OF CHIEF ENGINEER 69
39. AUTHORITY AND DUTIES OF ENGINEER 70
40. NOTICE REQUIREMENTS 70
41. EQUAL EMPLOYMENT OPPORTUNITY - NEW YORK 71
42. EQUAL EMPLOYMENT OPPORTUNITY - NEW JERSEY 73
43. NO DISCRIMINATION IN EMPLOYMENT 74
44. AFFIRMATIVE ACTION REQUIREMENTS - EQUAL EMPLOYMENT OPPORTUNITY 75
45. PREVAILING RATE OF WAGE 81
46. EXTRA WORK ORDERS 83
47. PERFORMANCE OF EXTRA WORK 83
48. TITLE TO MATERIALS 83
49. ASSIGNMENTS AND SUBCONTRACTS 84

50. CLAIMS OF THIRD PERSONS 84
51. CERTIFICATES OF PARTIAL COMPLETION 85
52. CERTIFICATE OF SUBSTANTIAL COMPLETION 85
53. CERTIFICATE OF FINAL COMPLETION 86
54. NO GIFTS, GRATUITIES, OFFERS OF EMPLOYMENT, ETC. 86

CHAPTER V - WARRANTIES MADE AND LIABILITY ASSUMED BY THE CONTRACTOR

55. CONTRACTOR'S WARRANTIES 87
56. RISKS ASSUMED BY THE CONTRACTOR 88
57. NO THIRD PARTY RIGHTS 89
58. INSURANCE PROCURED BY THE AUTHORITY 90
59. INSURANCE PROCURED BY CONTRACTOR 92

CHAPTER VI - RIGHTS AND REMEDIES

60. RIGHTS AND REMEDIES OF AUTHORITY 94
61. RIGHTS AND REMEDIES OF CONTRACTOR 95
62. PERFORMANCE OF WORK AS AGENT FOR CONTRACTOR 95
63. NO ESTOPPEL OR WAIVER 95

CHAPTER VII - MISCELLANEOUS

64. SUBMISSION TO JURISDICTION 96
65. PROVISIONS OF LAW DEEMED INSERTED 96
66. INVALID CLAUSES 96
67. NON-LIABILITY OF THE AUTHORITY REPRESENTATIVES 96
68. SERVICE OF NOTICES ON THE CONTRACTOR 97
69. MODIFICATION OF CONTRACT 97
70. PUBLIC RELEASE OF INFORMATION 97

PERFORMANCE AND PAYMENT BOND 98

ACKNOWLEDGMENT 101

SPECIFICATIONS 102

DIVISION 1 - GENERAL PROVISIONS

71. CONSTRUCTION REQUIRED BY THE SPECIFICATIONS 102
72. AVAILABLE PROPERTY 103
73. OPERATIONS OF OTHERS 103
74. LABOR ACTIONS 103
75. CONTRACTOR'S MEETINGS 103
76. CONTRACT DRAWINGS 104
77. SHOP DRAWINGS, CATALOG CUTS AND SAMPLES 105

78. SUBSTITUTION 108
79. WORKMANSHIP AND MATERIALS 110
80. INSPECTIONS AND REJECTIONS 112
81. MANUFACTURERS' CERTIFICATION 114
82. NO RELEASE OF CONTRACTOR 114
83. ERRORS AND DISCREPANCIES 114
84. DIFFERING SUBSURFACE CONDITIONS 114
85. ACCIDENTS AND FIRST AID PROVISIONS 115
86. SAFETY PROVISIONS 115
87. RECYCLING OF CONSTRUCTION DEBRIS MATERIAL 117
88. DIESEL-POWERED EQUIPMENT 118
89. DAILY PROGRESS, EQUIPMENT AND LABOR REPORTS 122
90. LAWS AND ORDINANCES 123
91. U.S. COAST GUARD SECURITY REQUIREMENTS 123
92. IDENTIFICATION 124
93. SIGNS 124
94. CONTRACTOR'S FIELD OFFICE AND REPRESENTATIVE 124
95. SURVEYS 124
96. TEMPORARY STRUCTURES 125
97. PERMIT AND REQUIREMENTS FOR WELDING 125
98. FINAL INSPECTION 126
99. WARRANTIES 126
100. TEMPORARY UTILITY SERVICES 126
101. TEMPORARY SANITARY FACILITIES 126
102. PROGRESS SCHEDULE 126
103. CONDITIONS AND PRECAUTIONS 139
104. HOURS OF WORK 140

SECTION	TITLE
	DIVISION 2 - SITEWORK
02361	TIMBER PILES
02490	FENDERS SYSTEMS
	DIVISION 3 - CONCRETE
03100	CONCRETE FORMWORK

SECTION	TITLE
03200	CONCRETE REINFORCEMENT
03301	PORTLAND CEMENT CONCRETE, LONG FORM
03364	PLACEMENT OF PORTLAND CEMENT CONCRETE UNDERWATER
03602	GROUTING (NON-METALLIC)

Permits

Schedule of Minimum Wage Rates (FED NJ)

Schedule of Minimum Wage Rates (FED NY)

Notification of M/WBE On-line Directory and Forms

Schedule A

Schedule B

Schedule C

Schedule D

ADVERTISEMENT

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

Sealed proposals for the following contract will be received by The Port Authority of New York and New Jersey in the office of the Director of Procurement, Attn: Bid Custodian, One Madison Avenue, 7th Floor, New York, NY 10010, until 2:30 P.M. on the date indicated where the proposals will then be publicly opened and read in the Bid Room.

Contract documents may be seen at the Contract Desk on the 3rd Floor, 3 Gateway Center, Newark, NJ and may be obtained upon receipt of a non-refundable payment of $100.00 per set. Only company checks or money orders payable to the order of The Port Authority of New York and New Jersey will be accepted. If checks or money orders for documents are mailed, they should be addressed to The Port Authority of New York and New Jersey, Contract Desk, 3rd Floor, 3 Gateway Center, Newark, NJ 07102. For availability of contract documents, go to http://www.panynj.gov/business-opportunities/bid-proposal-advertisements.html Questions by prospective bidders concerning the contract should be directed only to the person whose name and phone number is listed.

A VALID PHOTO ID IS REQUIRED TO GAIN ACCESS INTO EITHER BUILDING.

Contract MFP-654.141 - New York and New Jersey Marine Terminals - Multi-Facility Fender System Rehabilitation Via Work Order. Estimate Range: $1M - $5M. Bids Due Thursday, September 23, 2010. The work under this contract consists generally of removal, replacement, and disposal of damaged timber fender pile system at Brooklyn Port Authority Marine Terminal, Red Hook Container Terminal, Port Newark, Elizabeth-Port Authority Marine Terminal and New Jersey Automarine Terminal. For questions, call Jessamma Vatakencherry at (212)435-3953 or email - jvataken@panynj.gov.

New York, MONDAY, August 30, 2010

INFORMATION FOR BIDDERS

1. FORM AND SUBMISSION OF PROPOSALS

The Port Authority of New York and New Jersey, hereinafter called "the Authority", invites Proposals in the annexed form. Proposals will be received until 2:30 P.M. on Thursday, September 30, 2010 in the office of the Director of Procurement, Attn: Bid Custodian, One Madison Avenue, 7th Floor, New York, NY 10010 at which time they will be opened and publicly read in the Bid Room. Each Proposal must be contained in the envelope furnished by the Authority, which shall be sealed and conspicuously endorsed with the bidder's name and the number of this Contract in the space provided. This Contract booklet shall not be unstapled or taken apart.

The Proposal must be submitted upon the blank form bound herewith and must give all information required. [1] The Proposal must be signed and the acknowledgment taken on the appropriate form following the Proposal.

No effort is made to emphasize any particular provision of the Contract, but bidders must familiarize themselves with every provision and its effect.

2. PAPERS ACCOMPANYING PROPOSALS

Each Proposal must be accompanied by the following papers, which, unless otherwise indicated, should be enclosed with the Proposal:

A. If the bidder be a corporation, a statement of the names and residences of its officers, which should be included on the page following the Proposal.

If the bidder be a partnership, a statement of the names and residences of its members, indicating which are general and which are special partners, which should be included on the page following the Proposal.

If the bidder be an individual, a statement of his residence, which should be included on the page following the Proposal.

B. Either the Bid Bond bound herewith, duly executed by the bidder as principal and by one or more surety companies duly authorized to carry on the business of suretyship in the state(s) in which the construction site is located, whose names appear on the current list of the Treasury Department of the United States as acceptable as sureties upon federal contracts; or, in lieu of a Bid Bond.

A certified check, payable to the order of The Port Authority of New York and New Jersey, in the same amount appearing in the Bid Bond form, which check shall be placed in an envelope marked "Bid Security" and enclosed with the Proposal.

---

[1] While two or more copies of this booklet may be furnished to each prospective bidder, only one should be submitted. The extra copies are for the bidders use.

C.

1.) Certified financial statements, including applicable notes, reflecting the bidder's assets, liabilities, net worth, revenues, expenses, profit or loss and cash flow for the most recent calendar year or the bidder's most recent fiscal year.

2.) Where such certified financial statements are not available, then either reviewed or compiled statements from an independent accountant setting forth the information described in Paragraph 1, above.

3.) Where neither certified financial statements nor financial statements from an independent accountant are available, then financial statements containing the information described in Paragraph 1, above, prepared directly by the bidder. However, such financial statements must be accompanied by a signed copy of the bidder's most recent Federal income tax return and a statement in writing, signed by a duly authorized representative of the bidder, that such statements accurately reflect the current financial condition of the bidder.

Where statements submitted pursuant to either Paragraph 1 or 2, above, show the position of the bidder as of a date more than forty-five (45) days prior to the date on which Proposals are opened, the bidder shall also submit a statement in writing signed by a duly authorized representative of the bidder, that the present financial condition of the bidder is at least as good as that shown on the statements submitted.

4.) A statement of work which the bidder has on hand, including any work on which a bid has been submitted, containing a description of the work, the dollar value, the location by city and state, the current percentage of completion and the expected date for completion.

5.) Fill in below the name and address of the bidder's chief banking representative handling the bidder's account.

Banking Institution:	Bank of America
Address:	265 Montauk Hwy
	Islip, NY 11751
Bank Representative:	Cheryl DiGangi
Telephone Number:	631-581-4901

6.) Fill in below the bidder's Federal Employer Identification Number (i.e., the number assigned to firms by the Federal Government for tax purposes); the bidder's Dun and Bradstreet number, if any; the name of any other credit service to which the bidder has furnished information and the number, if any, assigned by such service to the bidder's account.

(Ex. 1)

Federal Employer Identification No.

62-361-1071

Dun and Bradstreet No.

Other Credit Service

Account No.

E. The Form of Contract bound herewith, with the bidder's unit prices inserted in the clause thereof entitled "Unit Prices". The unit prices must be given both in figures and in writing and, in case of discrepancy, the writing shall control. The unit prices must be extended and totaled. One copy of each addendum, if any, issued during the bidding period shall be initialled and attached to the Proposal, but any Proposal submitted without such addendum initialled and attached will nevertheless be construed as though such addendum had been initialled and attached.

3. QUALIFICATION INFORMATION

At any time after the opening of Proposals, the Chief Engineer may give oral or written notice to one or more bidders to attend a pre-award meeting and to furnish the Authority with information relating to his qualifications to perform the Work, including the following, which information shall be furnished within seven (7) days thereafter:

A. The bidders MBE/WBE Participation Plan submitted on the form annexed hereto as Schedule C (see the clause hereof entitled "Minority and Women's Business Enterprises Program") and a detailed list of the plant and equipment which the bidder proposes to use, indicating which portions it already possesses.

B. Detailed information relating to work which the bidder has completed for others, including personal and corporate references, sufficient to the Authority to determine the Contractor's responsibility, experience and capacity to perform the Work. If required by the Chief Engineer, the foregoing information shall include information to demonstrate to the satisfaction of the Chief Engineer that the Contractor has within the past five years been a contractor on at least one contract of the same general type, extent and complexity as the Contract on which the Proposal has been submitted, and completed the work skillfully, in a satisfactory manner and on time.

C. Information to supplement a) data shown in the financial statements and the statement of work on hand required to be submitted with the Proposal; and b) any statement submitted under the clause hereof entitled "Certification of No Investigation (Criminal or Civil Anti-Trust), Indictment, Conviction, Suspension, Debarment, Disqualification, Prequalification Denial or Termination, etc, Disclosure of Other Required Information", or "Non-Collusive Bidding and Code of Ethics Certification; Certification of No Solicitation Based on Commission, Percentage, Brokerage, Contingent Fee or Other Fee".

D. Moreover, in the event that the bidder's performance on a past Port Authority or PATH contract or contracts has been rated less than satisfactory, the Chief Engineer may give oral or written notice to the bidder to furnish information demonstrating to the satisfaction of the Chief Engineer that, notwithstanding such rating, such performance was, in fact, satisfactory, or that the circumstances which gave rise to such unsatisfactory rating have changed or will not apply to performance of the Contract, and that such performance will be satisfactory.

E. If the bidder has performed a contract for the States of New York or New Jersey, or any governmental entity within such States and has filed a questionnaire or other document required to be submitted in order for the bidder to qualify to perform the contract, the bidder may be requested by the Chief Engineer to submit the most recent completed questionnaire or other such document, or if the most recent completed questionnaire or other such document is not available, to submit a written statement indicating the approximate date of the contract and the name of the governmental entity which awarded them the contract.

F. Any additional information relevant to the bidder's Proposal.

G. Detailed information in writing setting forth the affirmative action which the bidder proposes to take to ensure equal employment opportunities as required by clause A of the clause of the Form of Contract entitled "No Discrimination in Employment". This action which for the purpose of convenience is referred to as an "Affirmative Action Program", shall be in addition to the action required under clauses B through G thereof. Solely for the information of the bidder and without in any way limiting or defining the affirmative action program to be proposed by the bidder, there are available for inspection in the office of the General Manager, Business and Job Opportunity, Office of Regional and Economic Development of the Port Authority of New York and New Jersey, copies of sample affirmative action programs.

In the event that any of the foregoing is requested and is not furnished within seven days thereafter or within such additional time as the Chief Engineer, in his sole discretion, may allow, the Authority may not be in a position to determine whether the bidder is qualified, whether the bidder understands the requirements of the contract or whether the bid is responsive and may, in its sole discretion, reject the bidder's Proposal.

The giving of such notice to the bidder in connection with any of the foregoing lists, statement or information shall not be construed as an acceptance of his Proposal. However, the Authority reserves the right in its sole and absolute discretion, to accept the Proposal of a bidder despite the fact that said bidder has not submitted any information, list or statement required pursuant to this Section within the above-stated time period.

4. ACCEPTANCE OR REJECTION OF PROPOSAL

Within ninety (90) days after the opening of the Proposals, the Authority will accept one of the Proposals, if it accepts any. The acceptance of a Proposal will be only by mailing to or delivering at the office designated in the Proposal a notice in writing specifically indicating acceptance signed by an authorized representative on behalf of the Authority who is at present the Authority's Director of Procurement. No other act of the Authority, its Commissioners, officers, agents, or employees shall constitute acceptance of a Proposal. Such notice will state whether or not the Authority elects to require the bidder to furnish a Performance and Payment Bond. Rejection of a Proposal will be only by either (a) a notice in writing specifically stating that the Proposal is rejected, signed by an authorized representative on behalf of the Authority who is at present the Authority's Director of Procurement and mailed to or delivered at the office designated in the Proposal or (b) omission of the Authority to accept a Proposal within ninety (90) days after the opening of Proposals; and no other act of the Authority, its Commissioners, officers, agents or employees shall constitute rejection of a Proposal, including any counter offer or other act of the Authority, its Commissioners, officers, agents or employees.

The Authority reserves the unqualified right, in its sole and absolute discretion, to reject all Proposals or to accept that Proposal if any, which in its judgment will under all the circumstances best serve the public interest and to waive defects in any Proposal.

In the event that a successful bidder defaults upon the Contract by failing to furnish a satisfactory Performance and Payment Bond, if required, and the Authority terminates the Contract, the Authority reserves the option to accept the Proposal of any other bidder within ninety (90) days after the opening of Proposals, in which case such acceptance shall have the same effect as to such other bidder as though he were the originally successful bidder.

5. RETURN OF CERTIFIED CHECKS

Within ten (10) days after the opening of the Proposals the Authority will return all certified checks deposited by bidders, except those deposited by three bidders to be selected by the Authority, which will be returned within three days after one Proposal is accepted by the Authority; or if a Performance and Payment Bond is required, within three days after a satisfactory Performance and Payment Bond is furnished to the Authority; or if all Proposals are rejected, not later than three days after such rejection. The return of a bidder's check shall not, however, be deemed to be a rejection of his Proposal.

6. WEBSITE POSTINGS OF CONTRACT DOCUMENTS

Recipients of Contract Documents marked Confidential (Privileged) may not post them or any of them to a website except in accordance with the Authority's prior written approval, which may require a written non-disclosure agreement.

Recipients of Contract Documents not marked Confidential (Privileged) may not post them or any of them to a website unless the website (1) is non-public, (2) is password protected and (3) is accessible only to the recipient's prospective subcontractors and suppliers. Recipient's prospective subcontractors and suppliers shall also be deemed recipients and shall be required to conform to the terms of this numbered clause. Recipients shall be deemed to include both bidders and those who do not submit bids.

No later than 180 days after the date of receipt of Proposals, all recipients shall remove all Contract Documents from their websites.

7. DISPOSAL OF CONTRACT DOCUMENTS

All recipients of Contract documents, including bidders and those who do not bid and their prospective subcontractors and suppliers who may receive all or a part of the Contract documents or copies thereof, shall make every effort to ensure the secure and appropriate disposal of the Contract documents to prevent further disclosure of the information contained in the documents. Secure and appropriate disposal includes methods of document destruction such as shredding or arrangements with refuse handlers that ensure that third persons will not have access to the documents' contents either before, during, or after disposal. Documents may also be returned for disposal purposes to the Contract Desk on the 3rd Floor, 3 Gateway Center, Newark NJ 07102 or the office of the Director of Procurement, One Madison Avenue, 7th Floor, New York NY 10010.

8. MINORITY AND WOMEN'S BUSINESS ENTERPRISES PROGRAM (MBE/WBE)

The Authority has a long-standing practice of making its contract opportunities available to as many firms as possible and has taken affirmative steps to encourage Minority Business Enterprises (MBEs) and Women's Business Enterprises (WBEs) to seek business opportunities with it.

"Minority-owned business" or "MBE" means a business entity which is at least 51 percent owned by one or more members of one or more minority groups, or, in the case of a publicly held corporation, at least 51 percent of the stock of which is owned by one or more members of one or more minority groups, and whose management and daily business operations are controlled by one or more such individuals who are citizens or permanent resident aliens.

"Women-owned business" or "WBE" means a business which is at least 51 percent owned by one or more women, or, in the case of a publicly held corporation, 51 percent of the stock of which is owned by one or more women, and whose management and daily business operations are controlled by one or more women who are citizens or permanent resident aliens.

"Minority group" means any of the following racial or ethnic groups:

A. Black persons having origins in any of the black African racial groups not of Hispanic origin;

B. Hispanic persons of Puerto Rican, Mexican, Dominican, Cuban, Central, or South American culture or origin, regardless of race;

C. Asian and Pacific Islander persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent or the Pacific Islands;

D. Native American or Alaskan native persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification.

In the event that the Contractor subcontracts any portion of the Work, the Contractor shall use and document every good faith effort to ensure MBE and WBE participation in the Work. Such good faith efforts shall include at least the following:

A. Attendance at pre-bid meetings, if any, scheduled by the Authority;

B. Utilization of the Authority's Directory of certified MBE/WBEs available on-line (see Notification of M/WBE On-line Directory and Forms in back of Contract booklet) and/or proposing for certification other MBE/WBEs which appear to meet the Authority's criteria for MBE/WBE certification and which are technically competent to perform the Work which the bidder plans to subcontract;

C. Active and affirmative solicitation of bids for subcontracts from MBE/WBEs;

D. Advertisement in general circulation media, trade association publications and minority-focused media for a reasonable period before bids or proposals are due;

E. Dividing the work to be subcontracted into smaller portions or encouraging the formation of joint ventures, partnerships or similar arrangements among subcontractors;

F. Providing a sufficient supply of drawings and specifications of prospective work to MBE/WBEs and providing appropriate materials to each in sufficient time to review; and

G. Utilizing the services of available minority and women's community organizations; contractor's groups; local, State and Federal business assistance/development offices and other organizations that provide assistance to MBE/WBEs.

Subsequent to acceptance by the Authority of the Contractor's Proposal, the Contractor shall use and document every good faith effort to comply with these requirements and to permit its MBE/WBE subcontractors to perform. Such good faith efforts shall include at least the following:

A. Ensuring that progress payments are made in a timely fashion in accordance with the requirements of this Contract;

B. Not requiring bonds from and/or providing bonds and insurance for subcontractors where appropriate;

C. Soliciting specific recommendations on methods for enhancing MBE/WBE participation from Authority staff responsible for such participation; and

D. Nominating subcontractors for participation in business assistance programs sponsored by the Authority or the Regional Alliance of Small Contractors such as the Loaned Executive Assistance Program (L.E.A.P.).

Subsequent to acceptance by the Authority of the Contractor's Proposal, the Contractor shall also provide the Engineer, at his request, with a trade breakdown schedule showing when the Contractor's MBE/WBE subcontractors are scheduled to perform. The Contractor shall also submit to the Engineer, on a monthly basis, the Statement of Subcontractor's Payments annexed hereto as Schedule D.

Following approval by the Engineer under the clause entitled "Assignments and Subcontracts" of one or more subcontractors who are either MBEs or WBEs and listed in the MBE/WBE Directory or determined to be "eligible" by the Chief Engineer in accordance with this numbered clause, the Authority may, at its sole option, provide to said approved M/WBEs, without charge, whatever appropriate consultant services may be available under the L.E.A.P. Program; provided, however, that such consultant services will only be furnished pursuant to a request in writing from the Director, Office of Business & Job Opportunity of the Port Authority of New York and New Jersey, 233 Park Avenue South - 4th Floor, New York, NY 10003.

Such services will be discontinued following a written request from the Contractor to the Director, Office of Business & Job Opportunity of the Port Authority of New York and New Jersey, to discontinue them.

The L.E.A.P. services include advising on scheduling, purchasing, planning and other aspects of construction to firms to mitigate business or management problems which could negatively impact on their performance. These services do not include engineering or legal advice. The determination as to whether or not to follow the advice given lies solely with the M/WBE subcontractor. Prior to being accepted as a participant in the L.E.A.P. Program, the M/WBE subcontractor will be required to release the Authority and the individuals furnishing consultant advice of all liability and responsibility in connection therewith.

The Authority has compiled and made available on-line an MBE/WBE Directory which specifies the firms the Authority has determined to be (1) MBEs/WBEs and (2) experienced in performing work in the trades and contract dollar ranges indicated in the Directory. The Authority makes no representation as to the financial responsibility of such firms or their ability to perform Work required under this Contract. Subject to the following paragraph, only MBEs/WBEs listed in the Directory will count toward the MBE/WBE participation.

If the Contractor wishes to perform a portion of the Work through a firm not listed in the Directory [2] but which the Contractor believes should be eligible because it is (1) an MBE/WBE, as defined above and (2) technically competent to perform portions of the Work or the Contractor believes it is such a firm, the Contractor shall submit to the Director, Office of Business & Job Opportunity of the Port Authority of New York and New Jersey, a written request for a determination that the proposed firm is eligible. This shall be done by completing and forwarding a) the form labeled "Schedule A" and, if appropriate, "Schedule B" which are annexed hereto and form a part hereof and b) technical references of jobs completed of similar scope and complexity on the form annexed hereto and made a part hereof labeled "MBE/WBE Approval Request" and such other information as may be necessary to permit the Authority to determine whether the firm is in fact an MBE/WBE and technically competent to perform portions of the Work.

---

2 The following organizations may be able to refer the Contractor to MBEs/WBEs who are technically competent to perform portions of the Work. Any referrals which are not listed in the Directory shall be submitted to the Authority for a determination as to eligibility as provided above.

1. Queens Air Services Development Office
JFK International Airport
Building #141
Federal Circle, First Floor
Jamaica, NY 11430
(718) 244-6852
Fax (718) 244-7371
www.asdoonline.com

2. Chinatown Manpower Project, Inc.
70 Mulberry Street
New York, NY 10031
(212) 571-1690
www.cmpny.org

3. Association of Minority Enterprises of NY, Inc.
135-20 Liberty Avenue
Richmond Hill, NY 11419
(718) 291-1641
Fax (718) 291-1641
www.ameny.org

4. Statewide Hispanic Chamber of Commerce of New Jersey
150 Warren Street, Suite 110
Jersey City, NJ 07302
(201) 451-9512
Fax (201) 451-9547
www.shccnj.org

5. Greater Newark Business Development Consortium
744 Broad Street, 26th Floor
Newark, NJ 07102
(973) 242-5563
www.gnbdc.org

6. Jamaica Business Resource Center
90-33 160th Street
Jamaica, NY 11432
(718) 206-2255
Fax (718) 206-3693
www.jbrc.org

7. Council for Airport Opportunity
Newark Liberty International Airport
Building 80
Newark, NJ 07014
(973) 961-4382
www.caonj.com

8. National Hispanic Business Group
1230 Avenue of the Americas,
7th Floor
New York, NY 10020
(212) 265-2664
www.nhbg.org

9. Greater Jamaica Development Corp.
90-04 161st Street

Jamaica, NY 11432

(718) 291-0282

Fax (718) 291-7918

www.gjdc.org

10. NYS Assn. Of Minority Contractors
Brooklyn Navy Yard

Building 280, 4th Floor, Suite 414
Brooklyn, NY 11205

(212) 246-8380

Fax (718) 246-8376

www.nysamc.org

11. Professional Women in Construction
315 E. 56th Street, Suite 202

New York, NY 10022

(212) 486-7745

Fax (212) 486-0228

www.pwcusa.org

12. NY/NJ Minority Purchasing Council

330 Seventh Avenue, 8th Floor

New York, NY 10001

(212) 502-5663

www.nynjmsdc.org

13. National Minority Business Council

120 Broadway, 19th Floor

New York, NY 10271

(212) 693-5050

www.nmbc.org

14. Queens Overall Economic Development Office

120-55 Queens Boulevard, Suite 309 Kew Gardens, NY 11424

(718) 263-0546

Fax (718) 263-0594

www.queensny.org

15. York College Small Business Development Center

94-50 159th Street

York College,

Room S 107

Jamaica, NY 11451

(718) 262-2880

Fax (718) 262-2881

www.nyssbdc.org

16. Small Business Development Center - Rutgers University, University Heights

43 Bleeker Street

Newark, NJ 07102

(973) 353-1927

Fax (973) 353-1110

www.msbdc.newark.rutgers.edu

17. New Jersey Association of Women Business Owners (NJAWBO)
186 Princeton Hightstown Road
West Windsor, NJ 08550
(609) 799-5101
www.njawbo.org

18. New Jersey Air Services Development Office
Newark Liberty International Airport Building #80 - Second Floor
Newark, NJ 07114
(973) 961-4278
Fax (973) 961-4282
www.asdonline.com

19. Caribbean-American Chamber of Commerce
Brooklyn Navy Yard
63 Flushing Avenue
Brooklyn, NY 11205
(718) 834-4544
Fax (718) 834-9774
www.caribbeantradecenter.com

20. Northeast Region – Small Business Resource Transportation Center
29-10 Thomson Avenue
Long Island City, NY 11101
(718) 482-5941
www.osdbu.dot.gov/regional/northeast.cfm

21. Asian Women in Business
42 Broadway, Suite 1748
New York, NY 10004
(212) 868-1368
Fax (212) 868-1373
www.awib.org

22. Asian American Business Development Center
80 Wall Street, Suite 418
New York, NY 10005
(212) 966-0100
Fax (212) 966-2786
www.aabdc.com

23. New York State Federation of Hispanic Chambers of Commerce
2710 Broadway
New York, NY 10025
(212) 222-8300
Fax (212) 222-8412
www.nysfhcc.com

24. Orange County Chamber of Commerce
30 Scott Corners Drive
Montgomery, NY 12549
(845) 457-9700 Ext. 1101
www.orangeny.com

25. Regional Alliance For Small Contractors
625 Eighth Avenue, 2nd Floor,
North Wing
New York, NY 10018
(212) 268-2991
www.regional-alliance.org

26 Women Builders Council
500 Hampton Avenue
Brooklyn, NY 11235
(212) 367-2130
www.wbcnyc.org

All such requests shall be in writing addressed to the Chief Engineer. If any such firm is determined to be eligible it shall only be by a writing over the name of the Chief Engineer. In the event that such firm is found not to be eligible, the Chief Engineer will only consider as a substitute for such firm, a firm listed in the Authority's MBE/WBE Directory available on-line.

The Contractor shall submit the names of proposed MBEs/WBEs for work on this Contract if their names do not appear in the Authority's MBE/WBE Directory available on-line in accordance with the requirements of this clause and all other requirements of this Contract. MBEs/WBEs proposed as lessors of equipment or materialmen shall be deemed "subcontractors" for the purpose of this numbered clause and the clause hereof entitled "Assignments and Subcontracts" but shall not be deemed subcontractors for any other purpose.

The Contractor shall ensure that all approved MBE/WBE subcontractors maintain a regular on site presence at the construction site for the portions of the Work they are subcontracted to perform and that they exercise financial and operation management and control of such portions of the Work.

Nothing herein shall be deemed to supersede or to otherwise modify the clause of the Form of Contract entitled "Assignments and Subcontracts".

9. INSPECTION OF SITE

Each bidder or his authorized representative must make proper arrangements with the Resident Engineer at the construction site before inspecting the construction site. To make such arrangements call Ronald Shaw, at (973) 589-7323.

10. QUESTIONS BY BIDDERS

Questions by prospective bidders concerning the Contract may be addressed to Jessamma Vatakencherry, at (212) 435-3953 or email at jvataken@panynj.gov, who however is authorized only to direct the attention of prospective bidders to various portions of the Contract so that they may read and interpret such portions for themselves. Neither Jessamma Vatakencherry nor any other employee or representative of the Authority is authorized to give interpretations of any portion of the Contract or to give information as to the requirements of the Contract in addition to that contained in the Contract. Interpretations of the Contract or additional information as to its requirements, where necessary, shall be communicated to bidders only by written addendum issued over the name of the Chief Engineer, which addendum shall be considered part of this Contract. Accordingly, nothing contained herein and no representation, statement or promise, oral or in writing, of the Authority, its Commissioners, officers, agents, representatives or employees shall impair or limit the effect of the warranties of the Contractor contained in the clause of the Form of Contract entitled "Contractor's Warranties" or elsewhere in this Contract. The provisions of this clause shall apply to questions addressed by prospective bidders both before and after their receipt of Contract Documents.

11. PORT AUTHORITY SECURITY REQUIREMENTS

The Port Authority of New York and New Jersey operates facilities and systems at which terrorism or other criminal acts may have a significant impact on life safety and key infrastructures. The Authority reserves the right to impose multiple layers of security requirements on the performance of the Contract Work, including on the Contractor, its staff and subcontractors and their staffs depending upon the level of security required, as determined by the Authority. The Contractor shall, and shall instruct its subcontractors, to cooperate with Authority staff in adopting security requirements. These security requirements may include, but are not limited to, the following.

A. Identity Checks and Background Screening:

Contractor/subcontractor identity checks and background screening shall include but shall not be limited to: (1) inspection of not less than two forms of valid and current government issued identification (at least one having an official photograph) to verify staff's name and residence; (2) screening federal, state and local criminal justice agency information databases and files; (3) screening of any terrorist identification files; (4) multi-year check of personal, employment and/or credit history; (5) access identification to include some form of biometric security methodology such as fingerprint, facial or iris scanning.

The Contractor may be required to have its staff, and any subcontractor's staff, authorize the Authority or its designee to perform background checks. Such authorization shall be in a form acceptable to the Authority. If the Engineer directs the Contractor to have identity checks and background screening performed by a particular firm designated by the Engineer, the Authority will compensate the Contractor for the cost of such screening at the Net Cost of such screening. "Net Cost" shall be computed in the same manner as is compensation for extra work, including any percentage addition to cost, as set forth in the clause of the Contract providing compensation for extra work. Performance of such Net Cost work shall be as directed by the Engineer and shall be subject to all provisions of the Contract relating to performance of extra work. Compensation for said Net Cost work shall not be charged against the total amount of compensation authorized for extra work.

Issuance of Photo Identification Badges:

No person will be permitted on or about the construction site without a photo identification badge approved by the Engineer. The Contractor shall provide such badges for employees, subcontractors and materialmen. All employees of the Contractor, subcontractors and materialmen shall wear identification badges in a conspicuous and clearly visible position whenever they are working at the construction site.

If the Authority requires facility-specific identification badges for the Contractor's and subcontractors' staffs, the Authority will supply such identification badges at no cost to the Contractor.

B. Construction Site Access Control:

1.) The Authority may provide for construction site access control, inspection and monitoring by Authority retained security guards. However, this provision shall not relieve the Contractor of its responsibility to secure its equipment and work at the construction site at its own expense.

2.) At the beginning of each work period the Contractor shall furnish to the security guards, if any, or to the Engineer a memorandum showing for that work period:

a. The name and company affiliation of each employee of the Contractor or of a subcontractor who is expected to enter the site and,

b. The name of any firm anticipated to be delivering materials or servicing equipment that day and a description of such materials or services.

The Authority may impose, increase, and/or upgrade security requirements for the Contractor, subcontractors and their staffs during the term of this contract to address changing security conditions and/or new governmental regulations.

12. PREVAILING RATE OF WAGE CERTIFICATION

The bidders' attention is directed specifically to the clause of the Form of Contract entitled "Prevailing Rate of Wage" and to the fact that the Authority requires a certification in writing from the successful bidder, in such form as may be required pursuant to such clause, that he has paid and caused his subcontractors to pay at least the prevailing rate of wage and supplements required by such clause. This certification is required prior to his receipt of any payment from the Authority hereunder as provided in the clauses of the Form of Contract entitled "Monthly Advances" and "Final Payment" or at any other time.

13. CERTIFICATION OF NO INVESTIGATION (CRIMINAL OR CIVIL ANTI-TRUST), INDICTMENT, CONVICTION, SUSPENSION, DEBARMENT, DISQUALIFICATION, PREQUALIFICATION DENIAL OR TERMINATION, ETC; DISCLOSURE OF OTHER REQUIRED INFORMATION

By bidding on this Contract, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, that the bidder and each parent and/or affiliate of the bidder has not (a) been indicted or convicted in any jurisdiction; (b) been suspended, debarred, found not responsible or otherwise disqualified from entering into contracts with any governmental agency or been denied a government contract for failure to meet prequalification standards; (c) had a contract terminated by any governmental agency for breach of contract or for any cause related directly or indirectly to an indictment or conviction; (d) changed its name and/or Employer Identification Number (taxpayer identification number) following its having been indicted, convicted, suspended, debarred or otherwise disqualified, or had a contract terminated as more fully provided in (a), (b) and (c) above; (e) ever used a name, trade name or abbreviated name, or an Employer Identification Number different from those inserted in the Proposal; (f) been denied a contract by any governmental agency for failure to provide the required security, including bid, payment or performance bonds or any alternative security deemed acceptable by the agency letting the contract; (g) failed to file any required tax returns or failed to pay any applicable federal, state or local taxes; (h) had a lien imposed upon its property based on taxes owed and fines and penalties assessed by any agency of the federal, state or local government; (i) been, and is not currently, the subject of a criminal investigation by any federal, state or local prosecuting or investigative agency and/or a civil anti-trust investigation by any federal, state or local prosecuting or investigative agency, including an inspector general of a governmental agency or public authority; (j) had any sanctions imposed as a result of a judicial or administrative proceeding with respect to any professional license held or with respect to any violation of a federal, state or local environmental law, rule or regulation; and (k) shared space, staff, or equipment with any business entity.

The foregoing certification as to "(a)" through "(k)" shall be deemed to have been made by the bidder as follows: if the bidder is a corporation, such certification shall be deemed to have been made not only with respect to the bidder itself, but also with respect to each director and officer, as well as, to the best of the certifier's knowledge and belief, each stockholder with an ownership interest in excess of 10%; if the bidder is a partnership, such certification shall be deemed to have been made not only with respect to the bidder itself, but also with respect to each partner. Moreover, the foregoing certification, if made by a corporate bidder, shall be deemed to have been authorized by the Board of Directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of such certification as the act and deed of the corporation.

In any case where the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the signed bid a signed statement which sets forth in detail the reasons therefor. If the bidder is uncertain as to whether it can make the foregoing certification, it shall so indicate in a signed statement furnished with its bid, setting forth an explanation for its uncertainty.

Notwithstanding that the certification may be an accurate representation of the bidder's status with respect to the enumerated circumstances provided for in this clause as requiring disclosure at the time that the bid is submitted, the bidder agrees to immediately notify the Authority in writing of any change in circumstances during the period of irrevocability, or any extension thereof.

The foregoing certification or signed statement shall be deemed to have been made by the bidder with full knowledge that it would become a part of the records of the Authority and that the Authority will rely on its truth and accuracy in awarding this Contract. In the event that the Authority determines at any time prior or subsequent to the award of the Contract that the bidder has falsely certified as to any material item in the foregoing certification; willfully or fraudulently submitted any signed statement pursuant to this clause which is false in any material respect; or has not completely and accurately represented its status with respect to the circumstances provided for in this clause as requiring disclosure, the Authority may determine that the bidder is not a responsible bidder with respect to its bid on this Contract or with respect to future bids and may, in addition to exercising any other rights or remedies available to it, exercise any of the rights or remedies set forth in the clause of the Form of Contract entitled "Rights and Remedies of Authority". In addition, bidders are advised that knowingly providing a false certification or statement pursuant hereto may be the basis for prosecution for offering a false instrument for filing (see e.g., New York Penal Law, Section 175.30 et seq.). Bidders are also advised that the inability to make such certification will not in and of itself disqualify a bidder, and that in each instance the Authority will evaluate the reasons therefor provided by the bidder.

Under certain circumstances the bidder may be required as a condition of this contract award to enter into a Monitoring Agreement under which it will be required to take certain specified actions, including compensating an independent Monitor to be selected by the Port Authority. Said Monitor shall be charged with, among other things, auditing the actions of the bidder to determine whether its business practices and relationships indicate a level of integrity sufficient to permit it to continue business with the Port Authority.

As used in this clause, the following terms shall mean:

Affiliate - An entity in which the parent of the bidder owns more than fifty percent of the voting stock, or an entity in which a group of principal owners which owns more than fifty percent of the bidder also owns more than fifty percent of the voting stock.

Agency or Governmental Agency - Any federal, state, city or other local agency, including departments, offices, quasi-public agencies, public authorities and corporations, boards of education and higher education, public development corporations, local development corporations and others.

Employer Identification Number - The tax identification number assigned to firms by the Federal government for tax purposes.

Investigation - Any inquiries made by any federal, state or local criminal prosecuting or investigative agency, including an inspector general of a governmental agency or public authority, and any inquiries concerning civil anti-trust investigations made by any federal, state or local governmental agency. Except for inquiries concerning civil anti-trust investigations, the term does not include inquiries made by any civil government agency concerning compliance with any regulation, the nature of which does not carry criminal penalties, nor does it include any background investigations for employment, or Federal, state, and local inquiries into tax returns.

Officer - Any individual who serves as chief executive officer, chief financial officer, or chief operating officer of the bidder by whatever titles known.

Parent - An individual, partnership, joint venture or corporation which owns more than 50% of the voting stock of the bidder.

Space Sharing - Space shall be considered to be shared when any part of the floor space utilized by the submitting business at any of its sites is also utilized on a regular or intermittent basis for any purpose by any other business or not-for-profit organization, and where there is no lease or sublease in effect between the submitting business and any other business or not-for-profit organization that is sharing space with the submitting business.

Staff Sharing - Staff shall be considered to be shared when any individual provides the services of an employee, whether paid or unpaid, to the bidder and also, on either a regular or irregular basis, provides the services of an employee, paid or unpaid, to one or more other business(es) and/or not-for-profit organization(s), if such services are provided during any part of the same hours the individual is providing services to the bidder or if such services are provided on an alternating or interchangeable basis between the bidder and the other business(es) or not-for-profit organization(s). "The services of an employee" should be understood to include services of any type or level, including managerial or supervisory. This type of sharing may include, but is not limited to, individuals who provide the following services: telephone answering, receptionist, delivery, custodial, and driving.

Equipment Sharing - Equipment shall be considered to be shared whenever the bidder shares the ownership and/or the use of any equipment with any other business or not-for-profit organization. Such equipment may include, but is not limited to, telephones or telephone systems, photocopiers, computers, motor vehicles, and construction equipment. Equipment shall not be considered to be shared under the following two circumstances: when, although the equipment is owned by another business or not-for-profit organization, the bidder has entered into a formal lease for the use of the equipment and exercises exclusive use of the equipment; or when the bidder owns equipment that it has formally leased to another business or not-for-profit organization, and for the duration of such lease the bidder has relinquished all right to the use of such leased equipment.

14. NON-COLLUSIVE BIDDING AND CODE OF ETHICS CERTIFICATION; CERTIFICATION OF NO SOLICITATION BASED ON COMMISSION, PERCENTAGE, BROKERAGE, CONTINGENT FEE OR OTHER FEE

By bidding on this Contract, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, that: (a) the prices in its bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor; (b) the prices quoted in its bid have not been and will not be knowingly disclosed, directly or indirectly, by the bidder prior to the official opening of such bid to any other bidder or to any competitor; (c) no attempt has been made and none will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition; (d) this organization has not made any offers or agreements, or given or agreed to give anything of value (see definition of "anything of value" appearing in the clause of the Form of Contract entitled "No Gifts, Gratuities, Offers of Employment, etc.") or taken any other action with respect to any Authority employee or former employee or immediate family member of either which would constitute a breach of ethical standards under the Code of Ethics and Financial Disclosure dated as of April 11, 1996 (a copy of which is available upon request to the individual named in the clause hereof entitled "Questions by Bidders"), nor does this organization have any knowledge of any act on the part of an Authority employee or former Authority employee relating either directly or indirectly to this organization which constitutes a breach of the ethical standards set forth in said Code; (e) no person or selling agency, other than a bona fide employee or bona fide established commercial or selling agency maintained by the bidder for the purpose of securing business, has been employed or retained by the bidder to solicit or secure this Contract on the understanding that a commission, percentage, brokerage, contingent or other fee would be paid to such person or selling agency; (f) the bidder has not offered, promised or given, demanded or accepted, any undue advantage, directly or indirectly, to or from a public official or employee, political candidate, party or party official, or any private sector employee (including a person who directs or works for a private sector enterprise in any capacity), in order to obtain, retain, or direct business or to secure any other improper advantage in connection with this Contract.

The foregoing certification as to "(a)", "(b)", "(c)", "(d)", "(e)" and "(f)" shall be deemed to have been made by the bidder as follows: if the bidder is a corporation, such certification shall be deemed to have been made not only with respect to the bidder itself, but also with respect to each parent, affiliate, director and officer of the bidder, as well as, to the best of the certifier's knowledge and belief, each stockholder of the bidder with an ownership interest in excess of 10%; if the bidder is a partnership, such certification shall be deemed to have been made not only with respect to the bidder itself, but also with respect to each partner. Moreover, the foregoing certification, if made by a corporate bidder, shall be deemed to have been authorized by the Board of Directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of such certification as the act and deed of the corporation.

In any case where the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the signed bid a signed statement which sets forth in detail the reasons therefor. If the bidder is uncertain as to whether it can make the foregoing certification, it shall so indicate in a signed statement furnished with its bid, setting forth in such statement the reasons for its uncertainty. As a result of such disclosure, the Port Authority shall take appropriate action up to and including a finding of non-responsibility.

Failure to make the required disclosures shall lead to administrative actions up to and including a finding of non-responsibility.

Notwithstanding that the bidder may be able to make the foregoing certification at the time the bid is submitted, the bidder shall immediately notify the Authority in writing during the period of irrevocability of bids on this Contract or any extension of such period, of any change of circumstances which might under this clause make it unable to make the foregoing certification or required disclosure. The foregoing certification or signed statement shall be deemed to have been made by the bidder with full knowledge that it would become a part of the records of the Authority and that the Authority will rely on its truth and accuracy in awarding this Contract. In the event that the Authority should determine at any time prior or subsequent to the award of this Contract that the bidder has falsely certified as to any material item in the foregoing certification or has willfully or fraudulently furnished a signed statement which is false in any material respect, or has not fully and accurately represented any circumstance with respect to any item in the foregoing certification required to be disclosed, the Authority may determine that the bidder is not a responsible bidder with respect to its bid on this Contract or with respect to future bids on Authority contracts and may, in addition to exercising any other rights or remedies it may have, exercise any of the rights or remedies set forth in the clause of the Form of Contract entitled "Rights and Remedies of the Authority".

In addition, bidders are advised that knowingly providing a false certification or statement pursuant hereto may be the basis for prosecution for offering a false instrument for filing (see e.g., New York Penal Law, Section 175.30 et seq.). Bidders are also advised that the inability to make such certification will not in and of itself disqualify a bidder, and that in each instance the Authority will evaluate the reasons therefor provided by the bidder.

Under certain circumstances the bidder may be required as a condition of this contract award to enter into a Monitoring Agreement under which it will be required to take certain specified actions, including compensating an independent Monitor to be selected by the Port Authority. Said Monitor shall be charged with, among other things, auditing the actions of the bidder to determine whether its business practices and relationships indicate a level of integrity sufficient to permit it to continue business with the Port Authority.

15. BIDDER ELIGIBILITY FOR AWARD OF CONTRACTS - DETERMINATIONS BY AN AGENCY OF THE STATE OF NEW YORK OR NEW JERSEY CONCERNING ELIGIBILITY TO RECEIVE PUBLIC CONTRACTS

Bidders are advised that the Authority has adopted a policy to the effect that in awarding its contracts it will honor any determination by an agency of the State of New York or New Jersey that a bidder is not eligible to bid on or be awarded public contracts because the bidder has been determined to have engaged in illegal or dishonest conduct or to have violated prevailing rate of wage legislation.

The policy permits a bidder whose ineligibility has been so determined by an agency of the State of New York or New Jersey to submit a bid on a Port Authority contract and then to establish that it is eligible to be awarded the contract on which it has bid because (i) the state agency determination relied upon does not apply to the bidder, or (ii) the state agency determination relied upon was made without affording the bidder the notice and hearing to which the bidder was entitled by the requirements of due process of law, or (iii) the state agency determination was clearly erroneous or (iv) the state agency determination relied upon was not based on a finding of conduct demonstrating a lack of integrity or a violation of a prevailing rate of wage law.

The full text of the resolution adopting the policy may be found in the Minutes of the Authority's Board of Commissioners meeting of September 9, 1993.

PROPOSAL

To The Port Authority of New York and New Jersey:

The undersigned[3]

R.B. Conway + Sons Inc, a corporation organized
under the laws of the State of NY

(hereinafter called "the Contractor") hereby offers to perform all the obligations and to assume all the duties and liabilities of the Contractor provided for in the annexed Contract, at the prices inserted by the undersigned in the clause of the Form of Contract entitled "Unit Prices".

This offer shall be irrevocable for ninety (90) days after the date on which The Port Authority of New York and New Jersey opens this Proposal.

To induce the acceptance of this Proposal, the undersigned hereby makes each and every certification, statement, assurance, representation and warranty made by the Contractor in said Contract. Moreover as a condition to receipt and consideration by the Authority of the Proposal whether or not it is accepted, the undersigned agrees that all information of any nature whatsoever, regardless of the form of the communication, received from the undersigned (including its officers, agents, or employees) by the Authority, its Commissioners, officers, agents or employees, and notwithstanding any statement therein to the contrary, has not been given in confidence and may be used or disclosed by or on behalf of the Authority without liability of any kind except as may arise under letters patent of the undersigned, if any.

---

3 Insert bidder's name at the top of the page. After the bidder's name, insert one of the following phrases:

If a corporation, give state of incorporation, using the phrase, "a corporation organized under the laws of the State of ."

If a partnership, give full names of partners, using also the phrase, "co-partners doing business under the firm name of ."

If an individual using a trade name, give individual name, using also the phrase, "an individual doing business under the trade name of ."

If a joint venture, give the information required above for each participant in the joint venture.

Unless expressly stated otherwise, the Information for Bidders, all papers required by it and submitted in connection herewith at any time, said Form of Contract, and all papers made part of the Contract by the terms of the Form of Contract are made part of this Proposal.

The undersigned hereby designates the following as the bidders office[4]: 532 Broadhollow Rd
Suite 129
Melville, NY 11747

The telephone number of the bidder is: 631-586-0478

The fax number of the bidder is: 631-586-0480

The E-Mail address of the bidder is: Aconway@rbconway.com

[4] Insert office address.

SIGNATURE AND CERTIFICATE OF AUTHORITY[5]

Dated, 9/29, 2010

(Signature of individual or name of corporation or partnership) R.B. Conway + Sons Inc.

(Signature of agent, partner or corporate officer) By[6] [7]Alex Conway

(Acknowledgment of signature to be taken on proper form on following page(s))

CERTIFICATE OF AUTHORITY, IF BIDDER IS A CORPORATION

I, the undersigned, as Secretary of the corporation submitting the foregoing Proposal, hereby certify that under and pursuant to the by-laws and resolutions of said corporation, each officer who has signed said Proposal on behalf of the corporation is fully and completely authorized so to do.

(Corporate Seal) Alex Conway

---

5 If bidder is a joint venture, insert signatures as appropriate for one participant of the joint venture on this page and attach and complete an additional signature sheet in the same form as appears on this page for each other participant as required.

6 If Proposal is signed by an officer or agent, give title.

7 NOTE: The foregoing signature shall be deemed to have been provided with full knowledge that the foregoing Proposal, the accompanying Contract booklet, as well as any certification, statement, assurance, representation, warranty, schedule or other document submitted by the bidder with the Proposal will become a part of the records of the Authority and that the Authority will rely in awarding the Contract on the truth and accuracy of such Proposal and each such certification, statement, assurance, representation, warranty and schedule made therein by the Contractor. Knowingly submitting a false statement in connection with any of the foregoing may be the basis for prosecution for offering a false instrument for filing (see, e.g., N.Y. Penal Law, Section 175.30 et seq.).

ACKNOWLEDGMENT[8]

ACKNOWLEDGMENT OF BIDDER, IF A CORPORATION

State of New York _____

_____ SS:

County of Suffolk _____

On this _____ day of September, 2010, before me personally came and appeared Alex Conway _____, to me known, who, being by me duly sworn, did depose and say that he resides at _____ (Ex. 1) _____, that he is the President of R.B. Conway + Sons Inc _____, the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation; and that he signed his name thereto by like order.

(Notary Seal)

Medine Borluca
Notary Public, State of New York
01B0615778
Qualified in Nassau County
Commission Expires Aug 28, 2014

Medine Borluca _____

(Notary Signature)

ACKNOWLEDGMENT OF BIDDER, IF A PARTNERSHIP

State of _____

_____ SS:

County of _____

On this _____ day of _____, 20 , before me personally came and appeared _____, to me known and known to me to be one of the members of the firm of _____, described in and who executed the foregoing instrument and he acknowledged to me that he executed the same as and for the act and deed of said firm.

(Notary Seal)

_____

(Notary Signature)

ACKNOWLEDGMENT OF BIDDER, IF AN INDIVIDUAL

State of _____

_____ SS:

County of _____

On this _____ day of _____, 20 , before me personally came and appeared _____ to me known and known to me to be the person described in and who executed the foregoing instrument and he acknowledged to me that he executed the same.

(Notary Seal)

_____

(Notary Signature)

---

8 If bidder is a joint venture, insert signature as appropriate for one participant of the joint venture on this page and attach and complete an additional Acknowledgment sheet in the same form as appears on this page for each other participant as required

STATEMENT ACCOMPANYING PROPOSAL[9]

Names and Residences of Officers, If Bidder is a Corporation

Name	Title	Residence[10]
Alex Conway	President/Sec	
Robert Conway	Vice-President	

(Ex. 1)

Names and Residences of Partners, If Bidder is a Partnership

Name	General or Limited Partner	Residence[11]

Bidder's Residence, If an Individual[12]

---

9 If bidder is a joint venture, insert signature as appropriate for one participant of the joint venture on this page and attach and complete an additional Statement Accompanying Proposal sheet in the same form as appears on this page for each other participant as required.

10 Give Street and Number of Residence. Do not give business address.

11 Give Street and Number of Residence. Do not give business address.

12 Give Street and Number of Residence. Do not give business address.

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned[13]

R.B. Conway & Sons Inc. a corporation organized under the laws of the State of New York

as principal(s); and[14]

International Fidelity Insurance Company

as surety are hereby held and firmly bound unto The Port Authority of New York and New Jersey (herein called the "Authority") in the penal sum of Five Hundred Thousand Dollars ($500,000), for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

Signed this 21st day of September , 2010

The condition of the above obligation is such that whereas the above named principal(s) has submitted to the Authority a certain Proposal, bound herewith and hereby made a part hereof, to perform the obligations of the Contractor under a contract in writing, known as Contract MFP-654.141, "New York & New Jersey Marine Terminals - Multi-Facility Fender System Rehabilitation via Work Order", now therefore:

A. If said Proposal shall not be accepted, or

B. If said Proposal shall be accepted and the Authority does not require the principal(s) to furnish a Performance and Payment Bond, or

C. If said Proposal shall be accepted and the Authority requires the principal(s) to furnish a Performance and Payment Bond and either the principal(s) furnishes a Performance and Payment Bond satisfactory to the Authority in accordance with the requirements of said Proposal or the Authority does not terminate the Contract as provided therein on account of the failure to furnish such a bond,

Then, this obligation shall be void, otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

---

13 Insert bidder's name. If a corporation, give the state of incorporation using the phrase "a corporation organized under the laws of the ".

If a partnership, give full names of partners, using also the phrase, "co-partners doing business under the firm name of ".

If an individual using a trade name, give individual name, using also the phrase, "an individual doing business under the trade name of ".

If a joint venture, give the information required above for each participant in the joint venture.

14 Insert name of surety.

The surety, for value received, hereby stipulates and agrees that the obligations of said surety and its bond shall be in no way impaired or affected by any extensions of the times within which the Authority may receive or accept such Proposal or within which the principal(s) may furnish a Performance and Payment Bond or by any waiver by the Authority of any of the requirements of said Proposal; and said surety does hereby waive notice of any such extensions or waivers.

IN WITNESS WHEREOF, the principal(s) and surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

R.B. Conway & Sons Inc.

Principal [15]

(Seal)

By[16] Alex Conway

International Fidelity Insurance Company

Surety

(Seal)

By[17] Thomas M. Niland
Thomas M. Niland, Attorney In Fact

---

15 If bidder is a joint venture, insert signature and information required as appropriate for one participant of the joint venture on this page and attach and complete an additional sheet in the same form as appears on this page for each other participant as required.

16 If bond is signed by an officer or agent, give title; if signed by a corporation, affix corporate seal.

17 If bond is signed by an officer or agent, give title; if signed by a corporation, affix corporate seal.

ACKNOWLEDGMENT[18]

ACKNOWLEDGMENT OF BIDDER, IF A CORPORATION

State of New York

SS:

County of Suffolk

On this 29th day of September, 2010, before me personally came and appeared Alex Conway, to me known, who, being by me duly sworn, did depose and say that he resides at Huntington, NY, that he is the President of R.B. Conway + Sons Inc, the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation; and that he signed his name thereto by like order.

(Notary Seal)

Medine Borluca
Notary Public, State of New York
01B0615778
Qualified in Nassau County
Commission Expires Aug 28, 2014

Medine Borluca

(Notary Signature)

ACKNOWLEDGMENT OF BIDDER, IF A PARTNERSHIP

State of _____

SS:

County of _____

On this _____ day of _____, 20 , before me personally came and appeared _____, to me known and known to me to be one of the members of the firm of _____, described in and who executed the foregoing instrument and he acknowledged to me that he executed the same as and for the act and deed of said firm.

(Notary Seal)

_____

(Notary Signature)

ACKNOWLEDGMENT OF BIDDER, IF AN INDIVIDUAL

State of _____

SS:

County of _____

On this _____ day of. _____, 20 , before me personally came and appeared _____ to me known and known to me to be the person described in and who executed the foregoing instrument and he acknowledged to me that he executed the same.

(Notary Seal)

_____

(Notary Signature)

AFFIX ACKNOWLEDGMENT AND JUSTIFICATION OF SURETY

---

18 If bidder is a joint venture, insert signature as appropriate for one participant of the joint venture on this page and attach and complete an additional Acknowledgment sheet in the same form as appears on this page for each other participant as required.

FORM OF CONTRACT

CHAPTER I

GENERAL PROVISIONS

16. DEFINITIONS

To avoid undue repetition, the following terms whenever they occur in this Form of Contract or any of the other papers forming a part of the Contract shall be construed as follows:

"Contract" shall mean, in addition to this Form of Contract, the Information for Bidders, the Proposal, the Authority's acceptance, the Specifications and the Contract Drawings (including written addenda issued over the name of the Chief Engineer), all of which are made part hereof as though herein set forth in full. The Contract as so defined shall constitute the complete and exclusive statement of the terms of the agreement between the parties and the Contract may not be explained or supplemented by course of dealing, usage of trade or course of performance.

The term "days" or "calendar days" in reference to a period of time shall mean consecutive calendar days, Saturdays, Sundays and holidays, included.

The term "construction site" or words of similar import shall mean all berths and piers at Port Newark, Elizabeth-Port Authority Marine Terminal, Brooklyn-Port Authority Marine Terminal, Port Authority Auto Marine Terminal, Howland Hook and Red Hook Container Terminal.

"Work" shall mean all structures, equipment, plant, labor, materials (including materials and equipment, if any, furnished by the Authority) and other facilities and all other things necessary or proper for or incidental to performing performing removal, replacement, and disposal of damaged fender systems, all as directed by the Engineer and in accordance with Work Order(s) issued by the Engineer; and "performance of Work" and words of similar import shall mean the furnishing of such facilities and the doing of such things.

"Work required by the Contract Drawings and Specifications in their present form" or words of similar import shall include all Work required by the Specifications in their present form (whether or not shown upon the Contract Drawings), all Work shown upon the Contract Drawings in their present form (whether or not mentioned in the Specifications), and all Work involved in or incidental to the accomplishment of the results intended by the Specifications and Contract Drawings in their present form (whether or not mentioned therein or shown thereon)."

"Equipment" and "plant" shall include construction equipment and plant rented as agent for the Authority.

"Work Order" shall mean the document issued by the Engineer with provisions as described herein in the clause of the Form of Contract entitled "Work Orders".

"Notification" shall mean a telephone call followed by a telecommunication facsimile from the Authority to the number(s) designated by the Contractor or to such other number(s) as he may subsequently designate pursuant to the terms of this Contract and shall include, but not be limited to, the Work Order, the location of the Authority contact person, and a general description of the Work to be performed; and omissions from such general description shall not alter or reduce a requirement for Work otherwise stipulated elsewhere herein or in the Work Order.

"Schedule of Unit Prices" or words of similar import shall mean the Schedule of Unit Prices contained in the clause hereof entitled "Unit Prices".

"Classified Work" shall mean the items of Work set forth in the Schedule of Unit Prices and shall include any Work hereafter required which is of the same general character as that set forth in any of said items. In determining what is of the same general character, there shall be taken into consideration the provisions for measurement for payment appearing in said clause entitled "Unit Prices", which provisions shall form a part of the items in said Schedules of Unit Prices.

"Extra Work" shall mean Work required by the Chief Engineer, Deputy Director of Construction or Engineer of Construction pursuant to the clause hereof entitled "Extra Work Orders", other than Classified Work, which is in addition to that required by the Contract Drawings and Specifications in their present form.

"Estimated Total Contract Price" shall mean the result obtained by applying the unit prices quoted in the Schedule of Unit Prices to the estimated quantities therein and totaling the results, whether or not such results are correctly shown in the Contractor's Proposal.

"Contract Drawings" shall mean the Contract Drawings designated in the clause of the Specifications entitled "Contract Drawings" and, except as used in the phrase "Contract Drawings in their present form", shall include any future alterations and revisions of said drawings.

"Shop Drawings" shall mean all drawings, diagrams, illustrations, schedules, including supporting data, which are specifically prepared for this Contract and submitted by the Contractor pursuant to the requirements of the Specifications or the Engineer to illustrate some portion of the Work. The terms "shop drawings", "placing drawings" and "working drawings" are used interchangeably in this Contract.

"Catalog Cuts" shall mean all standard drawings, diagrams, illustrations, brochures, schedules, performance charts and instructions submitted by the Contractor pursuant to the requirements of the Specifications or the Engineer to illustrate some portion of the Work.

"Director of Procurement" shall mean the Director of Procurement of the Authority for the time being, or her successor in duties, acting either personally or through her duly authorized representatives acting within the scope of the particular authority vested in them.

"Chief Engineer" shall mean the Chief Engineer of the Authority for the time being, or his successor in duties, acting personally.

"Engineer" shall mean the Chief Engineer, acting either personally or through his duly authorized representatives acting within the scope of the particular authority vested in them.

"Deputy Director of Construction" shall mean the Deputy Director of Construction of the Authority for the time being, or his successor in duties, acting personally.

"Engineer of Construction" shall mean the designated Engineer of Construction for the facility at which the Work is being performed or his successor in duties, acting personally.

"Inspector" shall mean any representative of the Engineer designated by him as Inspector and acting within the scope of the particular authority vested in him.

The term "permanent construction" shall include all construction, installation, structures, equipment and materials (including materials and equipment, if any, furnished by the Authority) to be constructed, installed or left by the Contractor at or about the construction site (or elsewhere in the possession of the Authority) after the completion of the Work (whether or not they are yet delivered or installed), even though they are subsequently to be removed by others. The terms, "permanent installation", "permanent structure", "permanent materials", and words of similar import shall have the same meaning as the term "permanent construction".

"Subcontractor" shall mean anyone who performs Work (other than or in addition to the furnishing of materials, plant or equipment) at or about the construction site, directly or indirectly for or in behalf of the Contractor (and whether or not in privity of contract with the Contractor), but shall not include any person who furnished merely his own personal labor or his own personal services or who performs Work which consists only of the operation of construction equipment of which he is the lessor.

"Materialman" shall mean anyone who furnishes materials, plant or equipment to the Contractor or any subcontractor for use at or about the construction site in the performance of Work.

"Materialman" or "subcontractor", however, shall exclude the Contractor or any subsidiary or parent of the Contractor or any person, firm or corporation which has a substantial interest in the Contractor or in which the Contractor or the parent or the subsidiary of the Contractor, or an officer or principal of the Contractor or of the parent or the subsidiary of the Contractor has a substantial interest, provided, however, that for the purpose of the clause hereof entitled "Assignments and Subcontracts" the exclusion in this paragraph shall not apply to anyone but the Contractor himself.

"Workingman" or "workman" shall mean any employee of the Contractor or of a subcontractor who performs personal labor or personal services at the construction site.

"Notice" shall mean a written notice.

Whenever they refer to the Work or its performance, "directed", "required", "permitted", "ordered", "designated", "prescribed" and words of similar import shall mean directed, required permitted, ordered, designated or prescribed by the Engineer; and "approved", "acceptable", "satisfactory" and words of similar import shall mean approved by or acceptable or satisfactory to the Engineer; and "necessary", "reasonable", "proper", "correct" and words of similar import shall mean necessary, reasonable, proper or correct in the judgment of the Engineer.

Whenever "including", "such as" or words of similar import are used, the specific things thereafter enumerated shall not limit the generality of the things preceding such words.

17. GENERAL AGREEMENT

The Contractor agrees to perform performing removal, replacement, and disposal of damaged fender systems all as directed by the Engineer and in accordance with Work Order(s) issued by the Engineer and to furnish all structures, equipment, plant, labor, materials and other facilities and to do all other things necessary or proper therefor or incidental thereto, all in strict accordance with the Contract Drawings and Specifications and any future changes therein; and the Contractor further agrees to assume and perform all other duties and obligations imposed upon him by this Contract. The furnishing of equipment and plant, however, shall be subject to the provisions of the clause hereof entitled "Agency for Rental of Construction Equipment".

The Authority agrees to pay to the Contractor and the Contractor agrees to accept from The Authority, in full consideration for the performance by the Contractor of his duties and obligations under this Contract and the whole thereof, a compensation determined from the Work performed upon the basis of the items of Work, units of measurement and prices specified in the clause hereof entitled "Unit Prices" and such compensation only, subject only to the express provisions of this Contract specifically setting forth actual, defined additions to or deductions from such compensation.

This Contract is one entire contract for the accomplishment of the results and the doing of the things above specified and is not separable. Similarly, the Contractor's compensation is one entire compensation which, although computed upon the basis of the actual quantities of Classified Work performed and the unit prices quoted by the Contractor in the Schedule of Unit Prices, is not earned solely by the doing of the acts from which such compensation is determined.

The enumeration in this Form of Contract and in the Specifications of particular things to be furnished or done at the Contractor's expense, or without cost or expense to the Authority, or without additional compensation to the Contractor shall not be deemed to imply that only things of a nature similar to those enumerated shall be so furnished and done; but the Contractor shall perform all Work as required without other compensation than that specifically provided, whatsoever changes may be made in the Contract Drawings and Specifications, whatsoever Work may be required in addition to that required by the Work Order(s) issued by the Engineer and Contract Drawings and Specifications in their present form, and whatsoever obstacles or unforeseen conditions may arise or be encountered.

18. WORK ORDERS

Authorization for Work under this Contract will be given in written Work Order(s), signed by the Engineer, which will describe the Work to be performed under such Work Order. Such Work Orders may be subsequently modified by the Engineer. The Contractor shall provide all labor, material and equipment and do all things which the Engineer deems best, taking all precautions against injuries to persons, property or traffic, replacing at his own expense all Work unsatisfactory to the Engineer, all in strict accordance with all documents made part of the Work Order, including but not limited to, the Specifications, Contract Drawings, if any, oral directions and any sketches or other Drawings.

The Contractor shall commence the Work under each Work Order within ten (10) calendar days after receipt of such Order. The Contractor shall give the Engineer written advance notice of the date he intends to commence the Work Order by the Engineer. Such notice shall be received by the Engineer at least one week prior to the date of intended commencement. To the extent practicable, the Engineer will endeavor to issue Work Orders at times when the Work may be performed without interruption. The availability of the construction site, however, is dependent on numerous factors not within the control of the Authority, such as ship movements by shipping operators entitled to use the construction site without interference, and the Authority does not guarantee that the work will not be interrupted.

It is currently expected but not guaranteed that the Engineer will not issue a Work Order unless the dollar amount of Work to be performed under such Work Order is equal to or greater than $25,000.00.

19. AUTHORITY ACCESS TO RECORDS

The Authority shall have access during normal business hours to all records and documents of the Contractor relating to any amounts for which the Contractor has been compensated, or claims he should be compensated, by the Authority by payment determined on any basis other than by payment of a lump sum or unit price amount agreed upon in writing by the Contractor and the Authority; provided, however, such access shall extend to certified payroll records as described in the clause of the Form of Contract entitled "Prevailing Rate of Wage" regardless of the method by which the Contractor is compensated under this Contract. The Contractor shall obtain for the Authority similar access to similar records and documents of subcontractors. Such access shall be given or obtained both before and within a period of three years after Final Payment to the Contractor; provided, however, that if within the aforesaid three year period the Authority has notified the Contractor in writing of a pending claim by the Authority under or in connection with this Contract to which any of the aforesaid records and documents of the Contractor or of his subcontractors relate either directly or indirectly, then the period of such right of access shall be extended to the expiration of 6 years from the date of Final Payment with respect to the records and documents involved.

No provision in this Contract giving the Authority a right of access to records and documents is intended to impair or affect any right of access to records and documents which the Authority would have in the absence of such provision.

20. AGENCY FOR RENTAL OF CONSTRUCTION EQUIPMENT

With respect to the performance of Work in the State of New York:

A. General Provisions

The Contractor further agrees to act as the agent of the Authority, subject to the provisions of this numbered clause relating to such agency for the rental of all construction equipment necessary or desirable for or incidental to the performance of the Contract (other than construction equipment owned and also used by the Contractor or owned and also used by any subcontractor) and, in the exercise of such agency, to assume all the obligations and duties imposed upon him by this Contract. The Contractor may authorize any subcontractor to act as his subagent for rental of such equipment for use by such subcontractor, subject to all the provisions of this Contract. "Construction equipment" as used in this numbered clause shall include plant.

The Authority will pay the rental charges for said equipment directly to the lessors thereof, but the charges so paid shall be deducted from the compensation payable to the Contractor under the Contract; provided, however, that the Authority will pay such charges, and the Contractor is authorized by the Authority to act as such agent, to the extent only that the charges payable for such rental do not exceed the compensation payable to the Contractor under the Contract; and provided further that the Contractor performs all the obligations relating to said agency imposed upon him by this Contract.

The Authority will provide the Contractor with a statement to be furnished by him and the subcontractors to such lessors which will identify this Contract as the one under which the Contractor is authorized to rent said equipment and which will identify the site to which delivery must be made. The Contractor shall arrange for delivery of said equipment directly to the construction site. Payment of the rental charges therefore shall be made by the Authority on the basis of invoices made out to the Authority in which is contained the place of delivery and on which the Contractor has certified by endorsement that such construction equipment is being or has been used in the performance of the Contract, said invoices to be submitted through the Contractor to the Authority at the time said equipment is put into use at the construction site. In the event said invoices are not submitted promptly, at the time stated above, but are submitted at a time when, by reason of prior advances and payments to the Contractor or for his account, the amounts still payable to the Contractor in connection with the Contract are insufficient to pay said invoices, then the Authority shall not be liable to the lessors for any amounts in excess of said amounts still payable to the Contractor which remain in the possession of the Authority.

Notwithstanding the above agency arrangement, the Authority shall not be liable to lessors of construction equipment for any amounts except rental charges based on time of use of such equipment, and the Contractor's agency is limited accordingly. All obligations incurred by the Contractor or subcontractors for any other expenses, including repairs and damages for breach of the rental agreement, shall be obligations incurred by the Contractor or subcontractors as principal not as agent of the Authority. Moreover, as between the Authority and the Contractor, the Contractor shall be responsible for all amounts due to lessors of construction equipment notwithstanding the above agency arrangement.

The Contractor shall indemnify the Authority against any claim of any kind whatsoever made against the Authority by a lessor of construction equipment and the Contractor assumes the risk of all claims against him by any lessor of construction equipment, including in both cases, claims in connection with a subcontractor.

The agency provided for under this numbered clause shall not relieve the Contractor of any of his duties and obligations elsewhere provided for under this Contract.

B. Option Not to Act as Agent

Notwithstanding the provisions of A above, the Contractor shall have the right to elect not to act as the agent of the Authority for the rental of any particular item or items of said construction equipment, in which event, with regard to any such rentals by the Contractor as principal and not agent, the provisions of A of this numbered clause shall be inapplicable as well as those provisions of the clause of the Form of Contract entitled "Exemption From New York State and New York City Sales Taxes", which relate to rental of construction equipment.

21. EXEMPTION FROM NEW JERSEY STATE SALES TAXES

With respect to the performance of Work in the State of New Jersey, the attention of the Contractor is directed to the following provision of the New Jersey State Sales and Use Tax Act:

Receipts from sales made to contractors or repairmen of materials, supplies or services for exclusive use in erecting structures or building on, or otherwise improving, altering or repairing real property of:

> (a) organizations described in subsections (a) and (b) of section 9 of the "Sales and Use Tax Act," P.L. 1966, c.30 (C. 54:32B-9);
>
> *** are exempt from the tax imposed under the "Sales and Use Tax Act," provided any person seeking to qualify for the exemption shall do so pursuant to such rules and regulations and upon forms as shall be prescribed by the director. N.J.S.A. 54:32B-8:22.

The Authority is an exempt organization of the type described in subsection (a) of section 9 of the act.

In view of the foregoing, the Contractor should not include in his price(s) any amounts for New Jersey State sales and use taxes on such materials, supplies and services. [19]

If (i) any claim is made against the Contractor by the State of New Jersey for such sales or compensating use taxes, or (ii) any claim is made against the Contractor by a materialman or a subcontractor on account of a claim against such materialman or subcontractor by the State of New Jersey for such sales or compensating use taxes, then the Authority will reimburse the Contractor in an amount equal to the amount of such tax required to be paid in accordance with the requirements of law, provided that:

A. the Contractor, or the Contractor and any such subcontractor, as the case may be, have complied with such rules and regulations as may have been promulgated relating to the claiming of the exemption from such taxes and have filed all the forms and certificates required by the applicable laws, rules and regulations in connection therewith; and

B. the Authority is afforded the opportunity before any payment of tax is made, to contest said claim in the manner and to the extent that the Authority may choose and to settle or satisfy said claim, and such attorney as the Authority may designate is authorized to act for the purpose of contesting, settling and satisfying said claim; and

---

[19] Note regarding equipment rentals: The attention of the Contractor is directed to the fact that the New Jersey State Sales Tax Bureau has ruled that the "rental of equipment is taxable whether or not the job is performed for an exempt organization." Therefore in the case of equipment rentals, if any, the Contractor should include in his prices an amount for taxes thereon.

C. the Contractor, or the Contractor and any such subcontractor, as the case may be, give immediate notice to the Authority of any such claim, cooperate with the Authority and its designated attorney in contesting said claim and furnish promptly to the Authority and said attorney all information and documents necessary or convenient for contesting said claim, said information and documents to be preserved for six years after the date of Final Payment or longer if such a claim is pending or threatened at the end of such six years.

If the Authority elects to contest any such claim, it will bear the expense of such contest.

22. EXEMPTION FROM NEW YORK STATE AND NEW YORK CITY SALES TAXES

With respect to the performance of Work in the State of New York:

A. Materials Incorporated in Permanent Construction

The attention of the Contractor is directed to the following provision of the New York State and New York City Sales and Compensating Use Tax Act:

> "#1115. Exemptions from sales and use taxes. (a) Receipts from the following shall be exempt from the tax on retail sales imposed under subdivision (a) of section eleven hundred five and the compensating use tax imposed under section eleven hundred ten:
> (15) Tangible personal property sold to a contractor, subcontractor or repairman for use in erecting a structure or building of an organization described in subdivision (a) of section eleven hundred sixteen, or adding to, altering or improving real property, property or land of such an organization, as the terms real property, property or land are defined in the real property tax law; provided, however, no exemption shall exist under this paragraph unless such tangible personal property is to become an integral component part of such structure, building or real property."

The Authority is an exempt organization of the type described in subdivision (a) of section eleven hundred sixteen.

In view of the foregoing, the Contractor should not include in his price(s) any amounts for New York State and New York City sales and compensating use taxes on such tangible personal property.

If (i) any claim is made against the Contractor by the State of New York or City of New York for such sales or compensating use taxes, or (ii) any claim is made against the Contractor by a materialman or a subcontractor on account of a claim against such materialman or subcontractor by the State of New York or City of New York for such sales or compensating use taxes, then the Authority will reimburse the Contractor in an amount equal to the amount of such tax required to be paid in accordance with the requirements of law, provided that:

1.) the Contractor, or the Contractor and any such subcontractor, as the case may be, have complied with such rules and regulations as may have been promulgated relating to the claiming of the exemption from such taxes and have filed all the forms and certificates required by the applicable laws, rules and regulations in connection therewith;

2.) and the Authority is afforded the opportunity before any payment of tax is made, to contest said claim in the manner and to the extent that the Authority may choose and to settle or satisfy said claim and such attorney as the Authority may designate is authorized to act for the purpose of contesting, settling and satisfying said claim; and

3.) the Contractor, or the Contractor and any such subcontractor, as the case may be, give immediate notice to the Authority of any such claim, cooperate with the Authority and its designated attorney in contesting said claim and furnish promptly to the Authority and said attorney all information and documents necessary or convenient for contesting said claim, said information and documents to be preserved for six years after the date of Final Payment or longer if such a claim is pending or threatened at the end of such six years.

If the Authority elects to contest any such claim, it will bear the expense of such contest.

B. Rental of Construction Equipment

The rental by the Contractor or subcontractor of construction equipment not owned by the Contractor or subcontractors for use in the performance of the Contract will also not be subject to New York State or New York City sales or compensating use taxes, provided that:

1.) the Contractor's and any subcontractor's use of construction equipment rented from others, and any agreement for such rental, is based upon the agency arrangement provided for in the clause hereof entitled "Agency for Rental of Construction Equipment" and the Contractor and subcontractors have performed all their obligations under said clause;

2.) delivery of said equipment is to the construction site;

3.) the Contractor or subcontractor has furnished to the lessor the statement from the Authority identifying this Contract as the one under which the Contractor or subcontractor has been authorized to rent said equipment and identifying the construction site to which delivery must be made;

4.) the invoice for said equipment is made out to the Authority and prescribes the place of delivery; and

5.) the amounts payable for rental of said equipment do not exceed the amount of compensation payable in connection with the Work.

In view of the above, the Contractor should not include in his price(s) any amounts for New York State and New York City sales and compensating use taxes on such rentals of equipment.

If (i) any claim is made against the Contractor by the State or City of New York for sales or compensating use taxes on such rental of construction equipment or (ii) any claim is made against the Contractor by a materialman, lessor or a subcontractor on account of a claim against such materialman, lessor or subcontractor by the State or City of New York for sales or compensating use taxes on rental of said equipment, then the Authority will reimburse the Contractor in an amount equal to the amount of such tax required to be paid in accordance with the requirements of law, provided that the provisos listed above in this numbered clause as A.1 through A.3 and B.1 through B.5 are complied with.

If the Authority elects to contest any such claim, it will bear the expense of such contest.

23. PERFORMANCE AND PAYMENT BOND

If the Authority shall in its sole discretion so elect at the time of accepting the Contractor's Proposal, the Contractor shall furnish a bond for the faithful performance of all obligations imposed upon him by the Contract and also for the payment of all lawful claims of subcontractors, materialmen and workmen arising out of the performance of the Contract. Such bond shall be in the form bound herewith entitled, "Performance and Payment Bond", shall be in a penal sum equal to the Estimated Total Contract Price and such bond shall be signed by one or more sureties[20] satisfactory to the Authority. The bond may be executed on a separate copy of such form not physically attached to this Contract booklet. In any case, both the form of bond bound herewith and any unattached executed copy thereof shall form a part of this Form of Contract as though herein set forth in full.

At any time after the opening of Proposals, the Authority may give notice to one or more bidders to advise the Authority as to the names of their proposed sureties. Within forty-eight hours thereafter each bidder so notified shall so advise the Authority. The giving of such notice to a bidder shall not be construed as an acceptance of his Proposal, and omission to give such notice shall not be construed as an election by the Authority not to require a bond.

If the Authority elects to require the Contractor to furnish a bond, he shall deliver such bond to the Authority within seven days after receipt by him of the acceptance of his Proposal, and the sureties thereon shall be as proposed by him, provided, that if the Authority has theretofore given notice to him that his proposed sureties or any of them are not satisfactory, the bond shall be executed by other sureties satisfactory to the Authority.

The Authority shall give notice to the Contractor within ten (10) days after receipt of the Performance and Payment Bond as to whether or not such bond is satisfactory.

In the event of a default by the Contractor in his obligation to furnish a satisfactory bond within seven (7) days after he received an acceptance of his Proposal, such default shall entitle the Authority in its discretion to terminate this Contract at any time within forty-five (45) days after the acceptance of the Proposal, without any liability on the part of the Authority. Inasmuch as the damages to the Authority resulting from a termination by it upon the failure of the Contractor to furnish a satisfactory bond will include items whose accurate amount will be difficult or impossible to compute, such damages shall be liquidated in the sum of the following amounts:

A. The excess, if any, of the Estimated Total Contract Price in the Proposal finally accepted over that in the Proposal of the Contractor; and

B. The expense of such new advertisement of the Contract, if any, as may be deemed necessary by the Authority; and

C. The sum of $500 for each day after the receipt by the Contractor of the acceptance of his Proposal that the performance of the Contract is not commenced by reason of the failure of the Contractor to furnish the required bond.

---

20 Sureties must be corporations (commonly known as "surety companies"), authorized to do business as sureties in the state(s) in which the construction site is located, whose names appear on the current list of the Treasury Department of the United States in effect at the time of submission of the Performance and Payment Bond to the Authority as acceptable as sureties to the Treasury Department. In addition, the aggregate underwriting limitations on any one risk as set forth in the aforementioned list of the Treasury Department of the sureties shall equal or exceed the penal sum of the Performance and Payment Bond.

In the recovery of the damages above specified, the Authority may proceed against the sum represented by the certified check deposited with it or against the Bid Bond and take such other action as it may deem best in the public interest.

If the Contractor furnishes a bond in accordance with the requirements of the Authority under this numbered clause, the Authority shall reimburse the Contractor for the net amount actually paid by him to the surety or sureties as the premium on such bond. The Contractor shall deliver to the Engineer receipts from the surety or sureties evidencing such payment and the amount thereof. Within fifteen days after receipt of such evidence satisfactory to the Engineer, the Authority shall pay to the Contractor by check the amount provided in this numbered clause.

If at any time the Authority shall be or become dissatisfied with any surety or sureties then upon any bond furnished in accordance with the requirements of the Authority, or if for any other reason such bond shall cease to be adequate security to the Authority, the Contractor shall, within five days after notice from the Authority so to do, substitute a new bond in such form and sum and signed by such other sureties as may be necessary in the opinion of the Authority to constitute adequate security.

CHAPTER II

PRICES AND PAYMENTS

24. UNIT PRICES

The following Schedule of Unit Prices does not constitute an outline of the Work required by the Contract Drawings and Specifications in their present form but is merely a list of the items of Classified Work to be used in computing the Contractor's compensation. It contains all such items. The compensation computed therefrom is full compensation for all Work whatsoever required by the Contract Drawings and Specifications in their present form.

In the case of each item of Classified Work, the Work performed will be measured and the Contractor's compensation will be computed as hereinafter provided in this numbered clause. In case of discrepancy between the prices quoted in writing and those quoted in figures, the writing shall control.

The Estimated Total Contract Price is solely for the purpose of fixing the amount of security to be maintained by the Contractor for the faithful performance of the Work. Prior to the signature of the Contract by the parties, it was for the purpose of facilitating the comparison of Proposals and of computing damages in the event of a default by the successful bidder in the agreement created by the acceptance of his Proposal. The estimated quantities are given solely as a basis for the computation of the Estimated Total Contract Price. The Authority makes no representation as to what the actual quantities will be and shall not be held responsible even though the estimated quantities are not even approximately correct. Insofar as the Contractor's compensation is based upon Classified Work, it will be computed from the actual quantities of Work performed, whether greater or less than the estimated quantities.

I. SCHEDULE OF UNIT PRICES				
Item No.	Estimated Quantities	Items of Classified Work With Unit Prices Written	Figures	
			Unit Prices	Amounts[21]
1.	1,500 LF	TREATED SOUTHERN YELLOW PINE FENDER PILES OVER 46 FT. TO 70 FT., PER LINEAR FOOT. Forty DOLLARS CENTS	40	60,000
2.	1,200 LF	TREATED LINE PILES OVER 71 FT. TO 80 FT., REPAIR TYPE 1, PER LINEAR FOOT. Seventy one DOLLARS CENTS	71	85,200
3.	1,200 LF	TREATED LINE PILES OVER 71 FT. TO 80 FT., REPAIR TYPE 2 AND 3, PER LINEAR FOOT. One hundred forty five DOLLARS CENTS	145	174,000
4.	25 EA	POST LINE PILES, REPAIR TYPE 4 AND 5, PER EACH. Two thousand three hundred DOLLARS CENTS	2300	57,500
5.	1,000 LF	TREATED LINE PILES OVER 71 FT. TO 80 FT., REPAIR TYPE 6, PER LINEAR FOOT. One hundred sixty DOLLARS CENTS	160	160,000
6.	25 EA	SHIM TIMBER PILE, REPAIR TYPE 8, PER EACH. One hundred DOLLARS CENTS	100	2500
7.	275 EA	RE-SECURE FENDER PILES, PER EACH. Three hundred DOLLARS CENTS	300	82,500
8.	700 EA	REMOVAL AND DISPOSAL OF FENDER PILES, PER EACH. Five hundred DOLLARS CENTS	500	350,000

[21] The amount for each item shall be computed by multiplying the estimated quantity of that item by the unit price for the item.

I. SCHEDULE OF UNIT PRICES				
Item No.	Estimated Quantities	Items of Classified Work With Unit Prices Written	Figures	
			Unit Prices	Amounts[21]
9.	30,000 LBS	TIMBER FASTENINGS AND MISCELLANEOUS HARDWARE, PER POUND. Four _____ DOLLARS _____ CENTS	4	120,000
10.	3,500 EA	EXPANSION ANCHORS, PER EACH. Seventy _____ DOLLARS _____ CENTS	70	245,000
11.	1,000 LF	WIRE LASHING, PER LINEAR FOOT. Five _____ DOLLARS _____ CENTS	5	5000
12.	150 MBM	UNTREATED CHOCKS, PER THOUSAND FEET BOARD MEASURE. Five thousand seven hundred _____ DOLLARS _____ CENTS	5700	855,000
13.	100 MBM	TREATED WALES, PER THOUSAND FEET BOARD MEASURE. Six thousand five hundred _____ DOLLARS _____ CENTS	6500	650,000
14.	20 MBM	TREATED BACKING LOGS, PER THOUSAND FEET BOARD MEASURE. Four thousand Five hundred _____ DOLLARS _____ CENTS	4500	90,000
15.	5 MBM	TREATED VERTICAL SHEETING – VERTICAL SHEETING SYSTEM, PER THOUSAND FEET BOARD MEASURE. Five thousand _____ DOLLARS _____ CENTS	5000	25,000
16.	2 MBM	UNTREATED CHOCKS – VERTICAL SHEETING SYSTEM, PER THOUSAND FEET BOARD MEASURE. Six thousand five hundred _____ DOLLARS _____ CENTS	6500	13,000

I. SCHEDULE OF UNIT PRICES				
Item No.	Estimated Quantities	Items of Classified Work With Unit Prices Written	Figures	
			Unit Prices	Amounts[21]
17.	10 MBM	TREATED WALES – VERTICAL SHEETING SYSTEM, PER THOUSAND FEET BOARD MEASURE. Six thousand five hundred DOLLARS _____ CENTS	6500	65,000
18.	275 LF	RE-SECURE CHOCKS, PER LINEAR FOOT. Forty DOLLARS _____ CENTS	40	11,000
19.	5 EA	RE-SECURE FENDER POSTS, PER EACH. Three hundred DOLLARS _____ CENTS	300	1,500
20.	2,000 LF	RE-SECURE WALES, PER LINEAR FOOT. Forty five DOLLARS _____ CENTS	45	90,000
21.	100 LF	RE-SECURE VERTICAL SHEETING, PER LINEAR FOOT. Fifty DOLLARS _____ CENTS	50	5,000
22.	4,000 LF	REMOVAL AND DISPOSAL OF CHOCKS OTHER THAN FOR VERTICAL SHEETING SYSTEM, PER LINEAR FOOT. Ten DOLLARS _____ CENTS	10	40,000
23.	5 EA	REMOVAL AND DISPOSAL OF FENDER POSTS, PER EACH. Two hundred DOLLARS _____ CENTS	200	1,000
24.	4,000 LF	REMOVAL AND DISPOSAL OF WALES OTHER THAN FOR VERTICAL SHEETING SYSTEM, PER LINEAR FOOT. Twenty five DOLLARS _____ CENTS	25	100,000

I. SCHEDULE OF UNIT PRICES				
			Figures	
Item No.	Estimated Quantities	Items of Classified Work With Unit Prices Written	Unit Prices	Amounts[21]
25.	1,700 LF	REMOVAL AND DISPOSAL OF BACKING LOGS, PER LINEAR FOOT. Five _____ DOLLARS _____ CENTS	5	8500
26.	600 LF	REMOVAL AND DISPOSAL OF CHOCKS – VERTICAL SHEETING SYSTEM, PER LINEAR FOOT. Twenty _____ DOLLARS _____ CENTS	20	12,000
27.	500 LF	REMOVAL AND DISPOSAL OF WALES – VERTICAL SHEETING SYSTEM, PER LINEAR FOOT. Thirty five _____ DOLLARS _____ CENTS	35	17,500
28.	1,000 LF	REMOVAL AND DISPOSAL OF VERTICAL SHEETING – VERTICAL SHEETING SYSTEM, PER LINEAR FOOT. Eighteen _____ DOLLARS _____ CENTS	18	18,000
29.	7 EA	MOORING DEVICE – BOLLARD, PER EACH. Seven thousand _____ DOLLARS _____ CENTS	7000	49,000
30.	10 EA	MOORING DEVICE – CLEAT, PER EACH. Two thousand _____ DOLLARS _____ CENTS	2000	20,000
31.	260 LF	DRILL HOLES FOR INSTALLING MOORING DEVICES, PER LINEAR FOOT. Thirty _____ DOLLARS _____ CENTS	30	7800
32.	30 EA	RE-SECURE MOORING DEVICE – BOLLARD, PER EACH Two thousand five hundred ___ DOLLARS _____ CENTS	2500	75,000

I. SCHEDULE OF UNIT PRICES				
Item No.	Estimated Quantities	Items of Classified Work With Unit Prices Written	Figures	
			Unit Prices	Amounts[21]
33.	15 EA	RE-SECURE MOORING DEVICE – CLEAT, PER EACH. One thousand two hundred DOLLARS _____ CENTS	1200	18,000
34.	12 EA	REMOVAL AND DISPOSAL OF MOORING DEVICE - BOLLARD, PER EACH. One hundred DOLLARS _____ CENTS	100	1200
35.	15 EA	REMOVAL AND DISPOSAL OF MOORING DEVICE – CLEAT, PER EACH. One hundred DOLLARS _____ CENTS	100	1500
36.	100 EA	RUBBER BLOCKS. PER EACH Five hundred DOLLARS _____ CENTS	500	50,000
37.	150 EA	REMOVAL AND DISPOSAL OF RUBBER BLOCKS, PER EACH. Fifty DOLLARS _____ CENTS	50	7500
38.	20 EA.	RE-INSTALLATION OF RUBBER BLOCKS, PER EACH. Two hundred DOLLARS _____ CENTS	200	4000
39.	5 MBM	TREATED FENDER BLOCKS, PER THOUSAND FEET BOARD MEASURE. Twelve thousand DOLLARS _____ CENTS	12000	60,000
40.	5 MBM	TREATED FENDER BLOCKS – VERTICAL SHEETING SYSTEM, PER THOUSAND FEET BOARD MEASURE. Ten thousand DOLLARS _____ CENTS	10,000	50,000

I. SCHEDULE OF UNIT PRICES				
Item No.	Estimated Quantities	Items of Classified Work With Unit Prices Written	Figures: Unit Prices	Figures: Amounts[21]
41.	125 LF	REMOVAL AND DISPOSAL OF FENDER BLOCKS, PER LINEAR FOOT. Fifty DOLLARS CENTS	50	6,250
42.	4 EA	MOBILIZATION – BROOKLYN-PORT AUTHORITY MARINE TERMINAL AND RED HOOK CONTAINER TERMINAL, PER EACH. Ten thousand DOLLARS CENTS	10,000	40,000
43.	4 EA	MOBILIZATION – PORT NEWARK AND ELIZABETH PORT AUTHORITY MARINE TERMINAL, PER EACH Ten thousand DOLLARS CENTS	10,000	40,000
44.	2 EA	MOBILIZATION, PORT AUTHORITY AUTO MARINE TERMINAL, PER EACH. Ten thousand DOLLARS CENTS	10,000	20,000
45.	150 HR	EQUIPMENT WORK SUSPENSION, PER HOUR. Five hundred DOLLARS CENTS	500	75,000
46.	150 HR	CREW WORK SUSPENSION, PER HOUR. One thousand DOLLARS CENTS	1000	150,000
47.	3 EA	BARGE FENDER SYSTEM SECTIONS, PER EACH. Fifty thousand DOLLARS CENTS	50,000	150,000
48.	1,300 LF	TIMBER FACING FOR BARGE FENDER SYSTEM, PER LINEAR FOOT. Fifty DOLLARS CENTS	50	65,000

I. SCHEDULE OF UNIT PRICES				
			Figures	
Item No.	Estimated Quantities	Items of Classified Work With Unit Prices Written	Unit Prices	Amounts[21]
49.	8 EA	RUBBER FENDER SYSTEM – BERTHS 51 – 63 (ODD), PER EACH. Six thousand five hundred DOLLARS CENTS	6500	52,000
50.	8 EA	RUBBER FENDER SYSTEM – PARTIAL BERTHS 66 – 74 (EVEN), PER EACH. Sixteen Thousand DOLLARS CENTS	16,000	128,000
51.	8 EA	RUBBER FENDER SYSTEM – BERTHS 82 – 86 (EVEN) PARTIAL BERTHS 88, 90, 92, PER EACH. Seven thousand five hundred DOLLARS CENTS	7,500	60,000
52.	8 EA	RUBBER FENDER SYSTEM – PARTIAL BERTH 88 BARGE FENDER, PER EACH. Seven thousand five hundred DOLLARS CENTS	7,500	60,000
53.	200 SF	FENDER PANEL FOR RUBBER FENDER SYSTEM – BERTHS 51 – 63 (ODD), PER SQUARE FOOT. Two hundred twenty DOLLARS CENTS	220	44,000
54.	200 SF	FENDER PANEL FOR RUBBER FENDER SYSTEM – PARTIAL BERTHS 66 – 74 (EVEN), PARTIAL BERTHS 88, 90, 92, PER SQUARE FOOT. Two hundred forty DOLLARS CENTS	240	48,000
55.	200 SF	FENDER PANEL FOR RUBBER FENDER SYSTEM – TYPE 'C', PER SQUARE FOOT. Two hundred twenty DOLLARS CENTS	220	44,000
56.	7 EA	REMOVAL OF BARGE FENDER SYSTEM SECTION, PER EACH. Two thousand DOLLARS CENTS	2000	14,000

I. SCHEDULE OF UNIT PRICES				
Item No.	Estimated Quantities	Items of Classified Work With Unit Prices Written	Figures	
			Unit Prices	Amounts[21]
57.	7,000 LF	GREENHEART FENDER PILES OVER 46 FT. TO 70 FT., PER LINEAR FOOT. Fifty DOLLARS CENTS	50	350,000
58.	20 MBM	UNTREATED WALES, PER THOUSAND FEET BOARD MEASURE. Six thousand DOLLARS CENTS	6000	120,000
59.	1,500 LF	REMOVAL TIMBER FACING FOR BARGE FENDER SYSTEM, PER LINEAR FOOT. Eighteen DOLLARS CENTS	18	27,000
60.	4,000 LF	GREENHEART FENDER PILES OVER 46 FT. TO 70 FT. FOR STOCKPILE, PER LINEAR FOOT. Twenty eight DOLLARS CENTS	28	112,000
61.	3,000 LF	UNTREATED SOUTHERN YELLOW PINE FENDER PILES OVER 46 FT. TO 70 FT. FOR STOCKPILE, PER LINEAR FOOT. Eighteen DOLLARS CENTS	18	54,000
62.	4,000 LF	INSTALL PILES FROM STOCKPILE, PER LINEAR FOOT. Twenty two DOLLARS CENTS	22	88,000
63.	130 EA	LOAD AND TRANSPORT PILES FROM STOCKPILE, PER EACH. One hundred DOLLARS CENTS	100	13,000
64.	10 EA	CHAIN ANCHOR, PER EACH. Three thousand DOLLARS CENTS	3000	30,000

65.	15 EA	CABLE TIE BACK ASSEMBLY, PER EACH. Nine hundred DOLLARS CENTS	900	13,500
66.	20 MOVES	TOWING EQUIPMENT FOR MOVE, PER MOVE One thousand five hundred DOLLARS CENTS	1500	30,000
		ESTIMATED TOTAL CONTRACT PRICE[22]	$5,521,950	

The following provisions are applicable to the Schedule of Unit Prices . The quantity for payment described in the following provisions shall be the quantity of Classified Work furnished, installed, performed and/or placed in accordance with the Specifications, as shown on the Contract Drawings and where ordered by the Engineer.

No quantity of work will be included under more than one item of Classified Work.

In the case of Item No. 1 (Treated Southern Yellow Pine Fender Piles Over 46 FT. to 70 FT.), the quantity for payment shall be the number of linear feet of treated southern yellow pine fender piles actually installed, measured by the Engineer from the tip to the cut-off elevation.

In the case of Item No. 2 (Treated Line Piles Over 71 FT. to 80 FT., Repair Type 1), the quantity for payment shall be the number of linear feet of line piles actually installed, in accordance with the detail entitled "Repair Type 1 – Pile Installation, Part Plan" shown on Contract Drawing No. S022, measured by the Engineer from the tip to the cut-off elevation.

In the case of Item No. 3 (Treated Line Piles Over 71 FT. to 80 FT., Repair Type 2 and 3), the quantity for payment shall be the number of linear feet of line piles actually installed, in accordance with the detail entitled "Repair Type 2 – Pile Installation, Part Plan" and "Repair Type 3 – Pile Installation, Part Plan" shown on Contract Drawing No. S022, measured by the Engineer from the tip to the cut-off elevation.

In the case of Item No. 4 (Post Line Piles, Repair Type 4 and 5), the quantity for payment shall be the number of line piles actually posted in accordance with the details entitled "Repair Type 4 – Plumb Post Pile" and "Repair Type 5 – Plumb Post Pile" shown on Contract Drawing No. S023.

In the case of Item No. 5 (Treated Line Piles Over 71 FT. to 80 FT., Repair Type 6), the quantity for payment shall be the number of linear feet of line piles actually installed, in accordance with the detail entitled "Repair Type 6 – Pile Installation" shown on Contract Drawing No. S023, measured by the Engineer from the tip to the cut-off elevation.

In the case of Item No. 6 (Shim Timber Pile, Repair Type 8), the quantity for payment shall be the number of timber piles actually shimmed in accordance with the detail entitled "Repair Type 8 – Shim Timber Pile" shown on Contract Drawing No. S023.

In the case of Item No. 7 (Re-secure Fender Piles), the quantity for payment shall be the number of fender piles actually re-secured. When, in the opinion of the Engineer, it is necessary to unfasten and later re-secure sound timber fender piles in order to install new members as specified in a Work Order, the Contractor will be compensated for unfastening and re-securing the sound timber pile at the applicable unit price for re-securing fender piles or line piles. In no event however, shall the unfastening and re-securing of sound timber be construed as removing piles.

---

22 The Estimated Total Contract Price shall be computed by totaling the amounts inserted in the "Amounts" column.

In the case of Item No. 8 (Removal and Disposal of Fender Piles), the quantity for payment shall be the number of fender piles actually removed for disposal off of Authority property.

In the case of Item No. 9 (Timber Fastenings and Miscellaneous Hardware), the quantity for payment shall be the number of pounds of timber fastenings and miscellaneous hardware actually furnished, including steel driving shoes. The furnishing of new timber fastenings and miscellaneous hardware shall not be included for payment under any other item specified herein. The installation of new or reusable timber fastenings and miscellaneous hardware, however, shall be included in the payment for each applicable item requiring the installation of such fastenings and hardware. No payment for the furnishing of expansion anchors under Item No.10 shall be included for payment under this item.

In the case of Item No. 10 (Expansion Anchors), the quantity for payment shall be the number of expansion anchors and expansion bolts actually installed.

In the case of Item No. 11 (Wire Lashing), the quantity for payment shall be the number of linear feet of 5/8" wire rope lashing actually installed.

In the case of Item No. 12 (Untreated Chocks), the quantity for payment shall be the number of thousand feet board measure (MBM) of untreated chocks actually installed, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item.

In the case of Item No. 13 (Treated Wales), the quantity for payment shall be the number of thousand feet board measure (MBM) of treated wales, treated backing logs, treated vertical sheeting, treated fender blocks and treated fender blocks-vertical sheeting system, as the case may be actually installed, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item.

In the case of Item No. 14 (Treated Backing Logs), the quantity for payment shall be the number of thousand feet board measure (MBM) of treated wales, treated backing logs, treated vertical sheeting, treated fender blocks and treated fender blocks-vertical sheeting system, as the case may be actually installed, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item.

In the case of Item No. 15 (Treated Vertical Sheeting - Vertical Sheeting System), the quantity for payment shall be the number of thousand feet board measure (MBM) of treated wales, treated backing logs, treated vertical sheeting, treated fender blocks and treated fender blocks-vertical sheeting system, as the case may be actually installed, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item.

In the case of Item No. 16 (Untreated Chocks - Vertical Sheeting System), the quantity for payment shall be the number of thousand feet board measure (MBM) of untreated chocks actually installed, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item.

In the case of Item No. 17 (Treated Wales - Vertical Sheeting System), the quantity for payment shall be the number of thousand feet board measure (MBM) of treated wales, treated backing logs, treated vertical sheeting, treated fender blocks and treated fender blocks-vertical sheeting system, as the case may be actually installed, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item.

In the case of Item No. 18 (Re-secure Chocks), the quantity for payment shall be the number of linear feet of chocks, wales or vertical sheeting, as the case may be, actually unfastened and re-secured, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under these items. When, in the opinion of the Engineer, it is necessary to unfasten and later re-secure sound timber in order to install new members as specified in a Work Order, the Contractor will be compensated for unfastening and re-securing the sound timber at the applicable unit price for each item. In no event, however, shall the unfastening and re-securing of sound timber be construed as a removal.

In the case of Item No. 19 (Re-secure Fender Posts), the quantity for payment shall be the number of linear feet of fender posts actually unfastened and re-secured. When, in the opinion of the Engineer, it is necessary to unfasten and later re-secure sound fender posts in order to install new members as specified in a Work Order, the Contractor will be compensated for unfastening and re-securing the sound fender posts under this item. In no event, however, shall the unfastening and re-securing of sound timber be construed as removing fender posts.

In the case of Item No. 20 (Re-secure Wales), the quantity for payment shall be the number of linear feet of chocks, wales or vertical sheeting, as the case may be, actually unfastened and re-secured, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under these items. When, in the opinion of the Engineer, it is necessary to unfasten and later re-secure sound timber in order to install new members as specified in a Work Order, the Contractor will be compensated for unfastening and re-securing the sound timber at the applicable unit price for each item. In no event, however, shall the unfastening and re-securing of sound timber be construed as a removal.

In the case of Item No. 21 (Re-secure Vertical Sheeting), the quantity for payment shall be the number of linear feet of chocks, wales or vertical sheeting, as the case may be, actually unfastened and re-secured, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item. When, in the opinion of the Engineer, it is necessary to unfasten and later re-secure sound timber in order to install new members as specified in a Work Order, the Contractor will be compensated for unfastening and re-securing the sound timber at the applicable unit price for each item. In no event, however, shall the unfastening and re-securing of sound timber be construed as a removal.

In the case of Item No. 22(Removal and Disposal of Chocks Other Than For Vertical Sheeting System), the quantity for payment shall be the number of linear feet of chocks, wales or backing logs, as the case may be, actually removed for disposal of off Authority property, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item.

In the case of Item No. 23 (Removal and Disposal of Fender Posts), the quantity for payment shall be the number of fender posts actually removed for disposal of off Authority property.

In the case of Item No. 24 (Removal and Disposal of Wales Other Than For Vertical Sheeting System), the quantity for payment shall be the number of linear feet of chocks, wales or backing logs, as the case may be, actually removed for disposal of off Authority property, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item.

In the case of Item No. 25 (Removal and Disposal of Backing Logs), the quantity for payment shall be the number of linear feet of chocks, wales or backing logs, as the case may be, actually removed for disposal of off Authority property, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item.

In the case of Item No. 26 (Removal and Disposal of Chocks - Vertical Sheeting System), the quantity for payment shall be the number of linear feet of chocks in the vertical sheeting, actually removed from the vertical sheeting system for disposal of off Authority property, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item. No payment for removal and disposal of chocks and wales, as described in Item No. 22, will be included for payment under this item.

In the case of Item No. 27 (Removal and Disposal of Wales - Vertical Sheeting System), the quantity for payment shall be the number of linear feet of wales on the vertical sheeting, actually removed from the vertical sheeting system and properly disposed of off Authority property, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item. No payment for removal and disposal of wales, as described in Item No. 24, will be included for payment under this item.

In the case of Item No. 28 (Removal and Disposal of Vertical Sheeting - Vertical Sheeting System), the quantity for payment shall be the number of linear feet of vertical sheeting, actually removed from the vertical sheeting system and properly disposed of off Authority property, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item.

In the case of Item No. 29 (Mooring Device - Bollard), the quantity for payment shall be the number of bollard mooring devices, actually installed in accordance with the details on Contract Drawing No. S021.

In the case of Item No. 30 (Mooring Device - Cleat), the quantity for payment shall be the number of cleat mooring devices, actually installed in accordance with the details on Contract Drawing No. S021.

In the case of Item No. 31 (Drill Holes For Installing Mooring Devices), the quantity for payment shall be the number of linear feet of 2 1/4" diameter holes actually drilled in concrete for installing mooring devices, measured after drilling, in accordance with the details on Contract Drawing No. S021.

In the case of Item No. 32 (Re-secure Mooring Device - Bollard), the quantity for payment shall be the number of bollard mooring devices, actually re-secured. In no event, however, shall the unfastening and re-securing of a mooring device be construed as a removal of such device.

In the case of Item No. 33 (Re-secure Mooring Device - Cleat), the quantity for payment shall be the number of cleat mooring devices, actually re-secured. In no event, however, shall the unfastening and re-securing of a mooring device be construed as a removal of such device.

In the case of Item No. 34 (Removal and Disposal of Mooring Device - Bollard), the quantity for payment shall be the number of bollard mooring devices, actually removed for disposal of off Authority property.

In the case of Item No. 35 (Removal and Disposal of Mooring Device), the quantity for payment shall be the number of cleat mooring devices, actually removed for disposal of off Authority property.

In the case of Item No. 36 (Rubber Blocks), the quantity for payment shall be the number of rubber blocks as shown on Contract Drawing S012 and the number of cylindrical marine fenders as shown on Contract Drawing S004 actually installed.

In the case of Item No. 37 (Removal and Disposal of Rubber Blocks), the quantity for payment shall be the number of rubber blocks actually removed for disposal of off Authority property.

In the case of Item No. 38 (Re-Installation of Rubber Blocks), the quantity for payment shall be the number of rubber blocks actually re-installed.

In the case of Item No. 39 (Treated Fender Blocks), the quantity for payment shall be the number of thousand feet board measure (MBM) of treated wales, treated backing logs, treated vertical sheeting, treated fender blocks and treated fender blocks-vertical sheeting system, as the case may be actually installed, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item.

In the case of Item No. 40 (Treated Fender Blocks - Vertical Sheeting System), the quantity for payment shall be the number of thousand feet board measure (MBM) of treated wales, treated backing logs, treated vertical sheeting, treated fender blocks and treated fender blocks-vertical sheeting system, as the case may be actually installed, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under this item.

In the case of Item No. 41 (Removal and Disposal of Fender Blocks), the quantity for payment shall be the number of linear feet of fender blocks actually removed and properly disposed of off Authority property, measured along the centerline of the face of the blocks in place.

In the case of Item No. 42 (Mobilization - Brooklyn-Port Authority Marine Terminal and Red Hook Container Terminal), the quantity for payment shall be the actual number of times, which the Contractor's equipment and crew move to either the Brooklyn-Port Authority Marine Terminal or Red Hook Container Terminal. No payment for mobilization under this item shall be made for a move within the Brooklyn-Port Authority Marine Terminal or Red Hook Container Terminal, or from one terminal specified in this item to another terminal specified in this item.

In the case of Item No. 43 (Mobilization - Port Newark and Elizabeth Port Authority Marine Terminal), the quantity for payment shall be the actual number of times, which the Contractor's equipment and crew move to either Port Newark or Elizabeth-Port Authority Marine Terminal. No payment for mobilization under this item shall be made for a move within the Port Newark and Elizabeth-Port Authority Marine Terminal, or from one terminal specified in this item to another terminal specified in this item.

In the case of Item No. 44 (Mobilization, Port Authority Auto Marine Terminal), the quantity for payment shall be the actual number of times, which the Contractor's equipment and crew move to the Port Authority Auto Marine Terminal. No payment for mobilization shall be made for a move within the Port Authority Auto Marine Terminal under this item.

In the case of Items No. 45 and 46 (Equipment and Crew Work Suspension), the quantity for payment shall be the number of hours in a normal eight hour working day that elapse between, a) the time the Contractor is ordered to suspend Equipment Work and Crew Work, as the case may be, and standby or relocate to areas at the same construction site due to interference with shipping, tenant operations or for any other reason, when so directed by the Engineer and, b) the time he is ordered to resume Work or is ordered to terminate by the Engineer. Payment for elapsed time under these items shall be pro-rated to the nearest half hour. As used herein "Crew" shall mean all workers employed at the construction site by the Contractor and subcontractors for the Work under the Work Order. "Equipment" shall mean equipment used at the construction site by the Contractor and subcontractors for the Work under the Work Order. In the event the Engineer, in his sole opinion, determines that the area of Work specified in the written Work Order is no longer available and that no alternative area of Work specified in the written Work Order is available at the construction site, then the Contractor shall terminate his operation without further compensation. The Contractor shall resume his operations within 21 calendar days after receipt of notice that the area is available for Work. Compensation for remobilization of same shall be determined in accordance with the applicable mobilization item of the clause entitled "Compensation for Extra Work".

In the case of Item No. 47 (Barge Fender System Sections), the quantity for payment shall be the number of 29'-41/2" barge fender sections, actually installed in accordance with Contract Drawing No. S016, excluding timber facing which shall be paid under Item No. 48.

In the case of Item No. 48 (Timber Facing For Barge Fender System), the quantity for payment shall be the number of linear feet of timber facing for barge fenders actually installed in accordance with Contract Drawing No. S016, measured alongthe vertical centerline of the timber in place.

In the case of Item No. 49 (Rubber Fender System, Berths 51-63 (ODD)), the quantity for payment shall be the number of rubber fenders actually installed in accordance with Contract Drawing S011. Fender panels for the rubber fender system Berths 51-63 (Odd) are not included for payment under this item, but will be paid for under Item No. 53.

In the case of Item No. 50 (Rubber Fender System, Partial Berths 66-74 (Even)), the quantity for payment shall be the number of buckling column fenders, actually installed in accordance with Contract Drawing S014. Fender panels for the rubber fender system Partial 66-74 (Even) are not included for payment under this item, but will be paid for under Item No. 54.

In the case of Item No. 51 (Rubber Fender System, Berths 82 – 86 (Even), Partial Berths 88, 90, 92), the quantity for payment shall be the number of rubber fenders actually installed in accordance with Contract Drawings S015. Fender panels for the rubber fender system Berths 82-86 (Even), Partial Berths 88, 90, 92 are not included for payment under this item, but will be paid for under Item No. 55.

In the case of Item No. 52 (Rubber Fender System, Partial Berth 88 Barge Fender), the quantity for payment shall be the number of rubber fenders actually installed in accordance with Contract Drawings S016. Fender panels for the rubber fender system Partial Berth 88 Barge Fender are not included for payment under this item, but will be paid for under Item No. 47.

In the case of Item No. 53 (Fender Panel For Rubber Fender System – Berths 51 – 63 (ODD)), the quantity for payment shall be the number of square feet of fender panel, including reaction and suspension chains, for rubber fender system Berths 51-63 (Odd) actually installed in accordance with Contract Drawing No. S011, measured on the vertical face of the panel in place.

In the case of Item No. 54 (Fender Panel For Rubber Fender System – Partial Berths 66 – 74 (Even)), the quantity for payment shall be the number of square feet of fender panel, for rubber fender system Partial Berths 66-74 (Even) actually installed in accordance with Contract Drawing No. S014, measured on the vertical face of the panel in place.

In the case of Item No. 55 (Fender Panel For Rubber Fender System – Berths 82-86 (Even), Partial Berths 88, 90, 92), the quantity for payment shall be the number of square feet of fender panel, including reaction and suspension chains, for rubber fender system Berths 82-86 (Even), Partial Berths 88, 90, 92 actually installed in accordance with Contract Drawing No. S015, measured on the vertical face of the panel in place.

In the case of Item No. 56 (Removal of Barge Fender System Section), the quantity for payment shall be the number of 29'-4 1/12" barge fender system sections actually removed to accommodate installations in accordance with Contract Drawing No. S016, excluding the removal of timber facing which shall be paid for under Item No. 59.

In the case of Item No. 57 (Greenheart Fender Piles Over 46 FT. to 70 FT.), the quantity for payment shall be the number of linear feet of greenheart fender piles actually installed, measured by the Engineer from the tip to the cut-off elevation.

In the case of Item No. 58 (Untreated Wales), the quantity for payment shall be the number of thousand feet board measure (MBM) of untreated Wales, untreated backing logs, untreated vertical sheeting, untreated fender blocks and untreated fender blocks-vertical sheeting system, as the case may be actually installed, measured along the centerline of the face of the timbers in place, without deduction for any length occupied by bolt holes, bevels, notches or splices. No length occupied by timber wedging or blocking shall be included in the measurement for payment under these items.

In the case of Item No. 59 (Removal Timber Facing For Barge Fender System), the quantity for payment shall be the number of linear feet of 8" x 12" timber facing for barge fenders sections actually removed to accommodate installations in accordance with Contract Drawing No. S016, measured along the vertical centerline of the timber in place.

In the case of Item No. 60 (Greenheart Fender Piles Over 46 FT. To 70 FT. For Stockpile), the quantity for payment shall be the number of linear feet of greenheart fender piles over 46 ft. to 70 ft. actually furnished measured by the Engineer after stockpiling.

In the case of Item No. 61 (Untreated Southern Yellow Pine Fender Piles Over 46 FT. to 70 FT. For Stockpile), the quantity for payment shall be the number of linear feet of untreated southern yellow pine fender piles over 46 ft. to 70 ft. actually furnished measured by the Engineer after stockpiling.

In the case of Item No. 62 (Install Piles From Stockpile), the quantity for payment shall be the number of linear feet of stockpiled piles, greenheart and untreated over 46 ft. to 70 ft. actually installed, measured by the Engineer from the tip to the cut-off elevation.

In the case of Item No. 63 (Load and Transport Piles from Stockpile), the quantity for payment shall be the number of piles of any length actually loaded from the stockpile and transported.

In the case of Item No. 64 (Chain Anchor), the quantity for payment shall be the number of chain anchors actually installed in accordance with the detail entitled "Chain Anchor Detail" on Contract Drawing No. S004.

In the case of Item No. 65 (Cable Tie Back Assembly), the quantity for payment shall be the number of cable tie back assemblies actually installed in accordance with the detail entitled "Cable Tie Back Assembly" on Contract Drawing No. S012.

In the case of Item No. 66 (Towing Equipment for Move), the quantity for payment shall be the actual number of tug movements at the construction site ordered by the Engineer due to tenant or shipping interference with the Contractor's Operations.

25. COMPENSATION FOR EXTRA WORK

The Chief Engineer shall have authority to agree in writing with the Contractor on behalf of the Authority upon lump sum or other compensation for Extra Work in lieu of the compensation for which provision is hereinafter made in this numbered clause.

If such agreement on compensation is not made, and Extra Work be performed, the Contractor's compensation shall be increased by the following amounts and such amounts only:

1.) For Extra Work consisting of refuse container services, an amount equal to the actual net cost in money of the labor and materials required for the provision of such services, plus seven per cent (7%) of such net cost.

2.) For Extra Work consisting of performance of construction work at the construction site, an amount determined as follows:

a. In the case of Extra Work performed by the Contractor personally, an amount equal to the actual net cost in money of the labor and materials required for such Extra Work, plus twenty per cent (20%) of such net cost, plus such rental for equipment (other than small tools) required for such Extra Work as the Engineer deems reasonable.

b. In the case of Extra Work performed by a subcontractor, an amount equal to the actual net cost in money of the labor and materials required for such Extra Work, plus twenty per cent (20%) of such net cost plus such rental for equipment (other than small tools) required for such Extra Work as the Engineer deems reasonable, plus seven per cent (7%) of the sum of the foregoing cost, percentage of cost, and rental.

As used in this numbered clause (and in this clause only):

"Refuse Container Services' means the delivery, removal and emptying of refuse containers as required during the performance of Extra Work subject to approval by the Engineer.

"Labor" means foremen, surveyors, laborers, mechanics and other employees below the rank of superintendent, exclusive of timekeepers, directly employed at the construction site, whether employed by the Contractor or by the subcontractors, subject to the Engineer's authority to determine what employees of any category are "required for Extra Work" and as to the portion of their time allotted to Extra Work; and "cost of labor" means the wages actually paid to and received by such employees; however, all wages actually paid that are in excess of the prevailing wages in the performance of Extra Work shall be subject, on each occasion, to the initial and continuing approval of the Engineer in advance of the performance of such Extra Work; plus a proper proportion of (a) vacation allowances and union dues and assessments which the employer actually pays pursuant to contractual obligation upon the basis of such wages, and (b) taxes actually paid by the employer pursuant to law upon the basis of such wages. "Employees" as used above means only the employees of one employer.

"Materials" means temporary and consumable materials as well as permanent materials; and "cost of materials" means the price (including taxes actually paid by the Contractor pursuant to law upon the basis of such materials) for which such materials are sold for cash by the manufacturers or producers thereof, or by regular dealers therein, whether or not such materials are purchased directly from the manufacturer, producer or dealer (or if the Contractor is the manufacturer or producer thereof, the reasonable cost to the Contractor of the manufacture and production), plus the reasonable cost of delivering such materials to the construction site in the event that the price paid to the manufacturer, producer or dealer does not include delivery and in case of temporary materials, less their salvage value, if any.

"Work day" in reference to an item of equipment means a day other than a Saturday, Sunday or legal holiday except that if the particular item of equipment is actually utilized at the construction site by the Contractor or subcontractors under this or any other Contract with the Authority on a Saturday, Sunday or legal holiday said day shall be deemed a work day.

The rental for equipment, whether owned by the Contractor or subcontractors or rented from others and notwithstanding the actual price of any rental or actual costs associated with such equipment, shall be computed by the Engineer on the basis of the following:

A.

1.) Hourly rental for those items of equipment listed in the "Rental Rate Blue Book" (published by Machinery Information Division, K-III Directory Corporation, 1735 Technology Drive, Suite 410, San Jose, California 95110), (hereinafter called "the Blue Book"), shall be 100% of the applicable rates as listed in said book, reduced to an hourly basis (see formula below) except that such applicable rates shall be reduced by 50% for all hours of rental payable hereunder in excess of 8 hours each day. The edition of this publication to be used shall be the one in effect on the date of the actual rental of the equipment. The "Estimated Operating Cost per Hour" as set forth for such item of equipment in the Blue Book shall be added to the hourly rental for each hour that such equipment is actually engaged in performing Extra Work. No amount for operating cost will be allowed during periods when such equipment is not actually engaged in performing Extra Work (i.e., standby rental time). None of the provisions of the Blue Book shall be deemed referred to or included in this Contract except as specifically set forth in this Section.

2.) If no listing of rental rate and/or hourly operating cost for the item of equipment is in the Blue Book, the Engineer shall determine the reasonable rate of rental and/or hourly operating cost of the particular item of equipment by such other means as he finds appropriate.

3.) In the event the Contractor is directed by the Engineer to immediately perform Extra Work within 24 hours of the direction to proceed, the Engineer shall determine the reasonable rate of rental and/all hourly operating cost of the items of equipment necessary to perform such Extra Work by such means as he finds appropriate. However, if the equipment is owned by the Contractor or owned by a subsidiary of the Contractor, the Blue Book rates will apply as set forth in this clause.

B. When utilizing the rental rates appearing in the Blue Book, the Engineer shall determine the applicable rate and the hourly rental determined therefrom by applying the following criteria:

1.) The rate to be applied for an item of equipment used on a particular Extra Work order shall be the monthly rates from the foregoing publication.

The pro rata portion which one hour bears to the applicable rate shall be determined in accordance with the following formula:

Hourly rate based on monthly rental.	1/176 of monthly rental from Blue Book

2.) The rental rate shall be multiplied by the applicable regional adjustment factor shown for such item of equipment in the Blue Book. The adjustment factor shall not apply to the hourly operating cost.

3.) If the Engineer should determine that the nature or size of the equipment used by the Contractor in connection with Extra Work is larger or more elaborate, as the case may be, than the size or nature of the minimum equipment determined by the Engineer to be suitable for the Extra Work, the reasonable rental will not be based upon the equipment used by the Contractor but will be based on the smallest or least elaborate equipment determined by the Engineer to have been suitable for the performance of the Extra Work.

C. In the case of equipment utilized only for Extra Work: (a) in addition to amounts determined as provided in subparagraphs A and B above, there will be added to the rental as computed above the taxes on the rental actually paid by the Contractor or subcontractor and the reasonable cost of transporting such equipment to and from the construction site, including applicable tolls, and (b) notwithstanding the number of hours during which such equipment is utilized, the minimum rental therefor will be for a period of eight hours.

In computing the Contractor's compensation insofar as it is based upon Extra Work, and notwithstanding any provision to the contrary appearing in the Blue Book, no consideration shall be given to any items of cost or expense not expressly set forth above, it being expressly agreed that the costs and percentage additions hereinbefore provided cover items of cost and expense to the Contractor of any type whatsoever, including administration, overhead, taxes (other than those enumerated above), clean-up, consumables including gas and oil, drafting (including printing or other reproduction), coordination, field measurements, maintenance, repairs, insurance, profit to the Contractor and small tools.

Whenever any Extra Work is performed (whether by the Contractor directly or through a subcontractor), the Contractor shall, at the end of each day, submit to the Engineer (a) daily time slips showing the name and number of each workman employed on such Work, the number of hours which he is employed thereon, the character of his duties, and the wages to be paid to him, (b) a memorandum showing the state and federal taxes based on such wages, and vacation allowances and union dues and assessments which the employer actually pays pursuant to contractual obligation upon the basis of such wages (c) a memorandum showing the amount and character of the materials furnished for such Work, from whom they were purchased and the amount to be paid therefor, and (d) a memorandum of equipment used in the performance of such Work, listing the actual hours of operation for each piece of equipment, together with the rental claimed therefor. Such memoranda and time slips are for the purpose of enabling the Engineer to determine the amounts to be paid by the Authority under this numbered clause; and accordingly, they shall constitute a condition precedent to such payment and the failure of the Contractor or his subcontractors to furnish them with respect to any Work shall constitute a conclusive and binding determination on his part that such Work is not Extra Work and shall constitute a waiver by the Contractor of claims for payment for such Work. The Contractor's compensation for Extra Work shall be subject to audit review by the Authority. The Engineer will notify the Contractor that an audit review will be conducted no later than 90 days from the date of such notification. The Engineer will also provide the Contractor with an estimated duration of the audit. During the audit review, the Contractor shall provide records to substantiate the memorandum and time slips submitted to the Engineer. Failure to provide such Contractor or subcontractor records may result in a reduction or total denial of material, equipment and labor costs for Extra Work. Upon completion of the audit review, the Contractor will be provided with the audit findings of the Authority. If the Contractor disagrees in whole or in part with the audit findings, the Contractor shall notify the Authority of such disagreement in writing within 30 days of receipt of said audit findings or the Authority will deem the audit findings to be final and acceptable to the Contractor. In the event that the Chief Engineer and the Contractor shall agree in writing upon a lump sum or other compensation for Extra Work in lieu of compensation as provided in the second paragraph of this clause, the daily time slips and memoranda required by this paragraph shall not be required subsequent to the date on which such agreement has been reached.

26. COMPENSATION FOR PREMIUM TIME

Where the Engineer directs that the Contractor perform Work at times other than those elsewhere specified in the Contract, and the Contractor directly or through a subcontractor is obligated by the provisions of its applicable collective bargaining agreement to pay premium time rates for such Work then, the Contractor shall be compensated for the cost differential between regular time rates and premium time rates at an amount equal to the total of the following:

A. For premium time rates paid by the Contractor to its own forces, an amount equal to the premium time portion of the salaries and wages which the employer is required to pay and actually pays to its employees pursuant to the terms of its applicable collective bargaining agreement for the overtime period or periods described above, plus a proper proportion, if any, computed upon the basis of premium time salaries and wages of (1) taxes actually paid by the employer pursuant to law, (2) vacation allowances, other fringe benefits and union dues and assessments which the employer actually pays pursuant to contractual obligations, and (3) increased premiums paid by the Contractor personally, specifically allocable to the insurance required by this Contract, plus five per cent (5%) of such premium portion.

B. For premium time rates paid by a subcontractor, an amount equal to the premium time portion of the salaries and wages which the employer is required to pay and actually pays to its employees pursuant to the terms of its applicable collective bargaining agreement for the overtime period or periods described above, plus a proper proportion, if any, computed upon the basis of premium time salaries and wages of (1) taxes actually paid by the employer pursuant to law, (2) vacation allowances, other fringe benefits and union dues and assessments which the employer actually pays pursuant to contractual obligations, and (3) increased premiums paid by a subcontractor, specifically allocable to the insurance required by this Contract, plus five per cent (5%) of such premium portion, plus two per cent (2%) of the foregoing cost.

All additions to the Contractor's compensation provided for in this clause require the prior written approval of the Engineer and are conditioned on the Contractor's verifiable by the Authority payment of such amounts to his subcontractor.

The additions to the Contractor's compensation provided in this clause shall not apply where the Engineer directs the Contractor to perform work at times other than those specified elsewhere in the Contract and also determines that such work is required to mitigate previous delays in the Contractor's performance of Work.

27. COMPENSATION FOR EMERGENCY DELAYS

If the Contractor is specifically directed by the Engineer to suspend his operations as stipulated in the Specifications entitled "Conditions and Precautions" or if the Contractor is specifically directed not to start his operations at a time when operations are permitted to start as stipulated in such Section, and if solely because of such suspension or direction not to start any of the Contractor's or subcontractor's employees or equipment then engaged in or about to start such Work are necessarily kept idle at the construction site, during the hours when they would otherwise be engaged in the performance of the Work, then the Contractor's compensation shall be increased by an amount equal to the salaries and wages in amounts approved by the Engineer which the employer is required to pay and actually pays to such employees for the period or periods of such idleness, plus a proper proportion of (a) taxes actually paid by the employer pursuant to law upon the basis of such salaries and wages, and (b) vacation allowances and union dues and assessments which the employer actually pays pursuant to contractual obligations upon the basis of such salaries and wages, and in addition thereto such rental as the Engineer deems reasonable for such equipment during the period or periods of such idleness. The rental for idle equipment shall be computed by the Engineer in accordance with the provisions of the clause of the Form of Contract entitled "Idle Salaried Men and Equipment".

In the event that the Contractor deems that any payment should be made pursuant to this numbered clause, he shall give prompt written notice to the Engineer stating the reasons why he believes such payments should be made and shall moreover, furnish to the Engineer at the end of each day, a memorandum showing the name, payroll title, salary rate and employer of each of the workingmen, and description, owner and claimed rental rate for each item of equipment claimed to have been kept idle. Said notice and memorandum are for the purpose of enabling the Engineer to verify the Contractor's claim at the time. Accordingly, notwithstanding any other provisions hereof, the failure of the Contractor to furnish such notice and memorandum shall constitute a conclusive binding determination on his part that he is not entitled to compensation as provided herein and shall constitute a waiver by the Contractor of all claims for such payment, such notice and memorandum being conditions precedent to payment under this numbered clause.

28. MONTHLY ADVANCES

On or about the fifteenth day of each month, the Engineer shall (upon receipt from the Contractor of such information as he may require, including a certification in writing, in such form as may be required pursuant to the clause hereunder entitled "Prevailing Rate of Wage", that he has paid and caused his subcontractors to pay at least the prevailing rate of wage and supplements required by such clause) estimate and certify to the Authority the approximate amount of Work performed and compensation earned by the Contractor up to that time showing separately:

A. The approximate amount of Classified Work performed by the Contractor up to that time and a sum determined from such Work in accordance with the units of measurement and unit prices specified in the Schedule of Unit Prices.

B. The increases, if any, in the Contractor's compensation for which provision is specifically made elsewhere in this Contract.

As an aid to the Contractor and to facilitate his performance, the Authority shall, within fifteen days after the receipt of each such monthly certificate, advance to the Contractor by check the sums so certified, minus, however, five per cent (5%) of the sum certified pursuant to subparagraph A of this numbered clause, and minus all prior advances and payments to the Contractor or for his account and minus payments by the Authority to lessors of construction equipment.

Within seven days of receipt of any sum attributable to Work performed by a subcontractor or materialman or within such later period as is provided in the subcontract or purchase agreement, the Contractor shall advance to the subcontractor or materialman said sum, less such amount, if any, as the Contractor is authorized to retain under the subcontract or purchase agreement.

Notwithstanding the above, the Authority shall have the right, at its sole discretion, to directly pay the subcontractors and material suppliers who perform Work for or furnish materials to the Contractor in connection with the Work of this Contract.

Prior to certifying any amount for payment hereunder, the Engineer may require that the Contractor submit a certification accurately and fully setting forth the total amount due and payable to each subcontractor and supplier for Work performed or materials provided by such subcontractor or supplier in connection with the Work of this Contract. Any payment made by the Authority to a subcontractor or supplier pursuant to the provisions of this numbered clause shall be made in reliance upon such certification and all such payments shall be considered as advances to the Contractor of the compensation payable hereunder. No such payment shall relieve the Contractor of any of its obligations hereunder.

Furthermore, within fifteen (15) days of the Contractor's receipt of the Authority acceptance of the Contractor's Proposal, the Contractor shall submit to the Engineer a listing of all subcontract and material supply agreements entered into by the Contractor for the performance of Work required by this Contract. Such listing shall include the names and addresses of each such subcontractor and supplier and the amounts payable under each such agreement. As and when any modifications are made to such agreements or any additional subcontracts or supply agreements are entered into, the Contractor shall inform the Engineer of such and shall indicate the amounts payable thereunder.

Nothing contained herein shall be deemed to create any additional rights in such subcontractors or suppliers or to alter the rights of the Authority as such are set forth in the clause hereof entitled "Withholding of Payments".

29. RELEASE OF MONIES PREVIOUSLY WITHHELD FROM MONTHLY ADVANCES UPON RENDITION OF A CERTIFICATE OF SUBSTANTIAL COMPLETION

After the rendition of the Certificate of Substantial Completion and with the approval of the Engineer, an amount up to 80% of the total amount of monies withheld from the Contractor's monthly advances in accordance with the preceding clause may be released to the Contractor. If, in the Engineer's judgment, no monies, or less than 80% of the total amount of monies withheld should be released it will be based on, but not limited to, the estimated value of the remaining Work, unresolved claims by subcontractors, the estimate of possible audit adjustments and an assessment of the risks to the Authority in making such a release of monies. This clause does not create a right to such a release of monies or to any specific percentage release, all of which shall remain purely the discretionary decision of the Engineer.

Prior to the release of any amount withheld from the Contractor's monthly advances by the Authority, the Contractor shall submit to the Engineer a certification of all unresolved requests for additional compensation including all items in dispute and potential claims which the Contractor had actual knowledge of or by reasonable inspection and inquiry should have known of, to the date of the certification. Any such items not made known to the Authority by inclusion in the certification of additional compensation requests submitted by the Contractor will be deemed to have been released by the Contractor. Notwithstanding the above provisions, before making any release of monies the Engineer may require the Contractor to submit further information for the Engineer's review and analysis, and shall require the Contractor to execute a separate written release of claims as described above in a form acceptable to the Authority.

Nothing contained herein shall be deemed to alter or diminish the rights of the Authority as such are set forth in the clauses hereof entitled "Withholding of Payments", "Final Payment", "Monthly Advances" or under any other clause of this Contract relating to compensation to the Contractor, any release of monies hereunder being purely at the discretion of the Engineer.

30. FINAL PAYMENT

After the rendition of the Certificate of Final Completion and upon receipt from the Contractor of such information as may be required, the Engineer shall certify in writing to the Authority and to the Contractor the total compensation earned by the Contractor.

If so required, the Contractor shall thereupon (i) certify to the Authority in writing, in such form as may be required pursuant to the clause hereunder entitled "Prevailing Rate of Wage", that he has paid and caused his subcontractors to pay at least the prevailing rate of wage and supplements required by such clause and (ii) furnish to the Authority a detailed sworn statement of all claims, just and unjust, of subcontractors, materialmen and other third persons then outstanding and which he has reason to believe may thereafter be made on account of the Work.

Within thirty days after issuance of such certificate of total compensation earned (or within thirty days after receipt of the documents provided for in the immediately preceding paragraph, if required), the Authority shall pay to the Contractor by check the amount stated in said certificate, less all other payments and advances whatsoever to or for the account of the Contractor. All prior estimates and payments shall be subject to correction in this payment, which is throughout this Contract called the Final Payment.

The acceptance by the Contractor, or by anyone claiming by or through him, of Final Payment for all Work Orders shall be and shall operate as a release to the Authority of all claims and of all liability to the Contractor for all things done or furnished in connection with the Contract and for every act and neglect of the Authority and others relating to or arising out of the Contract, including claims arising out of breach of contract and claims based on claims of third persons, excepting only his claims for reimbursement for certain sales taxes as hereinbefore provided. No payment, however, final or otherwise, shall operate to release the Contractor or his sureties from any obligations in connection with this Contract or the Performance and Payment Bond.

The Contractor's agreement as provided in the immediately preceding paragraph above shall be deemed to be based upon the consideration forming part of this Contract as a whole and not to be gratuitous; but in any event even if deemed gratuitous and without consideration, such agreement as provided in the immediately preceding paragraph above shall nevertheless be effective. Such release shall include all claims, whether or not in litigation and even though still under consideration by the Authority or the Engineer. Such release shall be effective notwithstanding any purported reservation of right by the Contractor to preserve such claim. The acceptance of any check designated as "Final Payment" for all Work Orders or bearing any similar designation shall be conclusively presumed to demonstrate the intent of the Contractor that such payment was intended to be accepted as final, with the consequences provided in this numbered clause, notwithstanding any purported reservation of rights.

The Contractor agrees that he shall not be entitled to, and hereby waives any right he might otherwise have to, and shall not seek any judgment whether under this Contract or otherwise for any such Final Payment or for an amount equivalent thereto or based thereon, or for any part thereof, if such judgment would have the effect of varying, setting aside, disregarding or making inapplicable the terms of this numbered clause or have the effect in any way of entitling the Contractor to accept such Final Payment or an amount equivalent thereto or based thereon or any part thereof other than in the same fashion as a voluntary acceptance of a Final Payment subject to all the terms of this Contract including this numbered clause, unless and until the Contractor should obtain a judgment on any claim arising out of or in connection with this Contract (including a claim based on breach of contract) for an amount not included in said Final Payment. In any case in which interest is allowable on the amount of the Final Payment, such interest shall be at the rate of 6% per annum for the period, if any, in which such interest is due.

31. WITHHOLDING OF PAYMENTS

If (1) the Contractor fails to perform any of his obligations under this Contract or any other agreement between the Authority and the Contractor (including his obligation to the Authority to pay any claim lawfully made against him by any materialman, subcontractor or workman or other person which arises out of or in connection with the performance of this Contract or any other agreement with the Authority) or (2) any claim (just or unjust) which arises out of or in connection with this Contract or any other agreement between the Authority and the Contractor is made against the Authority or (3) any subcontractor under this Contract or any other agreement between the Authority and the Contractor fails to pay any claims lawfully made against him by any materialman, subcontractor, workman or other third person which arises out of or in connection with this Contract or any other agreement between the Authority and the Contractor or if in the opinion of the Chief Engineer any of the aforesaid contingencies is likely to arise, then the Authority shall have the right, in its discretion, to withhold out of any payment (final or otherwise and even though such payment has already been certified as due) such sums as the Chief Engineer may deem ample to protect it against delay or loss or to assure the payment of just claims of third persons, and to apply such sums in such manner as the Chief Engineer may deem proper to secure such protection or satisfy such claims. All sums so applied shall be deducted from the Contractor's compensation. Omission by the Authority to withhold out of any payment, final or otherwise, a sum for any of the above contingencies, even though such contingency has occurred at the time of such payment, shall not be deemed to indicate that the Authority does not intend to exercise its right with respect to such contingency. Neither the above provisions for rights of the Authority to withhold and apply monies nor any exercise or attempted exercise of, or omission to exercise, such rights by the Authority shall create any obligation of any kind to such materialmen, subcontractors, workmen or other third persons.

Until actual payment to the Contractor, his right to any amount to be paid under this Contract (even though such amount has already been certified as due) shall be subordinate to the rights of the Authority under this numbered clause.

In the event that wages and/or supplements have been paid in an amount less than as required by this Contract, the Authority shall also have the right to withhold from the Contractor out of any payment, final or otherwise, on this, or any other open contract that the Contractor has with the Authority, so much as may be necessary to pay to laborers, mechanics, architects, draftsmen, engineers and technical workers, and others employed on the Work, the difference between the sums such persons should have received as wages and/or supplements and the amounts they actually received, and to pay such sums over to such persons. All such payments shall be deemed to be payments for the Contractor's account. In addition, the Contractor shall be required to pay to the Authority an amount equal to the Authority's cost of any investigation conducted by or on behalf of the Authority, that discovers a failure to pay wages and/or supplements as required by this Contract by the Contractor or its subcontractors, the cost of such investigation to be determined by the Chief Engineer personally. If the Contractor fails or refuses to pay for the cost of any such investigation after demand by the Authority, the Authority may deduct from any amount payable to the Contractor by the Authority, under the Contract or under any other open contract between the Contractor and the Authority, an amount equal to the cost of such investigation.

If, however, the payment of any amount due to the Contractor shall be improperly delayed by the fault of the Authority, the Authority shall pay the Contractor interest thereon at the rate of six percent (6%) per annum for the period of delay, it being agreed that such interest shall be in lieu of and in liquidation of any damages to the Contractor because of such delay.

CHAPTER III

PROVISIONS RELATING TO TIME

32. TIME FOR COMPLETION AND DAMAGES FOR DELAY

The Contractor shall complete the performance of all Work required by each Work Order within the time(s) specified by the Engineer in such Work Order.

The Contractor shall not commence the performance of the first Work Order until the later of the following dates:

A. If a Performance and Payment Bond is required, the date of receipt by him of notice from the Authority that the Performance and Payment Bond furnished by him is satisfactory;

B. The date of receipt by him of notice from the Authority that the insurance procured by him in accordance with the clause hereof entitled "Insurance Procured by Contractor" is satisfactory, as evidenced by the certificate(s) to be furnished in accordance with said clause.

The time for completion shall not be extended on account of the time required to furnish the documents referred to in subparagraphs A and B above, but the Authority shall give notice to the Contractor within ten days after receipt of the Performance and Payment Bond or certificate of insurance as to whether or not such bond or insurance is satisfactory.

The Contractor's obligations for the performance and completion of the Work within the time or times provided for in this Contract are of the essence of this Contract. The Contractor guarantees that he can and will complete the performance of the Work within the time hereinbefore stipulated or within the time as extended in accordance with the clause hereof entitled "Extensions of Time". Inasmuch as the damage and loss to the Authority which will result from delay in completing the performance of the Work within the time herein stipulated will include items of loss whose amount will be incapable or very difficult of accurate estimation, the damages to the Authority for each calendar day by which the Contractor does not complete performance of the Work within the time or times above stipulated or within such time or times as extended in accordance with the clause hereof entitled "Extensions of Time", shall be liquidated in the sum of Five Hundred Dollars ($500) per calendar day.

The Contractor shall notify the Engineer of the time he plans to commence Work at the construction site at least 2 days prior to such time.

33. TERM OF CONTRACT

The term of the Contract shall commence on the date of Authority acceptance of the Contractor's Proposal and shall terminate on the date two (2) years after the date of the Authority's acceptance of the Contractor's Proposal. However, if a Work Order is issued prior to the date two (2) years after the date of the Authority's acceptance of the Contractor's Proposal which requires Work after the aforementioned two (2) year period, the Contractor shall perform such Work and the Contract shall continue in full force and effect until the completion of such Work Order.

This Contract may be terminated by the Authority at any time during the term of this Contract. The Authority shall have the right to terminate this Contract or any part thereof, without cause, at any time, upon 30 days written notice to the Contractor. The right of termination described above shall be in addition to any rights and remedies that the Authority would have at law or in equity resulting from the Contractor's breech of this Contract.

34. EXTENSIONS OF TIME

The time above provided for completion of any part of the Contract shall be extended (subject, however, to the provisions of this numbered clause) only if in the opinion of the Engineer the Contractor is necessarily delayed in completing such part by such time solely and directly by a cause which meets all the following conditions:

A. Such cause is beyond the Contractor's control and arises without his fault;

B. Such cause comes into existence after the opening of Proposals on this Contract and neither was nor could have been anticipated by investigation before such opening.

Variations in temperature and precipitation shall be conclusively deemed to have been anticipated before opening of such Proposals on this Contract except to the extent that the actual monthly average temperature varies from a temperature which is 10 per cent (10%) above or below the monthly normal temperature and except to the extent that the actual number of days of precipitation (of 0.1 inch or more) per month exceeds a number equal to two plus the normal number of days of precipitation per month.

In any case, the variations in temperature and precipitation described in the immediately preceding sentence will be cause for an extension of time only if occurring between the actual time of commencement of the Work at the construction site and the time for completion stipulated in the clause hereof entitled "Time for Completion and Damages for Delay" (or such time as extended as provided for herein). In the case of portions of months the number of days will be pro-rated by the Engineer. Temperature and precipitation shall be as recorded by the U. S. Weather Bureau in its publications, including that entitled "Local Climatological Data with Comparative Data", which is applicable to the area in which the Work is to be performed, and in the case of precipitation, the normal number of days of precipitation (of 0.1 inch or more) per month as abstracted from the aforementioned publications are as follows:

Month	**Normal number of days per month on which precipitation exceeds 0.1 inch**
January	7
February	7
March	8
April	7
May	6
June	6
July	5
August	7
September	6
October	6
November	7
December	7

In any event, even though a cause of delay meets all the above conditions, an extension shall be granted only to the extent that (i) the performance of the Work is actually and necessarily delayed and (ii) the effect of such cause cannot be anticipated and avoided or mitigated by the exercise of all reasonable precautions, efforts and measures (including planning, scheduling and rescheduling), whether before or after the occurrence of the cause of delay, and an extension shall not be granted for a cause of delay which would not have affected the performance of the Contract were it not for the fault of the Contractor or for other delay for which the Contractor is not entitled to an extension of time.

Any reference herein to the Contractor shall be deemed to include subcontractors and materialmen, whether or not in privity of contract with the Contractor, and employees and others performing any part of the Contract and all the foregoing shall be considered as agents of the Contractor.

The period of any extension of time shall be that necessary to make up the time actually lost, subject to the provisions of this numbered clause, and shall be only for the portion of the Contract actually delayed. The Engineer may defer all or part of his decision on an extension and any extension may be rescinded or shortened if it subsequently is found that the delays can be overcome or reduced by the exercise of reasonable precautions, efforts and measures.

As a condition precedent to an extension of time, the Contractor shall give written notice to the Engineer within 48 hours after the time when he knows or should know of any cause which might under any circumstances result in delay for which he claims or may claim an extension of time (including those causes which the Authority is responsible for or has knowledge of), specifically stating that an extension is or may be claimed, identifying such cause and describing, as fully as practicable at the time, the nature and expected duration of the delay and its effect on the various portions of the Contract. Since the possible necessity for an extension of time may materially alter the scheduling, plans and other actions of the Authority, and since, with sufficient opportunity, the Authority might if it so elects attempt to mitigate the effect of a delay for which an extension of time might be claimed, and since merely oral notice may cause disputes as to the existence or substance thereof, the giving of written notice as above required shall be of the essence of the Contractor's obligations and failure of the Contractor to give written notice as above required shall be a conclusive waiver of an extension of time.

It shall in all cases be presumed that no extension, or further extension, of time is due unless the Contractor shall affirmatively demonstrate to the satisfaction of the Engineer that it is. To this end the Contractor shall maintain adequate records supporting any claim for an extension of time, and in the absence of such records, the foregoing presumption shall be deemed conclusive.

35. IDLE SALARIED MEN AND EQUIPMENT

If any salaried men or equipment of the Contractor or any subcontractor are necessarily kept continuously idle and wholly unoccupied at the construction site for a full day on each of two or more full days on which they would be engaged in the performance of the Work but for causes due solely to acts or omissions of the Authority or the Engineer occurring after the opening of Proposals on this Contract, and if such idleness is not due to any cause within the control of the Contractor or of any of his subcontractors or materialmen or his or their employees, then the Authority shall pay to the Contractor and the Contractor shall accept (in addition to any sums otherwise payable under this Contract, and in full satisfaction of and in liquidation of all claims for damages because of such act or omission of the Authority or the Engineer) an amount equal to that which the employer actually pays such salaried employees during such full days of idleness, plus a proper proportion of vacation allowances and union dues and assessments actually paid by the employer pursuant to contractual obligations on the basis of such salaries, and a proper proportion of the taxes actually paid by the employer pursuant to law upon the basis of such salaries and plus such rental for such idle equipment as the Engineer deems reasonable. The rental for idle equipment shall be computed by the Engineer in accordance with the provisions of the clause of the Form of Contract entitled "Compensation for Extra Work"; provided, however, that the seven per cent (7%) of the rental to be paid in accordance with said clause in the case of equipment utilized by subcontractors shall not be payable in connection with such idle equipment; and provided further that the provisions of subparagraph C of said clause shall not be applicable to such idle equipment.

The Contractor shall give written notice to the Engineer before the end of the second of the above mentioned 2 or more full days (whether or not the Authority is aware of the existence of any circumstances which might constitute a basis for payment under this numbered clause), specifically stating that salaried men or equipment have been kept idle under circumstances which might result in payment under this numbered clause; and he shall furnish with such notice, for all the days that have occurred, and shall in addition furnish at the end of each additional day of the above mentioned 2 or more full days, (a) a memorandum showing the name, payroll title, salary rate and employer of each of the salaried men claimed to have been kept idle at the construction site, and taxes based upon their salaries and the holiday and vacation allowances and union dues and assessments which the employer must actually pay pursuant to contractual obligations based on their salaries, and (b) a memorandum of the equipment claimed to be kept idle, together with the amount claimed as rental therefor. Said notice and memoranda are for the purpose of enabling the Engineer to verify the Contractor's claim at the time, and of enabling him to take such steps as may be necessary to remedy the conditions upon which the claim is based. The furnishing of such notice and memoranda shall be a condition precedent to payment under this numbered clause, so that the day on which notice is given shall be counted as not later than the second of the above mentioned 2 or more full days and no subsequent day shall be counted for which the above memoranda are not furnished at the end of such day.

36. DELAYS TO CONTRACTOR

As between the Contractor and the Authority, the Contractor assumes the risk of all suspensions of or delays in performance of the Contract, regardless of the length thereof, arising from all causes whatsoever, whether or not relating to this Contract, including wrongful acts or omissions of the Authority, its officers, agents, employees and contractors, except only to the extent, if any, that compensation or an extension of time may be due as expressly provided for elsewhere in this Contract for such suspension or delays and except to the extent, if any, that compensation may be agreed to by the Chief Engineer in writing pursuant to the clause hereof entitled "Compensation for Extra Work" for impact costs incurred by the Contractor in connection with the performance of Extra Work. Subject only to such exceptions, the Contractor shall bear the burden of all costs, expenses and liabilities which he may incur in connection with such suspensions or delays, and all such suspensions, delays, costs, expenses and liabilities of any nature whatsoever, whether or not provided for in this Contract, shall conclusively be deemed to have been within the contemplation of the parties.

Notwithstanding any provisions of this Contract, whether relating to time of performance or otherwise, the Authority makes no representation or guaranty as to when the construction site or any part thereof will be available for the performance of the Contract or as to whether conditions at the construction site will be such as to permit the Contract to be performed thereon without interruption or by any particular sequence or method or as to whether the performance of the Contract can be completed by the time required under this Contract or by any other time.

Wherever in connection with this Contract it is required, expressly or otherwise, that the Authority shall perform any act relating to the Contract, including making available or furnishing any real property, materials, or other things, no guaranty is made by the Authority as to the time of such performance and the delay of the Authority in fulfilling such requirement shall not result in liability of any kind on the part of the Authority except only to the extent, if any, that an extension of time or compensation may be due as expressly provided for elsewhere in this Contract.

37. CANCELLATION FOR DELAY

If the performance of the Contract or any portion of it shall, in the opinion of the Chief Engineer, be materially delayed, whether or not through the fault of the Contractor, by any cause which affects the Contractor's ability to perform the Contract without affecting to the same degree the Authority's own ability to perform it, either directly or through others, the Authority shall have the right at any time during the existence of such delay to cancel this Contract as to any portion not yet performed, without prejudice to the rights, liabilities and obligations of the parties under this Contract arising out of portions already performed, provided, however, that such right of cancellation shall not exist if the delay be due to any wrongful act or omission of the Authority. In the event of such cancellation, no allowance shall be made for anticipated profits.

CHAPTER IV

CONDUCT OF CONTRACT

38. AUTHORITY OF CHIEF ENGINEER

Inasmuch as the public interest requires that the project to which this Contract relates shall be performed in the manner which the Authority, acting through the Chief Engineer, deems best, the Chief Engineer shall have absolute authority to determine what is or is not necessary or proper for or incidental to the portion thereof specified in the clause hereof entitled "General Agreement" and the Contract Drawings and Specifications shall be deemed merely his present determination on this point. In the exercise of this authority, he shall have power to alter the Contract Drawings and Specifications; to require the performance of Work not required by them in their present form, even though of a totally different character from that now required; and to vary, increase and diminish the character, quantity and quality of, or to countermand, any Work now or hereafter required. Such variation, increase, diminution or countermanding need not be based on necessity but may be based on convenience.

If at any time it shall be, from the viewpoint of the Authority, impracticable or undesirable in the judgment of the Chief Engineer to proceed with or continue the performance of the Contract or any part thereof, whether or not for reasons beyond the control of the Authority, he shall have authority to suspend performance of any part or all of the Contract until such time as he may deem it practicable or desirable to proceed. Moreover, if at any time it shall be, from the viewpoint of the Authority impracticable or undesirable in the judgment of the Chief Engineer to proceed with or continue the performance of the Contract or any part thereof whether or not for reasons beyond the control of the Authority, he shall have authority to cancel this Contract as to any or all portions not yet performed and as to any materials not yet installed even though delivered. Such cancellation shall be without prejudice to the rights and obligations of the parties arising out of portions already performed, but no allowance shall be made for anticipated profits.

To resolve all disputes and to prevent litigation the parties to this Contract authorize the Chief Engineer to decide all questions of any nature whatsoever arising out of, under, or in connection with, or in any way related to or on account of, this Contract (including claims in the nature of breach of Contract or fraud or misrepresentation before or subsequent to acceptance of the Contractor's Proposal and claims of a type which are barred by the provisions of this Contract) and his decision shall be conclusive, final and binding on the parties. His decision may be based on such assistance as he may find desirable. The effect of his decision shall not be impaired or waived by any negotiations or settlement offers in connection with the question decided, whether or not he participated therein himself, or by any prior decision of the Engineer or others, which prior decisions shall be deemed subject to review, or by any termination or cancellation of this Contract provided, however, that notwithstanding the decision reached by the Chief Engineer in a review of determinations by the Deputy Director of Construction or Engineer of Construction or Engineer that a particular item of Work is not Extra Work the Contractor shall be compensated therefor as provided in written orders of the Deputy Director of Construction or Engineer of Construction or Engineer expressly and unmistakably indicating his intention to treat Work described therein as Extra Work issued in accordance with the provisions of the clause hereof entitled "Extra Work Orders" for amounts not in excess of $250,000.

All such questions shall be submitted in writing by the Contractor to the Chief Engineer for his decision, together with all evidence and other pertinent information in regard to such questions, in order that a fair and impartial decision may be made. In any action against the Authority relating to any such question the Contractor must allege in his complaint and prove such submission, which shall be a condition precedent to any such action. No evidence or information shall be introduced or relied upon in such an action that has not been so presented to the Chief Engineer.

This numbered clause shall be governed by and construed in accordance with the law of the State of New York, without giving effect to its choice of law provisions.

39. AUTHORITY AND DUTIES OF ENGINEER

In the performance of the Contract, the Contractor shall conform to all orders, directions and requirements of the Engineer and shall perform the Contract to the satisfaction of the Engineer at such times and places, by such methods and in such manner and sequence as he may require, and the Contract shall at all stages be subject to his inspection. The Engineer shall determine the amount, quality, acceptability and fitness of all parts of the Work and shall interpret Contract Drawings, Specifications and any orders for Extra Work. The Contractor shall employ no equipment, materials, methods or men to which the Engineer objects, and shall remove no materials, equipment or other facilities from the construction site without permission. Upon request, the Engineer shall confirm in writing any oral order, direction, requirements or determination.

The Contractor is requested to orally advise the Engineer of questions as they arise. Although such advice will not substitute for the written notice and information for which requirements are set forth elsewhere herein, it is anticipated that it will facilitate prompt decisions on the part of the Engineer and others.

The enumeration herein or in the Specifications of particular instances in which the opinion, judgment, discretion or determination of the Engineer shall control or in which the Contract shall be performed to his satisfaction or subject to his inspection, shall not imply that only the matters of a nature similar to those enumerated shall be so governed and performed, but without exception the entire Contract shall be so governed and so performed.

40. NOTICE REQUIREMENTS

No claim against the Authority shall be made or asserted in any action or proceeding at law or in equity, and the Contractor shall not be entitled to allowance of such claim, unless the Contractor shall have complied with all requirements relating to the giving of written notice of the information with respect to such claim as provided in this numbered clause. The failure of the Contractor to give such written notice and information as to any claim shall be conclusively deemed to be a waiver by the Contractor of such claim, such written notice and information being conditions precedent to such claim. As used herein "claim" shall include any claim arising out of, under, or in connection with, or in any way related to or on account of, this Contract (including claims in the nature of breach of Contract or fraud or misrepresentation before or subsequent to acceptance of the Contractor's Proposal and claims of a type which are barred by the provisions of this Contract) for damages, payment or compensation of any nature or for extension of any time for performance of any part of this Contract.

The requirements as to the giving of written notice and information with respect to claims shall be as follows:

A. In the case of any claims for Extra Work, extension of time for completion, idle salaried men and equipment, or any other matter for which requirements are set forth elsewhere in this Contract as to notice and information, such requirements shall apply.

B. In the case of all other types of claim, notice shall have been given to the Engineer, personally, as soon as practicable, and in any case, within 48 hours, after occurrence of the act, omission, or other circumstance upon which the claim is or will be based, stating as fully as practicable at the time all information relating thereto. Such information shall be supplemented with any further information as soon as practicable after it becomes or should become known to the Contractor, including daily records showing all costs which the Contractor may be incurring or all other circumstances which will affect any claim to be made, which records shall be submitted to the Engineer, personally.

The above requirements for notices and information are for the purpose of enabling the Authority to avoid waste of public funds by affording it promptly the opportunity to cancel or revise any order, change its plans, mitigate or remedy the effects of circumstances giving rise to a claim or take such other action as may seem desirable and to verify any claimed expense or circumstances as they occur, and the requirements herein for such notice and information are essential to this Contract and are in addition to any notice required by statute with respect to suits against the Authority.

The above referred to notices and information are required whether or not the Authority is aware of the existence of any circumstances which might constitute a basis for a claim and whether or not the Authority has indicated it will consider a claim.

No act, omission, or statement of any kind shall be regarded as a waiver of any of the provisions of this numbered clause or may be relied upon as such waiver except only either a written statement signed by the Executive Director of the Authority or a resolution of the Commissioners of the Authority expressly stating that a waiver is intended as to any particular provision of this numbered clause, and more particularly no discussion, negotiations, consideration, correspondence, or requests for information with respect to a claim by any Commissioner, officer, employee or agent of the Authority shall be construed as a waiver of any provision of this numbered clause or as authority or apparent authority to effect such a waiver.

Since merely oral notice or information may cause disputes as to the existence or substance thereof, and since notice, even if written, to other than the Authority representative above designated to receive it may not be sufficient to come to the attention of the representative of the Authority with the knowledge and responsibility of dealing with the situation only notice and information complying with the express provisions of this numbered clause shall be deemed to fulfill the Contractor's obligation under this Contract.

41. EQUAL EMPLOYMENT OPPORTUNITY - NEW YORK

During the performance of this Contract, within the State of New York the Contractor agrees as follows:

A. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color or national origin, and will take affirmative action to insure that they are afforded equal employment opportunities without discrimination because of race, creed, sex, color or national origin. Such action shall be taken with reference, but not be limited to: recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of pay or other forms of compensation, and selection for training or retraining, including apprenticeship and on-the-job training.

B. The Contractor shall send to each labor union or representative of workers with which he has or is bound by a collective bargaining or other agreement or understanding, a notice, to be provided by the State Commission for Human Rights, advising such labor union or representative of the Contractor's agreement under clauses A through H (hereinafter called "non-discrimination clauses"). If the Contractor was directed to do so by the Authority as part of the bid or negotiation of this Contract, the Contractor shall request such labor union or representative to furnish him with a written statement that such labor union or representative will not discriminate because of race, creed, sex, color or national origin and that such labor union or representative either will affirmatively cooperate, within the limits of its legal and contractual authority, in the implementation of the policy and provisions of these non-discrimination clauses or that it consents and agrees that recruitment, employment, and the terms and conditions of employment under this Contract, shall be in accordance with the purposes and provisions of these non-discrimination clauses. If such labor union or representative fails or refuses to comply with such a request that it furnish such a statement, the Contractor shall promptly notify the State Commission for Human Rights of such failure or refusal.

C. The Contractor shall post and keep posted in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Commission for Human Rights setting forth the substance of the provisions of clauses A and B and such provisions of the State's laws against discrimination as the State Commission for Human Rights shall determine.

D. The Contractor shall state, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, sex, color or national origin.

E. The Contractor shall comply with the provisions of Sections 291-299 of the Executive Law and the Civil Rights Law, shall furnish all information and reports deemed necessary by the State Commission for Human Rights under these non-discrimination clauses and such sections of the Executive Law, and shall permit access to his books, records and accounts by the State Commission for Human Rights, the Attorney General and the Industrial Commissioner for the purposes of investigation to ascertain compliance with these non-discrimination clauses and such sections of the Executive Law and Civil Rights Law.

F. This Contract may be forthwith canceled, terminated or suspended, in whole or in part, by the Authority upon the basis of a finding made by the State Commission for Human Rights that the Contractor has not complied with these non-discrimination clauses, and the Contractor may be declared ineligible for future contracts made by or on behalf of the State, the Authority or other public authority or agency of the State, until he has satisfied the State Commission for Human Rights that he has established and is carrying out a program in conformity with the provisions of these non-discrimination clauses. Such finding shall be made by the State Commission for Human Rights after conciliation efforts by the Commission have failed to achieve compliance with these non-discrimination clauses and after a verified complaint has been filed with the Commission, notice thereof has been given to the Contractor by the Commission and an opportunity has been afforded him to be heard publicly before the State Commissioner of Human Rights or his designee. Such sanctions may be imposed and remedies invoked independently of or in addition to sanctions and remedies otherwise provided by law.

G. The Contractor shall include the provisions of clauses A through F in every subcontract or purchase order in such a manner that such provisions will be binding upon each subcontractor or vendor as to operations to be performed within the State of New York. The Contractor shall take such action in enforcing such provisions of such subcontract or purchase order as the Authority may direct, including sanctions or remedies for non-compliance. If the Contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by the Authority, the Contractor shall promptly so notify the General Counsel to the Authority, requesting him to intervene and protect the interests of the Authority.

H. The provisions of this numbered clause which refer to the State Commission for Human Rights, the Attorney General and the Industrial Commissioner are inserted in this Contract for the benefit of such parties, as well as for the benefit of the Authority, and said Commission, Commissioner and the Attorney General shall have a direct right of action against the Contractor to effectuate the intent of this clause.

42. EQUAL EMPLOYMENT OPPORTUNITY - NEW JERSEY

With respect to the performance of Work in the State of New Jersey and in order to conform with the policy of the Authority the Contractor agrees that the provisions of N.J.S.A. 10:2-1 through 10:2-4, dealing with discrimination in employment on public contracts, and the Rules and Regulations promulgated pursuant thereto, are hereby made a part of this Contract and are binding upon him and that it shall not be a defense to the Contractor in any action arising directly or indirectly out of such legislation and Rules and Regulations that the Authority may not be subject thereto.

The provisions of this numbered clause are for the benefit of the Attorney General of the State of New Jersey, Division on Civil Rights in the Department of Law and Public Safety of the State of New Jersey, and the Director thereof, as well as for the benefit of the Authority, and said Division and Director shall have a right of action against the Contractor to effectuate the intent of this clause.

43. NO DISCRIMINATION IN EMPLOYMENT

During the performance of this Contract, within the State of New Jersey the Contractor agrees as follows:

A. The Contractor will not discriminate against any employee or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status, and will undertake or continue existing programs of affirmative action to ensure that minority group persons are afforded equal employment opportunity without discrimination. Such programs shall include but not be limited to, recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, termination, rates of pay or other forms of compensation, and selections for training or retraining, including apprenticeships and on-the-job training,

B. The Contractor shall request such employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding and which is involved in the performance of the Contract to furnish a written statement that such employment agency, labor union or representative shall not discriminate because of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will cooperate in the implementation of the Contractor's obligations hereunder,

C. The Contractor will state, in all solicitations or advertisements for employees placed by or on behalf of the Contractor in the performance of the Contract with the Port Authority, that all qualified applicants will be afforded equal employment opportunity without discrimination because of race, creed, color, national origin, sex, age, disability or marital status,

D. The Contractor will include the provisions of subparagraphs A through C of this paragraph in every subcontract or purchase order in such a manner that such provisions will be binding upon each subcontractor or vendor as to its work in connection with the Contract with the Port Authority,

E. The Contractor will submit to the Authority every two weeks a report indicating the number of workers employed at the construction site as of the lst and 15th days of each month and the projected number of workers to be so employed during the following month. This report shall also indicate the trade in which such workers are employed and, with respect to current employment (but not projected employment), shall indicate the number of such workers who are members of the following groups:

1.) Black persons having origins in any of the Black African racial groups not of Hispanic origin;

2.) Hispanic persons of Puerto Rican, Mexican, Dominican, Cuban, Central or South American culture or origin, regardless of race;

3.) Asian and Pacific Islander persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent or the Pacific Islands;

4.) American Indian or Alaskan Native persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification.

F. The Contractor agrees that he will fully cooperate with the office of the Attorney General of the State of New Jersey and with the Authority which seeks to deal with the problem of unlawful or invidious discrimination, and with all other State efforts to guarantee fair employment practices under this contract, and said Contractor will comply promptly with all requests and directions from the Attorney General of the State of New Jersey and the Authority in this connection, both before and during construction.

G. Full cooperation as expressed in clause F foregoing shall include, but not be limited to, being a witness or complainant in any proceeding involving questions of unlawful or invidious discrimination if such is deemed necessary by the Attorney General of the State of New Jersey, permitting employees of said Contractor to be witnesses or complainants in any proceeding involving questions of unlawful or invidious discrimination, if such is deemed necessary by the Attorney General of the State of New Jersey, signing any and all documents involved in any proceeding involving questions of unlawful or invidious discrimination, the execution of which are deemed necessary by the Attorney General of the State of New Jersey, participating in meetings, submitting periodic reports on the racial aspects of present and future employment, assisting in inspection at the construction site, and promptly complying with all State directives deemed essential by the Attorney General of the State of New Jersey to insure compliance with all Federal and State laws, regulations and policies against racial or other unlawful or invidious discrimination.

H. Upon the basis of a finding by the Attorney General of the State of New Jersey that the Contractor has not complied with these nondiscrimination clauses and that by reason thereof there has been a material breach of this contract, the Executive Director of the Authority shall have the sole discretion and power to declare this contract null and void upon 10 days' notice to the Contractor. In such event the Contractor shall become liable for any and all damages which shall accrue to the Authority including, but not limited to, the difference between the total cost of completion and the contract price under this agreement.

I. The provisions of this numbered clause which refer to the Attorney General are inserted in this contract for the benefit of the Attorney General of the State of New Jersey as well as for the benefit of the Authority, and said Attorney General shall have a direct right of action against the Contractor to effectuate the intent of this clause.

44. AFFIRMATIVE ACTION REQUIREMENTS - EQUAL EMPLOYMENT OPPORTUNITY

The Contractor shall comply with the provisions set forth hereinafter. These provisions are modeled on the conditions for bidding on federal government contracts adopted by the Office of Federal Contract Compliance in 1978.

Each bidder, contractor or subcontractor (hereinafter called the Contractor) must fully comply with the clauses entitled 'Equal Employment Opportunity - New York' and 'Equal Employment Opportunity - New Jersey' and these bid conditions. The Contractor commits itself to the goals for minority and female utilization set forth below and all other requirements, terms and conditions of these bid conditions by submitting a properly signed bid.

The Contractor shall appoint a company executive to assume the responsibility for the implementation of the requirements, terms and conditions of these bid conditions.

A. The goals for minority and female participation, expressed in percentage terms, for the Contractor's workforce at the construction site under this Contract are as follows:

Minority, except laborers	30%
Minority, laborers	40%
Female, except laborers	6.9%
Female, laborers	6.9%

These goals are applicable to all construction Work performed at the construction site under the Contract.

The Contractor's compliance with this Section shall be based on its implementation of the clauses entitled 'Equal Employment Opportunity - New York' and 'Equal Employment Opportunity - New Jersey', and specific affirmative action obligations required herein of minority and female employment and training must be substantially uniform throughout the length of the Contract and in each trade. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the Contract. Compliance with the goals will be measured against the total work hours performed.

B.

1.) The Contractor shall provide written notification to the General Manager, Business and Job Opportunity, Office of Regional and Economic Development of the Port Authority of New York and New Jersey, within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under this Contract. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

2.) The Contractor shall submit a Workforce Projection Schedule, which shall be correlated to the progress schedule, within thirty days after acceptance of the proposal, for the approval of the Engineer. The Contractor shall maintain and periodically update it at intervals as required by the Engineer. The Workforce Projection Schedule shall include the time period in which each trade shall be utilized, the average number of workers required per trade on a weekly basis, the peak period for each trade, and the number of workers required per trade for the peak period on a weekly basis.

C.

1.) As used in these specifications:

a. Omitted

b. "Manager" means General Manager, Business and Job Opportunity, Office of Regional and Economic Development of the Authority;

c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U. S. Treasury Department Form 941;

d. "Minority" includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(ii) Hispanic persons of Puerto Rican, Mexican, Dominican, Cuban, Central or South American culture or origin, regardless of race;

(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2.) Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the Work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 such provisions as are necessary for the Contractor to achieve the aggregate goals set forth above.

3.) Omitted.

4.) The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p hereof. The goals set forth above are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in the total workforce at the construction site under the Contract including employees of the Contractor and the subcontractors. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified. These goals may be achieved through utilization of journeyworkers and apprentices. In the event they are not achieved through the utilization of journeyworkers, the maximum number of apprentices provided for in the applicable collective bargaining agreement may be utilized to achieve said goals.

5.) Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations hereunder.

6.) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7.) The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these provisions shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

b. Develop maximum job opportunities for apprentices appropriate to the conditions of the Work and subject to the applicable collective bargaining agreement, in conjunction with training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7a above.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Manager when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations hereunder with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth.

k. Tests and other selection requirements shall comply with 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations hereunder are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8.) Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p hereof provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's non-compliance.

9.) Goals for minorities and for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation hereof if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation hereof if a specific minority group of women is under-utilized).

10.) The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11.) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12.) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the clause entitled "Equal Employment Opportunity", including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered by the Authority. Any Contractor who fails to carry out such sanctions and penalties shall be in violation hereof.

13.) The Contractor, in fulfilling its obligations hereunder shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 hereof so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of these provisions, the Authority shall proceed accordingly.

14.) The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports, including the Monthly Employment Utilization Report, relating to the provisions hereof as may be required and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g. mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15.) Nothing herein provided shall be construed as a limitation upon the application of any laws which establish standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

45. PREVAILING RATE OF WAGE

The Contractor shall pay or provide (and shall cause all subcontractors to pay or provide) to his or their workmen, laborers and mechanics (who are employed by him or them to work on an hourly or daily basis at any trade or occupation at or about the construction site) at least the prevailing rate of wage and supplements for others engaged in the same trade or occupation in the locality in which the Work is being performed as determined by the Engineer.

For purposes of this Contract, the Engineer has determined that the prevailing rates of wage and supplements are those established by the Secretary of Labor of the United States pursuant to the Davis-Bacon Act (40 U.S.C.A. 276a) for the locality in which the Work is to be performed. The schedule of wages and supplemental benefits which are currently in effect is attached hereto. However, the applicable rates shall be those which are in effect on the date of opening of Proposals.

The provisions of this numbered clause are inserted in this Contract for the benefit of such workmen, laborers and mechanics as well as for the benefit of the Authority; and if the Contractor or any subcontractor shall pay or provide any such workman, laborer or mechanic less than the rates of wages and supplements above described, such workman, laborer or mechanic shall have a direct right of action against the Contractor or such subcontractor for the difference between the wages and supplements actually paid or provided and those to which he is entitled under this clause. If such workman, laborer or mechanic is employed by any subcontractor whose subcontract does not contain a provision substantially similar to the provisions of this clause (requiring the payment or provision of at least the above minimum, and providing for a cause of action in the event of the subcontractor's failure to pay or provide such wages and supplements) such workman, laborer or mechanic shall have a direct right of action against the Contractor. The Authority shall not be a necessary party to any action brought by any workman, laborer or mechanic to obtain a money judgment against the Contractor or any subcontractor pursuant to this numbered clause.

Nothing herein contained shall be construed to prevent the Contractor or any subcontractor from paying higher rates of wages or providing higher supplements than the minimum hereinbefore prescribed; and nothing herein contained shall be construed to constitute a representation or guarantee that the Contractor or any subcontractor can obtain workmen, laborers and mechanics for the minimum herein before prescribed. All wages actually paid that are in excess of the prevailing wages in the performance of Extra Work and Net Cost Work, if applicable, shall be subject, on each occasion, to the initial and continuing approval of the Engineer in advance of the performance of such Extra Work and Net Cost Work, if applicable.

The Contractor shall post at the Work site, in a place that is prominent, accessible and visible to all employees of the Contractor and its subcontractors during the daily time period that the Contractor and/or subcontractor performs Work at the site, the appropriate prevailing wage and supplement schedules. The Contractor must inform all employees, including those of its subcontractors, that they may obtain a copy of the prevailing wage and supplement schedule from the Contractor.

The Contractor and every subcontractor shall make and maintain weekly payroll records during the course of the Work and for the period set forth in the clause hereof entitled "Authority Access to Records" for all employees employed in the Work. Such records shall contain the name, address and last four digits of the social security number of each such employee (Contractors and subcontractors must maintain the full social security number of each employee and shall provide them upon request to the Port Authority Inspector General), the employee's correct payroll classification, rate of pay and supplements, daily and weekly number of hours worked, deductions made and actual wages and supplements paid. The Contractor shall submit these weekly payroll records to the Authority (on forms furnished by the Authority) of all his payroll records and those of each of his subcontractors as the Authority may require with the Contractor's monthly Payment Application, together with an affidavit by the Contractor and by each subcontractor to the effect that such payroll records are correct and complete, the wage and supplement rates contained therein are not less than those required by the provisions of this Contract, and the classifications set forth for each employee conform with the work performed. Such copies and summaries and the original payroll records shall be available for inspection by the Authority (including its Inspector General), and the Contractor and its subcontractors shall permit such representatives to interview employees during working hours on the job site.

The Engineer may at any time request the Contractor to prepare a daily report on the Authority form entitled *Contractor Daily Sign-In Sheet*, copies of which can be obtained from the Engineer. The *Contractor Daily Sign-In Sheet* shall be completed as follows:

1.) At the beginning of each workday the Contractor shall:

   a. fill in the top of the *Contractor Daily Sign-In Sheet*, including the location, date, contractor/subcontractor name and contract number;

   b. ensure that each employee, including those of subcontractors, has printed and signed his or her name and indicated his or her work classifications, the last four digits of his or her social security number, and his or her starting time;

2.) At the end of each workday, the Contractor shall:

   a. ensure that each employee, including those of subcontractors, has signed out and indicated his or her ending time;

   b. sign the Certification Statement at the bottom of the form to indicate that the information contained in the *Contractor Daily Sign-In Sheet* is true and accurate; and

   c. submit the original completed form to the Engineer's representative.

In an area of his office at the Site of the Work which is accessible to his employees, the Contractor shall display such printed material as may be provided by the Engineer setting forth information for the employees of the Contractor and his subcontractors concerning the wage and supplemental benefit requirements set forth in this numbered clause. The Contractor shall also cause each of his subcontractors to display such material in a similarly accessible place in any office which the subcontractor maintains at the Site of the Work.

The Contractor's failure to comply with any provision of this numbered clause shall be deemed a substantial breach of this Contract.

46. EXTRA WORK ORDERS

No Extra Work of a cost in excess of $250,000 shall be performed except pursuant to written orders of the Chief Engineer expressly and unmistakably indicating his intention to treat the Work described therein as Extra Work; and, no Extra Work of a cost of $250,000 or less shall be performed except pursuant to written orders of the Chief Engineer, Deputy Director of Construction, Engineer of Construction or Engineer expressly and unmistakably indicating his intention to treat the Work described therein as Extra Work.

In the absence of such an order signed by the Chief Engineer in the case of Extra Work of a cost in excess of $250,000 and by the Chief Engineer or Deputy Director of Construction or Engineer of Construction or Engineer in the case of Extra Work of a cost of $250,000 or less, if the Engineer shall direct, order or require any Work, whether orally or in writing, which the Contractor deems to be Extra Work, the Contractor shall nevertheless comply therewith, but shall within twenty-four (24) hours give written notice thereof to the Chief Engineer and the Engineer, stating why he deems it to be Extra Work, and shall moreover furnish to the Engineer time slips and memoranda as required by the clause hereof entitled "Compensation for Extra Work". Said notice, time slips and memoranda are for the purpose of affording to the Chief Engineer an opportunity to verify the Contractor's claim at the time and (if he desires so to do) to cancel promptly such order, direction or requirement of the Engineer, of affording to the Engineer an opportunity of keeping an accurate record of the materials, labor and other items involved, and generally of affording to the Authority an opportunity to take such action as it may deem desirable in light of the Contractor's claims. Accordingly, the failure of the Contractor to serve such notice or to furnish such time slips and memoranda shall be deemed to be a conclusive and binding determination on his part that the direction, order or requirement of the Engineer does not involve the performance of Extra Work, and shall be deemed to be a waiver by the Contractor of all claims for additional compensation or damages by reason thereof, such written notice, time slips and memoranda being a condition precedent to such claims.

47. PERFORMANCE OF EXTRA WORK

The provisions of this Form of Contract relating generally to Work and its performance shall apply without exception to any Extra Work required and to the performance thereof. Moreover, the provisions of the Specifications relating generally to the Work and its performance shall also apply to any Extra Work required and to the performance thereof, except to the extent that a written order in connection with any particular item of Extra Work may expressly provide otherwise.

48. TITLE TO MATERIALS

All materials to become part of the permanent construction shall be and become the property of the Authority upon delivery at the construction site or upon being especially adapted for use in or as a part of the permanent construction, whichever may first occur, subject however to the Contractor's assumption of risk under the clause hereof entitled "Risks Assumed by the Contractor", subparagraph A.

The Contractor shall promptly furnish to the Authority such bills of sale and other instruments as may be required by it, properly executed, acknowledged and delivered, assuring to it title to such materials, free of encumbrances and shall mark or otherwise identify all such materials as the property of the Authority.

49. ASSIGNMENTS AND SUBCONTRACTS

Any assignment or other transfer by the Contractor of this Contract or any part hereof or of any of his rights hereunder or of any monies due or to become due hereunder and any delegation of any of his duties hereunder without the express consent in writing of the Authority shall be void and of no effect as to the Authority, provided, however, that the Contractor may subcontract portions of the Work to such persons as the Engineer may, from time to time, expressly approve in writing. For each individual, partnership or corporation proposed by the Contractor as a subcontractor, the Contractor shall submit to the Authority a certification or, if a certification cannot be made, a statement by such person, partnership or corporation to the same effect as the certification or statement required from the Contractor pursuant to the clauses of the "Information For Bidders" entitled "Certification of No Investigation (Criminal or Civil Anti-Trust), Indictment, Conviction, Suspension, Debarment, Disqualification, Prequalification Denial or Termination, Etc; Disclosure of Other Required Information" and "Non-Collusive Bidding and Code of Ethics Certification; Certification of No Solicitation Based on Commission, Percentage, Brokerage, Contingent Fee or Other Fee". All further subcontracting by any subcontractor shall also be subject to such approval of the Engineer. Approval of a subcontractor may be conditioned on (among other things) the furnishing, without expense to the Authority, of a surety bond guaranteeing payment by the subcontractor of claims of materialmen, subcontractors, workmen and other third persons arising out of the subcontractor's performance of any part of the Work. Approval of a subcontractor may be rescinded for, among other things, failure of the Contractor to furnish the subcontractor's certificate of insurance, if any is required by the Form of Contract clause entitled "Insurance Procured by Contractor", within the time set forth in said clause.

No consent to any assignment or other transfer, and no approval of any subcontractor, shall under any circumstances operate to relieve the Contractor of any of his obligations; no subcontract, no approval of any subcontractor and no act or omission of the Authority or the Engineer shall create any rights in favor of such subcontractor and against the Authority; and as between the Authority and the Contractor, all assignees, subcontractors, and other transferees shall for all purposes be deemed to be agents of the Contractor. Moreover, all subcontracts and all approvals of subcontractors shall be and, regardless of their form, shall be deemed to be conditioned upon performance by the subcontractor in accordance with this Contract; and if any subcontractor shall fail to perform the Contract to the satisfaction of the Engineer, the Engineer shall have the absolute right to rescind his approval forthwith and to require the performance of the Contract by the Contractor personally or through other approved subcontractors.

50. CLAIMS OF THIRD PERSONS

The Contractor undertakes to pay all claims lawfully made against him by subcontractors, materialmen and workmen, and all claims lawfully made against him by other third persons arising out of or in connection with or because of the performance of this Contract and to cause all subcontractors to pay all such claims lawfully made against them.

51. CERTIFICATES OF PARTIAL COMPLETION

If at any time prior to the rendition of the Certificate of Final Completion, any portion of the permanent construction has been satisfactorily completed, and if in the judgment of the Engineer such portion of the permanent construction is not necessary for the operations of the Contractor but will be immediately useful to and is needed by the Authority for other purposes, the Engineer may render to the Authority and to the Contractor a certificate in writing to that effect (herein called a Certificate of Partial Completion), and thereupon or at any time thereafter the Authority may take over and use the portion of the permanent construction described in such Certificate and exclude the Contractor therefrom.

The rendition of a Certificate of Partial Completion shall not be construed to constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates in the event that he has failed to complete the same in accordance with the terms of this Contract. Moreover, the acceptance of a Certificate of Partial Completion by the Authority shall not operate to release the Contractor or his sureties from any obligations under or upon this Contract or the Performance and Payment Bond.

52. CERTIFICATE OF SUBSTANTIAL COMPLETION

Prior to the rendition of the Certificate of Final Completion, the Engineer may deem the entire Work to be substantially completed when, in the judgment of the Engineer, the permanent construction has been satisfactorily completed to the point where the Work is fit for its intended purpose and use. The Engineer may, if such a determination of substantial completion is made and at such time, render to the Authority and to the Contractor a certificate in writing to that effect (herein called the Certificate of Substantial Completion), and thereupon or at any time thereafter the Authority may take over and use the permanent construction described in such Certificate and exclude the Contractor therefrom. Whether to make a determination of a substantial completion as to any portion of the Work, and whether to render such a Certificate, shall be the discretionary determination of the Engineer based upon an examination and appraisal of the completed Work, and no right to such a determination or certification is established in the Contractor by this provision.

The rendition of such Certificate of Substantial Completion shall not relieve the Contractor of his obligation hereunder to complete the Work of this Contract nor shall it be construed to constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates in the event that he has failed to complete the same in accordance with the terms of this Contract. Moreover, the acceptance of a Certificate of Substantial Completion by the Authority shall not operate to release the Contractor or his sureties from any obligations under or upon this Contract or the Performance and Payment Bond.

When the Contractor is of the opinion that the Work is substantially complete as described above, the Contractor may submit to the Engineer a written request that the Engineer inspect the Work so as to determine, in the Engineer's sole opinion, whether substantial completion has been achieved. The Contractor's written request shall list the specific items of Work that are incomplete. Upon such a request, the Engineer will respond within 30 days with a Certificate of Substantial Completion or provide a written explanation of the reasons why the Work is not substantially complete including a list of open items necessary to achieve substantial completion. Nothing contained herein shall be deemed to preclude the Engineer from making a determination of substantial completion in the absence of a request therefor by the Contractor.

53. CERTIFICATE OF FINAL COMPLETION

After the satisfactory completion of all Work whatsoever required and the making of such tests and inspections as may be necessary or desirable, the Engineer shall render to the Authority and to the Contractor a certificate in writing (herein called the Certificate of Final Completion) certifying that in his opinion all Work under this Contract including Extra Work, has been completed in accordance with the Contract Drawings and Specifications and the requirements of the Engineer, and certifying the date as of which it was so completed.

The rendition of the Certificate of Final Completion shall not be construed to constitute an extension of the Contractor's time for performance in the event that he has failed to complete the Work in accordance with the terms of this Contract. Moreover, the acceptance of the Certificate of Final Completion by the Authority shall not operate to release the Contractor or his sureties from any obligations under or upon this Contract or the Performance and Payment Bond.

54. NO GIFTS, GRATUITIES, OFFERS OF EMPLOYMENT, ETC.

During the term of this Contract, the Contractor shall not offer, give or agree to give anything of value either to an Authority employee, agent, job shopper, consultant, construction manager or other person or firm representing the Authority, or to a member of the immediate family (i.e, a spouse, child, parent, brother or sister) of any of the foregoing, in connection with the performance by such employee, agent, job shopper, consultant, construction manager or other person or firm representing the Authority of duties involving transactions with the Contractor on behalf of the Authority, whether or not such duties are related to this Contract or any other Authority contract or matter. Any such conduct shall be deemed a material breach of this Contract.

As used herein "anything of value" shall include but not be limited to any (a) favors, such as meals, entertainment, transportation (other than that contemplated by the Contract or any other Authority contract), etc., which might tend to obligate the Authority employee to the Contractor, and (b) gift, gratuity, money, goods, equipment, services, lodging, discounts not available to the general public, offers or promises of employment, loans or the cancellation thereof, preferential treatment or business opportunity. Such term shall not include compensation contemplated by this Contract or any other Authority contract.

Where used in this clause, the term "Authority" shall be deemed to include all subsidiaries of the Authority. Currently, those subsidiaries are the Port Authority Trans-Hudson Corporation (PATH), the Newark Legal and Communications Center and the New York and New Jersey Railroad Corporation.

In addition, during the term of this Contract, the Contractor shall not make an offer of employment or use confidential information in a manner proscribed by the Code of Ethics and Financial Disclosure dated as of April 11, 1996 (a copy of which is available upon request to the Office of the Secretary of the Authority).

The Contractor shall include the provisions of this clause in each subcontract entered into under this Contract.

CHAPTER V

WARRANTIES MADE AND LIABILITY

ASSUMED BY THE CONTRACTOR

55. CONTRACTOR'S WARRANTIES

The Contractor represents and warrants:

A. That he is financially solvent, that he is experienced in and competent to perform the type of services contemplated by this Contract, that the facts stated or shown in any papers submitted or referred to in connection with his Proposal are true, and, if the Contractor be a corporation, that it is authorized to perform this Contract;

B. That he has carefully examined and analyzed the provisions and requirements of this Contract and inspected the construction site, that from his own investigations he has satisfied himself as to the nature of all things needed for the performance of this Contract, the general and local conditions and all other matters which in any way affect this Contract or its performance, and that the time available to him for such examination, analysis, inspection and investigations was adequate;

C. That the Contract is feasible of performance in accordance with all its provisions and requirements and that he can and will perform it in strict accordance with such provisions and requirements;

D. That no Commissioner, officer, agent or employee of the Authority is personally interested directly or indirectly in this Contract or the compensation to be paid hereunder; and

E. That, except only for those representations, statements or promises expressly contained in this Contract, no representation, statement or promise, oral or in writing, of any kind whatsoever by the Authority, its Commissioners, officers, agents, employees or consultants has induced the Contractor to enter into this Contract or has been relied upon by the Contractor, including any with reference to: (1) the meaning, correctness, suitability, or completeness of any provisions or requirements of this Contract; (2) the nature, existence or location of materials, structures, obstructions, utilities or conditions, surface or subsurface, which may be encountered at the construction site; (3) the nature, quantity, quality or size of the materials, equipment, labor and other facilities needed for the performance of this Contract; (4) the general or local conditions which may in any way affect this Contract or its performance; (5) the price of the Contract; or (6) any other matters, whether similar to or different from those referred to in (1) through (5) immediately above, affecting or having any connection with this Contract, the bidding thereon, any discussions thereof, the performance thereof or those employed therein or connected or concerned therewith.

Moreover, the Contractor accepts the conditions at the construction site as they may eventually be found to exist and warrants and represents that he can and will perform the Contract under such conditions and that all materials, equipment, labor and other facilities required because of any unforeseen conditions (physical or otherwise) shall be wholly at his own cost and expense, unless specifically provided for elsewhere in this Contract.

Nothing in the Contract Drawings or Specifications or any other part of the Contract is intended as or shall constitute a representation by the Authority as to the feasibility of performance of this Contract or any part thereof. Moreover, the Authority does not warrant or represent either by issuance of the Contract Drawings and Specifications or by any provision of this Contract as to time for performance or completion or otherwise that the Contract may be performed or completed by the times required herein or by any other times.

The Contractor further represents and warrants that he was given ample opportunity and time and by means of this paragraph was requested by the Authority to review thoroughly all documents forming this Contract prior to opening of Proposals on this Contract in order that he might request inclusion in this Contract of any statement, representation, promise or provision which he desired or on which he wished to place reliance; that he did so review said documents, that either every such statement, representation, promise or provision has been included in this Contract or else, if omitted, that he expressly relinquishes the benefit of any such omitted statement, representation, promise or provision and is willing to perform this Contract without claiming reliance thereon or making any other claim on account of such omission.

The Contractor further recognizes that the provisions of this numbered clause (though not only such provisions) are essential to the Authority's consent to enter into this Contract and that without such provisions, the Authority would not have entered into this Contract.

56. RISKS ASSUMED BY THE CONTRACTOR

The Contractor assumes the following distinct and several risks, whether they arise from acts or omissions (whether negligent or not) of the Contractor, of the Authority, or of third persons, or from any other cause, and whether such risks are within or beyond the control of the Contractor, excepting only risks which arise solely from affirmative acts done by the Authority subsequent to the opening of Proposals on this Contract with actual and wilful intent to cause the loss, damage and injuries described in subparagraphs A through C below:

A. The risk of loss or damage to the permanent construction prior to the rendition of the Certificate of Final Completion (other than loss or damage to the portions of the permanent construction with respect to which Certificates of Partial Completion have been issued), and the Contractor shall forthwith repair, replace and make good any such loss or damage to the permanent construction without cost to the Authority;

B. The risk of claims, fines or penalties, just or unjust, made by third persons or assessed by courts or governmental agencies or entities against the Contractor or the Authority on account of injuries (including wrongful death), loss, damage or liability of any kind whatsoever arising or alleged to arise out of or in connection with the performance of the Work (whether or not actually caused by or resulting from the performance of the Work) or out of or in connection with the Contractor's operations or presence at or in the vicinity of the construction site or Authority premises, including claims against the Contractor or the Authority for the payment of workers' compensation, whether such claims, fines or penalties are made or assessed and whether such injuries, damage, loss and liability are sustained at any time both before and after the rendition of the Certificate of Final Completion;

C. The risk of loss or damage to any property of the Contractor, and of claims made against the Contractor or the Authority for loss or damage to any property of subcontractors, materialmen, workmen and others performing the Work, occurring at any time prior to completion of removal of such property from the construction site or Authority premises or the vicinity thereof.

The Contractor shall indemnify the Authority against all claims described in subparagraphs B and C above and for all expense incurred by it in the defense, settlement or satisfaction thereof, including expenses of attorneys, except where indemnity would be precluded by New York State General Obligations Law, Section 5-322.1 or by other applicable law. If so directed, the Contractor shall defend against any claim described in subparagraphs B and C above, in which event he shall not without obtaining express advance permission from the General Counsel of the Authority raise any defense involving in any way jurisdiction of the tribunal, immunity of the Authority, governmental nature of the Authority or the provisions of any statutes respecting suits against the Authority . Unless a claim is one which the Contractor is not required to indemnify the Authority against as described in the first sentence of this paragraph, such defense shall be at the Contractor's cost.

The provisions of this numbered clause shall also be for the benefit of the Commissioners, officers, agents and employees of the Authority, so that they shall have all the rights which they would have under this numbered clause if they were named at each place above at which the Authority is named, including a direct right of action against the Contractor to enforce the foregoing indemnity, except, however, that the Authority by action of its Board of Commissioners may at any time in its sole discretion and without liability on its part cancel the benefit conferred on any of them by this numbered clause, whether or not the occasion for invoking such benefit has already arisen at the time of such cancellation.

Neither the issuance of a Certificate of Completion nor the making of Final Payment shall release the Contractor from his obligations under this numbered clause. Moreover, neither the enumeration in this numbered clause nor the enumeration elsewhere in this Contract of particular risks assumed by the Contractor or of particular claims for which he is responsible shall be deemed (a) to limit the effect of the provisions of this numbered clause or of any other clause of this Contract relating to such risks or claims, (b) to imply that he assumes or is responsible for risks or claims only of the type enumerated in this numbered clause or in any other clause of this Contract, or (c) to limit the risks which he would assume or the claims for which he would be responsible in the absence of such enumerations.

The provisions of this numbered clause shall not be impaired by any rights the Contractor might otherwise have to limitation or apportionment of damages under the law of admiralty or to limitation of liability under 33 U.S.C.A. Chapter 9 (Protection of Navigable Waters and of Harbor and River Improvements), 46 U.S.C.A. Chapter 8 (Limitation of Vessel Owner's Liability), and any other similar statutes, and as between the Contractor and the Authority, the Contractor hereby waives any such rights. Moreover, the Contractor also waives any rights to limitation of liability under such law or statutes in connection with damage which may occur to property of the Authority arising out of or in connection with performance of the Contract whether the right to recover for such damage arises under this Contract or otherwise.

57. NO THIRD PARTY RIGHTS

Nothing contained in this Contract is intended for the benefit of third persons, except to the extent that the Contract specifically provides otherwise by use of the words "benefit" or "direct right of action".

58. INSURANCE PROCURED BY THE AUTHORITY

In order to reduce the cost of this Contract, the Authority will procure and will maintain in force and pay the premiums on:

A. A policy of public liability (Comprehensive - Commercial General Liability, including Contractual) insurance on which the Contractor and the subcontractors will be insureds issued by an insurance company satisfactory to the Authority, with current coverage limits of $50 million per occurrence for bodily injury and property damage liability.

B. A policy of workers' compensation and employer's liability insurance fulfilling the Contractor's and the subcontractor's obligations under the applicable State Workers' Compensation Law for those employees of the Contractor and the subcontractors employed pursuant to this Contract in operations conducted at the site of the Work hereunder. Coverage under this policy may, as appropriate, include one or more of the following endorsements:

1.) Longshore and Harbor Workers' Compensation Act Coverage Endorsement. (Applies when performing work on or around navigable waters).

2.) Maritime Coverage Endorsement (Applies to masters or members of the crews of vessels, if vessels are used).

3.) Federal Employer's Liability Act Coverage Endorsement. (May apply to railroad related Work).

Determination in any instance as to the appropriateness of the included coverage described in B.1, 2 and 3 above will be made based upon information to be provided by the Contractor relating to the mode of performance of work to be done under the Contract.

The policy described in B above will not provide coverage for any workers' compensation for the Contractor and/or subcontractors who perform any asbestos work. In such cases, the Contractor or subcontractors shall procure and maintain, at their own expense, the workers' compensation insurance in accordance with the requirements of law in the state(s) where the work will take place, including employer's liability insurance (in limits of not less than $1 million per occurrence).

Should the Contractor and/or subcontractors be required to procure the workers' compensation insurance, within ten days after the acceptance of its Proposal the Contractor shall deliver to the General Manager, Risk Management, The Port Authority of NY & NJ, Treasury Department, 225 Park Avenue South, 12th Floor, New York, N.Y. 10003 (Attn: Contract Insurance Review), an original certificate, stating the Contract number, from the insurer. A duplicate certificate evidencing the above insurance shall also be delivered to the Engineer. With regard to insurance required to be procured by a subcontractor, the Contractor shall deliver the certificate described above at least ten days before the subcontractor commences Work.

The requirements for insurance procured by the Contractor or subcontractors shall not in any way be construed as a limitation on the nature or extent of the obligations of the Contractor or subcontractors.

C. A policy of builder's risk insurance, covering the improvements or other Work to be effectuated by the Contractor and the subcontractors, with coverage limits of $50 million per occurrence for all locations combined (subject to a $50 million annual aggregate for flood and earthquake damage and a limit of $10 million per occurrence for damage to off-site storage and property in-transit). The deductible is $10,000 per occurrence for all losses except those caused by flood and earthquake, where a $50,000 deductible per occurrence with respect to flood, and a $25,000 deductible per occurrence with respect to earthquake are in effect. The policy form contains various exclusions, including but not limited to the following property exclusions: automobiles; aircraft; and Contractors' and subcontractors' machinery, tools, and equipment and property of a similar nature, including forms, shoring, scaffolding, temporary structures, rental property/equipment and similar property, not intended to become a permanent part of a building or structure. The Contractor and the subcontractors must refer to the policy form to determine all properties and perils included and excluded and to determine their rights and responsibilities as insureds under the policy form. The Contractor and the subcontractors are responsible for payment for all losses within the deductibles and losses not covered by the builder's risk policies.

The current policies described in A through C of this numbered clause are available for examination by appointment in the office of the General Manager, Risk Management, The Port Authority of NY & NJ, Treasury Department, 225 Park Avenue South, 12th Floor, New York, N.Y. 10003. The policies under A above are subject to certain liability coverage exclusions, which include, but are not limited to, exclusions from liability from claims arising from pollution and exposure to asbestos.

The Contractor and subcontractors shall comply with all obligations of the insured under or in connection with all of the policies described in A through C above.

The Authority shall have the right at any time and from time to time at its option to procure insurance substituting in whole or in part for any or all of the policies described in A through C above or to require that the Contractor and the subcontractors themselves obtain insurance substituting in whole or part for that above referred to, provided always, however, that the Contractor and the subcontractors shall be afforded coverage as stipulated by the Authority and the Authority shall either pay the premiums on such substitute insurance or reimburse the Contractor and the subcontractors therefor.

Neither the procurement of the above insurance or any substitute insurance nor the extent of the coverage or the limits of liability thereunder shall be construed to be a limitation on the nature or extent of the Contractor's obligations, or to relieve the Contractor of any such obligations, and the procurement of the above insurance is only for the purpose of reducing the cost of the Contract without constituting any representation by the Authority as to the adequacy of the insurance to protect the Contractor against the obligations imposed on the Contractor by law (except the applicable State Workers' Compensation Law) or by this or any other Contract.

Notwithstanding any provision of this clause, however, no subcontractor shall be or have the right to be covered under the policies of insurance above referred to until the subcontractor has been expressly approved in writing by the Engineer, as required under this Contract, and such approval may be withheld, among other reasons, until execution by the subcontractor of agreements affirming its obligations provided in this clause with respect to the above insurance.

The provisions of this numbered clause are not intended to create any rights for the Contractor other than rights which may be available to the Contractor under said policies themselves, whatever such rights may be. Moreover, the Authority makes no representation or guaranty, either by the provisions of this numbered clause or otherwise, as to the effect of or the coverage under said policies, and no employee or agent of the Authority is authorized to make any such representation or guaranty, either by the provisions of this numbered clause or otherwise, as to the effect of or the coverage under said policies, and no employee or agent of the Authority is authorized to make any such representation or guaranty or to offer any interpretation of or information on said policies. The Contractor warrants and represents that it has examined and is familiar with the above stated coverages and that in submitting its Proposal it has relied solely on its own interpretation thereof and not on any representations or statements, oral or written, of the Authority, its Commissioners, officers, agents, employees, consultants or contractors.

All negotiations and adjustments with any insurer concerning payment for any loss, the risk of which is borne by the Contractor under this Contract, shall be the responsibility of and shall be conducted by the Contractor unless the applicable policy provides otherwise. The Contractor shall, however, inform the Engineer of the progress of all such negotiations and notify the Engineer sufficiently in advance of all meetings thereon so that the Engineer or designated representatives may attend said negotiations if they so desire.

The Authority shall be entitled to all returned premiums, dividends and credits which may become payable at any time for any reason whatsoever in connection with the aforementioned insurance. The Contractor hereby assigns to the Authority all such returned premiums, dividends and credits and the subcontractors shall be deemed to have assigned to the Authority all such returned premiums, dividends and credits by becoming subcontractors under this Contract. The Contractor shall execute and cause the subcontractors to execute any instrument necessary or convenient to evidence the Authority's right to such returned premiums, dividends and credits.

Notwithstanding any payment by the Authority of any insurance premiums, the Authority shall not be deemed the employer of any employees hired by the Contractor or any subcontractor covered by such insurance nor shall it be liable for any of the obligations of such employer.

The Contractor and the subcontractors shall cooperate to the fullest extent with the Authority in all matters relating to the aforementioned insurance and shall comply with all requirements of all insurance policies procured by the Authority. They shall also at their own expense furnish the Engineer or a duly authorized representative with copies of all payrolls, correspondence, papers, records and other things necessary or convenient for dealing with or defending against any claims and for procuring or administering the aforementioned insurance including furnishing the name of any of their employees, officers, or agents whose presence or testimony is necessary or convenient in any negotiations or proceedings involving such insurance.

59. INSURANCE PROCURED BY CONTRACTOR

The Contractor, in its own name as insured, shall maintain and pay the premiums on the policy or policies of insurance for coverage(s) as hereinafter described, which shall cover its operations hereunder, shall be effective throughout the effective period of this contract, and shall afford coverage(s) in not less than the amounts set forth below:

A. Commercial Automobile Liability Insurance: covering "any" vehicles on the broadest commercial available form:

1.) Combined single limit for bodily injury and property damage liability with a minimum limit of $3 million each accident.

B. Protection and Indemnity Insurance

If watercraft is to be used, the Contractor shall take out, maintain and pay the premiums on a policy of Marine Protection and Indemnity Insurance (that will "pay on behalf of" basis) and Chartered Legal Liability, where applicable, or similar watercraft coverage, relating to the operation, maintenance or use of any vessel (whether self-propelled or being towed) in connection with work to be performed under this Contract, in a limit of liability of not less than $5 million for any one occurrence.

The Authority shall be named as an additional insured in the liability policy or policies and evidenced by the certificate(s) of insurance set forth above. The liability policy(ies) and the certificate(s) of insurance shall show coverage for cross-liability/severability of interests as provided under the standard ISO "separation of insureds" condition.

The Contractor shall deliver certified copies of the policy(ies) described above or certificate(s) of insurance evidencing the existence thereof to the Engineer at the location where the work will be performed, within ten (10) days after the acceptance of its Proposal. Such policy(ies) or certificate(s) shall state the contract number and shall contain a valid provision or endorsement that the policy(ies) may not be canceled, terminated, changed or modified without giving thirty (30) days written advance notice thereof to the Authority. Such policy(ies) and certificate(s) of insurance shall contain an additional endorsement providing that "the insurance carrier shall not, without obtaining express advance permission from the General Counsel of the Authority, raise any defense involving in any way the jurisdiction of the tribunal over the person of the Authority, raise any defense involving in any way the jurisdiction of the Authority, its Commissioners, officers, agents or employees, the governmental nature of the Authority or the provisions of any statute respecting suits against the Authority". Certified copies of all renewal policies or certificates evidencing their existence shall be delivered to the Engineer at the location where the work will be performed at least ten (10) days prior to the expiration date of each expiring policy. If at any time any of the certificates or policies shall be or become unsatisfactory to the Authority as to form or substance, or if the carrier issuing any such certificate or policy shall be or become unsatisfactory to the Authority, the Contractor shall promptly obtain a new and satisfactory certificate and policy. Upon request of the General Manager, Risk Management, the Contractor shall furnish the Authority with a certified copy of each policy stated above.

The requirements for insurance procured by the Contractor shall not in any way be construed as a limitation on the nature or extent of the contractual obligations assumed by the Contractor under this contract. The insurance requirements are not a representation by the Authority as to the adequacy of the insurance to protect the Contractor against the obligations imposed on them by law or by this or any other Contract.

CHAPTER VI

RIGHTS AND REMEDIES

60. RIGHTS AND REMEDIES OF AUTHORITY

The Authority shall have the following rights in the event the Chief Engineer shall deem the Contractor guilty of a breach of any term whatsoever of this Contract:

A. The right to take over and complete the Work or any part thereof as agent for and at the expense of the Contractor, either directly or through other contractors.

B. The right to cancel this Contract as to any or all of the Work yet to be performed.

C. The right to specific performance, an injunction or any other appropriate equitable remedy.

D. The right to money damages.

For the purpose of this Contract, breach shall include but not be limited to the Contractor's failure to procure insurance satisfactory to the Authority within the time limit specified in the Clause hereof entitled "Insurance Procured by Contractor" and the following, whether or not the time has yet arrived for performance of an obligation under this Contract: a statement by the Contractor to any representative of the Authority indicating that he cannot or will not perform any one or more of his obligations under this Contract; any act or omission of the Contractor or any other occurrence which makes it improbable at the time that he will be able to perform any one or more of his obligations under this Contract; any suspension of or failure to proceed with any part of the Work by the Contractor which makes it improbable at the time that he will be able to perform any one or more of his obligations under this Contract; any false certification at any time by the Contractor as to any material item certified pursuant to the clauses of the Information For Bidders entitled "Certification of No Investigation (Criminal or Civil Anti-Trust), Indictment, Conviction, Suspension, Debarment, Disqualification, Prequalification Denial or Termination, Etc; Disclosure of Other Required Information" and "Non-Collusive Bidding and Code of Ethics Certification; Certification of No Solicitation Based on Commission, Percentage, Brokerage, Contingent Fee or Other Fee", any false certification at any time by the Contractor or a subcontractor pursuant to the clause "Prevailing Rate of Wage Certification" set forth in the Information for Bidders, or the willful or fraudulent submission of any signed statement pursuant to such clauses which is false in any material respect; or the Contractor's incomplete or inaccurate representation of its status with respect to the circumstances provided for in such clauses.

The enumeration in this numbered clause or elsewhere in this Contract of specific rights and remedies of the Authority shall not be deemed to limit any other rights or remedies which the Authority would have in the absence of such enumeration; and no exercise by the Authority of any right or remedy shall operate as a waiver of any other of its rights or remedies not inconsistent therewith or to estop it from exercising such other rights or remedies.

61. RIGHTS AND REMEDIES OF CONTRACTOR

Inasmuch as the Contractor can be adequately compensated by money damages for any breach of this Contract which may be committed by the Authority, the Contractor expressly agrees that no default, act or omission of the Authority shall constitute a material breach of this Contract, entitling him to cancel or rescind it or (unless the Engineer shall so direct) to suspend or abandon performance.

62. PERFORMANCE OF WORK AS AGENT FOR CONTRACTOR

In the exercise of its right to take over and complete Work as agent for the Contractor, for which provision is made in the clause hereof entitled "Rights and Remedies of Authority", the Authority shall have the right to take possession of and use or permit the use of any and all plant, materials, equipment and other facilities provided by the Contractor for the purpose of the Work and the Contractor shall not remove any of the same from the site of the Work without express permission. Unless expressly directed to discontinue the performance of all Work, the Contractor shall continue to perform the remainder thereof in such manner as in no way will hinder or interfere with the portions taken over by the Authority.

In the certificate of total compensation earned, for which provision is made in the clause hereof entitled "Final Payment", the Engineer will separately state the amount of Work performed by the Authority as agent for the Contractor, credit to the Authority the cost thereof, and credit to the Contractor the compensation earned thereby; and the difference between them shall be payable by the Contractor to the Authority, or vice versa as the case may be. If such difference is in its favor, the Authority may deduct it from any moneys due the Contractor, and if such moneys be insufficient, the balance thereof shall be payable to it on demand; if in the Contractor's favor, it shall constitute part of the Final Payment.

The exercise by the Authority of its right to take over the Work shall not release the Contractor or his sureties from any of his or their obligations or liabilities under this Contract or the Performance and Payment Bond.

63. NO ESTOPPEL OR WAIVER

The Authority shall not be precluded or estopped by any acceptance, certificate or payment, final or otherwise, issued or made under this Contract or otherwise issued or made by it, the Engineer, or any officer, agent or employee of the Authority, from showing at any time the true amount and character of Work performed, or from showing that any such acceptance, certificate or payment is incorrect or was improperly issued or made; and the Authority shall not be precluded or estopped, notwithstanding any such acceptance, certificate or payment, from recovering from the Contractor any damages which it may sustain by reason of any failure on his part to comply strictly with this Contract, and any moneys which may be paid to him or for his account in excess of those to which he is lawfully entitled.

Neither the acceptance of the Work or any part thereof, nor any payment therefor, nor any order or certificate issued under this Contract or otherwise issued by the Authority, the Engineer, or any officer, agent or employee of the Authority, nor any permission or direction to continue with the performance of Work, nor any performance by the Authority of any of the Contractor's duties or obligations, nor any aid lent to the Contractor by the Authority in his performance of such duties or obligations, nor any other thing done or omitted to be done by the Authority, its Commissioners , officers, agents or employees shall be deemed to be a waiver of any provision of this Contract or of any rights or remedies to which the Authority may be entitled because of any breach thereof, excepting only a resolution of its Commissioners, providing expressly for such waiver. No cancellation, rescission or annulment hereof, in whole or as to any part of the Work, because of any breach hereof, shall be deemed a waiver of any money damages to which the Authority may be entitled because of such breach. Moreover, no waiver by the Authority of any breach of this Contract shall be deemed to be a waiver of any other or any subsequent breach.

CHAPTER VII

MISCELLANEOUS

64. SUBMISSION TO JURISDICTION

The Contractor hereby irrevocably submits himself to the jurisdiction of the Courts of the State of New York and to the jurisdiction of the Courts of the State of New Jersey in regard to any controversy arising out of, connected with, or in any way concerning the Proposal or this Contract. The Contractor agrees that service of process on the Contractor in relation to such jurisdiction may be made, at the option of the Authority, either by registered or certified mail addressed to the applicable office as provided for in the clause hereof entitled "Service of Notices on the Contractor", by registered or certified mail addressed to any office actually maintained by the Contractor or by actual personal delivery to the Contractor if the Contractor be an individual, to any partner if the Contractor be a partnership or to an officer, director or managing or general agent if the Contractor be a corporation.

Such service shall be deemed to be sufficient when jurisdiction would not lie because of the lack of basis to serve process in the manner otherwise provided by law. In any case, however, process may be served as stated above whether or not it might otherwise have been served in a different manner.

65. PROVISIONS OF LAW DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included therein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

66. INVALID CLAUSES

If any provision of this Contract shall be such as to destroy its mutuality or to render it invalid or illegal, then, if it shall not appear to have been so material that without it the Contract would not have been made by the parties, it shall not be deemed to form part thereof but the balance of the Contract shall remain in full force and effect.

67. NON-LIABILITY OF THE AUTHORITY REPRESENTATIVES

Neither the Commissioners of the Authority nor any officer, agent, or employee thereof shall be charged personally by the Contractor with any liability or held liable to him under any term or provision of this Contract, or because of its execution or attempted execution, or because of any breach hereof.

68. SERVICE OF NOTICES ON THE CONTRACTOR

Whenever provision is made in this Contract for the giving of any notice to the Contractor, its deposit in any post office or post office box, enclosed in a postpaid wrapper addressed to the Contractor at his office, or its delivery to his office, shall be sufficient service thereof as of the date of such deposit or delivery, except to the extent, if any, otherwise provided in the clause entitled "Submission to Jurisdiction". Until further notice to the Authority the Contractor's office will be that stated in his Proposal. Notices may also be served personally upon the Contractor; or if a corporation, upon any officer, director, or managing or general agent; or if a partnership upon any partner.

69. MODIFICATION OF CONTRACT

No change in or modification, termination or discharge of this Contract, in any form whatsoever, shall be valid or enforceable unless it is in writing and signed by the party to be charged therewith or his duly authorized representative, provided, however, that any change in or modification, termination or discharge of this Contract expressly provided for in this Contract shall be effective as so provided.

The authority of any person to order Extra Work or to alter the Contract Drawings and Specifications does not include the power to cancel, modify or waive any provision of the Form of Contract, and no officer or other representative of the Authority shall have the power so to do unless and until hereafter so authorized by or pursuant to a resolution of the Commissioners of the Authority or by or pursuant to a resolution of their appropriate Committee.

70. PUBLIC RELEASE OF INFORMATION

The Contractor and all his subcontractors shall not issue or permit to be issued any press release, advertisement, or literature of any kind, which refers to the Authority or the services performed in connection with this Contract, without first obtaining the written approval of the Chief Engineer. Such approval may be withheld if for any reason the Chief Engineer believes that the publication of such information would be harmful to the public interest or is in any way undesirable. This provision shall survive termination or expiration of this Contract.

PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS that we, the undersigned[23] Contractor and surety company (or companies), as principal and surety (or sureties), respectively,

Contractor	Surety

[23] Insert names of the Contractor and surety company (or companies) in the appropriate columns. If space is insufficient add rider.

If the Contractor is a corporation, give the state of incorporation, using also the phrase "a corporation organized under the laws of _____".

If the Contractor is a partnership, give full names of partners, using the phrase "co-partners doing business under the firm name of _____".

If the Contractor is an individual using a trade name, give individual name, using also the phrase "an individual doing business under the trade name of _____.".

are hereby held and firmly bound unto The Port Authority of New York and New Jersey (herein called the "Authority") in the penal sum of _____ Dollars

and _____ Cents ($ _____.), for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, representatives, executors, administrators, successors and assigns. Each surety, however, if there is more than one, shall be jointly and severally liable for said penal sum.

Signed this _____ day of _____ 20

The condition of the above obligation is that

WHEREAS, the above named principal has entered into a Contract in writing with the Authority, a copy of which is hereby made a part of this bond as though herein set forth in full and which is designated Contract MFP-654.141 - "New York & New Jersey Marine Terminals - Multi-Facility Fender System Rehabilitation via Work Order", and

WHEREAS, the Authority has required this bond for the faithful performance of all obligations imposed by said Contract and also for the payment of all lawful claims of subcontractors, materialmen and workmen arising out of the performance of said Contract;

NOW, if the said principal shall well and faithfully do and perform the things agreed by him to be done and performed according to the terms and true intent and meaning of said Contract and if all lawful claims of subcontractors, materialmen and workmen arising out of the performance of said Contract are paid, then this obligation shall be void, otherwise the same shall remain in full force and effect; it being expressly understood and agreed that, provided the sureties shall comply with the provisions hereof, the aggregate liability of all sureties for any and all claims hereunder shall in no event exceed the penal amount of this obligation as hereinbefore stated.

This undertaking is for the benefit the Authority and all subcontractors, materialmen and workmen having lawful claims arising out of the performance of said Contract, and all such subcontractors, materialmen and workmen (as well as the Authority itself) shall have a direct right of action upon this bond; but the rights and equities of such subcontractors, materialmen and workmen shall be subject and subordinate to those of the Authority.

The sureties, for value received, hereby stipulate and agree that the obligations of said sureties and their bond shall be in no way impaired or affected by any extensions of time, modification, omission, addition or change in or to the said Contract or the construction to be performed thereunder, or by any supervision or inspection or omission to supervise or inspect the construction, or by any payment thereunder before the time required therein, or by any waiver of any provision or condition thereof (whether precedent or subsequent), or by any assignment, subletting or other transfer thereof or of any part thereof or of any construction to be performed or any moneys due or to become due thereunder; and said sureties do hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers, and hereby expressly stipulate and agree that any and all things done and omitted to be done by and in relation to assignees, subcontractors and other transferees shall have the same effect as to said sureties as though done by or in relation to said principal.

The sureties shall give the General Counsel of the Authority the following notices:

A. Written notice of an intent to pay any claim of a subcontractor, materialman or workman hereunder;

B. Written notice within five days of the institution of an action by a subcontractor, materialman or workman hereunder.

The sureties shall not pay the claim of any subcontractor, materialman or workman hereunder until the expiration of thirty days after receipt by said General Counsel of notice under either subparagraph A or B above, describing the claim to be paid.

IN WITNESS WHEREOF, the principal and the sureties have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____

Principal

(Seal) By [24] _____

_____

Surety

By[25] _____

APPROVED AS TO ACCEPTABILITY OF SURETIES:

_____

Credit Manager

_____20

[24] If bond is signed by an officer or agent, give title; if signed by a corporation, affix corporate seal.

[25] Add signatures of additional sureties, if any.

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of _____

_____ SS:

County of _____

On this _____ day of _____, 20 , before me personally came and appeared _____, to me known, who being by me duly sworn, did depose and say that he resides at _____; that he is the _____. of _____ the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation, and that he signed his name thereto by like order.

(Notary Seal) _____

(Notary Signature)

ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP

State of _____

_____ SS:

County of _____

On this _____ day of _____, 20 , before me

personally came and appeared _____, to me known, and known to me to be one of the members of the firm of _____ _____ described in and who executed the foregoing instrument and he acknowledged to me that he executed the same as and for the act and deed of said firm.

(Notary Seal) _____

(Notary Signature)

ACKNOWLEDGMENT OF PRINCIPAL, IF AN INDIVIDUAL

State of _____

_____ SS:

County of _____

On this _____ day of _____, 20 , before me personally came and appeared _____, to me known and known to me to be the person described in and who executed the foregoing instrument and he acknowledged to me that he executed the same.

(Notary Seal) _____

(Notary Signature)

AFFIX ACKNOWLEDGMENT AND JUSTIFICATION OF SURETY

SPECIFICATIONS

DIVISION 1

GENERAL PROVISIONS

71. CONSTRUCTION REQUIRED BY THE SPECIFICATIONS

These Specifications relate generally to performing performing removal, replacement, and disposal of damaged fender systems via Work Order(s).

These Specifications require the doing of all things necessary or proper for or incidental to the matter referred to in the immediately preceding paragraph, as shown on the Contract Drawings in their present form. In addition, all things shown on the Contract Drawings even though not expressly mentioned in these Specifications, all things mentioned in these Specifications even though not shown on the Contract Drawings, and all things not specified either on the Contract Drawings, or in the Specifications but involved in carrying out their intent and in the complete and proper execution of the matter referred to in the immediately preceding paragraph are required by these Specifications; and the Contractor shall perform the same as though they were specifically delineated, described and mentioned.

In case of a conflict between a requirement of the Contract Drawings and a requirement in Division 1 of the Specifications, the requirement of Division 1 shall control. In case of a conflict between a requirement contained in other Divisions of the Specifications and a requirement of the Contract Drawings, the requirement of the Contract Drawings shall control.

Some Sections of the Specifications make cross references to construction specified in other Sections of the Specifications, including cross references intended to avoid duplication by the bidders in quoting prices and to point out some of the necessity for coordination. Such cross references are not intended to be complete or all inclusive, and the Contractor shall ascertain for himself both the nature and the extent of all construction which may be related to that under each Section of the Specifications whether or not expressly referred to.

Some Sections of the Specifications contain a general description of the construction under such Sections. Such description is merely a very general one and is not intended to outline the construction required by the Specifications and Contract Drawings. Accordingly, such description shall be construed as in aid of and supplemental to, but in no case limiting, impairing or decreasing, the requirements elsewhere set forth with respect to the construction to be performed.

The Contractor's compensation for all construction whatsoever referred to in the Specifications and Contract Drawings in their present form, even though the need for certain items of such construction may be contingent upon future occurrences or determinations or upon other circumstances, shall be deemed to be included in the price(s) quoted by the Contractor in the Form of Contract unless the Specifications or Contract Drawings expressly state that compensation in addition to such price shall be payable for such items of construction. The express statement in some cases to the effect that certain construction shall be without additional cost to the Authority shall not impair the application of this paragraph in other cases.

The distribution of various parts of the construction among the Divisions and Sections of the Specifications or among the Contract Drawings is not intended as a representation of the most effective or logical method of organizing, scheduling, or subcontracting the construction, and the Contractor shall ascertain for himself how to do so unless otherwise expressly prescribed in this Contract.

In all cases the provisions of the second paragraph of this numbered Section shall control.

72. AVAILABLE PROPERTY

Subject to the conditions elsewhere stated herein, those areas to be occupied by the permanent construction will be made available to the Contractor upon the commencement of his first operations at the construction site.

Any additional property which the Contractor desires for his operations shall be obtained by him at his own expense.

The Contractor will be permitted to use only so much of the aforesaid areas as is necessary for the performance of the Contract, and he must at all times so conduct his operations as not to encroach upon or block the portions used by others. The Engineer may at any time make joint or exclusive assignments of particular portions thereof, either to the Contractor or to others, and may take over and use for other purposes any portions which, in the opinion of Engineer, are not required for the performance of the Contract.

The Contractor shall daily clean up the areas made available to him so that they are free at all times of refuse, rubbish, scrap material or debris.

73. OPERATIONS OF OTHERS

During the time that the Contractor is performing the Contract, other persons will be engaged in other operations on or about the construction site including facility operations, tenant operations and work under Authority contracts MFP-654.073 and MFP-654.074 all of which shall remain uninterrupted. The Contractor shall so plan and conduct his operations as to work in harmony with others engaged at the construction site and not to delay, endanger or interfere with the operations of others (whether or not specifically mentioned above), all to the best interests of the Authority and the public and as may be directed by the Engineer.

74. LABOR ACTIONS

Whenever any labor strike, slowdown, work stoppage, picketing or other labor action which might interfere with the performance of the Contract, or of other Authority or PATH contracts or the operation of any Authority or PATH facility occurs at the construction site or at any other Authority or PATH facility as a result of the Contractor's (or its subcontractor's) utilization of particular means, methods or manpower to perform the Work required by the Contract, the Contractor shall pursue all remedies which are appropriate and available to him to avoid such interference.

75. CONTRACTOR'S MEETINGS

The Contractor shall conduct job progress and coordination meetings with subcontractors in his field office every two weeks, or as frequently as job conditions require or the Engineer may request. The Engineer shall be notified and, at his option, may attend these meetings. The Contractor shall prepare and distribute minutes to the Engineer and the subcontractors within forty-eight (48) hours of the day following the meetings.

The Contractor shall attend separate job progress and coordination meetings with the Engineer every two weeks, or at times otherwise requested by the Engineer.

76. CONTRACT DRAWINGS

The Contract Drawings which accompany and form a part of these Specifications bear the general title "The Port Authority of NY & NJ - New York & New Jersey Marine Terminals - Multi-Facility Fender System Rehabilitation via Work Order - Contract MFP-654.141" and are separately numbered and entitled as follows:

G001	TITLE SHEET	
G002	INDEX OF DRAWINGS	Structural
G003	FACILITY LOCATION PLAN	Structural
G004	GENERAL AND STRUCTURAL NOTES, LEGEND AND ABBREVIATIONS	General
S001	BROOKLYN/RED HOOK/AUTO MARINE TERMINAL TYPICAL CROSS SECTION	Structural
S002	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL TYPICAL CROSS SECTION SHEET 1	Structural
S003	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL TYPICAL CROSS SECTION SHEET 2	Structural
S004	BROOKLYN PORT AUTHORITY MARINE TERMINAL FLEXIBLE FENDER SYSTEM	Structural
S005	BROOKLYN PORT AUTHORITY MARINE TERMINAL FIXED FENDER SYSTEM	Structural
S006	RED HOOK CONTAINER TERMINAL PIER 10	Structural
S007	RED HOOK CONTAINER TERMINAL PIER 11	Structural
S008	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL BERTHS 2, 4, 5, 7 AND 9	Structural
S009	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL BERTHS 11, 13, 15 AND 21	Structural
S010	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL BERTHS 3, 6 - 16 (EVEN) 23, 25 AND 26 - 30 (EVEN)	Structural
S011	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL BERTHS 50 - 61, 60 AND 72 - 80 (EVEN)	Structural
S012	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL BERTHS 18 - 24 (EVEN), 34, 36, 63 AND 88 - 98 (EVEN)	Structural
S013	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL BERTHS 62, 64 AND PARTIAL 66	Structural

S014	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL PARTIAL 66 - 74 (EVEN	Structural
S015	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL BERTHS 82 - 86 (EVEN), PARTIAL 88, 90 AND 92	Structural
S016	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL PARTIAL BERTH 88 BARGE FENDER	Structural
S017	PORT NEWARK/ELIZABETH PORT AUHTORITY MARINE TERMINAL BERTHS 3 AND 17	Structural
S018	PORT AUTHORITY AUTO MARINE TERMINAL CORNER CLUSTER DETAILS	Structural
S019	BROOKLYN PORT AUTHORITY MARINE TERMINAL CORNER CLUSTER DETAILS	Structural
S020	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL CORNER CLUSTER DETAILS	Structural
S021	MOORING BOLLARD AND CLEAT DETAILS	Structural
S022	LINE PILE INSTALLATION	Structural
S023	LINE PILE POSTING AND INSTALLATION	Structural
S024	PORT NEWARK/ELIZABETH PORT AUTHORITY MARINE TERMINAL BERTH 19	Structural

The Contract Drawings do not show all of the details of the Work and are intended only to illustrate the character and extent of the Work to be performed. Accordingly, they may be supplemented during the performance of the Work by the Engineer or by the Contractor subject to the approval of the Engineer, to the extent necessary to further illustrate the Work.

An indication on the Contract Drawings of the existence, nature or location of any utilities, structures, obstructions, conditions or materials does not constitute a representation as to the conclusions to be drawn therefrom nor a representation that no others exist in addition to those shown, even in the same location; nor does the absence of any indication on said drawings of the existence, nature or location of any utilities, structures, obstructions, conditions or materials constitute a representation that none exist.

After the Contract has been executed, the Contractor will be furnished six (6) copies of the Specifications and Contract Drawings without charge.

77. SHOP DRAWINGS, CATALOG CUTS AND SAMPLES

The Contractor shall specifically prepare for this Contract all Shop Drawings which may be required in addition to the Contract Drawings or in addition to any other drawings which the Engineer may issue in supplementing the Contract Drawings.

The specific requirements elsewhere set forth in the Specifications for furnishing Shop Drawings, Catalog Cuts and samples for any particular portion of the Contract shall not limit the obligation of the Contractor to furnish Shop Drawings, Catalog Cuts and samples for any other portion when so required by the Engineer.

The Contractor shall submit a general "Submittal Schedule" for the Engineer's review and approval listing the planned transmittal date and estimated number in each specification section category of Shop Drawings, Catalog Cuts, pages of calculations and samples within 30 days after receipt by the Contractor of the acceptance of the Proposal. A more detailed schedule shall be submitted no less than 30 calendar days prior to the actual date of any submittal.

After checking and verifying all field measurements and after complying with applicable procedures specified hereunder, the Contractor shall submit to the Engineer for review and approval, in accordance with the approved schedule of Shop Drawing submissions, or for other action if so indicated by the Engineer, six copies, unless otherwise requested, of all Shop Drawings which will bear a specific written indication that the Contractor has reviewed the submission for conformance to the requirements of the Contract Drawings and Specifications.

The Port Authority uses Primavera Expedition software to track the status of Submittals provided by the Contractor. In order to facilitate this electronic tracking, the Contractor shall use the transmittal form that is provided at the pre-construction meeting, and shall forward it to the Engineer via a MAPI compliant e-mail system (e.g. Microsoft Outlook, CC mail, Lotus notes, etc.).

The Contractor's transmittals of Submittal data shall fully comply with the numbering and naming conventions and other procedures that will be provided by the Engineer to the Contractor at the pre-construction meeting.

All submissions shall contain specific reference to the contract drawing and technical specification section to which they apply, as indicated below or as otherwise identified, as the Engineer may require. In general, submissions shall specifically reference Contract Drawing numbers or Specification section numbers for which the item pertains. The data shown on the Shop Drawings shall be complete with respect to quantities, dimensions, conformance to the specified performance and design criteria, materials, test results and similar information to enable the Engineer to review the submittal as required.

The Contractor shall also submit six copies to the Engineer for review and approval pursuant to the approved submittal schedule, of all Catalog Cuts and samples for conformance to the requirements of the Contract Drawings and Specifications. All Catalog Cuts and samples shall have been reviewed by the Contractor and shall be accompanied by a specific written indication that the Contractor has reviewed the submittal for conformance with the Contract Drawings and Specifications and shall be identified clearly as to material, supplier, manufacturer's procedures and pertinent data such as catalog numbers and the use for which intended.

Before submission of each Shop Drawing, Catalog Cut and sample, the Contractor shall have determined and verified all quantities, dimensions, conformance to the specified performance and design criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed and coordinated each Shop Drawing or Catalog Cut with other Shop Drawings and Catalog Cuts and with other requirements of the Work.

At the time of each submission, the Contractor shall give the Engineer specific written notice of each variation in any Shop Drawing, Catalog Cut and sample from the requirements of the Contract Drawings or Specifications and, in addition, shall cause a specific notation of each such variation to be made on each submittal to the Engineer, for review and approval of each such variation.

The Engineer's review and approval of Shop Drawings, Catalog Cuts or samples shall not relieve the Contractor from responsibility for any variation from the requirements of the Contract Drawings or Specifications unless the Contractor has in writing called the Engineer's attention to each such variation at the time of submission as required hereunder and the Chief Engineer has given written approval of each by an express specific written notation thereof incorporated in or accompanying the Shop Drawing, Catalog Cut or sample approval. Approval of Shop Drawings, Catalog Cuts and samples which are inconsistent with the requirements of the Contract Drawings and Specifications shall not be deemed to waive or change such requirements or to relieve the Contractor of his obligations to perform such requirements unless the Chief Engineer shall expressly and specifically state that he is waiving or changing such requirements, as stated above.

Where a Shop Drawing, Catalog Cut or sample is required no related Work shall be performed prior to the Engineer's review and approval of the submission.

The format for Shop Drawings prepared by the Contractor shall be as follows: Standard "D" size drawings with outside cut line dimensions of 22 inches by 34 inches and showing in detail all dimensions and description of materials. Two borders shall be drawn. The first shall be drawn one-half inch from the outside edges (top, bottom, left and right). The second shall be drawn inward to the drawing, one-half inch from the top, bottom and right border lines and one and one-half inch from the left border line. The inside borders on these drawings shall be 20 inches by 31 inches. A title block shall be shown on the right side of the drawing adjacent to the inside border identifying the Contractor's Name, Contract Title, Contract Number, cross-referenced Contract drawing number, Specification reference number and related paragraph and applicable signatures. These drawings shall be arranged in systematic order and numbered consecutively.

Upon receipt of the submittal, the Engineer will review the Shop Drawing, Catalog Cut or sample for conformance to the design information and materials shown on the Contract Drawings and contained in the Specifications. Approval by the Engineer shall not constitute a complete review or approval of the means, methods, techniques, sequences or procedures of construction, except where a specific means, method, technique, sequence or procedure of construction is specifically delineated in or required by the Contract Drawings or Specifications, and the approval shall not constitute a review and approval in regard to safety precautions or programs incident thereto. The review and approval of a separate item will not in itself indicate approval of the assembly in which the item functions. Any design shown on the Shop Drawings and prepared by the Contractor, his subcontractors, their detailers, or their professional engineers is the complete responsibility of the Contractor.

Within the number of working days hereinafter specified after receipt of the Shop Drawing prints, the Engineer shall approve or not approve the same or require corrections or additions to be made thereon. When a shop drawing is not approved or if additions or corrections are required, the Engineer shall return within this period one of the six copies submitted and the Contractor shall make the revisions, corrections or additions shown thereon to be made. The Contractor shall resubmit six prints showing the drawing corrected as required. The Contractor shall direct specific attention in writing to revisions other than the corrections called for by the Engineer on the previous submittal. Each drawing shall be corrected as required until the approval of the Engineer is obtained. After each resubmission, the Engineer shall have the number of working days hereinafter specified in which to approve revisions or corrections.

The number of working days within which the Engineer will advise the Contractor as to whether the Shop Drawings are approved, not approved, or require corrections or additions to be made thereto shall be as follows, except that 20 working days shall be required for the Engineer to review shop drawings submitted with design calculations.

No. of Dwgs. Submitted Within 5 Consecutive Working Days for Each Discipline(*)	No. of Working Days for Engineer To Review Shop Drawings
Up to 50	10
51 to 75	15
More than 75	20
* Disciplines shall be defined as follows: Structural, Architectural, Civil, Geotechnical, Mechanical, Electrical, Traffic and Environmental.	

Failure of the Contractor to provide 30 calendar days advance notice to the Engineer of any submittal shall result in a five (5) working day extension of the number of working days stated in the chart above. In no event shall an extension of the Engineer's review time provided for in this section relieve the Contractor from its duty to meet all contractual Milestone dates.

After approval has been given to any Shop Drawing or Catalog Cut no change will be permitted thereon unless approved in writing by the Engineer.

Before final payment for the Work is made, the Contractor shall submit to the Engineer only those previously approved or approved as noted Shop Drawings, which have been revised by field changes.

The Contractor shall mark-up the approved and approved as noted Shop Drawings directing specific attention to revisions reflecting the permanent construction as actually made. In accordance with the requirements specified in this numbered clause, the Contractor shall submit one original print of these drawings, marked "FINAL SHOP DRAWING – NOT FOR REVIEW", dated, and signed by the Contractor to the Engineer for verification. By signature, the Contractor is verifying that the drawing reflects the as-constructed condition.

All drawings, data, calculations and other papers of any type whatsoever, whether in the form of writing, figures or delineations, which are prepared in connection with this Contract and submitted to the Authority shall become the property of the Authority. The Authority shall have the non-exclusive right to use or permit the use of all such drawings, data and other papers and any ideas or methods represented thereby for any purpose and at any time without additional compensation. No such papers shall be deemed to have been given in confidence. Any statement or legend to the contrary in connection with such drawings, data or other papers and in conflict with the provisions of this paragraph shall be void and of no effect.

78. SUBSTITUTION

Where a proprietary item or make is specified or mentioned herein or called for or mentioned on the Contract Drawings and the phrases "similar and equal to" or "approved equal" are used in connection therewith, the utilization of any other item or make will be deemed a substitution. Substitution for the proprietary item or make specifically named may be made only in accordance with the Section hereof entitled "Workmanship and Materials" and in accordance with the following.

Whenever materials or equipment are specified or described in the Contract Drawings or Specifications by using the name of a proprietary item or the name of a particular supplier, the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of another supplier or manufacturer may be accepted by the Engineer if sufficient information and proof is submitted by the Contractor to permit the Engineer to determine that the material or equipment proposed is equivalent or equal to that named and the Engineer approves the substitution. The procedure for review by the Engineer will include the following. Requests for review of substitute items of material and equipment will not be accepted by the Engineer from anyone other than the Contractor. If the Contractor wishes to furnish or use a substitute item of material or equipment, the Contractor shall make a timely written application to the Engineer for approval thereof, certifying that the proposed substitution will perform at least the identical functions and achieve at least the identical results called for by the specified product and otherwise be equal to the specified product with regard to, but not limited to, durability, maintenance, strength, energy costs and record of proven performance. The application shall state that the evaluation and approval of the proposed substitution shall not delay the Contractor's completion of the Work as required by the Contract, whether or not approval of the substitution will require a change in the construction and, in no event will the Contractor be granted an extension of time for completion of any portion of the Work for reasons related directly or indirectly to the evaluation of the proposed substitution or to the proposed substitution itself. Any variations of the proposed substitution from that specified shall be identified in the application, and maintenance, repair and replacement services for the substitution shall be indicated. The Engineer may require the Contractor to furnish at the Contractor's expense additional laboratory test data concerning the proposed substitution.

Such submission to the Engineer shall be made only by including the requested substitution in the list of materials required to be submitted to the Engineer in accordance with the Section hereof entitled "Inspections and Rejections" within forty-five calendar days after the receipt of the acceptance of the Contractor's Proposal. After the approval of said list, no substitutions will be permitted, except that a brand or make named in the Specifications may be submitted for approval in lieu of a brand or make on said list. Any such submission shall not imply, or impose on the Engineer, any obligation whatsoever to discuss, disclose or justify the reasons for his opinion, approval, acceptance or rejection.

The Engineer shall be the sole judge of as to whether a proposed substitution will be approved, and no substitution shall be ordered or utilized without the Engineer's prior written approval. The Engineer may require Contractor to furnish at Contractor's expense a special performance guarantee or other assurance with respect to any approved substitution. Furthermore, the approval of any substitute proprietary item or make shall not in any way entitle the Contractor to additional compensation therefor.

Notwithstanding such approval, however, the Contractor assumes the risk that such approved substitute item or make is not equal to that shown or specified and if at any time the substitution shall appear not to be so equal he shall replace the substitution with that originally shown on the Contract Drawings or called for in the Specifications at his own cost and reimburse the Authority for any loss occurring on account of the substitution failing to be equal, notwithstanding that it had been previously approved for use by the Engineer.

The construction called for by the Contract Drawings and Specifications may be adapted for a particular proprietary item or make of material or equipment. Therefore, if any construction not required by the Contract Drawings or Specifications in their present form is necessary or desirable because of the use of substitute item or make of material or equipment (even though such other item or make is approved by the Engineer), such construction shall be furnished or performed by the Contractor at his expense and subject to the approval of the Engineer.

79. WORKMANSHIP AND MATERIALS

Workmanship and materials shall in every respect be free from defects of any kind and shall be in accordance with the best modern practice and whenever the Contract Drawings, Specifications or directions of the Engineer admit of a doubt as to what is permissible or fail to note the quality of any construction the interpretation which calls for the best quality is to be followed. Workmanship shall conform to applicable Specifications, manufacturer's instructions and recommendations for installation of products for the applications shown on the Contract Drawings, all of which shall be subject to the provisions of the Section of Division 1 GENERAL PROVISIONS entitled "Inspections and Rejections".

All items provided in this contract that use dates in the recording, storing or processing of information shall use such dates correctly at all times including using such dates correctly in the recording, storing or processing of information after January 1, 2000 (Year 2000 Compliant).

Materials and Equipment incorporated into the Work shall be new except as may be otherwise herein specifically required, and shall comply with make, size, type and quality specified, or as specifically approved in writing by the Chief Engineer in accordance with the Section of Division 1 GENERAL PROVISIONS entitled "Substitution".

Reference to standards of any society, institution, association, or governmental authority in the Specifications or on the Contract Drawings, whether specific or by implication, shall mean for such standards which are part of the building code in effect for Work of this Contract the edition date published in such code; and such references which are not part of the building code, shall mean the latest edition date in effect at the time of opening of Proposals upon the present Contract unless specifically stated otherwise.

If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment to be employed by the Contractor in performing the Work. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the approved instructions of the applicable supplier except as otherwise provided in the Contract Drawings or Specifications.

In case of a discrepancy between a description or requirement in the Contract Drawings and Specifications for any material or equipment and a catalog number or other designation for the same material or equipment (even though stated to be acceptable), the description or requirements shall control.

In various paragraphs of these Specifications, references may be made to certain standard or tentative specifications or requirements of various organizations. Unless otherwise stated, these references are to be construed as referring to the specifications and requirements in effect on the date set for opening bids upon the present Contract.

All inventions, ideas, designs and methods contained in the Specifications and Contract Drawings in which the Authority has or may acquire patent, copyright or other property rights are hereby expressly reserved for the exclusive use of the Authority. The Specifications and Contract Drawings contain confidential information which is disclosed only to enable this Contract to be performed. Said Specifications and Drawings must not be used for any purpose detrimental to the interest of the Authority and must not be produced or copied in whole or in part or used for furnishing information to others without the written consent of the Authority, provided, however, that the Contractor may, when the performance of the Contract so requires, furnish said information to others for the purpose of engaging or informing subcontractors and materialmen.

If, in accordance with this Contract, the Contractor furnishes research, development or consultative services in connection with the performance of the Contract and if in the course of such research, development or consultation patentable subject matter is produced by the Contractor, its officers, agents, employees, subcontractors or materialmen, the Authority shall have, without cost or expense to it, an irrevocable, non-exclusive, royalty-free license to make, have made, and use, either itself or by anyone on its behalf, such subject matter in connection with any activity now or hereafter engaged in or permitted by the Authority. Promptly upon request by the Authority, the Contractor shall furnish or obtain from the appropriate person a form of license satisfactory to the Authority, but as between the Contractor and the Authority the license herein provided for shall nevertheless arise for the benefit of the Authority immediately upon the production of said subject matter and shall not await formal exemplification in a written license agreement as provided for above. Such license may be transferred by the Authority to its successors, immediate or otherwise, in the operation or ownership of any real or personal property now or hereafter owned or operated by the Authority, but such license shall not be otherwise transferable.

The right to use all material, software, firmware, compositions of matter, manufactures, apparatus, appliances, processes of manufacture or types of construction required in connection with this Contract and to which a patent, copyright or other intellectual property right applies or may apply shall be obtained by the Contractor without separate or additional compensation whether the same is patented, copyrighted or otherwise protected as an intellectual property right before, during or after the performance of the Contract.

The Contractor shall indemnify the Authority against and save it harmless from all loss and expense incurred in the defense, settlement or satisfaction of any claims in the nature of patent, copyright or other intellectual property right infringement arising out of or in connection with the Authority use, in accordance with the preceding two paragraphs of this numbered clause, of such subject matter or material, software, firmware, compositions of matter, manufactures, apparatus, appliances, processes of manufacture or types of construction to which a patent, copyright or other intellectual property right applies or may apply. If requested by the Authority and if notified promptly in writing of any such claim, the Contractor shall conduct all negotiations with respect to and defend such claim without expense to the Authority. If the Authority be enjoined from using any of the facilities which form the subject matter of this Contract and as to which the Contractor is to indemnify the Authority against patent, copyright or other intellectual property right claims, the Authority may, at its option and without thereby limiting any other right it may have hereunder or at law or in equity, require the Contractor to supply, temporarily or permanently, facilities not subject to such injunction and not infringing any patent, copyright or other intellectual property right or to remove all such facilities and refund the cost thereof to the Authority or to take such steps as may be necessary to ensure compliance by the Authority with such injunction, all to the satisfaction of the Authority and all without cost or expense to the Authority.

80. INSPECTIONS AND REJECTIONS

All Work and all construction, processes of manufacture and methods of construction involved in or related to the performance of the Work shall be at all times and places subject to the inspection of the Engineer, acting personally or through his Inspectors, and the enumeration in these Specifications of particular portions of such Work, construction, processes of manufacture or methods of construction which will or may be inspected by the Engineer or such Inspectors shall not be deemed to imply that only such Work, construction, processes of manufacture and methods of construction will or may be so inspected. The Engineer shall be the judge of the quality and suitability of the Work, construction, processes of manufacture and methods of construction for the purposes for which they are used or to be used. Should they fail to meet his approval they shall be forthwith reconstructed, made good, replaced or corrected, as the case may be, by the Contractor at his own expense. Rejected material shall be removed immediately from the site. The fact that the Inspectors have approved the materials and workmanship shall not relieve the Contractor from his obligation to supply other material and workmanship when so ordered by the Engineer.

The Contractor , at his own expense, shall furnish such facilities and give such assistance for inspection as the Engineer may direct. In the case of materials required by the Specifications to be inspected in the factory or plant, and in the case of any other items which the Engineer may designate, the Contractor shall secure for the Engineer and his Inspectors free access to all parts of such factories or plants and shall furnish to the Engineer three copies of purchase orders, two copies of mill shipping statements and four copies of shipping statements. Moreover, in the case of such materials to be factory or plant inspected, the Contractor shall give at least ten days' notice to the Engineer of his intention to commence the manufacture or preparation of such materials.

Other than the materials and equipment specifically required to be inspected at the manufacturer's factory or plant, all materials will be inspected at the construction site and any portions thereof which are rejected by the Engineer shall be immediately removed from the construction site by the Contractor and shall be replaced with new materials by the Contractor at his own expense.

In the case of materials to be inspected at the construction site, the Contractor shall submit a list of all such materials in triplicate to the Engineer for his approval prior to ordering same. The list shall be submitted within forty-five calendar days after receipt of the notice of acceptance and shall contain the following information:

A. Classification of submittal in accordance with the following:

Class I - A submittal for record of an expressly specified item.

Class II - A submittal of an item which conforms to an express generic specification or a submittal which is deemed by the Contractor to be identical to an expressly specified item.

Class III - A submittal which is deemed by the Contractor to be functionally equivalent but not identical to a specified item.

B. In the case of Class II and Class III, the Contractor shall supply adequate information to the Engineer to enable the Engineer to compare the specified item and the proposed substitution. Information shall include, but need not be limited to, technical specifications, Catalog Cuts, drawings, references to existing installations and test data, or any other data required by the Engineer.

C. In the case of fabricated materials for which Shop Drawings are to be prepared, a brief description of the material and the statement "see Shop Drawings".

D. In the case of materials or equipment listed in manufacturer's catalogs, the list shall contain the vendor's name, the manufacturer's name, brand name, style designation, catalog number and, where the Specifications require catalog cuts, the statement "see catalog cut".

E. In the case of materials or equipment for which Shop Drawings are not to be prepared, and which are not listed in any catalog, the list shall contain a complete description of the material or equipment, which shall be in sufficient detail to describe completely the materials or equipment and quality therefor.

The Engineer shall advise the Contractor whether said list is approved or requires corrections or additions within the number of working days indicated in the chart below:

Type of Submittal	No. of Working Days for Engineer to Approve/Disapprove Items
Class I Material submittals	10
Portland Cement mix designs that require confirmation of the 28-day properties	35
Changes in asphalt mix designs that need to be confirmed with a batch mix at the plant	35
Class II Material submittals	20
Class III Material submittals	30

Failure of the Contractor to provide 30 calendar days advance notice to the Engineer of any submittal shall result in a five (5) working day extension of the number of days stated in the chart above. In no event shall an extension of the Engineer's review time provided for in this section relieve the Contractor from its duty to meet all contractual Milestone dates.

Within ten working days after receipt of said list, the Engineer shall notify the Contractor of which items are approved and which disapproved. Within two working days thereafter, the Contractor shall resubmit a new list covering those items which were disapproved. After each such re-submission the Engineer shall have a similar period of ten days in which to approve or disapprove.

Should materials or equipment be delivered to the construction site without having been placed on the aforementioned list and approved, it shall be immediately removed from the construction site by the Contractor at his own expense.

81. MANUFACTURERS' CERTIFICATION

Where materials and equipment are required by these Specifications to conform to certain standard or tentative specifications or requirements of any organizations, including American Society for Testing and Materials, American National Standards Institute, Association Rules for Grading Lumber, Federal Specifications, National Electrical Manufacturers Association, American Association of State Highway and Transportation Officials, American Water Works Association and the International Municipal Signal Association, the Contractor shall furnish to the Engineer the manufacturer's written certification that each of the materials or equipment conforms to the foregoing standard or tentative specifications. The certification shall be delivered to the Engineer prior to installation of the materials to which it refers. Such certifications shall not be binding or conclusive on the Authority and may be rejected at any time by the Engineer if incorrect, improper or otherwise unsatisfactory in his opinion.

82. NO RELEASE OF CONTRACTOR

Any provision of this Contract for testing, inspection or approval, and any actual testing, inspection or approval, of any materials, workmanship, plant, equipment, drawings, program, methods of procedure, or of any other thing done or furnished or proposed by the Contractor to be done or furnished in connection with the Contract is for the benefit of the Authority not the Contractor. Any approval of such things shall be construed merely to mean that at that time the Engineer knows of no good reason for objecting thereto. No such provision for testing or inspection, no omission of testing or inspection, and no such approval shall release the Contractor from his full responsibility for the accurate and complete performance of the Contract in accordance with the Contract Drawings and Specifications or from any duty, obligation or liability imposed upon him by the Contract or from responsibility for injuries to persons or damage to property.

83. ERRORS AND DISCREPANCIES

If, in the performance of the Contract, the Contractor discovers any errors or omissions in the Contract Drawings or Specifications, or in the marks, lines and elevations furnished by the Authority in the construction undertaken and executed by him, he shall immediately notify the Engineer and the Engineer shall promptly verify the same.

If with the knowledge of such error or omission and prior to the correction thereof, the Contractor proceeds with any construction affected thereby, he shall do so at his own risk and the construction so done shall not be considered as construction done under and in performance of this Contract unless and until approved and accepted.

84. DIFFERING SUBSURFACE CONDITIONS

If during the performance of Work, the Contractor becomes aware of any unanticipated subsurface conditions or has cause to suspect the presence of such condition, then the Contractor shall immediately notify the Engineer, or designee thereof verbally, to be followed immediately by written notification. The Contractor shall specify the nature, location, and impact on the Work of such conditions. The Contractor shall immediately stop Work in and secure the area against injury to persons or damage to property pending further instructions from the Engineer.

The Contractor shall then conduct all necessary investigations and testing of the subsurface conditions as directed by the Engineer to identify the character and extent of the unanticipated subsurface conditions and/or to satisfy applicable Federal, State and local laws, codes and ordinances and regulations and shall notify the Engineer accordingly. The investigation program shall be submitted to the Engineer for review and approval.

In the event the Contractor discovers such subsurface conditions during the performance of the Work and (i) special handling of such condition is necessary and required for the performance of the Work as determined by the Engineer; (ii) such special handling cannot be avoided or mitigated by the exercise of reasonable measures by the Contractor; and (iii) the Contractor actually incurs increased costs caused by such condition that could not have been reasonably anticipated from the Contract Drawings, Reference Drawings and Specifications and inspection of the construction site; then in such event, as approved by the Engineer, the Contractor shall, notwithstanding any provision in this Contract to the contrary, be compensated for such costs for special handling, including the necessary investigations and testing of subsurface conditions, in accordance with the provisions of the clause entitled "Compensation for Extra Work".

85. ACCIDENTS AND FIRST AID PROVISIONS

The Contractor shall promptly report in writing to the Engineer and to the Authority Manager, Claims Administration all accidents whatsoever arising out of or in connection with the performance of the Contract, whether on or adjacent to the construction site, which result in death, injuries or property damage, giving full details and statements of witnesses. In addition, if death or serious injuries or serious damage is caused, the accident shall be reported immediately by telephone to both of the said representatives of the Authority.

The Contractor shall provide at the construction site such equipment and medical facilities as are necessary to supply first aid service, in case of accident, to any who may be injured in the progress of the Contract. He shall have standing arrangements for the removal and hospital treatment of any person who may be injured while engaged in the performance of the Contract.

If any claim is made by any third person against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the fact in writing to the aforementioned representatives of the Authority, giving full details of the claim.

86. SAFETY PROVISIONS

In the performance of the Contract, the Contractor shall exercise every precaution to prevent injury to workers and the public or damage to property.

He shall, at his own expense, provide temporary structures, place such watchmen, design and erect such barricades, fences and railings, give such warnings, display such lights, signals and signs, exercise such precaution against fire, adopt and enforce such rules and regulations, and take such other precautions as may be necessary, desirable or proper, or as may be directed in a Work Order issued by the Engineer.

The Contractor shall employ for each Work Order of the Contract a competent person conforming to the requirements of the Code of Federal Regulations 29 CFR 1926.32(f) who shall be designated by the Contractor as authorized to perform the duties required by 29 CFR 1926 et seq. as applicable for each Work Order of this Contract.

Obtain and submit to the Engineer one copy of material safety data sheet (MSDS) conforming to the requirements of 29 CFR 1910.1200(g) for each hazardous chemical utilized for permanent and consumable materials employed for Work of this Contract.

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss, including but not limited to:

A. All employees on the Work, the public, and other persons and entities who may be affected thereby;

B. All the Work, materials and equipment to be incorporated therein, whether in storage on or off the site; and

C. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated for removal, relocation or replacement in the course of construction.

The Contractor's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and the Contractor has removed all workers, material and equipment from the construction site, or the issuance of the Certificate of Final Completion, whichever shall occur last.

Until fire protection needs are supplied by permanent facilities under this Contract, install and maintain temporary fire protection facilities. Comply with requirements of National Fire Protection Association NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alteration and Demolition Operations".

The Contractor shall employ only such men as are physically fit and are free from contagious or communicable diseases.

The Contractor shall use only machinery and equipment adapted to operate with the least possible noise, and shall so conduct his operations that annoyance to occupants of nearby property and the general public will be reduced to a minimum.

The bringing of intoxicating substances onto the construction site and the use or consumption of intoxicating substances at the construction site are prohibited. It shall be the responsibility of the Contractor to insure that all employees of the Contractor and of all subcontractors, materialmen and any other persons under contract to or under the control of the Contractor shall comply with the provisions of this paragraph.

The Contractor shall daily clean up all refuse, rubbish, scrap materials and debris caused by his operations, to the end that at all times the construction site shall present a neat, orderly and workmanlike appearance. Before the Certificate of Final Completion of Work will be issued, the Contractor shall remove all surplus materials, falsework, temporary fences and other temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations and shall put the construction site in a neat, orderly condition.

In the event the Contractor encounters at the construction site, material reasonably believed to be asbestos, polychlorinated biphenyl (PCB) or any other hazardous material, the Contractor shall immediately stop Work in the area affected and report the condition in writing to the Engineer. Work in the affected area shall not thereafter be resumed by the Contractor except upon the issuance of a written order to that effect from the Engineer.

Within 15 days of the acceptance of his Proposal, the Contractor shall submit to the Engineer, for review, the Contractor's Site Safety Program, which shall be specific for the construction site and include a description of the work to be performed, a hazard assessment of the Work to be performed and the means by which such hazards shall be mitigated. The Contractor's Site Safety Program shall comply with all applicable federal, state, municipal and local and departmental laws and shall include, among other things, the designation by the Contractor of a qualified individual to administer such Site Safety Program.

Should any vessel, equipment, plant, material, object or debris of any kind used in connection with the Contract or located at or in transit to or from the construction site be sunk, lost, dumped or go adrift under any circumstances, whether or not in navigable water, which in the opinion of the Engineer may, at the time or potentially, be dangerous to or obstruct any navigation or interfere in any way with other work by or for the Authority or with the use of the Authority facilities, the Contractor shall recover and remove the same immediately. The Contractor shall give immediate notice with description and location of such items to the Engineer and when required shall mark or buoy such items until they are removed. The foregoing obligations under this numbered Section shall not be impaired by any right which the Contractor might otherwise have to abandon such vessel, equipment, plant, material, object or debris of any kind without further obligation on his part, and the Contractor waives any such right.

87. RECYCLING OF CONSTRUCTION DEBRIS MATERIAL

The Contractor shall remove from Authority property all construction debris, demolition debris and other debris material generated from the performance of the Work of this Contract unless the material is deemed acceptable by the Engineer for on-site re-use or recycling in accordance with the technical requirements of this Contract and remains at the Work site. The Contractor shall transport to recycling facilities or re-use and recycle on-site for this Contract, as applicable, no less than 75% by weight of the following types of designated debris material, to the extent arising from the Work of this Contract:

Asphalt Concrete

Portland Cement Concrete

Steel

Excess Unrestricted Soil

During the process of removal of all such designated debris material from Authority property, the Contractor shall submit to the Engineer on a monthly basis a Designated Debris Material Assessment Summary indicating the actual types and quantities by weight of the designated debris material removed for this Contract up to that point in time. In addition, the Designated Debris Material Assessment Summary shall also include types and quantities by weight of designated debris material actually re-used or recycled on-site in this Contract or, if shown on the Contract Drawings, are stockpiled for future use by the Authority. The Designated Debris Material Assessment Summary shall be accompanied by written verification from recycling and landfill destinations identifying the originating Work site, quantity of material delivered and type of debris material for all designated debris material removed from the Work site.

Within 15 days of the acceptance of his Proposal, the Contractor shall submit to the Engineer for review the Contractor's Designated Debris Material Assessment Plan indicating the anticipated types and anticipated quantities by weight and the intended destinations for all such designated debris material to be removed from the Work site. The Designated Debris Material Assessment Plan shall also indicate anticipated types and anticipated quantities by weight of all such designated debris material to remain at the Work site for re-use or recycling in this Contract as applicable.

All removals shall be completed promptly upon the completion of construction under this Contract.

88. DIESEL-POWERED EQUIPMENT

A. The Contractor and its subcontractors shall minimize all air-borne pollutants generated by diesel-powered equipment and vehicles at all times during the performance of this Contract in accordance with this numbered clause. The requirements herein apply to all land-based and barge-mounted diesel-powered construction equipment. Marine propulsion engines, marine auxiliary engines, and dredges used in construction activity are exempt from these requirements.

B. No diesel-powered equipment shall be brought on the construction site without meeting the following requirements unless a waiver has been granted as specified in Section D below. In addition, all such equipment and engines shall comply with all Federal, state and local regulations applicable to exhaust emission controls and safety.

1.) Ultra Low Sulfur Diesel (ULSD) Fuel

All diesel-powered equipment to be used in the performance of the Work of this Contract shall use ULSD fuel with an average sulfur content of no more than 15 parts per million (ppm). This requirement applies to on-road and non-road diesel engines. The Engineer may collect samples of the ULSD fuel directly from the fuel tanks of the diesel-powered equipment used on the construction site in order to verify that sulfur concentrations do not exceed 15 ppm. Diesel-powered equipment not using ULSD shall be removed from the construction site or shall immediately comply with the ULSD fuel clause as directed by the Engineer and at no additional cost to the Authority.

2.) Emissions Control Devices – Best Available Technology (BAT)

All non-road diesel-powered equipment with a rated horsepower of 50 horse power (hp) or greater and active on the construction site for any portion of a 24-hour workday for more than 20 total consecutive and non-consecutive days shall be retrofitted with Emissions Control Devices (Devices) utilizing the best available technology (BAT). The Devices shall consist of Diesel Particulate Filters (DPFs) or other measures with equivalent particulate matter (PM) removal efficiency, wherever the implementation of such a Device is feasible in the opinion of the Engineer. For non-road diesel-powered equipment rated between 50 hp and 75 hp, Diesel Oxidation Catalysts (DOCs) may be used in place of DPFs.

Both active and passive filter regeneration mechanisms shall be considered for DPFs. In cases where DPFs are not feasible for safety considerations, mechanical reasons, or where the technology would not function properly, the Contractor shall submit a request for a waiver to the Engineer for review and approval prior to the use of such diesel-powered equipment. If the Engineer grants a waiver under these circumstances, then the Contractor shall retrofit the diesel-powered equipment with Flow Through Filters (FTF) if feasible in the opinion of the Engineer. DOCs shall be used in place of DPFs or FTFs unless it is proven to the Engineer by the Contractor that the application of this type of technology is also technically infeasible.

The use of diesel-powered engines greater than 50 hp without tailpipe reduction measures will be permitted pursuant to the Engineer's approval of a written request for a waiver submitted by the Contractor in accordance with Section D below.

The use of Devices shall be targeted primarily toward the reduction of PM and secondarily to the reduction of nitrogen oxides (NOX), and shall in no event result in an increase in the emissions of either pollutant. The Devices of best available technology shall be defined as those that are contained in the U.S. Environmental Protection Agency (EPA) Verified Retrofit Technology List, the list of California Air Resources Board (CARB), Verifications, Europe's Verified Technology List (VERT), or as otherwise approved by the Engineer to provide the maximal level of pollutant reductions intended by this clause. For more information, refer to the following websites:

U.S. Environmental Protection Agency Verified Technology List:
http://www.epa.gov/otaq/retrofit/nonroad-list.htm

California Air Resources Board Verified Technology List:
http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

Europe's Verified Technology List:
http://www.akpf.org/pub/vert_filterliste.pdf

3.) Diesel Construction Equipment Age Requirements

To facilitate the application of verified Emission Control Devices, as well as provide lower baseline emissions, Tier 0 engines shall not be used in the performance of this Contract unless they have been upgraded to Tier 1 and then retrofitted with best available technology devices. As determined by the Engineer, exceptions will be made only for specific engines that are not readily upgraded to Tier 1, and where the Work of this Contract cannot reasonably be performed using alternative engines that comply with this clause. In such cases, the Contractor shall submit a written request for a waiver to the Engineer for review and approval prior to bringing such equipment onto the construction site.

4.) Diesel Engine Idling Policy

The idling time of non-road and on-road vehicles shall be limited to three (3) consecutive minutes as determined by the Engineer with the following exceptions:

a. An on-road or non-road vehicle is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control, or is in queue when engaged in an active operation with other equipment.

b. It is necessary to operate defrosting, heating, or cooling equipment to ensure the safety or health of the driver or passengers.

c. To ensure the safe and proper operation of auxiliary equipment that is located in or on the vehicle, to accomplish the intended use of the vehicle or equipment, but only to the extent so necessary (for example - cranes and concrete mixers).

d. To bring the vehicle to the manufacturer's recommended operating temperature, but only to the extent so necessary.

e. The outdoor ambient temperature is below twenty (20) degrees Fahrenheit.

f. A vehicle is being actively worked on for repairs or maintenance and engine idling is necessary to effectuate such repairs or maintenance.

5.) Electrification

Where electric power is distributed to and available throughout a construction site, electrically powered equipment shall be preferred over diesel-powered versions of that equipment.

C. Submittals:

The Contractor shall submit to the Engineer for review and approval an inventory list for all non-road diesel equipment and engines, and verified Emissions Control Devices. No Work shall commence utilizing diesel-powered non-road equipment rated at 50 hp or greater until the Contractor submits a comprehensive and complete inventory list inclusive of all such equipment, including the specifics of each as detailed below, and same is approved by the Engineer.

1.) The inventory list shall be provided in an electronic format (e.g., Microsoft Word, Access or Excel), and shall include the following:

a. Contract number and title.

b. Owner of equipment's name, address, telephone number and contact person familiar with the operation and maintenance of the equipment and the emission control technologies; whether owner is the Contractor, subcontractor or rental firm.

c. Dates that equipment is anticipated to arrive at and depart from the site.

d. Number, type, make, year of manufacture, manufacturer and serial number.

e. Engine type, tier level, make, horsepower rating, year of manufacture, and serial number.

f. Approximate fuel consumption rate per shift.

g. Anticipated function, duration of use, and days and hours of operation.

h. Retrofit type, make, model, manufacturer, installation date, EPA, VERT or CARB verification number or supporting documentation related to emission control devices.

i. Previous acceptance or waivers granted by the Authority, or the City of New York, or the Metropolitan Transportation Authority, or another public agency that issued a waiver under the same or substantially the same standards.

2.) On-Going Equipment Updates:

Whenever a new or additional piece of diesel-powered non-road equipment is required to complete the Work of this Contract, the Contractor shall submit to the Engineer an update of the equipment inventory list. These updates shall include the actual dates the equipment arrives and departs from the site.

D. Waivers:

The Contractor shall submit a written request for a waiver to the Engineer for review and approval prior to bringing equipment that does not conform to the above requirements onto the construction site. The Contractor shall demonstrate due diligence by providing written documentation of efforts to comply with this clause. For waivers based upon the unavailability of retrofit devices for certain equipment, the Contractor will generally be required to provide written documentation from more than one vendor or supplier of retrofit devices to satisfy this requirement. Waiver requests related to the use of DPFs shall take into consideration actively regenerating filters for equipment with low temperature profiles that typically preclude the application of passively regenerating filtration systems.

Equipment retrofitted with an approved device in connection with another construction contract of the Authority, or the City of New York, or the Metropolitan Transportation Authority is exempt from further retrofitting for three (3) years from the date the retrofit was approved, even if new BAT retrofit devices are available. The Contractor shall submit to the Engineer documentation of approval of a retrofit device by the Authority, or the City of New York, or the Metropolitan Transportation Authority, or another public agency that issued a waiver under the same or substantially the same standards for the equipment in question. In addition, if the Authority, or the City of New York, or the Metropolitan Transportation Authority, another public agency that issued a waiver under the same or substantially the same standards previously waived a requirement contained in this clause for a particular piece of equipment, that equipment shall be exempt from the requirement for three (3) years from the date the initial waiver was granted.

1.) In responding to waiver requests, the following conditions will be taken into consideration with applicable documentation:

a. A BAT retrofit device would pose a safety hazard or impair operator visibility; or

b. A BAT retrofit device would void the engine warranty; or

c. A BAT retrofit device cannot be used for mechanical reasons; or

d. A BAT retrofit device or the engine would not function properly if the BAT retrofit device were installed; or

e. A Tier 0 engine is not readily upgraded to Tier 1, and where the task cannot be reasonably accomplished using alternative engines that do comply with this clause; or

f. The furnishing and installation of a BAT retrofit is more than 30 percent of the fair market value of the construction equipment; or

g. The Authority, or the City of New York, or the Metropolitan Transportation Authority, or another public agency that issued a waiver under the same or substantially the same standards previously approved a BAT retrofit device for the equipment in question. Such approval is valid for three years from the date it was issued; or

h. The Authority, or the City of New York, or the Metropolitan Transportation Authority, or another public agency that issued a waiver under the same or substantially the same standards previously granted a waiver for the equipment in question. Such waiver is valid for three years from the date it was issued.

In addition, the Engineer may, in his or her discretion, grant a waiver based upon excessive costs to satisfy the clause, undue burden on the Contractor, marginal benefits, or other relevant factors, provided adequate supporting documentation is submitted by the Contractor.

2.) Waiver requests shall include the following:

a. Name of contractor applying for the waiver.

c. Contract number and title.

d. Owner of equipment's name, address, telephone number and contact person familiar with the operation and maintenance of the equipment and the emission control technologies, whether owner is the Contractor, subcontractor or rental firm.

e. Number, type, make, year of manufacture, manufacturer and serial number.

f. Engine type, make, horsepower rating, year of manufacture, and serial number.

g. Approximate fuel consumption rate per shift.

h. Anticipated function, duration of use, and days and hours of operation.

i. Technical explanation of safety hazard, mechanical constraint, warranty, limited availability, or functionality issues cited as basis for waiver.

j. Written documentation from retrofit device manufacturers, engine manufacturers, or rental companies, as appropriate, supporting the stated reasons for the waiver; for waivers based upon the unavailability of a retrofit device for specified equipment, the Contractor shall provide documents from more than one supplier.

k. If applicable, documentation of previous BAT retrofit approvals granted by the Authority, or the City of New York, or the Metropolitan Transportation Authority, or another public agency that issued a waiver under the same or substantially the same standards for the equipment in question.

l. If applicable, documentation of previous waivers granted by the Authority, or the City of New York, or the Metropolitan Transportation Authority, or another public agency that issued a waiver under the same or substantially the same standards for the equipment in question.

3.) Review of Waiver Application

The Engineer will make a determination whether to approve the Waiver Request no later than 10 days after its receipt.

89. DAILY PROGRESS, EQUIPMENT AND LABOR REPORTS

The Contractor shall furnish to the Engineer at the end of each day Work is performed at the construction site, a memorandum showing for that day (a) the construction performed, (b) the type of equipment used identifying each piece of equipment as owned by the Contractor or rented from others; (c) a statement of any unusual happening that occurred, and (d) the names and number of workers in each trade classification that were employed. Such memorandum shall not be deemed to be a substitute for the notices, time slips, memoranda or other data required under the clauses of the Form of Contract relating to compensation for Extra Work.

90. LAWS AND ORDINANCES

In order to effectuate the policy of the Authority, the Contractor shall comply with all provisions of federal, state, municipal, local and departmental laws, ordinances, rules, regulations and orders which would affect the Contract and the performance thereof and those engaged therein if said Contract were being performed for a private corporation, except where stricter requirements are contained in the Work Order, Specifications or Contract Drawings, in which event the latter requirements shall apply. However, the Contractor shall not apply for any permits, licenses or variances in the name of or on behalf of the Authority, but shall do so in his own name where required by law, regulation or order or by the immediately preceding sentence. Nor shall the Contractor apply for any variance in his own name without first obtaining the approval of the Authority.

The Port Authority has applied for the following permit(s) in connection with this Contract in its own name:

1.	New York State Department of Environmental Conservation Facility DEC ID 2-6500-00010	General
2.	State of New Jersey Department of Environmental Protection Permit No. 0000-02-0033.1	General
3.	Department of the Army New York District, Corps of Engineers Application No. NAN-2009-01238-EBU	Nationwide
4.	State of New York, Department of State Ref. No. F-2003-0239	General

The Contractor shall comply with all provisions of the said permit(s). Copies of the permits are attached hereto and made a part hereof under "Permits".

91. U.S. COAST GUARD SECURITY REQUIREMENTS

The Contractor is advised that in conjunction with Port Security Provisions for the Port of New York and New Jersey a 25 yard security or exclusionary area has been established by the United States Coast Guard around all bridges, piers and other facilities on the waterfront in the Greater New York/New Jersey area. No person or vessel may enter these security areas without the approval of the Coast Guard Captain of the Port and Vessel Traffic Service Activities New York as well as the Commander, First Coast Guard District Bridge Branch.

All requests to enter into these security zones shall be made in writing to Captain of the Port of New York not less than 30 days prior to the intended date of entry into the zone. Requests must be submitted to the U.S. Coast Guard Waterways Oversight Branch at Commanding Officer, U.S. Coast Guard Activities New York (WOB), 212 Coast Guard Drive, Staten Island, NY 10305; (718) 354-4193 or 4355 and must contain a complete list of all personnel that will enter into the security zones, complete vessel information and, if appropriate, a copy of Coast Guard Bridge Branch construction approval.

The following information is required:

A. Employee's name, social security number and date of birth.

B. Contractor's supervisor name and telephone number.

C. Name, type, size of barge/vessel/boat.

D. Project start and end dates, working hours and days.

After background checks of all personnel have been completed, Coast Guard Captain of the Port will issue a letter specifying personnel and vessels authorized to enter the security zone.

After initial written approval for entry has been received, the Contractor shall notify the Coast Guard (Vessel Traffic Service 718-354-4038) daily prior to entering and upon securing for the day or leaving the site.

If additional, or changes in existing personnel, are required said information identified above shall be transmitted as above, as early as possible, but not less than 96 hours in advance of the expected change.

Failure to comply with the above Security Zone Requirements and Conditions is punishable under Federal Law by arrest, prosecution, and or civil penalties.

92. IDENTIFICATION

No person will be permitted on or about the construction site without a pass, permit or identification badge approved by the Engineer. The Contractor shall provide such passes, permits or identification badges for his employees, subcontractors and materialmen whenever necessary. Identification badges shall be worn in a conspicuous and clearly visible position by all employees of the Contractor whenever they are working at the construction site.

93. SIGNS

No advertisement or sign, other than the name and address of the Contractor, will be permitted on any fences, temporary structures or elsewhere on the construction site and such advertisement will be permitted only upon the condition that it is first approved by the Engineer. In any event, the advertisement shall not exceed six feet by eight feet in overall dimensions.

94. CONTRACTOR'S FIELD OFFICE AND REPRESENTATIVE

At a readily accessible point on or near the construction site, the Contractor shall maintain a field office provided with a telephone.

During the performance of any Work at the construction site, the Contractor shall have a representative thereat who shall be authorized by the Contractor to receive and put into effect promptly all orders, directions and instructions from the Engineer. The Contractor's representative shall be provided, at all times, with a conformed copy of this Contract, a set of the Contract Drawings, and a copy of the Work Order(s) issued by the Engineer.

Orders and directions may be given orally by the Engineer and shall be received and promptly obeyed by the Contractor or his representative or any superintendent, foreman or other employee of the Contractor who may have charge of the particular part of the Work in relation to which the orders or directions are given. A confirmation in writing of such orders or directions will be given by the Engineer when so requested by the Contractor.

95. SURVEYS

The Engineer will establish a bench mark and a base line at or adjacent to the location of the Contractor's operations. The Contractor shall perform all surveys which may be required for the performance of the Contract. He shall carefully preserve any base line and bench mark which may be established by the Engineer.

The Contractor shall, in addition, furnish to the Engineer, without additional compensation therefor, any or all information and data regarding points, lines, grades, elevations and other survey information established by the Contractor during the performance of the Contract.

Surveys and measurements of quantities for purposes of computing Contractor's compensation shall be made by the Contractor as directed by and in the presence of, or jointly with, the Engineer, at the Engineer's option. Computations of quantities for payment shall be made by the Contractor and shall be subject to the approval of the Engineer.

96. TEMPORARY STRUCTURES

Unless otherwise provided in this Contract, the Contractor shall determine the need for and shall design, furnish and construct all barricades, fences, staging, falsework, formwork, shoring, scaffolding and other temporary structures required in the performance of the Contract, whether or not of the type enumerated in the Specifications or on the Contract Drawings, including those which would be required by law or regulation if this Contract were being performed for a private corporation. All such temporary structures shall be of adequate strength for the purposes for which they are constructed and shall be provided with graphics, warning signs and warning lights as required to inform personnel and the public of the hazards being protected against, and the Contractor shall maintain them in satisfactory condition. The design and drawings for such structures shall be prepared by the Contractor utilizing a professional engineer licensed in the state where the structure will be constructed, and when requested by the Engineer they shall be submitted for his review before being used.

The Contractor shall ensure that each temporary structure is inspected by the professional engineer who designed the temporary structure prior to initial use and submit a schedule of periodic inspections to be performed by such professional engineer to the Engineer for review. The number of periodic inspections of temporary structures to be performed by the professional engineer shall be the minimum required by law or regulation if this Contract were being performed for a private corporation. The Contractor shall also submit a signed and sealed statement of inspection from the professional engineer performing the inspection of the temporary structure, including a statement of fitness for use for the intended purpose of the temporary structure, to the Engineer for review.

Neither such approval, however, nor any requirements of the Engineer, the Specifications or the Contract Drawings shall relieve the Contractor of his responsibility for the design, construction and use of the temporary structures or from any obligations and risks imposed on him under this Contract, and any such approval or requirements shall be deemed merely to relate to minimum standards and not to indicate that the temporary structures are adequate or that they meet the Contractor's obligations under this Contract.

Temporary structures shall be painted with an approved dark color paint and shall be repainted whenever necessary during the period that the Contract is being performed. Upon completion of all Work under this Contract, the temporary structures shall be removed from the construction site.

97. PERMIT AND REQUIREMENTS FOR WELDING

Prior to the commencement of any cutting or welding operations at the construction site, the Contractor shall notify the Engineer and obtain an Authority cutting and welding permit. The Authority will issue this permit without payment of a fee, and application forms may be obtained from any Resident Engineer of the Authority, at his office at the facility. Unless otherwise approved by the Engineer, all cutting and welding operations shall be performed in accordance with the conditions which form a part of said permit. The permit application must be filled out and submitted in duplicate to the Engineer at least forty-eight hours prior to commencing welding or cutting operations at the construction site.

98. FINAL INSPECTION

When, in the opinion of the Contractor, the construction is completed and ready for final inspection, he shall so notify the Engineer in writing and the Engineer will give said construction (including any portions with respect to which Certificates of Partial Completion have been issued) a minute and thorough inspection. Before any Certificate of Final Completion will be issued, any defects or omissions noted on this inspection must be corrected by the Contractor.

99. WARRANTIES

The Specifications may provide for certain warranties of portions of the permanent construction. These warranties are intended for the greater assurance of the Authority and not as a substitute for rights which the Authority might otherwise have. Although such warranties shall be enforceable as provided, neither any requirement of this Contract with respect to warranties by the Contractor nor any guarantee or warranty given to the Contractor or the Authority by any manufacturer shall be deemed to be a limitation upon any rights which the Authority would have, either expressed or implied, in the absence of such guarantees or warranties.

100. TEMPORARY UTILITY SERVICES

Operate and maintain temporary services and facilities in a safe and efficient manner. Modify as required throughout progress of the Contract, and remove from Authority property when no longer required, or replaced by the use of completed permanent facilities as approved by the Engineer.

Make arrangements for securing, and pay all costs for heat, light, power, water, and other services which may be required for the performance of the Contract.

101. TEMPORARY SANITARY FACILITIES

Make arrangements for securing and pay all costs for temporary toilets, wash facilities and drinking water including toilet tissue, paper towels, paper cups and similar disposable materials for use by the Contractor, subcontractors, materialmen or other persons over whom the Contractor has control. Comply with regulations and health codes, which would be applicable if the Authority were a private corporation, for the type, number, location, operation and maintenance of fixtures and facilities. Install facilities where directed by the Engineer, and remove from Authority property when no longer required.

102. PROGRESS SCHEDULE

A. Schedule Requirements

1.) The Contractor shall, at its own expense, prepare, maintain and update detailed electronic progress schedules for the Engineer's review and approval. All submittals required herein shall be in the form and content stipulated in this Section. Each progress schedule shall bear the signature of the Contractor's authorized representative. The progress schedules/graphics required by this Contract shall be produced using Primavera Project Planner (P3 or P3e).

2.) Progress schedules shall be sufficiently detailed to accurately depict all the Work (including any design, key submittals, procurement and construction activities performed by the Contractor) and shall graphically represent the logical sequence and duration of activities, all in accordance with the requirements of the Contract. The information provided in progress schedules shall also include, but not be limited to, the interdependencies between the Contractors' Activities and all other Activities required for the successful completion of the Contract, e.g., those to be performed by utility companies or by other entities. All Milestone dates specified in the Contract shall be represented in the schedule by Milestone activities that are logically interrelated to the work that must be accomplished in order to achieve the Milestone.

3.) The Contractor's schedule shall incorporate the Activity Code Structure shown in Attachment A, and such other coding as may be required by the Engineer.

4.) To assist the Contractor in preparing its progress schedule, a sample Network Diagram is shown in Figure 1. The sample is intended merely for the Contractor's guidance. The types of data shown are the types of data expected to be shown on the Contractor's Network Diagram. However, the information presented in the sample Network Diagram should not be misinterpreted as either representing a plan for the Contractor's Network Diagram or a depiction of the level of detail which will be required in such diagram.

5.) The submittal of Progress Schedules under this section shall not be deemed to be a substitute for the reporting requirements of the Section of Division 1 entitled "Daily Progress, Equipment and Labor Reports."

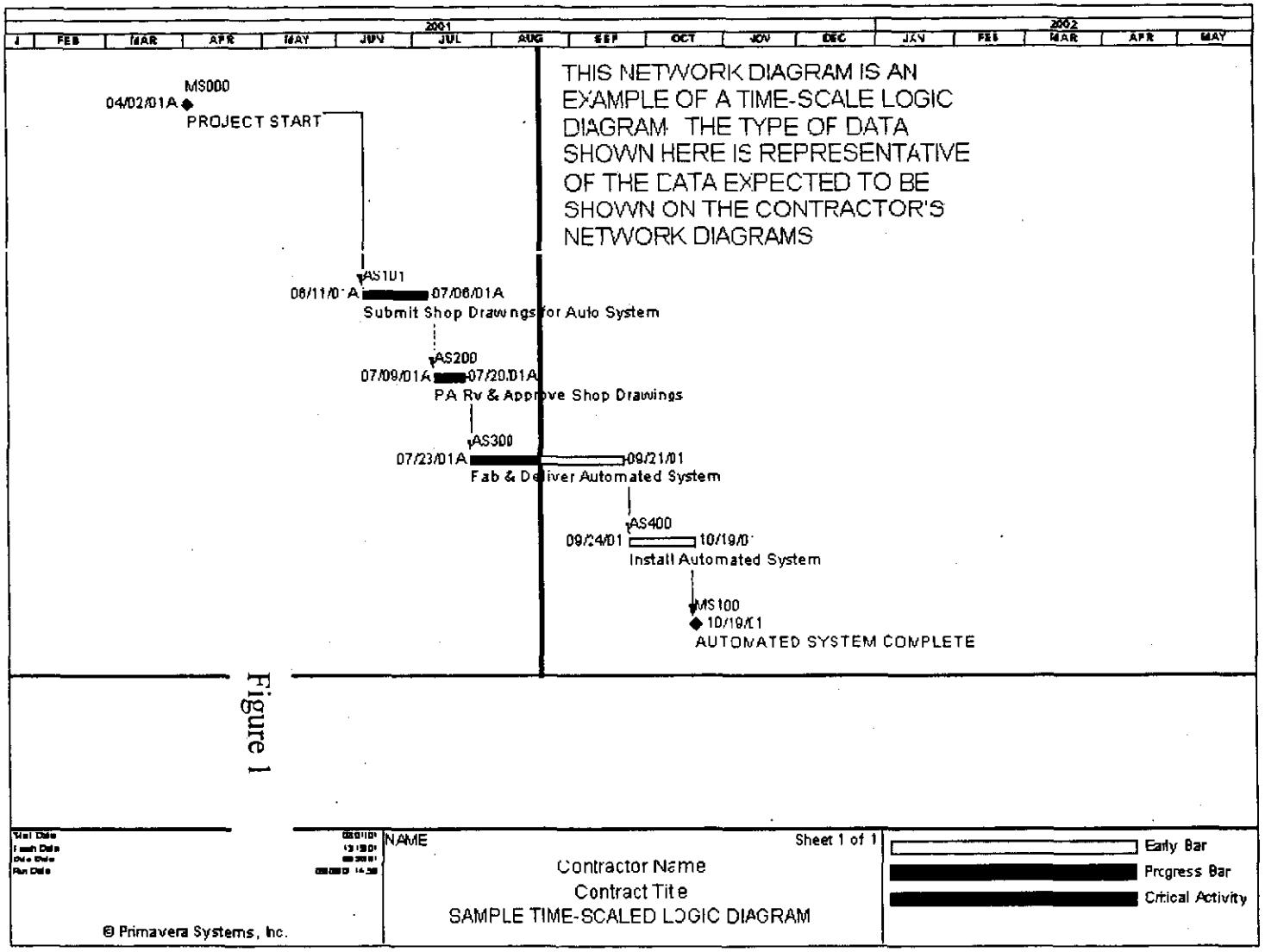
2001
2002
FEB
MAR
APR
MAY
JUL
AUG
SEP
OCT
FEB
MAR
APR
MAY
THIS NETWORK DIAGRAM IS AN EXAMPLE OF A TIME-SCALE LOGIC DIAGRAM. THE TYPE OF DATA SHOWN HERE IS REPRESENTATIVE OF THE DATA EXPECTED TO BE SHOWN ON THE CONTRACTOR'S NETWORK DIAGRAMS
MS000
04/02/01A
PROJECT START
AS101
06/11/01A
07/06/01A
Submit Shop Drawings for Auto System
AS200
07/09/01A
07/20/01A
PA Rv & Approve Shop Drawings
AS300
07/23/01A
09/21/01
Fab & Deliver Automated System
AS400
09/24/01
10/19/01
Install Automated System
MS100
10/19/01
AUTOMATED SYSTEM COMPLETE
NAME
Sheet 1 of 1
Contractor Name
Contract Title
SAMPLE TIME-SCALED LOGIC DIAGRAM
Early Bar
Progress Bar
Critical Activity
© Primavera Systems, Inc.

Figure 1

B. Schedule Terminology

Schedule terminology used in this Contract shall have the meaning described below:

1.) **Activity**: A discrete item of Work with a Duration that can be clearly defined; a synonym for task. Unless otherwise permitted in writing by the Engineer, an activity's duration shall be not more than 30 calendar days

2.) **Activity Codes**: Activity Codes allow each activity in a project to be grouped into specific classifications such as area, responsibility, phase, system, or location. The codes consist of specific values and descriptive titles that are entered into the data dictionary of the scheduling software. Activities are assigned specific Activity Codes as appropriate.

3.) **Alternative Solutions**: An analysis of the various options for dealing with encountered or anticipated Contract problems. An alternative solution is developed to assist in determining the best method(s) of preventing or correcting any impediments to the progress of the Work. Alternative Solutions analysis shall indicate impacts on scheduling and resources.

4.) **Analysis Report**: A report that displays the impacts of all variances reported in the Current Progress Schedule. The Analysis Report focuses attention on the impacts of variances between planned and actual performance, so as to support an assessment of such impacts. The Analysis Report shall include Alternative Solutions.

5.) **Bar Chart**: A schedule display designed to complement the Network Diagram. The Bar Chart is a traditional Gantt chart, to which the Early Start Dates, Early Finish Dates, Late Start Dates, Late Finish Dates, and Critical Path have been added.

6.) **Calendar**: A calendar defines when work on an activity can occur (i.e. Mon – Fri for a standard work week). Activities shall be assigned to a Calendar that represents the planned work days.

7.) **Constraint**: A constraint is a restriction imposed on the start or finish of an activity or project. An example of the use of constraints is the imposition of a "finish no later than" constraint[26] on the project completion Milestone that is equal to the Contract Completion date. This constraint facilitates the identification of activities that control or do not support the completion date. Constraints shall be limited to start and finish constraints on Milestone activities that represent critical Contract dates, unless otherwise approved by the Engineer in writing.

8.) **Critical Path**: The longest path through the network in estimated total elapsed time from the start of the first Activity through the completion of the last Activity. The Critical Path consists of a series of Activities which must be completed on their scheduled completion dates in order for the Contract to be completed on schedule.

---

26 A late finish or "finish no later than" constraint limits the latest time an activity can complete

9.) **Current Progress Schedule**: The most recent progress schedule which has been approved by the Engineer. The Baseline Schedule shall be referred to as "Revision 0". Each time a different Current Progress Schedule is accepted by the Engineer, the revision number must be increased by 1, and the old schedule must be electronically archived, so as to permit an audit trail.

10.) **Duration**: The estimated and/or actual length of time required to fully perform a specific Activity. The Duration is expressed in work days.

11.) **Early Finish Date**: The date upon which an Activity can be completed if it is begun on the Early Start Date.

12.) **Early Start Date**: The earliest date upon which an Activity can begin.

13.) **Hammock**: A hammock activity summarizing the early and late dates of a set of activities is used for reporting durations of groups of important activities. An activity shall be designated as a hammock by selecting Hammock as the activity type in the Primavera activity form.

14.) **Lag**: The interval between the completion of a Predecessor Activity and the start of a Successor Activity. For example, ten days of positive Lag will cause the Successor Activity to begin ten days after the Predecessor Activity has been completed. Negative Lag will cause the Activities to overlap. The amount of Lag between each Activity shall be clearly represented on the Network Diagram.

15.) **Late Finish Date**: The latest date by which an Activity must be completed if the succeeding Activity is to be started on schedule.

16.) **Late Start Date**: The latest date by which an Activity must be started to allow completion by the Late Finish Date.

17.) **Milestone**: A significant point in the performance of the Work. A milestone has no Duration, and represents the start of a portion of the Work or the completion of a portion of the Work. A milestone may also represent either the beginning or the completion of a task or action being performed by entities other than the Contractor (e.g., obtaining a permit, notification to proceed with certain Work, etc.).

18.) **Negative Float** The amount of time that the planned completion date of an Activity is later than its required (Late Finish) date. An Activity with Negative Float must be completed ahead of schedule if the Work is to be completed on time. Negative Float usually indicates the need for corrective and/or preventive action to complete the Work on schedule.

19.) **Network Diagram**: A logic diagram prepared according to the Precedence Diagram Method, which displays each Activity required for the performance of the Contract in the sequence in which it is to be performed with appropriate logic ties between activities displayed.

20.) **Baseline Schedule**: The detailed progress schedule first approved by the Engineer as provided for in the Contract.

21.) **Precedence Diagram Method (PDM)**: A particular type of graphic representation of all Activities and Constraints. The Activities are represented by nodes; the Constraints are represented by lines between nodes. A sample PDM Network Diagram appears in this Section.

22.) **Predecessor Activity**: An Activity which is a prerequisite to commencement of another Activity.

23.) **Preliminary Progress Schedule**: A detailed progress schedule for Work to be performed within one hundred days after the acceptance of the Contractor's Proposal.

24.) **Relationship**: a logic tie between two activities representing restrictions on the start or completion of the subsequent activity. Relationships may cause either positive or negative lag. The four basic types of relationships are finish to start, start to start, finish to finish, and start to finish.

25.) **Successor Activity**: An Activity which cannot be started or completed without the prior completion or partial completion of a Predecessor Activity.

26.) **Total Float**: The amount of time by which an Activity or series of Activities may be delayed without affecting the date of completion of the Work.

C. Schedule Submittal, Review & Approval Process

1.) Preliminary Progress Schedule

a. Within twenty (20) calendar days of the acceptance of the Contractor's Proposal for contracts under $20M, twenty-five (25) calendar days for contracts between $20M to $50M and thirty (30) calendar days for contracts over $50M, the Contractor shall submit a Preliminary Progress Schedule containing the Contractor's detailed proposed plan for the first hundred days of Work, with summary detail for the remaining duration of the project. The first hundred days of the Preliminary Progress Schedule shall be prepared with the same level of detail and in the same format required for the Baseline Schedule. The submittal shall consist of one computer diskette and three printed reports

b. The Engineer will review the Preliminary Progress Schedule and provide the Contractor with comments or accept it as the official Preliminary Schedule, within fifteen (15) calendar days.

c. If it is not accepted, the Contractor shall revise the Preliminary Progress Schedule in accordance with the Engineer's comments, and resubmit three printed reports and one diskette for the Engineer's approval, within seven (7) calendar days of the receipt by the Contractor of the Engineer's comments. Until such time as the Engineer accepts it, the Contractor shall resubmit the Preliminary Progress Schedule as required by the Engineer within the same time frames and in the same format as required in this paragraph for the initial resubmission.

d. The Preliminary Progress Schedule, all reports and network diagrams required by this section shall be updated and submitted monthly during the first ninety days.

2.) Baseline Schedule

a. Within ninety (90) calendar days of the acceptance of the Contractor's Proposal, the Contractor shall submit a proposed Baseline Schedule containing the Contractor's projected plan and schedule to complete all Work required by the Contract within the time(s) for completion required by the Contract. A schedule showing time(s) for completion other than those required by the Contract will not be accepted.

b. The Engineer will review the proposed Baseline Schedule and return it to the Contractor with comments, or accept it as the official Baseline Schedule, within fifteen (15) calendar days. The Contractor shall participate in any meetings called to resolve issues with the schedule.

c. If it is not accepted, the Contractor shall revise the Baseline Schedule in accordance with the Engineer's comments and resubmit three printed reports and one diskette for the Engineer's approval, within fifteen (15) calendar days of the receipt by the Contractor of the Engineer's comments. Until such time as the Engineer accepts it, the Contractor shall resubmit his proposed Baseline Schedule as requested by the Engineer within the same time frame and in the same format as required by this paragraph for the initial resubmission.

d. After the approval of any progress schedule required by this Section no changes shall be made therein without the written approval of the Engineer. No other act or omission on the part of the Engineer shall be deemed to constitute such approval. The Contractor shall not be entitled to any damages by reason of the failure of the Engineer to give timely approval or comments on any progress schedule submitted hereunder.

3.) Progress Schedule Updates

a. The Contractor shall submit to the Engineer not less frequently than once a month, on a date specified by the Engineer, an update of the Current Progress Schedule. Schedule updates shall status the actual performance and progress of the Work and depict any changes.

b. Within seven (7) calendar days after receipt by the Engineer of a updated progress schedule, the Contractor shall meet with the Engineer for the purpose of reviewing and obtaining the Engineer's approval of it.

c. The Engineer may require the Contractor to furnish a revised update which shall include any other information he may request to assist him in evaluating the Contractor's progress, including but not limited to manpower loading charts and equipment schedules; "what-if" analysis performed in a copy of the current progress schedule, etc.

d. In the event that the Engineer requests the Contractor to revise the updated schedule submitted, and/or to submit such additional information, the Contractor shall make the requested revisions and/or submit the updated schedule to the Engineer for approval along with the additional information requested within seven (7) calendar days of the Engineer's request.

D. Schedule Reporting Requirements

1.) The preliminary schedule submittal shall include one computer diskette and three copies of the following output reports:

a. A time-scale logic diagram in PDM format containing all activities displaying Activity ID, Activity Description, Calendar, original and remaining durations, percent complete, Early and Late Dates, and Total Float, and sorted by:

(i) Early Start, Early Finish, Total Float

(ii) Total Float, Early Start (Critical path report)

(iii) Late Start, Late Finish (if required by the Engineer)

b. A tabular Predecessor and Successor standard report showing the relationships between all activities in the schedule and sorted by ES, TF (if required by the Engineer)

c. Any other information which may be requested by the Engineer to assist him in the evaluation

2.) The baseline schedule submittal shall include one computer diskette and six copies of the following output reports:

a. A Schedule narrative that generally describes the Contractor's approach to meeting the project goals, lists the Critical Path Activities and compares Early and Late Dates with Contract Times and Milestone Dates. The basis for any constrained dates shall be explained.

b. A one-page time scaled Summary Schedule consisting of 20-40 Hammock activities or summary bars that show the entire project broken down into major portions of work, as agreed to by the Contractor and Engineer.

c. A time-scale logic diagram in PDM format containing all activities displaying Activity ID, Activity Description, Calendar, original and remaining durations, percent complete, Early and Late Dates, and Total Float, and sorted by:

(i) Early Start, Early Finish, Total Float

(ii) Total Float, Early Start (Critical path report)

(iii) Late Start, Late Finish (if required by the Engineer)

d. A tabular Predecessor and Successor standard report showing the relationships between all activities in the schedule and sorted by ES, TF (if required by the Engineer), as shown in figure 2.

e. Supporting data showing all activities with their associated cost, budgets or estimates

f. Any other information that may be requested by the Engineer to assist him in evaluation of the Contractor's progress. Such information may include, but not be limited to, the following:

(i) Cost Loading

(ii) Manpower loading charts

(iii) Equipment schedules

g. The Contractor shall electronically archive all accepted schedules

3.) Within seven (7) calendar days after the Baseline Schedule is first accepted by the Engineer, submit a reproducible transparency and six (6) Network Diagrams printed on "C" size (17" x 22") or "D" size (22"x34") sheets as directed by the Engineer. Each sheet shall have match lines indicating the interface between sheets if required.

PORT AUTHORITY OF NY & NJ — PRIMAVERA PROJECT PLANNER — LINCOLN TUNNEL SCADA SYSTEM UPGRADE

REPORT DATE 2NOV00 RUN NO. 420 — START DATE 1AUG97 FIN DATE 22JAN99*

18:47

Schedule Report - Predecessors & Successors — DATA DATE 15MAY00 PAGE NO. 27

ACTIVITY ID	ORIG DUR	REM DUR	CAL	%	CODE	ACTIVITY DESCRIPTION	EARLY START	EARLY FINISH	LATE START	LATE FINISH	TOTAL FLOAT
		P.L.D.F.,			7243.FS 0. 0. ,* 7253.FS 0. 1. -465						
		P.L.D.F.,*			7400.FS 0. 10. -549,						
7244	2	2	2	0	DDNE FIELD ACCEPTANCE TESTING NYLVB - SUBSYSTEMS		2JUN00	5JUN00	12AUG98	13AUG98	-465
		S.L.D.F.,			7150.FS 0. 0. -549, 7245.FS 0. 15. -444						
		P.L.D.F.,*			7492.FS 0. 20. -549,						
7502	1	1	2	0	TEST FIBER OPTIC SYSTEM DYER PLAZA		12JUN00*	12JUN00	22APR98	22APR98	-549
		S.L.D.F.,*			7496.FS 0. 79. -549,						
		P.L.D.F.,*			7537.FS 0. 20. -549,						
7547	1	1	2	0	TEST FIBER OPTIC SYSTEMS 39TH FAN ROOM		12JUN00	12JUN00	22APR98	22APR98	-549
		S.L.D.F.,*			7536.FS 0. 79. -549,						
		P.L.D.F.,*			7587.FS 0. 20. -549,						

FIGURE 2

4.) In addition to the reports required for the Baseline Schedule submittal, all Progress Schedule Update Reports shall include the following:

a. A narrative comparing the current Dates to the respective Milestone Dates, describing the physical progress during the current report period, explaining plans for continuing the work during the next report period and describing and explaining changes in crewing and construction equipment. The narrative shall also explain changes in Activity durations, logic ties and Activity Values and the reason why the change was made.

b. Whenever there is any delay or negative float prediction in the schedule, the Contractor shall submit an alternative solutions report that describes the delay, explains when it started and finished or is expected to finish and the basis for those dates, lists the affected schedule activities by activity ID, and discuss who the contractor feels is responsible. Any revisions to durations or the logical sequence of Activities made to reflect these delays must be explained. The report shall propose appropriate schedule recovery such as multiple shifts or overtime to mitigate any potential delay to the overall project completion date, or request an extension of time, as appropriate.

c. A revised Network Diagram sorted by Early Start and Early Finish indicating actual start and finish dates and the remaining duration and percent complete of activities in progress. The critical path of the project shall be clearly shown.

d. An Analysis Report indicating Activities and/or Milestones which are behind schedule by at least 30 calendar days (commonly evidenced by Negative Float).

e. A report that compares the Current Progress Schedule update with the Baseline and prior month's accepted schedule update and lists all changes made to the schedule.

E. General Schedule Provisions

1.) Should the Contractor fail to comply with any provision of this Section, The Engineer shall have the right in its discretion to withhold out of any payment (final or otherwise and even though such payment has already been certified as due) such sums as it deems necessary or desirable, all as more fully provided in the clause of the Form of Contract entitled "Withholding of Payments".

2.) Neither the acceptance, review or approval of any progress schedule or other data submitted by the Contractor pursuant to this Section, nor any other action on the part of the Engineer under this Section shall in any way be deemed as a representation by the Engineer that the Contractor can or will be permitted to follow a particular schedule or sequence of operations or that by following any such schedule or sequence he can or will complete the Work by the time(s) required by the Contract or by any other time(s). Nor shall the approval of any progress schedule or other such data relieve the Contractor of his obligation to complete the Contract by the time(s) required in the Contract, even though the schedule may be inconsistent with such completion.

3.) Any approval under this Section shall be construed merely to mean that the Engineer knew of no good reason at that time to object thereto. No acceptance, review or approval or any other action under this Section shall limit, affect or impair the Contractor's obligation to perform all Work by time(s) required by the Contract and in accordance with all other provisions of the Contract.

4.) The performance of the Work by the time(s) required in the Contract, after taking into account extensions to which the Contractor may be entitled under the clause "Extensions of Time", may require the use by the Contractor of overtime labor, additional shifts or additional plant and equipment and/or other measures at no additional cost to the Owner. The Contractor shall anticipate, avoid and mitigate the effects of all delays.

5.) The Engineer shall have the right at any time when in his judgment the Work is not proceeding in accordance with the approved progress schedule or at any time when it is likely that the Work might not be completed by the time(s) required in the Form of Contract even though the Contractor is proceeding in accordance with the approved progress schedule, to order the Contractor without additional compensation, to employ additional shifts to increase the number of men employed, to use additional plant or equipment, or to take such other steps as may be necessary or required to assure the completion within the time(s) shown in the accepted schedule.

6.) No action on the part of the Contractor pursuant to this Section shall be construed as a request by him for an extension of the time(s) for completion required by the Contract. A request for an extension of time shall be deemed made only if it complies with the requirements of the clause of the Form of Contract entitled "Extensions of Time". No extension of the time(s) for completion shall be inferred because of any action, omission to act, or statement on behalf of the Engineer pursuant to this Section. Extension of time, if any, shall be granted only pursuant to the clause of the Form of Contract entitled "Extensions of Time".

7.) The Contractor acknowledges and agrees that he is not entitled to an extension of time for impacts that do not extend the contractual end date of the project.

8.) Schedule float time disclosed or implied is not for exclusive use or benefit of the owner or contractor but is available to all parties as needed to meet contract milestones and the contract completion dates.

9.) Techniques such as preferential sequencing, special lead/lag logic restraints, extended activity times or imposed dates that tend to sequester float shall be cause for rejection of the Detailed Project Schedule and any revisions or updates.

ATTACHMENT A

MANDATORY ACTIVITY CODE STRUCTURE

1.) Responsibility (Owner, Contractor)

2.) Area (building, floor or area)

3.) Trade/CSI code (concrete, steel, etc as required)

4.) Location (3rd Fl, etc)

5.) Phase of Work, if applicable

6.) Change Order work, if applicable

7.) Other, as required by the Engineer

PRIMAVERA PROJECT PLANNER

Date 01/02/0 -----ACTIVITY CODES DICTIONARY----- Page 1

NAME - Project Title

CODE	VALUE	TITLE	SEQUENCE
Activity Codes:			
RESP	Responsibility		
	AE	Architect/Engineer	
	C	Contractor	
	O	Port Authority	
AREA	Area		
	G	General Area	1
	CTL	Air Traffic Control Tower	2
MILE	Milestone		
CSI	Trade/CSI Code		
	03000	Concrete	
	04000	Masonry	
	07000	Thermal & Moisture Protection	
	15000	Mechanical	
	16000	Electrical	
LOCN	Location		
PHAS	Phase		
	D	Design	1
	P	Procurement	2
	C	Construction	3
CO	Change Order Wor		
OTH	As Req'd by Engr		

103. CONDITIONS AND PRECAUTIONS

A. Construction Site Conditions:

1.) Should the Contractor be specifically directed to suspend operations in a pier or berth specified herein to be available for operations of the Contractor, or should such pier or berth not be available by the times specified elsewhere in the Contract, and if solely because of such suspension of operations or late availability of pier or berth, the Contractor is necessarily kept idle at the construction site, the Contractor will be compensated as stipulated in the provisions of the Contract concerning compensation for emergency delays.

2.) No vehicles of the Contractor, employees of the Contractor, subcontractors, materialmen or others over whom the Contractor has control will be permitted to park in or on Authority property, except for construction vehicles which will be permitted to park at the area of Work during the times when the Work is being performed.

All vehicles, including construction vehicles and company vehicles will be required to pay the appropriate tolls for each passage or crossing of Authority facilities, or parking at Authority lots.

3.) Securely fasten material or construction which must be left in place between working periods in a manner approved by the Engineer so as not to be a hazard.

4.) Take all precautions necessary for protection of persons, traffic and property during dust or fragment generating operations, concrete mixing or placing, or other operations which may stain, soil or damage property or injure persons. Provide and erect waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less, or other protective enclosures as approved by the Engineer.

5.) Restrict smoking to areas designated by the Engineer for this purpose.

6.) Do not burn or bury debris of any type on Authority property, or wash waste materials down sewers or into waterways.

7.) Provide sound suppression devices on gasoline and diesel powered construction equipment and pneumatic tools as required to maintain noise exposures below the limits specified in the Code of Federal Regulations (CFR) 29 CFR 1926 Occupational Safety and Health Regulations for Construction (OSHA). Maintain such sound suppression devices in proper operating condition throughout the time of their use, and adjust and repair as required to maintain noise within exposure levels stipulated in 29 CFR 1926.52, Table D-2.

B. No requirement of or omission to require any precautions under this Contract shall be deemed to limit or impair any responsibility or obligation assumed by the Contractor under or in connection with this Contract and the Contractor shall at all times maintain adequate protection to safeguard the public and all persons engaged in the Work and shall take such precautions as will accomplish such end, without undue interference with the public or the operations of the Authority.

104. HOURS OF WORK

A. Hours of Work

1.) Except as otherwise specified in a Work Order, the Contractor shall perform the Work of this Contract without restrictions.

2.) Do not perform Work on a legal holiday of the state(s) in which Work is being performed.

(END OF SECTION)

DIVISION 2

SECTION 02361

TIMBER PILES

PART 1. GENERAL

1.01 SUMMARY

This Section specifies requirements for timber piles.

1.02 REFERENCES

The following is a listing of the publications referenced in this Section:

	American Society for Testing and Materials (ASTM)
ASTM D 25	Round Timber Piles
	American Wood Preservers Association (AWPA)
AWPA M4	Standard For The Care of Preservative Treated Wood Products
AWPA P5	Standard For Waterborne Preservatives
AWPA T1	Use Category System: - Processing and Treatment Standard
AWPA U1	Use Category System: - User Specification For Treated Wood

1.03 DESIGN AND PERFORMANCE REQUIREMENTS

A. Job Conditions

1. Do not drive piles until excavation or filling in the area they are to occupy has been completed to the design grades shown on the Contract Drawings.

2. When concrete is less than 7 days old, do not drive piles closer to the concrete than the distance computed by the formula below:

$$D = 1/7 \sqrt{E}$$

Where: E = Energy of pile hammer (in foot Pounds)
D = Distance (in feet)

3. Do not drive piles until the Engineer has approved sequence of driving for all piles.

4. Protect existing structures from damage, including overhead and buried utility lines, to the satisfaction of the Engineer.

B. Alignment and Tolerances

1. After installation, the horizontal deviation of the centerline of the pile from the alignment of the centerline of the pile shown on the Contract Drawings shall not be greater than an amount equal to two percent of the length over which the alignment is being measured.

2. Piles at cut-off elevation shall not deviate laterally from required location by more than the tolerance shown on the Contract Drawings. Piles shall not be pulled into location by more than amount shown on Contract Drawings.

1.04 SUBMITTALS

See Appendix "A" for submittal requirements.

PART 2. PRODUCTS

2.01 MATERIALS

A. Timber Piles

1. Foundation piles shall be Longleaf, Shortleaf, Loblolly or Slash species of Southern Yellow Pine conforming to ASTM D 25. Foundation piles shall conform to the requirements specified in AWPA U1, Commodity Specification E, Category UC4C. For marine use, piles shall conform to the requirements specified in AWPA U1, Commodity Specification G, Category UC5B. Unless otherwise shown on the Contract Drawings, foundation piles shall have a minimum tip circumference of 25 inches and shall comply with the following minimum circumferences 3 feet from butt:

Pile Length (in feet)	Circumference 3 ft. From Butt (in inches)
Less than 50	38
51 - 65	41
Over 65	44

2. Fender piles shall be Southern Yellow Pine or Greenheart conforming to ASTM D25. Fender piles shall have a minimum tip circumference of 19 inches, except that those 50 feet and greater in length may have 16-inch minimum tip circumference.

3. Spliced piles are not permitted unless otherwise shown on the Contract Drawings.

PART 3. EXECUTION

3.01 PREPARATION

A. Preservative Treatment

1. Pressure treat all piles, except for greenheart in accordance with AWPA T1 and as follows:

a. Southern Yellow Pine foundation piles (AWPA T1, Section 8.5) to a minimum retention of 0.80 lbs. per cu ft of wood and a minimum penetration of 2.5 inches or 85% of sapwood, whichever is less.

b. Southern Yellow Pine marine piles (AWPA T1, Section 8.7) to a minimum retention of 2.5 lbs. per cu ft of wood in Zone 1 (0 – 0.5") and 1.5 lbs. per cu ft of wood in Zone 2 (0.5 – 2"). The minimum preservative penetration shall be 3.5 inches or 90% of sapwood whichever is less.

2. Preservative

a. Treat Southern Yellow Pine piles with Chromated Copper Arsenate (CCA) conforming to AWPA P5. Greenheart fender piles are not to be treated.

3. Handling, Storage and Repairs

a. Handling, storage and repairs of breaks, cuts or other damaged surfaces of preservative-treated piles shall conform to AWPA M4.

B. Banding and Driving Shoes

1. Where field conditions require, band piles as approved by the Engineer to prevent splitting during driving.

2. Where shown on the Contract Drawings, install steel driving shoes on all piles. Shoes shall be T-8316 "Rival Boot", as manufactured by Associated Pile and Fitting Company, Clifton, NJ or approved equal.

3.02 INSTALLATION

A. Pile Driving Equipment

1. Use rigid frame fixed-lead type driving equipment capable of supporting pile firmly in vertical position or to required batter.

2. Unless otherwise approved by the Engineer, leads shall be of sufficient length so that use of a follower will not be necessary.

3. Use an approved driving head designed to properly fit the head of the pile to prevent damage to the top of the pile during driving. The use of a McDermid Base is prohibited.

4. Use an approved cap block cushion consisting of alternate plates of phenolic laminate and aluminum designed to prevent damage to the piles while also transmitting the amount of transferred energy to the pile top required by Contract Drawings. The phenolic laminated plates shall be either Micarta as manufactured by Westinghouse Electric Corp., 304 Hoover Street, North Hampton, SC 29924, or Conbest as manufactured by Penn State Metal Fabricators, 124 Newton Street, Brooklyn, NY 11222. Substitutes not employing phenolic laminate will not be permitted.

5. Do not use wood chips, small wood blocks, shavings or any extraneous material to absorb the energy of the hammer.

6. Use boiler or compressor that meets minimum requirements for capacity or horsepower as recommended by the hammer manufacturer.

B. Pile Hammer

1. Use an open style, single acting air or hydraulic hammer, which complies with the rated energy per blow as set forth on the Contract Drawings. Hammer used shall be subject to prior approval by the Engineer.

2. Keep hammer in good mechanical condition and operate it at the speed and pressure recommended by the manufacturer.

3. During pile driving operations, the Engineer may make occasional measurements of the velocity of the hammer ram using Hammer Performance Analyzer (radar gun device), manufactured by Pile Dynamics, Inc., Cleveland, Ohio, to be furnished by the Authority. If the energy per blow computed in the basis of the measured ram velocity at impact is less than 80 percent of the rated energy per blow as specified by the manufacturer of the pile hammer, the Contractor shall make all necessary repairs so as to improve the energy output to a value of at least 80 percent of the rated energy per blow, or, alternatively, the Contractor shall replace the pile hammer.

C. Pile Driving

1. Driving operations shall be performed only in the presence of the Engineer.

2. Butt of pile shall be full and its surface shall be normal to the driving force. Maintain accurate alignment of the pile, hammer and leads to minimize bowing of the pile during impact of the hammer ram.

3. Where groups of piles are required, drive the center pile of the group first and then drive the remaining piles in the group progressing outward from the center.

4. Drive fender piles to the minimum tip penetration shown on the Contract Drawings and as close as possible to the face of structure and then spring them out for installation of the Fender System.

5. Drive foundation piles to the minimum tip penetration(s) and to the driving resistance shown on the Contract Drawings. Take corrective action, if required, to prevent observable impact bowing of pile at final driving resistance.

6. Drive foundation piles without interruption from the first hammer blow until required penetration and driving resistance have been attained, unless otherwise approved by the Engineer. If interruption of driving is necessitated by job requirements as approved by the Engineer, upon resuming driving, overcome friction due to the stoppage and drive or use other approved means of advancing the pile to the approximate tip elevation of immediately adjacent piles and to the required driving resistance shown on Contract Drawings.

7. Do not drive piles to an allowable pile load in excess of 40 tons as determined by the formula in 3.03 A.4 of this Section. If an allowable pile load of 40 tons is reached prior to achieving the required minimum tip penetration, spud, jet, jet and drive or use such other means as necessary to permit advancement to required minimum tip penetration and then drive to the required driving resistance shown on the Contract Drawings.

8. Jetting will be permitted only with the explicit approval of and within the limits specified by the Engineer. If jetting is performed, adjacent piles shall be redriven to the required driving resistance shown on the Contract Drawings.

9. At the completion of the driving operation on a pile, below the cut off elevation the pile shall be undamaged, free of defects and in compliance with the requirements of this Section.

10. Cut piles off at cut-off elevation shown on the Contract Drawings as soon as practical after driving and any required redriving as specified in 3.02 E of this Section.

D. Corrections of Deficiencies

1. The Contractor shall notify the Engineer immediately, in writing, of the failure of a pile to meet any requirement of this Section. Such written notification shall include all information required for the evaluation of remedial measures, including all information required for redesign.

2. If it is determined that a pile does not meet the requirement of this section due to encountering an obstruction, the Contractor shall be compensated on a net cost basis as defined by 3.02 E.8 for all remedial work associated with the deficient pile, including changes to concrete and reinforcement steel, as directed by the Engineer. If it is determined that a pile does not meet the requirements of this Section for any reason other than encountering an obstruction, the Contractor shall perform all remedial work associated with the deficient pile, including changes to concrete and reinforcement steel, at no cost to the Authority. An obstruction shall be defined as any natural or man made object which does not permit the pile to be advanced by driving or driving and spudding with the approved pile driving hammer. Soils with naturally high driving resistance shall not be considered to be an obstruction. It shall be the sole determination of the Engineer as to whether or not an obstruction is present during pile driving.

3. If a pile fails to comply with the location or inclination requirements of 1.03 B, the Engineer will calculate the load capacity requirements of that pile or, if in a pile group, each pile in that pile group, based on the actual, "as-driven" locations and inclinations. If the calculation indicates that the loading on that pile or, if in a pile group, on any pile in that pile group, exceeds 110 percent of the design load, then the Contractor shall perform such remedial work as the Engineer in his sole discretion may require including but not limited to furnishing and driving additional piles at locations approved by the Engineer and modifying concrete or reinforcement steel.

4. In the case of a pile with some deficiency that affects load capacity, the Engineer will calculate the load capacity requirements of that pile, based on its actual, "as-driven" tip elevation, location and inclination. If the calculation indicates that the loading on the pile exceeds some reduced allowable loading less than the design load, including a zero loading, as determined in the sole judgment of the Engineer, then the Contractor shall perform such remedial work as the Engineer in his sole discretion may require, including but not limited to furnishing and driving additional piles at locations approved by the Engineer and modifying concrete or reinforcement steel.

5. If a pile fails to comply with the requirements of this Section and the Engineer determines that modification to concrete or reinforcement steel, or the driving of additional piles is necessary, the Authority will perform all required redesign and detailing. In such event, the Authority will use its best efforts to complete redesign within the time set forth on the Contract Drawings.

6. The Contractor, at his option and at any time that he determines that a pile will not satisfy the requirements of this Section for a reason other than encountering an underground obstruction, may, subject to the provisions of 3.02 D.1 of this Section, abandon such pile and replace it with a new pile or piles rather than await direction or approval from the Engineer. However, the Contractor, in exercising this option, assumes the risk that such replacement pile or piles have not been installed at the proper design location and inclination so as to carry satisfactorily the design load as determined by subsequent analysis performed by the Engineer. Such abandonment and replacement shall be for the Contractor's convenience at no cost to the Authority and subject to all applicable provisions of the Contract. If it has been determined that the Contractor has encountered an obstruction, he shall proceed as directed by the Engineer.

7. Abandoned piles shall be cut off one foot below the elevation of the bottom of the pile cap as shown on the Contract Drawings.

8. "Net cost" shall be computed in the same manner as is compensation for extra work, including any percentage addition to cost, as set forth in the clause of the Contract providing compensation for extra work. Performance of such net cost work shall be subject to all provisions of the Contract relating to performance of extra work. Compensation for said net cost work shall not be charged against the total amount of compensation authorized for extra work.

E. Redriving Piles

1. Unless otherwise shown on the Contract Drawings, take optical survey measurements to establish the elevation of the top of each pile immediately after driving (or redriving) and, subsequently, after driving (or redriving) the entire group. Redrive all piles that the Engineer determines have heaved or uplifted 0.25 inch or greater from their original elevations and piles immediately adjacent thereto as directed by the Engineer.

2. Redrive until both the original tip elevation and the driving resistance shown on the Contract Drawings have been obtained, except that if original tip elevation cannot be reached, driving may be discontinued at a resistance of 150 percent of that shown on the Contract Drawings.

3. Redriving shall be performed at such times as approved by the Engineer.

4. Equipment for redriving shall be as specified for original driving except that use of a free hanging hammer will be permitted.

5. Piles shall not be cut off until the Engineer has determined that no further redriving is required.

3.03 FIELD TESTS

A. Inspection and Testing

1. The Engineer will inspect timber piles at the preservative treatment plant, before, during and after pressure treatment. Submit the name and contact information of the preservative treatment facility. Notify the Engineer in writing 15-days prior to treatment to allow for the scheduling of Engineer's Inspector.

2. The Engineer will inspect greenheart timber piles at the mill or supplier. Submit the name and contact information of the mill or supplier. Notify the Engineer in writing 15-days prior to shipment to allow for the scheduling of Engineer's Inspector.

3. Cooperate with the Engineer and furnish services as he may require for inspecting and obtaining data. Typical of these services shall be the measurement of length of piles and painting footmarks on piles.

4. The Engineer will keep a record of each foundation pile driven. Such record will include the following data:

   a. Date of driving

   b. Pile number

   c. Type and size of pile

   d. Length in leads before driving

   e. Elevation of pile butt and tip to nearest 0.1 inch immediately after driving

   f. Elevation of pile top after driving entire pile group to the nearest 0.1 inch to determine amount of heave

   g. Final elevation of pile tip after redriving entire pile group

   h. Length of cut-off

   i. Type of pile shoe used (if any)

   j. Hammer type and size

   k. Hammer speed

l.. Blows per foot of driven length and final blows per inch for last three inches

m. Blows per 1/2 inch of redrive

n. The time pile driving is started, interrupted, resumed and stopped

o. Description of any unusual circumstances affecting the driving of the particular pile

p. Slope of pile

4. The Engineer will determine the allowable pile load specified in 3.02 C.7 of this Section based on the formula below:

$$R = \frac{2WH}{s + 0.1}$$

Where:
- R = Allowable pile load (in pounds)
- W = Weight of the striking part of the hammer (in pounds)
- H = Effective height of fall (in feet)
- S = Average net penetration (in inches) per blow for last ten blows

END OF SECTION

SECTION 02361

TIMBER PILES

APPENDIX "A"

SUBMITTALS

Submit the following, in accordance with the requirements of "Shop Drawings, Catalog Cuts, and Samples" of Division 1 - GENERAL PROVISIONS:

A. Name and Contact information for the timber pile mill/supplier and preservative treatment facility.

B. Written Notification 5-days prior to treating timber piles or shipping greenheart piles.

C. A certification from the wood preserving company attesting that timber piles have been treated in conformance with the requirements of this Section.

D. A complete description of each pile hammer, including operational characteristics, rated energy, date of purchase and date and description of last overhaul.

E. A complete description of the driving equipment including caps, bases, leads, cap block cushion and guides.

F. The proposed sequence for driving all piles.

G. Details of jetting operation, if required to advance piles.

H. Plan for installing indicator piles including sequence of installation, if indicator piles are shown on the Contract Drawings or if Contractor elects to drive indicator piles.

I. As-built drawing(s) showing the exact location of all piles driven and identifying abandoned piles.

END OF APPENDIX "A"

DIVISION 2

SECTION 02490

FENDER SYSTEMS

PART 1. GENERAL

1.01 SUMMARY

This Section specifies requirements for fender systems to protect structure against berthing of marine vessels.

1.02 REFERENCES

American Society for Testing and Materials (ASTM)

ASTM A 36	Structural Steel
ASTM A 153	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A 307	Carbon Steel Externally Threaded Standard Fasteners
ASTM A 123	Zinc (Hot-Dip Galvanized) Coating on Iron and Steel Products
ASTM A 391	Alloy Steel Chain
ASTM 668	Steel Forging, Carbon and Alloy, for General Industrial Use

Federal Specifications

FF-N-105B	Nail, Brads, Staples and Spikes: Wire, Cut and Wrought

American Society of Mechancial Engineers/American National Standard Institute (ASME/ANSI)

Standard B18.2.1 Square and Hex Bolts and Screws

Standard Grading Rules for Southern Pine Lumber

Standard No. 17 Grading Rules for West Coast Lumber

Western Lumber Grade Rules

National Design Specifications for Wood Construction

National Hardwood Lumber Association

American Welding Society, Inc. (AWS)

D1.1	Standard Welding Code

1.03 QUALITY ASSURANCE

The Engineer reserves the rights to inspect timber at any time. The Contractor shall give the Engineer one week's notice prior to shipping timber to the construction site.

1.04 SUBMITTALS

For submittals see Appendix "A".

PART 2. PRODUCTS

2.01 TIMBER

A. All timber shall comply with the requirements of the latest published standard grading rules of the lumber association under whose rules the particular items are graded. They shall bear the official grade mark of the association under whose rules it is graded, and the moisture content shall conform to such rules.

B. All timber, except chocks and bearing wedges shall be Southern Yellow Pine - No. 1 Dense or Douglas Fir - Dense No. 1 unless otherwise shown on the Contract Drawings.

C. The chocks for the fender system and timber bearing wedges shall be mixed oak and shall conform to the requirements of the National Hardwood Lumber Association for sound square edge oak.

D. All timber shall be untreated unless otherwise shown on the Contract Drawings.

2.02 ACCESSORIES

A. Bolts, nuts and washers shall conform to ASTM A 307.

B. Lag screws shall conform to ASME/ANSE Standard B18.2.1.

C. Spikes shall be cut spikes conforming to Federal Specification FF-N-105B.

D. Adhesive-bonded anchors shall be as specified on the Contract Drawings.

E. Steel plates and shapes shall conform to ASTM A 36.

F. Chain used for the installation of rubber block assemblies shall be a heavy duty alloy steel with a nominal diameter of 1 inch, conforming to ASTM A 391 and shall be hot dipped galvanized as specified in this Section.

G. Miscellaneous hardware such as turnbuckles, shackles and eyebolts shall conform to ASTM A 668.

H. Rubber blocks shall be as specified in Appendix "B".

2.03 FABRICATION

A. Galvanizing

1. Galvanize all new timber fasteners and hardware in accordance with ASTM A 153 to a minimum coating of 2.0 oz. per square foot.

2. All ferrous metal items unless otherwise shown on the Contract Drawings or otherwise specified in this Section shall be galvanized; comply with ASTM A 123 and insofar as possible perform all galvanizing after fabrication.

B. Welding

Conform to AWS D1.1. Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure". Except where spot welding is shown on the Contract Drawings, all welds shall be continuous along entire line of contact.

PART 3. EXECUTION

3.01 TIMBER FASTENING

A. Counter-bore hole for timber fasteners to prevent cracking and splitting.

B. Where the length of fasteners are not shown on the Contract Drawings use the lengths required by the National Design Specification for Wood Construction.

3.02 TIGHTENING BOLTS

All bolts shall be tightened snugly against timber members with a pneumatic tool unless otherwise approved by the Engineer.

END OF SECTION

SECTION 02490

FENDER SYSTEMS

APPENDIX "A"

SUBMITTALS

The following items shall be submitted to the Engineer for approval, except as otherwise noted.

A. Shop Drawings

1. As per Division 1 "Shop Drawings, Catalog Cuts and Samples".
2. Shop Drawings of fender system.

B. Samples

1. As per Division 1 "Shop Drawings, Catalog Cuts and Samples".
2. Timber fasteners and adhesive-bonded anchors.

END OF APPENDIX "A"

SECTION 02490

FENDER SYSTEMS

APPENDIX "B"

RUBBER BLOCKS

A. Rubber blocks shall be manufactured by one of the following:

1. Goodyear Tire and Rubber Co.
   St. Marys, OH 45885
   Telephone # (419) 394-3311
2. Epton Industries, Inc.
   Ontario, Canada N2G1C5
   Telephone # (800) 265-2710
3. Trellex Morse - Keokuk, Iowa
   Telephone # (319) 524-8430

B. Blocks shall have dimensions as follows:

1. Type A - 10" diameter (OD), 5" diameter (I.D.), 12" long.
2. Type B - 12" diameter (OD), 6" diameter (I.D.), 12" long.
3. Type C - 10" square, 4" cored, 16" long.

END OF APPENDIX "B"

DIVISION 3

SECTION 03602

GROUTING (NON-METALLIC)

PART 1. GENERAL

1.01 SUMMARY

This Section specifies requirements for non-metallic, non-shrink, cement-based grouting.

1.02 REFERENCES

The following is a listing of the publications referenced in this Section:

American Society for Testing and Materials (ASTM)

ASTM C 109	Test Method for Compressive Strength of Hydraulic Cement Mortars
ASTM C 191	Test Method for Time of Setting of Hydraulic Cement by Vicat Needle
ASTM C 827	Test Method for Early Volume Change of Cementitious Mixtures

1.03 JOB CONDITIONS

Do not mix or place grout when the ambient temperature is below 40 degrees F or conditions indicate that the ambient temperature will fall below 40 degrees F within 72 hours, unless the areas to be grouted are enclosed and heated in an approved manner or otherwise approved by the Engineer.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver grout in the manufacturer's sealed original bags or containers bearing the manufacturer's name and product identification, in a manner to prevent damage by breakage, water or moisture.

B. Store all material on platforms and cover as necessary to protect it from water and moisture.

C. Deliver, protect and handle all tools and equipment in a manner to prevent damage that may make them defective for the purpose for which they are intended.

1.05 SUBMITTALS

See Appendix "A" for Submittal Requirements.

PART 2. PRODUCTS

2.01 MATERIALS

A. Grout shall be one of the following:

1. "Masterflow 713" - manufactured by Master Builders
2. "Five Star Grout" - manufactured By U.S. Grout Corporation
3. "Euco N-S Grout" - manufactured by Euclid Chemical Co.

B. Grout shall be premeasured and prepacked by the manufacturer, requiring only addition of potable water for mixing.

PART 3. EXECUTION

3.01 PREPARATION

Areas to be grouted as shown on the Contract Drawings shall be cleaned of all foreign materials, to the satisfaction of the Engineer.

3.02 MIXING AND PLACING

A. Use only the crew trained by the manufacturer's representative.

B. Mix and place the grout in accordance with manufacturer's methods approved by the Engineer.

C. Placement shall be continuous to avoid cold joints and voids. Grout shall be rodded or spaded to prevent the formation of air pockets.

3.03 FIELD TESTS

A. The Engineer may take and test samples of the grout being placed in accordance with ASTM C 109, C 191 and C 827.

B. In the event that tests of the grout placed reveal any failure to meet requirements of this Section, the Engineer will require removal and replacement of all portions of grout from the batch from which the sample was taken and the discontinuance of grouting until the Contractor has demonstrated to the satisfaction of the Engineer that the causes for failure have been corrected.

END OF SECTION

SECTION 03602

GROUTING (NON-METALLIC)

APPENDIX "A"

SUBMITTALS

A. Submit to the Manager, Materials Engineering Division, Port Authority Technical Center, 241 Erie Street, Jersey City, NJ 07310-1397, a sample of the grout material for approval.

B. Submit manufacturer's instructions and methods for handling, storage, mixing and placing of the grout, for approval.

END OF APPENDIX "A"

DIVISION 3

SECTION 03100

CONCRETE FORMWORK

PART 1. GENERAL

1.01 SUMMARY

This Section specifies requirements for cast-in-place concrete formwork.

1.02 REFERENCES

The following is a listing of the publications referenced in this Section:

	American Concrete Institute (ACI)
ACI 347	Guide to Formwork for Concrete
ACI 117	Standard Specifications for Tolerances for Concrete Construction and Materials
ACI 318	Building Code Requirements for Reinforced Concrete
	American Society for Testing and Materials (ASTM)
ASTM D 1751	Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-Extruding and Resilient Bituminous Types)
	National Forest Products Association (NFPA)
	National Design Specifications for Wood Construction
	West Coast Lumber Inspection Bureau
	American Plywood Association (APA)
	Douglas Fir Plywood Association (DFPA)

1.03 DESIGN AND PERFORMANCE REQUIREMENTS

A. Design calculations shall be prepared by a Professional Engineer licensed in the State where the Work is to be performed. Design calculations shall be made available to the Engineer to facilitate inspection.

B. For wood products furnished for the Work of this Section, the Contractor shall comply with the applicable provisions of "National Design Specifications for Wood Construction" of the National Forest Products Association (NFPA).

C. For all other products furnished for the Work of this section, the contractor shall comply with the reference standards of the local building code.

D. Shop Drawings

1. All formwork and shoring shop drawings shall be signed and sealed by a Professional Engineer licensed in the State where the Work is to be performed. Shop drawings shall be made available to the Engineer to facilitate inspection.

2. Shop drawings shall indicate:

a. Pertinent dimensions, openings, methods of construction, types of connections, materials, joint arrangement and details, ties and shores, location of framing, studding and bracing, and temporary supports;

b. Means of leakage prevention for concrete exposed to view in the finished construction;

c. Sequence and timing of erection and stripping, assumed compressive strength at time of stripping, height of lift and height of drop during placement;

d. Vertical, horizontal and special loads in accordance with "Loads" of ACI 347 (Section 2.2) and camber diagrams, if applicable;

e. Notes to formwork erector showing size and location of conduits and pipes embedded in concrete according to ACI 318 (Section 6.3).

1.04 SUBMITTALS

For Submittals - see Appendix "A".

PART 2. PRODUCTS

2.01 MATERIALS

A. Earth Forms

Use only for footings where shown on the Contract Drawings.

B. Lumber Forms

Use for edge forms and unexposed finish concrete. Boards shall be 6 inches or 8 inches in width, shiplapped or tongue and groove, "Standard" Grade Douglas Fir, conforming to the "Standard Grading and Dressing Rules No. 17", of the West Coast Lumber Inspection Bureau. Boards shall be four sides surfaced.

C. Plywood Forms

Use for exposed finish concrete. Forms shall conform to U.S. Product Standard PA 1-66. Each panel shall carry the grade trademark of the American Plywood Association along with the Douglas Fir Plywood Association (DFPA) Quality stamp and shall be full size (4-foot x 8-foot) panels.

1. Plywood for surfaces to receive membrane waterproofing shall be a minimum of 5/8 inch thick and shall be "B-B Plyform Class 1 Exterior" grade.

2. Plywood where "Smooth Finish" is required, as shown on the Contract Drawings, shall be "HD Overlay Plyform Class 1 Exterior" grade, a minimum of 3/4 inch thick.

D. Prefabricated Forms

Prefabricated forms shall be as listed below and where shown on the Contract Drawings:

1. Pan Type Void Forms

   Removable steel or reinforced plastic of sizes and profiles required to produce completed Work shown.

2. Tubular Column Type

   Metal, fiberglass-reinforced plastic, or spirally wound laminated fiber materials; inside surface treated with release agent; of sizes required to produce completed Work shown.

E. Steel Forms

Sheet steel, suitably reinforced and designed for the particular use shown on the Contract Drawings.

F. Form Liners

Smooth, durable, grainless and non-staining hardboard, unless otherwise shown on the Contract Drawings.

G. Framing, Studding, and Bracing

Stud or No. 3 Structural Light Framing grade.

H. Form Ties and Spreaders

Standard, non-corrosive metal form clamp assembly, of type acting as spreaders and leaving no metal within 1 inch of concrete face. No wire ties, wood spreaders or through bolts will be permitted.

I. Form Anchors and Hangers

Anchors and hangers used for exposed concrete shall not leave exposed metal at surface. Hangers supporting forms from structural steel shall be symmetrically arranged on supporting members to minimize twisting or rotation of member. Penetration of structural steel members will not be permitted.

J. Form Coating Agent

Provide one of the following unless otherwise shown on the Contract Drawings:

1. "Arcal-80"; Arcal Chemical Corporation
2. "Synthex"; Industrial Synthetics Company
3. "Nox-Crete Form Coating"; Nox-Crete Company

K. Vapor Retarder

Where shown on the Contract Drawings, 8 mil thick poly-ethylene sheet

L. Bituminous Joint Filler: ASTM D 1751

PART 3. EXECUTION

3.01 PREPARATION

A. Earth Forms

Trench earth forms neatly and accurately and at least 2 inches wider than footing widths shown on the Contract Drawings, unless otherwise indicated. Construct wood edge strips at top of each side of trench to secure reinforcing and prevent trench from sloughing. Form sides of footings where earth sloughs. Earth forms shall be tamped firm and cleaned of all debris and loose material before depositing concrete.

B. Formwork – General

Sloped surfaces steeper than 1.5 horizontal to 1 vertical should be provided with a top form to hold the shape of the concrete during placement, unless it can be demonstrated to the engineer that top forms can be omitted. Construct forms to the correct shape and dimensions, mortar tight, of sufficient strength, and so braced and tied together that the movement of men, equipment, materials or the placing and vibrating of the concrete shall not throw them out of line or position. Forms shall be strong enough to maintain their shape under all imposed loads. Camber where necessary to assure level finished soffits unless otherwise shown on the Contract Drawings. Carefully verify the horizontal and vertical positions of forms and correct all inaccuracies to the satisfaction of the Engineer before placing concrete in any form. Complete all wedging and bracing before placing concrete.

C. Forms for "Smooth Finish" Concrete

Use steel, plywood or lined board forms. Plywood and form liners shall be clean, smooth, uniform in size and free from damaged edges and holes. Form lining shall have close-fitting square joints between separate sheets and shall not be sprung into place. Sheets of form liners and plywood shall be full size wherever possible and joints shall be taped to prevent protrusions in concrete. Use special care in forming and stripping wood forms to protect corners and edges. All horizontal joints shall be level and continuous. Wood forms shall be kept wet at all times until stripping.

D. Forms for Surfaces to Receive Membrane Waterproofing

Use plywood or steel forms. After erection of forms, tape form joints to prevent protrusions in concrete.

E. Framing, Studding and Bracing

Space studs at 16 inches on center maximum for boards and 12 inches on center maximum for plywood. Framing, bracing, centering and supporting members shall be of ample size and strength to carry safely, without deflection, all dead and live loads to which forms may be subjected, and shall be spaced sufficiently close to prevent any bulging or sagging of forms. Soffits of all beam forms shall be constructed of material a minimum of two inches thick. Concrete out of line, level or plumb will be cause for rejection by the Engineer of the whole Work affected. Distribute bracing loads over base area on which bracing is erected. When placed on ground, protect against undermining, settlement or accidental impact.

3.02 INSTALLATION

A. Tolerances

Formwork shall be constructed so that concrete surfaces shall be within construction tolerances specified in "Standard Specifications for Tolerance for Concrete Construction and Materials" of ACI 117. Tolerances not met will be corrected to the satisfaction of the Engineer at no cost to the Authority.

B. Chamfered Corners

As shown on the Contract Drawings, provide moldings in forms for all chamfering required. Moldings shall be 45-degree right triangles in profile, of size required, milled from wood free from visible defects.

C. Forms Ties

Form ties shall be of sufficient strength and used in sufficient quantities to prevent spreading of the forms. Place ties at least one inch away from the finished surface of the concrete. Leave inner rods in concrete when forms are stripped. Space all form ties to be equidistant, and symmetrical and lined up both vertically and horizontally unless otherwise shown on the Contract Drawings.

D. Cleanouts and Access Panels

Provide removable cleanout sections or access panels at the bottoms of all forms to permit inspection and effective cleaning of loose dirt, debris, and waste material. Clean all forms and surfaces against which concrete is to be placed of all chips, sawdust, and other debris and thoroughly blow out with compressed air just before concrete is placed.

E. Arrangement

Arrange formwork to allow proper erection sequence and to permit form removal without damage to concrete.

F. Construction Joints

Provide a surfaced pouring strip where construction joints intersect exposed surfaces to provide a straight line at joints. Just prior to subsequent concrete placement, remove strip and tighten forms to conceal shrinkage. Construction joints shall show no overlapping of concrete and shall, as closely as possible, present the same appearance as butted plywood joints. Joints in a continuous line shall be straight, true, and sharp.

G. Embedded Items

Make provisions for pipes, sleeves, anchors, inserts, reglets, anchor slots, nailers, waterstops and other features. No wood or uncoated aluminum shall be embedded in concrete. Obtain any required information pertaining to embedded items to be furnished for the Work specified in other Sections. Securely anchor all embedded items in correct location and alignment prior to placing concrete. Conduits and pipes, including those made of coated aluminum, must meet the requirements of ACI 318 (Section 6.3). Approved coatings for aluminum shall be as follows unless otherwise shown on the Contract Drawings:

1. Conlux

   Primer - Bond Plex 46 or 66 (water borne urethane)
   Topcoat - Epolon Multi-Mil 39 (epoxy polyamide)

2. Sherwin Williams

   Topcoat - Heavy Duty Epoxy B67/B60B3 (epoxy polyamide)
   Note: self-priming

3. Benjamin Moore

   Primer - Epoxy Rust Inhibitive Primer (epoxy polyamide)
   Topcoat - Epoxy Enamel (epoxy polyamide)

H. Openings for Items Passing Through Concrete

Frame openings in concrete where shown on the Contract Drawings. Establish exact locations, sizes, and other conditions required for openings and attachment of Work specified under other Sections. Coordinate all Work of this nature in order that there shall be no unnecessary cutting and patching of concrete. Perform any cutting and repairing of concrete required as a result of failure to provide for such openings at no cost to the Authority.

I. Screeds

Set screeds and establish levels for tops of concrete slabs and levels for finish on slabs. Slope slabs to drain where required or as shown on the Contract Drawings. Before depositing concrete, remove all debris from the space to be occupied by the concrete and thoroughly wet all forms. Remove freestanding water.

J. Screed Supports

For concrete over waterproof membranes and vapor barrier membranes, use screed supports of a cradle, pad or base type which shall not puncture the membrane. Staking through the membrane will not be permitted.

K. Shores and Falsework

Provide shores and falsework of adequate strength to protect persons and adjacent structures. Falsework and supports shall be adequate in size and strength to resist the loads imposed upon them without deformation, deflection, or settlement. All members must be straight and true without twists or bends. Use wedges in pairs or jacks where required to bring forms, shoring, or falsework for beams, girders, slabs, and other parts of the structure to the necessary elevations and uniform bearing before placing concrete. Do not use single wedges. Vertical and lateral loads shall be carried to ground by the formwork system or by bracing. Where shores rest on ground, provide adequate mud sills or other bases. Construct forms to permit their removal without disturbing the original shoring. Ensure that there is no movement of shores, braces or other supports during placement of concrete.

L. Reuse and Coating of Forms

Thoroughly clean forms and reapply form coating before each reuse. For exposed Work, do not reuse any form which cannot be reconditioned to "like new" condition. Discard forms considered unsatisfactory by the Engineer. Apply form coating to all forms in accordance with the manufacturer's specifications, except where "Scored Finish" is required as shown on the Contract Drawings. Do not coat forms for concrete that is to receive a "Scored Finish". Apply form coatings before placing reinforcing steel.

M. Inspection

Notify the Engineer after placement of reinforcing steel in the forms, but prior to placing any concrete, so that his inspection may be made.

3.03 REMOVAL OF FORMS AND SHORES

A. The forms and supporting shoring shall not be removed until the members have acquired sufficient strength to support their weight and the loads superimposed thereon safely and until the time and sequence of removal have been approved by the Engineer. Formwork shall be removed without damage to the concrete, in a sequence that does not allow the members to be subject to impact or loading eccentricities. Any repair required as a result of damage to the concrete shall be made to the satisfaction of the Engineer at no cost to the Authority.

B. Except when otherwise approved by the Engineer, or when minimum attained concrete strengths are specified on the Contract Drawings, forms shall be left in place for not less than the total number of days as specified in ACI 347.

END OF SECTION

SECTION 03100

CONCRETE FORMWORK

SUBMITTALS

APPENDIX "A"

The following items shall be submitted to the Engineer for approval, except as otherwise noted.

A. Shop Drawings

1. As per Division 1, "Shop Drawings, Catalog Cuts and Samples";
2. Formwork and shoring shop drawings for areas accessible to the public and/or concrete exposed to view in the finished construction shall be submitted to the Engineer (as indicated in Section 1.03 D) at least 21 days prior to ordering any material or constructing any formwork;
3. Provide a layout of all embedded items, including electrical and telephone conduit and plumbing and drainage pipes, at least 15 days prior to concrete placement.

B. Catalog Cuts, Material Certification and Test Results

1. As per Division 1, "Shop Drawings, Catalog Cuts and Samples";
2. Material certifications, brand names and test results (where required) for all formwork materials. Submit at least 35 days prior to concrete placement.

C. Samples

1. As per Division 1, "Shop Drawings, Catalog Cuts and Samples";
2. Form ties and spreaders with manufacturer's specifications, submit at least 21 days prior to ordering any material;
3. Tapes for form joints with manufacturer's literature;
4. Waterstops and premolded expansion joint filler;
5. Form liners with manufacturer's specifications, submit at least 21 days prior to ordering any material;
6. Form coating agent with manufacturer's literature.

D. Design Computations

Design computations for areas accessible to the public and/or concrete exposed to view in the finished construction shall be submitted to the Engineer (as indicated in Section 1.03 A) at least 21 days prior to ordering any material or constructing any formwork.

END OF APPENDIX "A"

DIVISION 3

SECTION 03200

CONCRETE REINFORCEMENT

PART 1. GENERAL

1.01 SUMMARY

This Section specifies requirements for furnishing and installing concrete reinforcement.

1.02 REFERENCES

The following is a listing of the publications referenced in this Section:

	American Association of State Highway and Transportation Officials (AASHTO)
AASHTO M32	Steel Wire, Plain, for Concrete Reinforcement
AASHTO M55	Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement
AASHTO M221	Welded Deformed Steel Wire Fabric for Concrete Reinforcement
AASHTO M31	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
AASHTO M284	Epoxy-Coated Reinforcing Steel Bars
	American Concrete Institute (ACI)
ACI 315	Details and Detailing of Concrete Reinforcement
ACI 318	Building Code Requirements for Reinforced Concrete
	American Society for Testing and Materials (ASTM)
ASTM A 82	Steel Wire, Plain, for Concrete Reinforcement
ASTM A 184	Fabricated Deformed Steel Bar Mats for Concrete Reinforcement
ASTM A 185	Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement
ASTM A 497	Welded Deformed Steel Wire Fabric for Concrete Reinforcement
ASTM A 615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A 767	Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement
ASTM A 775	Epoxy-Coated Reinforcing Steel Bars
	American Welding Society (AWS)
AWS D 1.4	Structural Welding Code - Reinforcing Steel
	Concrete Reinforcing Steel Institute (CRSI)
	Manual of Standard Practice Placing Reinforcing Bars

1.03 BRIDGE WORK

For Work of this Section involving bridges, the Contractor shall comply with the applicable provisions of "Standard Specifications for Highway Bridges" of the American Association of State Highway and Transportation Officials (AASHTO). Materials shall be in accordance with AASHTO designations where shown after the ASTM designation in parenthesis. Where not shown, comply with ASTM Designation.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver concrete reinforcement in bundles marked with metal tags indicating size, length and mark number.

B. Store and handle materials to prevent corrosion, damage to coating or contamination that could impair bond.

1.05 SUBMITTALS

For submittals see Appendix "A".

PART 2. PRODUCTS

2.01 MATERIALS

A. Reinforcing Bars: ASTM A 615 (AASHTO M31), deformed, Grade 60, unless otherwise shown on the Contract Drawings.

Coated bars where shown on the Contract Drawings shall comply with the following:

1. Galvanized Reinforcing Bars

   ASTM A 767, Class-I hot-dip galvanized, after fabrication and bending.

   Repair sheared and cut ends and damaged coating with a zinc-rich formulation conforming to ASTM A 767 in accordance with the material manufacturers' recommendations.

2. Epoxy-coated Reinforcing Bars: ASTM A 775 (AASHTO M284)

   Repair sheared and cut ends and damaged coating with an epoxy patching material conforming to ASTM A 775 (AASHTO M284) in accordance with the patching material manufacturers recommendations.

B. Welded Wire Fabric

Types shall be as shown on the Contract Drawings and shall comply with the following:

1. Plain, ASTM A 185 (AASHTO M55), flat sheets for size W5 and larger and coiled rolls for sizes below W5.

2. Deformed, ASTM A 497 (AASHTO M221), flat sheets for sizes D5 and larger and coiled rolls for sizes below D5.

C. Fabricated Steel Bar Mats

Fabricated steel bar mats shall be in accordance with ASTM A 184, when shown on the Contract Drawings, and as follows:

1. Bar grade, size and spacing as shown on the Contract Drawings.
2. Welded connections, unless otherwise shown on the Contract Drawings.

D. Steel Wire

Steel wire shall comply with ASTM A 82 (AASHTO M32), plain finish, unless otherwise shown on the Contract Drawings.

2.02 ACCESSORIES

A. Tie Wire

Provide minimum 16-gage, annealed type. Provide nylon, plastic or epoxy-coated wire for use with epoxy-coated and galvanized reinforcing bars, if any.

B. Supports for Reinforcement

Provide bolsters, chairs, spacers, and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use galvanized steel wire bar type supports complying with CRSI standards and as follows:

1. For supporting epoxy-coated reinforcing bars, use plastic coated supports, or supports fabricated from or coated with a dielectric material.
2. For slabs-on-grade, use supports with horizontal plate runners.
3. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, use supports with plastic capped legs (CRSI, Class 1).
4. Where architectural concrete is shown on the Contract Drawings, use plastic side form spacers.

2.03 FABRICATION

A. Fabricate concrete reinforcement as shown on the Contract Drawings and on approved shop drawings, in accordance with ACI 315 "Tolerances".

B. Bend all concrete reinforcement cold. Heating of bars or wire fabric is prohibited.

C. Where welding of concrete reinforcement is shown on the Contract Drawings, weld in accordance with AWS Dl.4.

PART 3. EXECUTION

3.01 INSTALLATION

A. Place concrete reinforcement as shown on the Contract Drawings and on approved shop drawings. Where not shown on the Contract Drawings, comply with CRSI "Placing Reinforcing Bars".

B. Clean concrete reinforcement of loose rust, mill scale, earth, ice, and other materials that reduce or destroy bond with concrete.

C. Accurately position, support and secure concrete reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support concrete reinforcement by chairs, runners, bolsters, spacers, and hangers in accordance with CRSI Manual of Standard Practice". Do not interfere with placement of embedded items.

D. When a vapor barrier is shown on the Contract Drawings, do not cut or puncture during concrete reinforcement placement.

E. Place concrete reinforcement to obtain covers shown on the Contract Drawings for concrete protection, or in accordance with ACI 318 "Concrete Protection for Reinforcement", if not shown on the Contract Drawings. Arrange, space and securely tie bars and bar supports to hold concrete reinforcement in position during concrete placement operations. Set ties so ends are directed into concrete, not toward exposed concrete surfaces.

F. Install welded wire fabric in lengths as long as practical. Lap adjoining pieces at least one full mesh and lace splices with wire, but in no case shall lap be less than requirements of ACI 318 "Splices of Welded Deformed Wire Fabric in Tension" or "Splices of Welded Plain Wire Fabric in Tension". Offset end laps in adjacent widths to prevent continuous laps in either direction.

G. After concrete placement, do not field bend partially embedded concrete reinforcement except as shown on the Contract Drawings.

H. Repair damaged bars and welds, if any, in accordance with 2.O1A.

END OF SECTION

SECTION 03200

CONCRETE REINFORCEMENT

SUBMITTALS

APPENDIX "A"

The following items shall be submitted to the Engineer, except as otherwise noted.

A. Shop Drawings

1. As per Division 1, "Shop Drawings, Catalog Cuts and Samples".
2. Details indicating placement, cover, splice locations, lap lengths, mechanical splice hardware, grade, bar size, length, mark number, bending schedule, bending diagram, weld designations, type of coating, material used to repair coating, and types of chairs, spacers, hangers and tie wire for all concrete reinforcement.
3. All proposed changes to the size, spacing or arrangement of the reinforcing steel shown on the Contract Drawings shall be clearly flagged as such on the shop drawings.

B. Catalog Cuts, Material Certification and Test Results

1. As per Division 1, "Shop Drawings, Catalog Cuts and Samples".
2. Catalog cuts for chairs, spacers, hangers and mechanical splices.
3. Certification from the applicator of epoxy that the epoxy-coated reinforcing bars meet the requirements of ASTM A 775 (AASHTO M284).
4. Test results and certification from the galvanizer that the weight, application and testing of zinc coating conforms with specifications and ASTM A 767.
5. Certified mill test reports for all concrete reinforcement.

C. Samples

1. As per Division 1, "Shop Drawings, Catalog Cuts and Samples".
2. Mechanical Splice Hardware.
3. Material used to repair coating.

D. Design Computations

1. Design computations for all proposed changes to the size, spacing or arrangement of the concrete reinforcement shown on the Contract Drawings.

END OF APPENDIX "A"

DIVISION 3

SECTION 03301

PORTLAND CEMENT CONCRETE, LONG FORM

PART 1. GENERAL

1.01 SUMMARY

This Section and its appendices specify requirements for Portland Cement Concrete mix proportions, materials used in concrete mixes, placing, finishing (with the exception of concrete for pavements), curing, control joints, end result property requirements of the in-place concrete, and the evaluation of these properties through Quality Acceptance testing performed by the Authority for determining Adjustments to Contract Compensation. The Specifications herein establish minimum standards for concrete construction. This does not relieve the Contractor from following more stringent standards to achieve the quality acceptance limits for applicable performance parameters and their respective Percent Within Limit (PWL) measurements.

1.02 REFERENCES

The following is a listing of the publications, standards and codes referenced in this Section, of which the latest edition shall govern:

American Association of State Highway and Transportation Officials (AASHTO)

AASHTO HB	Standard Specifications for Highway Bridges.
AASHTO M182	Burlap Cloth Made From Jute or Kenaf.
AASHTO T 26	Standard Method of Test for Quality of Water to Be Used in Concrete.
AASHTO T 277	Electrical Indication of Concrete's Ability to Resist Chloride.
AASHTO T 318	Water Content of Freshly Mixed Concrete Using Microwave Oven Drying.

American Concrete Institute (ACI)

ACI 207	Mass Concrete.
ACI 211	Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
ACI 213	Guide for Structural Lightweight-Aggregate Concrete.
ACI 222R	Protection of Metals in Concrete Against Corrosion.
ACI 301	Specifications for Structural Concrete for Buildings.
ACI 302.1	Guide for Concrete Floor and Slab Construction.
ACI 303.1	Specification for Cast in Place Architectural Concrete.
ACI 304R	Guide for Measuring, Mixing, Transporting, and Placing Concrete. Chapter 8: Concrete Placed Under Water.
ACI 305R	Hot Weather Concreting.
ACI 306R	Cold Weather Concreting.

ACI 308	Standard Practice for Curing Concrete.
ACI 309R	Guide for Consolidation of Concrete.
ACI 318	Building Code Requirements for Structural Concrete.
ACI 548.4	Standard Specification for Latex-Modified Concrete (LMC) Overlays.

ASTM International (ASTM)

ASTM C 31	Practice for Making and Curing Concrete Test Specimens in the Field.
ASTM C 33	Specification for Concrete Aggregates.
ASTM C 39	Test Method for Compressive Strength of Cylindrical Concrete Specimens.
ASTM C 42	Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
ASTM C 78	Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading).
ASTM C 88	Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
ASTM C 94	Specification for Ready-Mixed Concrete.
ASTM C 114	Test Methods for Chemical Analysis of Hydraulic Cement.
ASTM C 131	Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
ASTM C 136	Test Method for Sieve Analysis of Fine and Coarse Aggregates.
ASTM C 138	Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete.
ASTM C 143	Test Method for Slump of Hydraulic-Cement Concrete.
ASTM C 150	Specification for Portland Cement.
ASTM C 156	Test Method for Water Retention by Liquid Membrane-Forming Curing Compounds for Concrete.
ASTM C 157	Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete.
ASTM C 171	Specification for Sheet Materials for Curing Concrete.
ASTM C 172	Practice for Sampling Freshly Mixed Concrete.
ASTM C 173	Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
ASTM C 174	Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores.
ASTM C 191	Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle.
ASTM C 227	Test Method for Potential Alkali Reactivity of Cement-Aggregate Combinations (Mortar-Bar Method).
ASTM C 231	Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
ASTM C 260	Specification for Air-Entraining Admixtures for Concrete.
ASTM C 289	Test Method for Potential Alkali-Silica Reactivity of Aggregates (Chemical Method).

ASTM C 309	Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
ASTM C 311	Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use in Portland-Cement Concrete.
ASTM C 330	Specification for Lightweight Aggregates for Structural Concrete.
ASTM C 494	Specification for Chemical Admixtures for Concrete.
ASTM C 535	Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
ASTM C 566	Test Method for Total Evaporable Moisture Content of Aggregate by Drying.
ASTM C 567	Test Method for Determining Density of Structural Lightweight Concrete.
ASTM C 618	Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
ASTM C 979	Specification for Pigments for Integrally Colored Concrete.
ASTM C 989	Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
ASTM C 1064	Test Method for Temperature of Freshly Mixed Hydraulic Cement Concrete.
ASTM C 1116	Specification for Fiber-Reinforced Concrete.
ASTM C 1152	Test Method for Acid-Soluble Chloride in Mortar and Concrete.
ASTM C 1218	Test Method for Water-Soluble Chloride in Mortar and Concrete.
ASTM C 1240	Specification for Silica Fume Used in Cementitious Mixtures.
ASTM C 1260	Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method).
ASTM C 1399	Test Method for Obtaining Average Residual-Strength of Fiber-Reinforced Concrete.
ASTM C 1583	Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials By Direct Tension (Pull-Off Method).
ASTM C 1611	Slump Flow of Self-Consolidating Concrete.
ASTM D 1751	Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
ASTM D 1752	Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction.
ASTM D 3665	Practice for Random Sampling of Construction Materials.
ASTM D 4580	Practice for Measuring Delaminations in Concrete Bridge Decks by Sounding.
ASTM D 4791	Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.
ASTM D 4833	Test Method for Index Puncture Resistance of Geomembranes, and Related Products.
ASTM D 5199	Test Method for Measuring the Nominal Thickness of Geosynthetics.

ASTM E 965	Test Method for Measuring Pavement Macrotexture Depth Using a Volumetric Technique.
ASTM E 1347	Test Method for Color and Color-Difference Measurement by Tristimulus (Filter) Colorimetry.

Federal Aviation Administration (FAA) Advisory Circular (AC)

FAA AC 150/ 5370, Item P-501-6	Standards for Specifying Construction of Airports - Portland Cement Concrete Pavement - Contractor Quality Control Program.

Federal Specifications

SS-S-1401	Sealants, Joint, Non-Jet-Fuel-Resistant, Hot-Applied, for Portland Cement and Asphalt Concrete Pavements.

New Jersey Department of Transportation (NJDOT)

Standard Specifications for Road and Bridge Construction 2007.

US Army Corps of Engineers (USACE)

Handbook of Concrete and Cement.

1.03 ENVIRONMENTAL REQUIREMENTS

A. Cold Weather Requirements

1. Cold weather concrete construction shall conform to ACI 306R.

2. Submit a Cold Weather Concrete Construction Plan, and have it approved prior to concrete placements when the ambient temperature falls below 50 deg F. This Plan shall conform to ACI 306R and shall include but not be limited to the demonstration of how the in situ concrete temperature will be maintained at 50 deg F and monitored, or at temperatures specified in ACI 306R, Table 3.1, whichever is more stringent. In addition, demonstrate that the specified concrete properties can be achieved within the time requirements specified while maintaining a minimum curing temperature of 50 deg F.

3. Do not mix or place concrete when the ambient temperature is below 35 deg F, or when conditions indicate that the temperature will fall below 35 deg F within 72 hours, unless the areas to receive fresh concrete are insulated or enclosed, and maintain the concrete temperature at 50 deg F or in accordance with Table 3.1 in ACI 306.

4. Reinforcement, forms and soils with which concrete will be in contact shall not be frozen and must be maintained completely frost-free. If required, apply heat to raise their temperature to a minimum of 35 deg F. The use of chemicals to eliminate frost will not be permitted.

B. Hot Weather Requirements

1. Hot weather concrete construction shall conform to ACI 305R.

2. Submit a Hot Weather Concrete Construction Plan and have it approved prior to concrete placements when the ambient temperature exceeds 80 deg F. This Plan shall conform to ACI 305R and shall include but not be limited to the demonstration of how the concrete temperature during batching and mixing will be kept below 90 deg F, how the concrete will be protected from rapid evaporation of surface moisture, the proper use of water reducing retarders with re-dosing charts and procedures and curing procedures.

3. Do not place concrete for pavements, overlays, bridge decks or ramps when the ambient temperature exceeds 85 deg F; schedule Work so that concrete can be placed during the coolest part of the day. Do not place concrete for structural decks, slabs or pavements when the rate of concrete surface evaporation exceeds 0.15 lbs/ft^2/hr, as defined in ACI 305R, Figure 2.1.5. If ambient conditions exceed this limit, demonstrate through the use of windscreens, fogging or other suitable means that the concrete evaporation rate is less than 0.15 lbs/ft^2/hr.

4. If the concrete temperature reaches 92 deg F as measured at the construction site in accordance with ASTM C 1064, it may be rejected.

1.04 QUALITY CONTROL

A. General

1. Maintain a level of Quality Control sufficient to consistently achieve the end result performance properties specified herein. In addition:

   a. Submit the approved mix proportions including an automated, time-date stamp on each delivery ticket indicating the batch weights of all batching constituents.

   b. Ensure that all plant mixing equipment and trucks are calibrated and approved by either the New Jersey or New York State Department of Transportation. Documentation of such conformance shall be available to the Engineer at all times.

   c. Ensure that all personnel performing concrete testing are certified ACI Grade I Concrete Laboratory Testing Technicians or Concrete Field Testing Technicians, as appropriate.

   d. When placing aeronautical pavement concrete, the quality control plan shall conform to the provisions of the Federal Aviation Administration Advisory Circular 150/5730-10D- Rigid Pavement Items P-501 Contractor Quality Control Program.

B. Quality Control Plan: Submit a Quality Control Plan a minimum of 10 days prior to the pre-concrete construction meeting described in 1.06. Do not start production before the Quality Control Plan has been approved by the Engineer. The Quality Control Plan shall include the following:

1. Quality Control Organization

   a. A chart showing all Quality Control personnel and a description of how these personnel integrate with and report to other management or field construction personnel. Include names, company name and each person's function, telephone number and fax number.

b. The quality control organization chart shall include a Program Administrator who shall ensure that all QA procedures are followed and enforced and who shall have a minimum of 5 years experience on projects of size and scope comparable to the Work of the Contract. The Program Administrator shall be a full-time employee of the Contractor or a consultant engaged by the Contractor. Additional qualifications shall include at least one of the following:

(1) Professional Engineer, Engineer-In-Training, Bachelor of Science in Civil Engineering, Civil Engineering Technology or five years experience with airport and/or highway concrete construction.

(2) Completed New Jersey ACI Chapter's "Concrete Construction Technology" course with 5 years of airport and/or highway concrete construction experience.

(3) Qualified as ACI Concrete Transportation Construction Inspector or possessing Concrete Construction Special Inspector certification with 5 years of airport and/or highway concrete construction experience.

2. Intended project progress schedule for each mix and application, including quantities and a submittal schedule.

3. Quality Control Testing Plan, including a list of testing standards and the frequency at which each test is to be performed.

a. Include gradation and moisture content testing for fine and coarse aggregates in accordance with ASTM C 136 and ASTM C 566, respectively. Perform both tests (1) prior to production, (2) every 3 hours during production or every 100 cubic yards of concrete produced (whichever is longer in time) and (3) when aggregates are used from a new stockpile that has not been tested for gradation or moisture content.

4. Documentation of Quality Control activities, including the location where recorded test results and other information such as mill test certificates for all cementitious material will be stored, which shall be made available to the Engineer at any time upon request.

5. Procedures for corrective action when QA and/or QC test results do not conform to the requirements of the Contract.

1.05 TRIAL BATCHING AND TEST POUR VERIFICATIONS

A. Trial Batching

1. The Engineer may prepare and test trial batches as specified herein and in accordance with ACI 318, Section 5.3. At the Engineer's request, submit representative samples of all materials in sufficient quantities to the Port Authority Materials Engineering Unit. In the event of a conflict between tests performed by the Engineer and tests performed by or for the Contractor, all tests performed by the Engineer shall control.

2. The Engineer may perform the following tests to verify trial batches submitted by the Contractor: compressive strength, flexural strength, permeability by the Coulomb test, air content, unit weight, water content of freshly mixed concrete using the microwave oven drying test, shrinkage, chloride ion concentration, corrosion inhibitor concentration, bond strength, slump, time of set, gradation of fine and coarse aggregates, and the fineness modulus of the fine aggregate.

B. Test Pours

1. Unless otherwise noted on the Contract Drawings, perform a test pour a minimum of 14 calendar days prior to production pouring in order to demonstrate and verify proper workability, finishability, setting characteristics, consolidation and curing procedures and to confirm that specified physical properties are attained for the approved mix proportions. For tremie concrete applications, construct a mock-up to verify acceptable consolidation and that the specified compressive strength is achieved by testing three in-place cores taken from the test placement at locations designated by the Engineer. In addition, for architectural cast in place concrete, construct a full-scale mock-up in accordance with 2.03 C.3. If in the sole opinion of the Engineer the test pour is acceptable, follow the procedures established during the test pour during production.

2. Test Pour Size: For flatwork, the minimum test pour size shall be a length of 100 feet for the entire thickness of the pavement and width of the screed planned to be used. For all other concrete construction, the test pour size shall be full-size for the cross sectional area, including the location of all steel reinforcement. However, at the option of the Engineer, the length of the member may be reduced from its design size, provided it is adequate to demonstrate workability, finishability, setting characteristics, consolidation, finish and curing procedures, as determined solely by the Engineer. Perform all test pours using the same personnel, equipment, procedures and materials that will be used for full production.

3. The test section will be considered acceptable if, in the sole opinion of the Engineer, it meets the specifications for surface preparation, batching, mixing, placement, consolidation, curing, finish and applicable performance properties of the concrete. In addition, for architectural concrete, color and texture will be considered acceptable according to the sole opinion of the Engineer.

4. In the event that the Engineer deems the test section unsatisfactory, remove the test section and repeat the test at no cost to the Authority.

5. The test pour location will be determined by the Engineer at the pre-concrete construction meeting, and will be located close to, if not within, the area of Work, unless otherwise noted on the Contract Drawings.

1.06 PRE-CONCRETE CONSTRUCTION MEETING

A. A pre concrete placement meeting will be conducted at the construction site by the Engineer a minimum of 20 days prior to the first pour to review the Contractor's submitted mix proportions, hot and cold weather concreting plans (as applicable), curing procedures plan and test pour and to discuss the methods and procedures to achieve the specified concrete quality. Notify the Engineer and send a pre-concrete meeting agenda to all attendees a minimum of 15 days prior to the scheduled date of the meeting indicating review subjects. At no additional cost to the Authority make arrangements for the Contractor's superintendent and a qualified representative from each segment of the concrete operations to be present, including, but not limited to the following:

1. Concrete supplier.

2. Laboratory representative responsible for the concrete proportion mix and Quality Control.

3. Contractor's Program Administrator for Quality Control.

4. Concrete subcontractor.
5. Admixtures and curing membrane suppliers.
6. Concrete pumping subcontractor.
7. Mobile mixer subcontractor.
8. Precast concrete fabricator and installer.
9. Joint sawing subcontractor.
10. The Engineer.

B. Record, type, and print meeting minutes and distribute them to all attendees of the meeting within 5 days of the date of the meeting.

C. Do not schedule the pre-concrete construction meeting until all of the following have been submitted and approved, as applicable to the Work of the Contract:

1. Mix Proportions.
2. Admixture dosage charts showing the effects of concrete temperatures from 50 deg F to 90 deg F.
3. Sample panels (12" x 12" x 2" for architectural concrete).
4. Hot and Cold Weather Concrete Construction Plans.
5. Independent testing laboratory AASHTO Accreditation Certification.
6. ACI Grade I certifications for concrete testing personnel.
7. Placement methods and procedures, including surface preparation.
8. Pumping Procedure Plan.
9. Curing Procedure Plan.
10. Joint Location Plan and Timing of Cuts.
11. Quality Control Plan.
12. Procedure for Curing Field Concrete Specimens.

1.07 SUBMITTALS

A. See Appendix "A" for submittal requirements.

B. Do not deliver any concrete to the construction site until all approvals have been obtained.

PART 2. PRODUCTS

2.01 MANUFACTURERS AND SOURCES OF SUPPLY

A. Use no cement, fly ash, slag, silica fume, metakaolin or fine or coarse aggregates that have not been approved by either the New Jersey or New York State Department of Transportation.

2.02 MATERIALS

A. Cement: Conforming to ASTM C 150, Type I and II, and Type III where early strength gain is required, or others specified on the Contract Drawings.

B. Very High Early Strength Cement: Defined as cement used to produce concrete with the compressive strength shown on the Contract Drawings within 12 hours or less and conforming to the following:

1. The compressive strength shall be greater than or equal to the specified strength at the curing time specified on the Contract Drawings, when tested in accordance with ASTM C 39. During cold weather concrete construction, demonstrate that the specified compressive strength can be obtained at a curing temperature of 50 deg F.

2. Absolute drying shrinkage less than or equal to 0.04% at 28 days for the mix proportions containing the Very High Early Strength Cement in accordance with ASTM C 157 modified (Air Drying Method), where the initial reading shall be taken at 3 hours after the addition of the mixing water to the dry materials in the mix.

3. Setting time, determined in accordance with ASTM C 191, shall be sufficient to provide adequate workability, meet the specified strength requirement, and allow enough time in the field to finish and begin curing the concrete for its intended use.

4. The Very High Early Strength Cement shall meet the properties in 2.02 B.1, 2.02 B.2 and 2.02 B.3, for each Lot of cement not to exceed every 50,000 pounds. Submit certification from an independent testing laboratory employed by the Contractor and approved by the Engineer that the cement meets these properties.

C. Silica Fume: Shall conform to ASTM C 1240 and the following:

1. Silicon Dioxide Content: 90% minimum.

2. Loss On Ignition: 6% maximum.

3. Surface Area: (nitrogen absorption): 15,000 m2kg.

4. Crystallinity: Non-crystalline within limits of detection by XRD.

5. Oversize Foreign Materials (in fume): 5% maximum on 45-micron sieve (wet).

D. Metakaolin: Conforming to ASTM C 618, Class N. Use one of the following products, or approved equal:

1. "MetaMax", as manufactured by Engelhard, Iselin, New Jersey.

2. "PowerPozz", as manufactured by Advanced Cement Technologies, LLC, Blaine, Washington.

E. Fly Ash: Conforming to ASTM C 311 and ASTM C 618, Class F except the maximum loss on ignition shall be less than 4%.

F. Slag: Conforming to ASTM C 989, Grade 100 or 120.

G. Fine Aggregate: Conforming to ASTM C 33, ASTM C 227, ASTM C 289 and ASTM C 131 with a maximum percentage of wear of 30%.

H. Coarse Aggregate (Normal Weight Concrete): Conforming to ASTM C 33, ASTM C 227, ASTM C 289, ASTM C 535 with a maximum percentage of wear of 40%, and ASTM C 88 with a magnesium sulfate loss of not more than 12% for a five-cycle test period. Use trap rock or gneiss for all pavement wearing surfaces. The aggregate in any size group shall not contain more than 8% by weight of flat or elongated pieces, as tested in accordance with ASTM D 4791. A flat or elongated piece is one having a ratio between the maximum and minimum dimensions of a circumscribing rectangular prism exceeding 5 to 1. In accordance with ACI 318, Section 3.3.2, the nominal maximum size of coarse aggregate shall be not larger than: (1) one-fifth the narrowest dimension between sides of forms, (2) one-third the depth of slabs, or (3) three-quarters the minimum clear spacing between individual reinforcing bars or wires, bundles of bars, or prestressing tendons or ducts. The nominal maximum size of coarse aggregate used shall be the largest size aggregate that conforms to ACI 318, Section 3.3.2, unless otherwise noted herein or shown on the Contract Drawings.

1. For full depth pavement concretes unless otherwise shown on the Contract Drawings the combined aggregate volume shall be a minimum of 70 percent. The combined gradation of the fine and coarse aggregate shall conform to the following, when tested in accordance with ASTM C 136:

	For Pavement 10 Inches or Greater in Thickness		For Pavement Less Than 10 Inches in Thickness	
Sieve Size % Passing	Min.	Max.	Min.	Max.
2-1/2"	100			
2"	90	98	100	
1-1/2"	76	88	89	98
1"	67	79	74	86
3/4"	65	77	64	76
3/8"	48	60	48	60
No. 4	30	42	30	42
No. 8	27	37	27	37
No. 16	20	30	20	30
No. 30	16	22	16	22
No. 50	4	10	4	10
No. 100	0	4	0	4

2. Pile Jackets: As a minimum, the mix proportion shall contain an ASTM C 33 Size No. 8 coarse aggregate. The ratio of coarse aggregate to fine aggregate by volume shall be not less than one to one.

3. Pipe Piles: Reduce the amount of coarse aggregate to minimize segregation. The volume of coarse aggregate shall not exceed 9.0 cubic feet per cubic yard of concrete. The maximum size coarse aggregate shall be ASTM C 33 Size No. 8.

4. Minimum Volume of Coarse Aggregate: All mixes shall contain a minimum of 39% coarse aggregate by volume, with the exception of 1) applications specified in Part 2.02 H.1-4, H.2), Performance Category VI applications, 3) bridge decks and 4) mixes containing ASTM C 33 Size No. 8 aggregate. Bridge deck concrete mixes shall contain a minimum of 41% coarse aggregate and total minimum aggregate volume of 67%. Mixes containing ASTM C 33 Size No. 8 stone not covered in 2.02 H.2-4 shall contain a minimum of 36% coarse aggregate by volume. These minimum requirements apply to all methods of placement, including pump mixes.

5. When requested by the Engineer, supply independent laboratory test results in accordance with ASTM C 1260 indicating the potential alkali reactivity of the aggregates and cementitious materials proposed for use. Expansion at 16 days shall be less than 0.10%.

I. Coarse Aggregate (Lightweight Concrete)

1. Expanded clay or shale produced by the rotary kiln process conforming to ASTM C 330 shall be graded in accordance with the requirements for 3/4" to No. 4 sieve sizes shown in Table I of that specification.

2. The oven dry unit weight of plant-tested, lightweight aggregate shall vary not more than +/- 3.0 pounds from the unit weight (pounds per cubic foot) determined from the sample quantity submitted in accordance with 1.05 A.1.

J. Water: Conforming to AASHTO T 26. Clean and potable for both mixing and curing concrete.

K. Formulated Latex Modifier: Latex modifier shall be modifier "A/NA", as manufactured by Dow Chemical, Midland, Michigan. Add latex emulsion at a rate of 3.5 gallons per 94 lbs. of cementitious material in the concrete mix.

L. Air Entraining Agent: Conforming to ASTM C 260.

M. Admixtures: All admixtures shall conform to ASTM C 494. They shall contain not more than 0.05% chloride ions, and shall be used in accordance with the manufacturer's recommendations. Submit dosage charts, including the effects of concrete temperatures from 50 deg F to 90 deg F, to the Engineer. All admixtures shall be manufactured by one of the following:

1. Euclid Chemical Company.

2. W.R. Grace & Company.

3. Master Builders Technologies.

4. Sika Corporation.

N. Polycarboxylate High Range Water Reducer: For use when self-compacting concrete is desired and approved by the Engineer. Conforming to ASTM C 494, Type F or Type G. Dosage rate shall be as recommended by the manufacturer to produce a spread of the concrete mixture measuring between 21 and 27 inches in diameter without segregation when released from a slump cone in accordance with ASTM C 1611. Use one of the following products, no substitutions:

1. "Plastol 5000" or "Plastol 341", as manufactured by The Euclid Chemical Company.

2. "ADVA Flow 530" or "ADVA Flow 540", as manufactured by W.R. Grace & Company.

3. "Glenium 3030 NS" or "Glenium 3200 HES", as manufactured by Master Builders Technologies.

O. Corrosion Inhibitors

1. Corrosion inhibitor shall be one of the following:

a. For cast in place or precast:

(1) "DCI-S", as manufactured by W.R. Grace & Company.

(2) "Eucon CIA", as manufactured by Euclid Chemical Company.

(3) An approved equal.

b. For precast applications only:

(1) "Sika CNI", as manufactured by Sika Corporation.

(2) "Rheocrete CNI", as manufactured by Master Builders Technologies.

(3) "DCI", as manufactured by W.R. Grace & Company.

2. The concentration of calcium nitrite shall be 30% +/- 2% by weight of solids per gallon.

3. The Engineer will sample the corrosion inhibitor for testing to verify the calcium nitrite solids content. The amount of calcium nitrite in fresh concrete may also be tested at any time, to verify if the proper quantity of the corrosion inhibitor is being batched in the mix.

4. Corrosion inhibitor admixtures shall not accelerate the setting time of the concrete mixture. Use a retarder and/or other admixtures to ensure that acceleration of setting time does not occur, while maintaining the applicable performance criteria, as stipulated in 2.04. Submit procedures for the placement of concrete mixes containing a corrosion inhibitor when a retarder is required for the range of concrete temperatures from 50 deg F to 90 deg F.

P. Viscosity Modifying and/or Self-Consolidating Admixtures: May be required for tremie concrete applications at the rate recommended by the manufacturer. Test concrete in accordance with CRD-C6189A US Army Corps of Engineers "Handbook of Concrete and Cement". Maximum percentage of washout weight loss shall not exceed 5% after three standard test drops in water.

Q. Pigments: Conforming to ASTM C 979.

R. Curing Materials

1. Curing compound shall be one of the following:

a. "DOT Resin Cure (Type II)", as manufactured by Conspec Marketing & Manufacturing Company, Inc.

b. "Euco Kurez Vox (White)", as manufactured by Euclid Chemical Company.

c. "1200 White", as manufactured by W.R. Meadows.

d. "AHT Type II Class B Cure", as manufactured by American Highway Technology, a Dayton Superior Company.

e. "Certi-Vex Envio Cure White-1000", as manufactured by Vexcon Chemicals Inc.

f. "Day-Chem White Pigmented Cure (J-10-W)", as manufactured by Dayton Superior.

g. Or an approved equal meeting the requirements specified in 2.02 R.2.

2. Liquid Membrane Forming Curing Compound conforming to the following:

a. For horizontal exterior applications, curing membranes are restricted to ASTM C 309 Type 2, Class B materials. ASTM C 309 Type 1-D, Class B membranes are acceptable for other exterior applications. ASTM C 309 Type 1, Class B membranes are acceptable for interior applications only.

b. Curing membranes shall be wax free when used on concrete where overlays, coatings, paints, sealers or any topping is to be applied, or where vehicular, pedestrian or aircraft traffic will pass over.

c. Membranes shall be volatile organic compound (VOC) compliant for the states of both New York and New Jersey. Submit certification of compliance to the Engineer upon request.

d. The membrane shall restrict the loss of water to not more than 0.40 kilograms per square meter in 72 hours at a coverage rate of 300 square feet per gallon per coat for Type I curing compounds, and 200 square feet per gallon per coat for Type 2 curing compounds when tested in accordance with ASTM C 156.

3. Burlap: Conforming to AASHTO M 182, Class 3, weighing approximately 9 oz./sq. yd. dry.

4. Sheet Material: Conforming to ASTM C 171.

a. Shall be White Burlap Polyethylene Sheet.

5. Cotton Mats: conforming to ASTM D 5199 with a minimum thickness of 40 mils, ASTM C 156 with a maximum water loss of 0.0065 oz./in.^{2}, ASTM D 4833 with a minimum puncture strength of 70 pounds and ASTM E 1347 with a minimum reflectance of 75%. The following cotton mats may be used in lieu of burlap for wet curing operations:

a. "Transguard 4000", as manufactured by Reef Industries, Inc., Houston, Texas, or

b. An approved equal conforming to the requirements specified in 2.02 R.5.

S. Evaporation Retardant: This material shall be used to retain moisture in the concrete during finishing operations. Use one of the following:

1. "Euco-Bar", as manufactured by Euclid Chemical Company.

2. "E-Con", as manufactured by L&M Construction Chemicals, Inc.

3. "Confilm", as manufactured by Master Builders Technologies.

4. "SikaFilm", as manufactured by Sika Corporation.

5. "Aquafilm", as manufactured by Conspec Marketing & Manufacturing Company, Inc.

T. Fiber Reinforcement:

1. Polypropylene Micro Fibers

a. Use one of the following products, subject to compliance with the Contract requirements:

(1) "Fiberstrand", as manufactured by Euclid Chemical Company.

(2) "Fibermesh", as manufactured by Fibermesh, Inc.

(3) "Forta", as manufactured by Forta Corporation.

(4) "Grace Fibers" or "Grace Microfibers", as manufactured by W.R. Grace & Company.

(5) "Durafiber", as manufactured by Industrial Systems, Ltd.

(6) Or an approved equal.

b. Additional requirements:

(1) Collated fibrillated materials: Dosage rate shall be a minimum of 1.5 lb./cu. yd.

(2) Multifilament fibers: Dosage rate shall be a minimum of 1 lb./cu. yd. The minimum length shall be 0.75 inches.

(3) Conformance with ASTM C 1116, designation Type III, 4.1.3.

(4) Conformance with a minimum plastic shrinkage crack reduction of 70 percent when tested in accordance with ICBO ES, Appendix B (7-92).

(5) Use of fibers shall not change the water requirements of the mix.

(6) Conform to the manufacturer's recommendations for the quantity of fiber, which shall be not less than the minimum requirements of 2.02 T.1.b.1 and 2.02 T.1.b.2.

(7) Arrange for the fiber manufacturer to provide the services of a qualified representative at the pre-concrete construction meeting and for the first two days of fibrous concrete placement production.

2. Structural Polypropylene/Polyethylene Macro Fibers

a. Use one of the following products, subject to compliance with the Contract requirements:

(1) "Tuf-Strand SF", as manufactured by Euclid Chemical Company.

(2) "Strux 90/40", as manufactured by W.R. Grace & Company.

(3) Or approved equal.

b. Additional requirements:

(1) Dosage rate shall be a minimum of 4.0 lb./cu. yd. Higher dosages may be noted on Contract Drawings.

(2) The minimum length shall be 1.50 inches.

(3) Fiber shall have an Aspect Ratio of 50 to 90.

(4) Conformance with ASTM C 1116, designation Type III, 4.1.3.

(5) The structural macro fiber concrete shall have an average residual strength of 200 psi when tested in accordance with ASTM C 1399.

(6) Use of fibers shall not change the water requirements of the mix.

(7) Conform to the manufacturer's recommendations for the quantity of fiber, which shall be not less than the minimum requirements of 2.02 T.2.b.1.

(8) Arrange for the fiber manufacturer to provide the services of a qualified representative at the pre-concrete construction meeting and for the first two days of fibrous concrete placement production.

U. Expansion Joints (Except for Bridge Decks) and Contraction Joints (Except for Pavements)

1. Vinyl plastic water stops shall be of types and sizes shown on the Contract Drawings and conforming to Corps of Engineers "Specifications for Polyvinylchloride Waterstop" (Designation: CRD-C 572-60, latest revision).

2. Premoulded expansion joint filler, when shown on the Contract Drawings:

a. Cork type shall be ASTM D 1752, Type II.

b. Bituminous type shall be ASTM D 1751.

3. Joint Sealant when shown on Contract Drawings: Federal Specification SS-S-1401, latest revision.

2.03 MIX PROPORTIONS

A. Develop mixes in accordance with the latest editions of ACI 211, ACI 301 and ACI 318 to achieve the proportion performance criteria in accordance with the Contract Documents, with a degree of excess as determined by Chapter 5 of ACI 318, and meet all of the applicable performance criteria as specified in the Contract Documents. In addition, all concrete placed underwater shall conform to ACI 304R, Chapter 8, and lightweight aggregate concrete shall conform to ACI 213. Submit an underwater concrete placement procedure that is in conformance with ACI 304R, Chapter 8. Prior to concrete construction and after approval of all materials to be used in the concrete, submit a mix proportion showing that all performance criteria have been met. Mix proportions submitted shall be based upon laboratory trial mix test results and/or mixes successfully used within the two years preceding the date of the submittal of the mix for the Work of this Section. The independent testing laboratory used to develop the mix proportions and to perform testing shall have AASHTO Accreditation for all test methods required to be performed and to develop the required mix. Submit proof of certification to the Engineer prior to the start of development of the mix proportions and testing. The mix proportions shall include copies of test reports, including test dates, and a complete list of materials, including type, brand and source. The trial mix design performed in the testing laboratory shall use the same materials, cement, pozzolons, aggregates and admixtures that will be used at the proposed batch plant. Show fineness modulus, gradations and absorptions of aggregates. If any of the approved mix constituents change in source, properties or proportion, submit a new mix. The mix proportions shall also conform to the following:

1. Substitute either fly ash or slag at the minimum rate of 20% by weight of cement. The maximum rates of substitution shall be 30% for fly ash and 40% for slag, unless otherwise approved by the Engineer. Fly ash and slag substitution in the same mix may be permitted upon approval by the Engineer.

2. For concrete placed underwater, the minimum cementitious material content shall be 700 pounds per cubic yard of concrete.

3. Compute water to cement ratio using the weight of cementitious material that is equal to the total weight of cement plus fly ash, slag and silica fume. Any admixtures which increase the water to cement ratio by 0.01 or greater shall be accounted for in the mix proportion to meet the specified water to cement ratio.

4. For Categories II, III and IV concrete applications, the mix water to cement ratio shall not exceed 0.40 and the absolute drying shrinkage at 28 days shall not exceed 0.04% in accordance with ASTM C 157 (Air Drying Method), modified to start measuring at 10 hours. In addition for Categories III and IV, the maximum Coulomb count at 28 days shall be 1,000 for mixes without calcium nitrite and 1,500 when the mix contains calcium nitrite. For mixes that do not have silica fume, latex or metakaolin but contain either fly ash or slag, the Coulomb count requirements shall remain the same; however, the test shall be performed at 90 days instead of 28 days. For concrete pavements and Categories I and V applications where the concrete will be exposed to freeze-thaw cycles and/or sulfates, the mix proportion water to cement ratio shall not exceed 0.40 and the absolute drying shrinkage at 28 days shall not exceed 0.04% in accordance with ASTM C 157 (Air Drying Method). For other concrete applications, the mix water to cement ratio shall not exceed 0.50, unless otherwise shown on the Contract Drawings.

5. High Range Water Reducer shall not be added to the concrete mix at the plant. It shall be delivered to the construction site in a tank fixed to the truck that discharges directly into the mixing drum, or it may be added to the drum from a calibrated dispensing unit. A calibrated dispensing unit shall be defined as a manufactured dispenser with clear volume indications marked on the outside of the unit. It shall be available at all times during the concrete placement for re-dosing purposes. Submit a re-dosing chart showing the dosages necessary to increase the slump, in inches per cubic yard of concrete remaining in the drum, over the range of concrete temperatures from 50 deg F to 90 deg F. If re-dosing occurs, the re-dosing chart shall be used, but under no circumstances shall the total dosage exceed the maximum dosage recommended by the manufacturer. The truck shall mix the load for a minimum of an additional 5 minutes prior to releasing the load.

6. The percentage of air in the mix shall fall within the range of the Lower Quality Limit (LQL) and the Upper Quality Limit (UQL) as outlined in the table shown in 2.04 A.6 entitled "Air Content Target Range for Freshly Mixed Concrete". Air content shall be determined by testing in accordance with ASTM C 231 for normal and heavyweight concrete mixes and ASTM C 173 for porous, lightweight aggregate.

7. Make adjustments to the weight of coarse, lightweight aggregate in accordance with the following:

   a. Design lightweight concrete mix proportions not to exceed 123 pounds per cubic foot, unless otherwise specified.

b. Adjust the proportion of lightweight aggregate to compensate for the difference between the wet unit weight determined in 3.05 B.5 and the dry unit weight of the material submitted in accordance with 1.05 A.1 and the approved mix proportions.

c. For lightweight aggregate mixes, advise the batch plant 72 hours prior to pouring in order to saturate the aggregate. Presoak lightweight coarse aggregate a minimum of 72 hours prior to mixing of concrete. The lightweight aggregate shall reach an absorbed moisture content not less than the manufacturer's written recommendations or the concrete will be rejected.

B. Where Latex Modified Concrete is specified in the Contract Documents, conform to ACI 548.4. The mix maximum water to cement ratio shall not exceed 0.37. The minimum volume of coarse aggregate shall be not less than 7.6 cubic feet (absolute volume) per cubic yard.

C. Architectural Concrete

Concrete that will be permanently exposed to view and which therefore requires special care in selection of concrete ingredients including color, forming, placing, consolidating and finishing to obtain the desired architectural appearance is designated as "Architectural Concrete".

1. A minimum of 35 days prior to construction of a mock-up, submit mix proportions and two sample panels (a minimum of 12" x 12" x 2") for each mix to the Engineer for approval. The materials used for the sample panels shall be from the same sources of material supply for all constituents in the approved mix. When requested by the Engineer, submit samples of all constituents for trial batching to the Port Authority Materials Engineering Unit to verify that the physical property requirements are met. Obtain approval for both sample panels for color and texture, as well as for the mix proportions for physical properties prior to constructing a mock-up.

2. Pigments, in conformance with ASTM C 979, shall be used when matching the color of existing concrete or when a specific color of concrete is required by the Engineer.

3. Construct mock-up only after the Engineer has approved both the mix proportions for physical properties and the sample panels for color and texture. For cast in place concrete, a mock-up in accordance with ACI 303.1 Section 1.6 Quality Assurance will be required for approval by the Engineer. For walls, a mock-up shall include all details that will be encountered in a typical day's pour. The mock-up may be constructed at the construction site as part of the permanent Work at the sole risk of the Contractor. If the Engineer rejects the mock-up, it shall be removed and recast at the sole expense of the Contractor. For precast architectural concrete, the mock-up shall consist of a full member selected in advance by the Engineer. Keep the approved mock-up at the precast concrete production facility for the Engineer to compare with the production units for acceptance or rejection. Acceptance or rejection shall be determined solely by the Engineer.

4. Construct mock-ups only with all of the actual constituents of the approved mix proportions. Do not proceed with production until the mix proportions, sample panels, full-scale mock-up and shop drawings have been approved by the Engineer. Once production begins, do not change suppliers or sources of supply for any of the constituents in the approved mix for the duration of the Contract.

5. In addition to the mix proportions and sample panels, submit the following for approval: forms, form liners and form oil or release agents.

6. Architectural Concrete shall conform to the Quality Assurance performance criteria specified in 4.01 B, Table 2 for the appropriate placement application and the associated Quality Acceptance Limits specified in 2.04.

7. Noticeable differences in color and/or texture of the finished product, as determined solely by the Engineer, shall be corrected by means and materials approved by the Engineer.

D. Pipe Piles: The target range for slump shall be 4 to 6 inches.

2.04 QUALITY ACCEPTANCE LIMITS

A. Develop mixes to meet the following performance criteria Quality Acceptance Limits in accordance with the relevant application properties specified in 4.01.B., Table 2, unless otherwise noted on the Contract Drawings:

1. Compressive Strength (ASTM C 39): The Lower Quality Limit, LQL, shall be the specified mix compressive strength at 28 days, unless otherwise noted on the Contract Drawings.

2. Flexural Strength (ASTM C 78): The Lower Quality Limit, LQL, shall be 700 psi at 28 days, unless otherwise noted on the Contract Drawings.

3. Permeability (AASHTO T 277): The Upper Quality Limit, UQL, shall be 1700 Coulombs for mixes not containing a corrosion inhibitor and 2200 Coulombs for mixes that do contain a corrosion inhibitor. Performance testing shall be performed at 28 days, except for mixes containing only fly ash and/or slag substitution for cement but no silica fume or metakaolin, which shall be evaluated at 90 days.

4. Bond Strength (ASTM C 1583): The Lower Quality Limit, LQL, shall be 150 psi at 28 days.

5. Water Content (AASHTO T 318): The Upper Quality Limit, UQL, for water content shall be the specified water to cementitious ratio specified in 2.03 A.4 plus 0.05.

6. Air Content (ASTM C 138, ASTM C 173 or ASTM C 231): Both the Lower Quality Limit, LQL, and the Upper Quality Limit, UQL, shall be as specified in the table below:

AIR CONTENT TARGET RANGE FOR FRESHLY MIXED CONCRETE

MAXIMUM SIZE AGGREGATE (SIZE #)	AIR CONTENT LQL	AIR CONTENT UQL
2" or above (# 467 and above)	3.5%	7.5%
1-1/2" (# 57)	4.0%	8.0%
1" (# 67)	4.5%	8.5%
1/2" (# 8)	5.5%	.9.5%
3/8"	6.0%	10.0%
Latex modified concrete	2.5%	6.5%

Note: For a specified compressive strength greater than 5000 psi, the LQL and UQL for air content, as indicated above, shall both be reduced by 1.0%. For all concrete applications not exposed to freeze-thaw cycling or chlorides, no air entrainment is required.

7. Chloride Ion Concentration by Weight of Cementitious Material (ASTM C 1152, ASTM C 1218, ASTM C 114, ACI 222R): The acid soluble chloride ions by weight of cementitious material in the concrete mix shall be less than or equal to 0.10% for reinforced concrete and 0.08% for prestressed concrete, as per ACI 222R. The water soluble chloride ions by weight of cementitious material in the concrete mix shall be less than or equal to 0.08% for reinforced concrete and 0.06% for prestressed concrete, as per ACI 222R.

8. Pavement Thickness: The Lower Quality Limit, LQL, for pavement thickness shall be 97.0% of the thickness shown on the Contract Drawings.

9. Delaminations: The total surface area tested for any given Lot of concrete shall indicate less than 5.00% delaminated area when tested using the chain drag in accordance with ASTM D 4580.

B. For concrete bridge decks where riding surface tolerances are required, as shown on the Contract Drawings, the following requirements shall be met:

1. Surface smoothness deviations shall not exceed 1/4 inch in 16 feet.

2. Vertical deviation from the grade shown on the Contract Drawings shall not exceed plus or minus 0.04 foot at any point.

C. For mass concrete as defined in ACI 207 or as specified on Contract Drawings the temperature at the core of the in situ concrete shall not exceed 160 deg F nor shall the maximum difference in temperature between the core and the surface of the structure exceed 35 deg F at any time. The drop in temperature in the first 24 hours after the end of protection shall not exceed the limits of ACI 306R Table 3.1.

D. Unless otherwise specified on the Contract Drawings, the above specified Quality Acceptance Limits will be used to calculate Adjustments to Contract Compensation in accordance with Part 4 of this Section.

PART 3. EXECUTION

3.01 SURFACE PREPARATION

A. Bonded Overlays and Patching Applications

1. Bond strength tests will be performed by the Engineer in accordance with ASTM C 1583, using 4-inch by 4-inch steel plates, to determine the adequacy of the surface preparation. A minimum average bond strength of 200 psi shall be attained, with no single test value less than 180 psi. If time does not permit the above test to be performed, as determined solely by the Engineer, the Engineer will measure the macrotexture depth in accordance with ASTM E 965. A minimum of four tests will be performed and the average macrotexture depth shall be a minimum of 0.06 inches. Prior to the placement of any overlay or patching material, obtain the Engineer's approval of the surface preparation.

B. Latex Modified Concrete and Silica Fume Concrete

1. The Engineer will sound the concrete surface to identify areas of unsound or deteriorated concrete. Areas so identified shall be removed to the limits and depths as ordered by the Engineer. Perform abrasive blasting of all exposed reinforcing steel that is to remain in place.

C. Construction Joints (excluding joints in pavements)

1. Number, locations and details shall be as shown on the approved shop drawings.

2. Planes of joints shall be normal to direction of pressure and shall include suitable keys and dowels.

3. Locate joints at points of minimum shear, unless otherwise shown on approved shop drawings or directed by the Engineer.

4. Avoid lips and other irregularities between adjoining sections of concrete. Secure forms tightly against previously placed concrete.

D. Expansion and Contraction Joints (excluding joints in pavements)

1. After curing concrete, clean grooves or saw cuts to receive joint sealant by scrubbing with a mechanical wire brush to loosen dirt and other foreign matter and blowing out loose matter with compressed air.

2. Install joint sealant to finish flush with concrete surface, except where otherwise shown on the Contract Drawings.

E. Preparation for Placing Concrete (excluding pavements)

1. Straighten bent dowels, whether placed under this Contract or by others, using tools approved by the Engineer. Do not apply heat to dowels.

2. Clean all dowels and all steel, that will be embedded in concrete, of all loose rust, scale, paint, grease and other objectionable materials.

3. Examine coated reinforcement for integrity of coating. Repair all damaged areas in accordance with the requirements of Specification Section 03200 entitled "Concrete Reinforcement". Make the repair crew available at the time of examination.

4. Check all formwork locking devices to ensure that they are in place and properly secured.

5. Do not place concrete for piles, footings, pile caps or slabs supported on pile caps or piles until the pile survey has been completed and additional reinforcing steel, if necessary, has been added as directed by the Engineer.

6. For preparation of surfaces to receive concrete, conform to the Contract Drawings for all procedures, equipment limitations and requirements to be performed prior to placing concrete.

7. Do not place concrete for slabs-on-grade, grade beams or footings until the subgrade has been inspected and approved by the Engineer, and until any base course or fill has been properly compacted in accordance with the Contract requirements.

8. Provide vent holes (1/4 inch diameter, minimum) edge angles or embedded plates at joints where vibrating alone will not ensure elimination of voids. Locate such holes at high points and with uniform spacing along joints for escape of air during concreting operations. Evidence of voids adjacent to embedments will be cause for rejection of work. Submit all vent holes and procedures for placement of concrete at joints with the shop drawings for review and approval.

9. Make provisions for the concrete to pass through the reinforcing steel without segregating during placement.

F. For preparations for placing concrete pavements, see Section 02513 entitled "PLACEMENT OF PORTLAND CEMENT CONCRETE PAVING (FAA)".

3.02 BATCHING AND MIXING CONCRETE

A. Measurement of Proportions

1. All concrete batching shall be in conformance with ASTM C 94 and ACI 304R.

2. For Very High Early Strength Concrete requiring 2000 psi or greater in 6 hours or less time, the method of batching will be restricted to a calibrated mobile mixer, or to a transit mixer that is loaded at the construction site with bulk bags of the Very High Early Strength Cement. Bulk bags shall contain sufficient Very High Early Strength Cement by weight to batch for a minimum of 3 cubic yards of concrete.

B. Mixing Concrete

1. Arrange for transit mix trucks to be inspected and approved annually by either the New Jersey or New York State Departments of Transportation.

a. Mixers shall be equipped with a metal plate attached by the manufacturer, indicating the volume of mixed concrete the equipment is intended to produce. The quantities of materials transported and the volume of mixed concrete produced shall not exceed the mixer's rated capacity. In locations where the rate of depositing is slow, the Engineer may restrict the volume of concrete that may be mixed in a mixer to a volume less than the manufacturer's rated capacity of the mixer.

b. Immediately repair or withdraw from use any mixer which is determined to be mechanically unsatisfactory.

2. If truck mixers are used, keep available a sufficient number to ensure continuous delivery of the concrete at the rate required for the proper handling, placing, finishing and curing of the concrete. If a plant at the construction site is used, it shall be of sufficient capacity to meet such requirements.

a. Mixers shall be of the revolving-drum type, with drums suitably mounted and fitted with adequate blades capable of discharging the mixture without segregation. All truck mixers shall be equipped with an accurate, operable counter to measure the number of drum revolutions and an accurate, working water site gage or manometer to measure the volume of water introduced into the drum. Truck mixers without an accurately operating counter or water site gage shall be immediately withdrawn from use.

3. The Engineer may permit one re-tempering of the concrete subject to the following:

   a. When the measured water content in the batch is less than the water in the approved mix proportion.

   b. The redosage of high range water reducer shall conform to the Engineer-approved redosage chart and shall not exceed the manufacturer's recommended limitation, nor shall it retard the initial set of the concrete by more than 30 minutes.

   c. When air content is below the lower quality limit specified in 2.04 A.6.

4. The Engineer may reject concrete in the following instances:

   a. Concrete has not been placed within 90 minutes from the time the cement had first contact with water.

   b. Concrete temperature reaches 92 deg F.

   c. The mix appears to be segregated.

5. The Engineer will reject concrete subject to the following:

   a. Concrete that has partially hardened or has attained its initial set prior to placement.

   b. The water to cement ratio as determined by AASHTO T 318 exceeds that given in 2.03 A.4 by 25%.

6. Construction Site Mixing: Measure mix components in accordance with tolerances given in ASTM C 94. Weigh all non-liquid components and measure all liquid components immediately prior to batching. Use a calibrated flask with clear indication markings for ounces, pints, etc. when measuring liquid components. Measures without calibrated clear indication markings will not be permitted. Mix concrete materials in an approved drum-type batch machine mixer.

   a. For a mixer capacity of 1 cubic yard or less, continue mixing a minimum of 3 minutes, but not more than 5 minutes after ingredients are in the mixer and before any portion of the batch is released.

   b. For a mixer capacity of greater than 1 cubic yard, increase the mixing time by 1 minute for each additional 1 cubic yard.

   c. Provide a batch ticket to the Engineer for each batch discharged and used in the Work, indicating the Contract number and title, date, time, mix type, mixing time, quantity of each constituent, volume of concrete and amount of water added. Record a location of the deposit in the structure that can be easily identified.

C. Mobile Mixers: When application requires the use of a mobile mixer, it shall meet the following criteria:

1. Proportioning and Mixing Equipment

   a. Mixer shall be a self-contained, self-propelled, continuous mixing type capable of carrying sufficient unmixed dry cement, aggregates, water and admixtures to produce not less than 6 cubic yards of concrete. Maintain a calibrated back-up unit at the construction site ready for use.

b. Mixer shall be capable of positive measurement of cement being introduced into the mix. A recording meter, visible at all times and equipped with a ticket printout, shall indicate this quantity.

c. Mixer shall provide positive control of the flow of water and admixtures. Water flow shall be indicated by flow meter and shall be readily adjustable to accommodate minor variations in aggregate moisture.

d. Mixer shall be capable of being calibrated to automatically proportion and blend all components of indicated composition on continuous or intermittent basis as required by the finishing operation, and shall discharge mixed material through a chute directly in front of the finishing machine. Notify the Engineer a minimum of 48 hours prior to calibration of the mobile mixers. Before approving the calibration of the mobile mixer, the Engineer will witness the calibration of the mobile mixer. However, the Contractor is responsible for testing the mix produced. Allow the Engineer to test the concrete mix at any time.

e. Calibrate mixer to accurately proportion the specified mix. Certification of calibration by an Engineer approved testing agency will be accepted as evidence of this accuracy, provided such certification attests the yield to be true within the following tolerances (by weight):

Coarse Aggregate	+/- 2%
Fine Aggregate	+/- 2%
Cement	+/- 1%
Water	+/- 1%
Admixtures	+/- 3%
Latex	+/- 1%

f. Mix in accordance with the specified requirements for the equipment used. The concrete, as discharged from the mixer, shall be such that finishing operations can proceed at a steady pace with final finishing completed before the formation of the plastic surface film.

g. Repair mixers not functioning in a manner the Engineer considers acceptable. If repair is not practical, remove the mobile mixer from the construction site and replace it with one which functions properly.

h. Prior to production, test the moisture content of the fine aggregate and coarse aggregate. Adjust the water gage setting only in the presence of the Engineer, to produce the approved mix water to cement ratio. Test the moisture content of the fine aggregate and coarse aggregate every 3 hours during production, or when the mobile mixer is loaded with aggregates from a stockpile different from the one for which moisture content tests were performed, whichever occurs first. Make adjustments in the presence of the Engineer. For Latex Modified Concrete, the maximum permissible moisture content of fine aggregate and coarse aggregate shall be 6.0% and 3.0%, respectively, as determined in accordance with ASTM C 566. If these limits are exceeded, stop concreting operations until drier aggregates are obtained. Allow the Engineer to view and copy all records for moisture content testing at any time.

3.03 PLACEMENT FIELD REQUIREMENTS

A. During all concrete placements at the construction site, the Contractor shall have an individual in a supervisory capacity present with a valid certification from one of the following programs:

1. ACI Concrete Transportation Construction Inspector or Concrete Construction Special Inspector.
2. New Jersey ACI Chapter's "Concrete Construction Technology" course.

B. Prior to any construction site delivery of concrete, furnish, deliver and maintain insulated curing boxes of sufficient size and strength to contain all the specimens (cylinders and beams) made by the Engineer in any two (2) consecutive Work periods. Such boxes shall be equipped to regulate the temperature in the range of 60 deg F to 80 deg F or 68 deg F to 78 deg F when the design compressive strength is 6000 psi or greater, and to provide the moisture to maintain the curing conditions specified in ASTM C 31. During hot weather when the temperature is greater than 80 deg F, maintain the temperature of the concrete specimens in the required range by immersing them in a water bath. Cover the water bath to prevent direct sunlight from raising the water temperature. Completely remove and replace the water in the bath every day. Locate the boxes where directed by the Engineer. Protect boxes from vibration and other disturbances during specimen curing.

C. Keep this Specification and the following ACI publications available at all times at the construction site:

1. ACI 301.
2. ACI 302.1R.
3. ACI 305R.
4. ACI 306R.
5. ACI 308.
6. ACI 309R.
7. ACI 318.

D. Ensure that the concrete supplier keeps this Specification and the following ACI publications available at all times at the batching location:

1. ACI 211.
2. ACI 213.
3. ACI 304R.

E. Bonding New Concrete to Existing Concrete

Where new concrete will be placed against existing concrete surfaces:

1. Surface to receive concrete shall be soaked and kept wet with water for one (1) hour prior to placement of material. Puddles of standing water shall be removed immediately prior to placement.

2. A thin layer of material from the leading edge of the concrete being placed shall be broomed into the wetted surface. Care shall be exercised to ensure that all vertical as well as horizontal surfaces receive a thorough, even coating and that the rate of progress is controlled so that the broomed material does not dry before being covered with additional material as required for final grade.

F. Placing Concrete (excluding pavements)

1. Place concrete only in the presence of the Engineer and by methods approved by him.

2. For concrete cast against earth or an approved compacted subgrade, and for concrete overlays, place concrete against surfaces in a saturated surface dry condition.

3. Prior to placing concrete, remove all standing water or puddles.

4. Do not place concrete on or next to frozen surfaces.

5. Transfer concrete from mixer to place of deposit as rapidly as practical to prevent formation of cold joints.

6. Use equipment and methods for placing which permit rapid placement of concrete of the required consistency and which preclude segregation.

7. The method and equipment used to transfer concrete from mixer to forms will be subject to prior approval by the Engineer. Do not use any pipes, chutes or other equipment made of aluminum.

8. Subject to the foregoing requirements, convey concrete by approved conveyors, pipes, chutes or spouts to a point not more than five feet horizontally or vertically from its final position, unless otherwise approved by the Engineer.

9. Concrete for fill in steel reinforced pipe piles, steel shells or caissons shall be deposited using a metal (not aluminum) hopper and an elephant trunk. The hopper and elephant trunk shall be set above the top of piles, steel shells or caissons to permit the escape of air as the concrete is placed. Elephant trunks shall be removed in sections while filling piles, steel shells or caissons from bottom of reinforcing cage to top of piles, steel shells or caissons. Elephant trunks shall extend a minimum distance of 10 feet below top of pile, steel shell or caisson or to bottom of reinforcing cage, whichever is greater. The top 15 feet of the concrete poured from the top shall be vibrated or rodded. No cold joints will be permitted during concreting operations, unless otherwise noted on the Contract Drawings.

10. Except where otherwise approved by the Engineer, consolidate concrete by internal mechanical vibration subject to the following:

    a. Type, number and method of application of vibrators will be subject to prior approval by the Engineer.

    b. Apply vibrators at points not more than 30 inches apart for time intervals of approximately 10 seconds.

    c. Do not use vibrators to move concrete horizontally.

    d. In locations where spading is approved in lieu of mechanical vibration, spade coarse aggregate away from the forms and into the plastic mass; rod concrete around embedded materials and into corners and spaces to be filled and use only approved equipment.

11. Prevent formation of laitance and accumulation of excessive water on surface of concrete as it is deposited. Remove any accumulated bleed water by approved means before placing other concrete.

12. Place concrete so as to require as little rehandling as possible. Place and spread concrete using an approved mechanical spreading device that prevents segregation of the materials. Place continuously between contraction joints. Perform necessary hand spreading with shovels, not rakes.

13. Deposit concrete as near to joints as possible without disturbing them but do not discharge onto a joint assembly unless placement is centered above the joint assembly.

14. Thoroughly consolidate concrete against and along the faces of all forms and previously placed concrete and along the full length and on both sides of all joint assemblies by means of vibrators inserted in the concrete. Do not permit vibrators to come in contact with a joint assembly, base course or a side form. In no case shall the vibrators be used to move the concrete.

15. Screed and float concrete for riding surfaces as it is placed and use an approved evaporation retardant or fog spray.

G. Concrete Placing and Finishing Equipment for Bridge Decks and other Riding Surfaces (except for FAA pavements)

1. For slab or overlays 8 inches or more thick use internal vibrators. Internal vibrators shall be gang-mounted and supplemented with manual vibrators subject to the following:

a. Use manual, hand-held vibrators adjacent to joint assemblies and similar locations where gang-mounted vibrators are not practical.

b. Check all vibrators prior to the start of Work and periodically during construction progress to verify that they are working properly.

2. For slab or overlays less than 8 inches thick, vibrating surface pans or screeds will be allowed.

3. Manual tools such as bull floats, trowels, brooms and other similar hand tools are acceptable.

H. For placement and finishing of concrete pavements, see Section 02513 entitled "PLACEMENT OF PORTLAND CEMENT CONCRETE PAVING (FAA)".

I. Consolidation and Finishing

1. Bridge Decks and other Riding Surfaces

a. Machine finishing shall conform to NJDOT Standard Specifications for Road and Bridge Construction 2007 Subsection 1005.02, .03 and .04.

b. Finishing at and adjacent to joints shall conform to NJDOT Standard Specifications for Road and Bridge Construction 2007 Subsection 405.03.02 Item C.

c. Hand finishing methods will not be permitted, except under the following conditions: (1) in the event of breakdown of the mechanical equipment, hand methods may be used to finish the concrete already deposited on the grade; (2) in areas of narrow widths or of irregular dimensions where operation of the mechanical equipment is impractical. Concrete, as soon as placed, shall be struck off and screeded using an approved portable screed. Use a second screed shall for striking off the bottom layer of concrete when reinforcement is used.

The screed for the surface shall be at least 2 feet longer than the maximum width of the slab to be struck off. It shall be of approved design, sufficiently rigid to retain its shape, and shall be constructed either of metal (not aluminum) or of other suitable material covered with metal. Consolidation shall be achieved by the use of suitable vibrators.

d. After the concrete has been struck off and consolidated, it shall be further smoothed and trued by means of a longitudinal float using one of the following methods:

(1) Long-handled floats shall be not less than 12 feet in length and 6 inches in width, stiffened to prevent flexibility and warping. The float shall be operated from foot bridges spanning but not touching the concrete or from the edge of the pavement. Floating shall pass gradually from one side of the bridge deck to the other. Forward movement along the centerline of the pavement shall be in successive advances of not more than one-half the length of the float. Any excess water or laitance in excess of 1/8-inch thick shall be removed and wasted.

(2) The Contractor may use a machine composed of a cutting and smoothing float(s), suspended from and guided by a rigid frame and constantly in contact with, the side forms or underlying surface. If necessary, long-handled floats having blades not less than 5 feet in length and 6 inches in width may be used to smooth and fill in open-textured areas in the pavement. When the crown of the bridge deck will not permit the use of the mechanical float, the surface shall be floated transversely by means of a long-handled float. Care shall be taken not to work the crown out of the pavement during the operation. After floating, any excess water and laitance in excess of 1/8-inch thick shall be removed and wasted. Successive drags shall be lapped one-half the length of the blade.

e. While the concrete is still in a workable condition, test it for trueness with a Contractor-furnished 16-foot straightedge swung from handles 3 feet (1 m) longer than one-half the width of the slab. The straightedge shall be held in contact with the surface in successive positions parallel to the centerline and the whole area gone over from one side of the slab to the other, as necessary. Advance in successive stages of not more than one-half the length of the straightedge. Any excess water and laitance in excess of 1/8-inch thick shall be removed from the surface of the bridge deck and wasted. Any depressions shall be immediately filled with freshly mixed concrete, struck off, consolidated and refinished. High areas shall be cut down and refinished. Special attention shall be given to ensure that the surface across joints meets the smoothness requirements set forth in 2.04 B. Straightedge testing and surface corrections shall continue until the entire surface is free from observable departures from the straightedge and until the slab conforms to the required grade and cross section. The use of long-handled wood floats shall be confined to a minimum; they may be used only in emergencies and in areas not accessible to finishing equipment. Test the surface across the joints with a 16-foot straightedge as the joints are finished and correct any irregularities in excess of 1/4 inch before the concrete has hardened.

2. Specified concrete finishes, as shown on the Contract Drawings, shall be in accordance with the following requirements:

a. "Smooth Finish": A surface of concrete obtained by the use of special forms as specified in Division 3 Section entitled "Concrete Formwork". Remove all fins and other irregularities in the exposed surfaces of concrete by rubbing the irregularities with a carborundum brick and clean fresh water. Any mortar patches shall be rubbed with a carborundum brick as above specified.

b. "Scored Finish": A surface of concrete obtained by roughening in an approved manner or by etching with sharp-pointed steel tools to key or otherwise improve the mechanical bond of the surface. Such scoring shall roughen at least ten percent of the area so scored.

c. "Float Finish": A surface of concrete obtained by the use of a wood float. Apply float finish to horizontal surfaces immediately after screeding and before initial setting has begun.

d. "Trowel Finish": A surface of concrete obtained by the use of a steel trowel, after screeding and floating the surface of the concrete to produce a dense, smooth, even surface suitable for painting or the application of floor covering. The troweling shall not take place until the surfaces have set sufficiently to sustain knee boards without damage. Troweling shall eliminate all irregularities and leave the concrete surface with a smooth, hard finish, free from marks and blemishes to the satisfaction of the Engineer.

e. "Traction Finish": A monolithic layer of abrasive concrete having a minimum thickness of 3/4 inch and which shall be "Emericrete SH", as manufactured by the Sika Corporation, or approved equal. Prepare the base and install the monolithic finish in accordance with the recommendations of the manufacturer of the abrasive concrete. The surface shall be given a wood float finish. The sides and edges of pavement slabs shall be rounded with an approved edging tool to the minimum radius obtainable in the sole opinion of the Engineer.

f. "Burlap Finish": A surface of concrete obtained by the use of a burlap drag, after screeding and floating the surface of the concrete. Drag the burlap in one direction in a straight line before initial setting has begun and in such a manner that the full width of the slab being finished is dragged in one operation. Prepare the surface prior to dragging by working from a bridge that does not come in contact with the fresh concrete at any point. The use of any burlap that causes irregularities or grooves greater than 1/16 inch in depth in the concrete surface will not be permitted. Rinse or wash burlap as often as is necessary to prevent the presence of hardened particles and consequent scarring of the concrete.

g. Stair treads and platforms of steel stairs shall be filled with mortar mixed in the proportions of one part Portland cement to three parts of fine aggregate, mixed with water to a satisfactory consistency. Coat the surface of the mortar with three pounds of aluminum oxide crystals per square yard of surface, uniformly applied, and trowel the surface to a smooth hard finish. Aluminum oxide crystals shall be grade AL203 crystals ranging from No. 12 to No. 30 in size and shall contain not more than six percent of iron or other impurities.

h. "Broom Finish" shall be subject to the following:

(1) Finish the concrete when the water sheen has practically disappeared. Use push broom or floor brush type, not less than 18 inches wide and made of good quality bass or bassine fibers not more than 4-1/2 inches long and with handles longer than half the width of the slab.

(2) Use an adequate number of brooms to keep up with other operations. Achieve proper finish prior to initial set of the concrete.

(3) Wash and thoroughly dry brooms at frequent intervals and remove worn or damaged brooms from the construction site.

(4) Draw broom across previously finished surface from the centerline to each edge of the slab with a slight overlap of strokes.

(5) Corrugations made in surface shall be uniform, approximately 1/16 inch in depth, and not more than 1/8 inch in depth.

(6) Complete brooming before concrete reaches a condition that would result in the surface becoming torn or unduly roughened and before initial set of concrete.

(7) Immediately following brooming, carefully finish the edges of slab along sides and at joints with an approved edging tool to form a smooth rounded surface of required radius and subject to the following:

(a.) Where corners or edges of slabs have crumbled and at any areas which have leaked sufficient mortar to make proper finishing difficult, remove loose fragments and soupy mortar, fill solidly with a mixture of correct proportions and consistency and finish.

(b.) Edges shall be smooth, true to line and free of unnecessary tool marks.

i. "Saw Cut Grooved Surface" for deck slabs and overlays shall conform to the requirements of the NJDOT Standard Specifications, Division 500 Subsection 507.03.02, Item L.

j. Concrete Curbs and Sidewalks

(1) Give sidewalks a "Float Finish", tool edges and joints for a width of 2 inches and round corners to a radius of 1/4 inch with an approved edging tool.

(2) Install expansion joints at not more than 20-foot intervals in sidewalks with matching joints in curbs. Use 1/4-inch bituminous joint filler.

(3) Score sidewalks in squares as approved by the Engineer.

J. Pump Concrete

1. Grout used to prime the pump line shall not be included in the placement. Dispose of the grout at the end of the pump line off Authority property. Do not begin placement until concrete is visible at the end of the pump line.

2. Allow no water to enter the pump hopper at any time during placement operations.

3. Submit written procedures for pumping to the Engineer for approval. The procedures shall contain, but shall not be limited to, pumping scheme, pump description, line diameter, line length and the number of turns and line offsets.

K. Silica Fume Concrete and Fibrous Concrete

1. Arrange for qualified technical representatives from the silica fume and the fiber suppliers, who are experienced in the batching and placement of silica fume and fibrous concrete, to be present for the pre-concrete construction meeting, all test pours and the first two production pours.

L. Fog spray forms, steel reinforcement and subgrade with potable water immediately prior to the placement of fresh concrete. Maintain uniform moisture of the subgrade without standing water, soft spots or dry areas.

3.04 CURING

A. Carefully cure all concrete. Submit a curing procedure plan for approval by the Engineer prior to placing any fresh concrete. Perform curing in accordance with ACI 308 and the following specifications. Commence curing procedures immediately after fresh concrete has been placed.

1. Provide suitable means, such as insulating blankets or heated enclosures, for maintaining a concrete temperature of at least 50 deg F after placement. At the end of this period, remove protection in such a manner that the drop in temperature of any portion of concrete is gradual and does not exceed the following within the first 24 hours after removal of protection, in accordance with ACI 306R, Table 3.1: 50 deg F for applications with a minimum dimension less than 12 inches; 40 deg F for applications with a minimum dimension between 12 and 36 inches; 30 deg F for applications with a minimum dimension between 36 and 72 inches; and 20 deg F for applications with a minimum dimension greater than 72 inches.

2. Allow all concrete to attain 4,000 psi compressive strength before exposure to freeze-thaw cycles.

3. Choice of curing material and method shall be as approved by the Engineer.

B. Wet Curing

1. All pavement concrete and structural slabs: Immediately after screeding of the concrete, apply an evaporation retardant, or commence the operation of a fog spraying system to keep moisture in the atmosphere surrounding the concrete until all concrete finishing has been completed. Do not direct fogging at the fresh concrete and do not permit ponding of water on the fresh concrete surface.

2. Perform wet curing for the following concrete applications: overlays, deck slabs, ramps, any concrete mixes containing silica fume, Very High Early Strength Cement and formulated latex modifier.

3. Immediately after finishing concrete, cover the surfaces with wet burlap or cotton mats which have been presoaked for a minimum of 24 hours in potable water, so that no marring of the surface occurs. Keep the burlap or cotton mats continuously moist, 24 hours per day, through the use of a fog spraying system or soaker hoses arranged at the high points of the concrete pour. Burlap, which shall consist of two or more layers, or cotton mats shall overlap a minimum of one foot, and shall be at least one foot longer than necessary to cover the entire width and edges of the pavement lane. The burlap or cotton mats shall be weighted down to prevent displacement.

   a. Inspect sheet material before reuse. Repair all holes and tears with cemented patches, subject to approval by the Engineer.

4. Wet curing procedures may be stopped only (1) when the ambient temperature is expected to fall below 35 deg F within 24 hours, (2) when placing concrete for slabs directly adjacent to the fog spraying system or soaker hoses or (3) when concrete is to receive traffic.

   a. When the ambient temperature at the surface of placement is 35 deg F and falling, wet curing will not be permitted; instead, apply a liquid membrane forming curing compound in accordance with 2.02 R and 3.04 C.1.a.

   b. When wet curing is temporarily interrupted for an adjacent placement, remove all standing water in areas to receive fresh concrete prior to placement. Occasionally spray a fine mist of water over the wet curing areas. Do not puddle water on the surface of the fresh concrete. When the fresh concrete is finished and covered with burlap or cotton mats, reassemble the continuous fog spraying system or soaker hoses and continue wet curing immediately.

   c. Areas in which the concrete will be exposed to traffic shall be wet cured for as long as possible. Wet curing may stop only when there is just enough time to apply a liquid membrane forming curing compound over the entire area prior to reopening it to traffic. In this case, apply the liquid membrane forming curing compound when the surface has no standing water or puddles on the surface, but is in a damp condition.

5. Wet cure for 7 days, or until 75% of the design compressive strength is obtained, whichever is longer, when determined by strength tests performed on sample cylinders cast in the field and cured in the same manner as the concrete.

6. Immediately after wet curing procedures are completed, apply a liquid membrane forming curing compound in accordance with 2.02 R and 3.04 C.1.a.

7. Contain water within the area of work.

8. For latex modified concrete, wet cure for a maximum of 48 hours, unless otherwise directed by the Engineer.

C. Liquid Membrane Forming Curing Compounds and Sheet Materials for Curing

1. Immediately after placing or finishing, commence the curing process of concrete not covered by forms from loss of moisture. Use one of the curing materials listed in 2.02 R, which may be supplemented by initially using an evaporation retardant listed in 2.02 S, as long as wet curing is not required, subject to the following:

   a. Apply white pigmented liquid membrane forming curing compound as soon as surface moisture has evaporated by approved pressure spraying or distributing equipment in two uniform full applications perpendicular to each other as recommended by the manufacturer. Allow the first coat to become tacky before applying the second coat. Each application shall be the full quantity recommended by the manufacturer. The entire surface shall be white after the second application.

      (1) Recoat areas subjected to heavy rainfall within 3 hours after rain.

      (2) Follow manufacturer's recommendations for agitation during application and warming where necessary during cold weather. Do not use liquid membrane forming curing compound where the surface being cured is to receive a finish that will be bonded to the concrete surface or where a floor hardener is to be applied, unless a certification of compatibility and a minimum five-year performance record is submitted in advance to the Engineer for approval.

      (3) The Engineer will check for uniformity through random sampling and testing. Testing may include determination of membrane infrared spectrum, pH, specific gravity and solids content.

2. Removal of Forms

   Removal of forms shall be subject to the following:

   a. Remove forms in accordance with the requirements of Specification Section 03100 entitled "Concrete Formwork" or Section 02513 entitled "Placement of Portland Cement Concrete Paving (FAA)".

   b. After removal of forms, patch areas of concrete which in the opinion of the Engineer show excessive honeycomb by cutting out defective areas, keying and refilling them with a mortar of cement and sand in the same proportions as those in the approved concrete mix design and sufficient water to provide a workable mix.

   c. After forms are removed, cure sides of slabs greater than 12 inches in thickness in accordance with 3.04 C.

d. Immediately after removal of forms, holes and voids in the surfaces of concrete, resulting from bolts and ties, shall be wetted and filled with a mortar containing cement and fine aggregate in the same proportions as in the approved concrete mix design, and utilizing cement which shall produce mortar of the same color as the concrete. Exposed mortar surfaces shall then be finished smooth and even with a wood float, except that those surfaces exposed to view in the finished structure shall be finished with a steel trowel to match adjacent surfaces. All fins and other surface irregularities shall be removed promptly by chipping, grinding or other methods approved by the Engineer to give a uniform finish. Where no specific surface finish for formed concrete surfaces is indicated on the Contract Drawings, no further finishing will be required.

e. Drop in concrete surface temperature over the first 24 hours shall be controlled in accordance with ACI 306.

3.05 QUALITY ASSURANCE TESTING, SAMPLING AND INSPECTIONS

A. The Engineer will perform Quality Assurance testing during mixing and placing of concrete on samples taken from the end of the pump line or at the point of discharge in accordance with ASTM C 172. The Engineer will take samples of concrete from each Lot during a single Work period based on random sampling procedures contained in ASTM D 3665. A Lot of concrete is defined as the production of a single Work period. For each Sublot, the Engineer will cast cylinders in accordance with ASTM C 31 when testing for compressive strength, as well as 4" x 8" cylinders when permeability is being tested and beams when flexural strength is being tested. The cylinders and beams will be tested in accordance with ASTM C 39 and ASTM C 78, respectively, for each Sublot to determine the compressive strength and flexural strength at the time requirements specified.

TABLE 1

LOTS AND SUBLOTS

Daily Placement Quantity (Cubic Yards)	Number of Lots	Number of Sublots
Less than 50	Note 1	Notes 1 and 3
50 – 100	1	3 equally divided
101 – 450	1	4 equally divided
Greater than 450	1	Note 2

Table 1 Notes:

1. If one Work period's placement of a given Class of concrete is less than 50 cubic yards, it will not constitute a Lot. It will be added either to the previous or the next Work period's Lot, whichever is closer in time, or until a minimum of 3 Sublots are completed constituting a Lot.

2. For concrete placements of 450 cubic yards or greater, a Sublot will be deemed to be one fourth of a Lot of concrete, or 150 cubic yards of concrete, whichever is less. For larger pours the Engineer may increase the number of cubic yards that constitute a Sublot.

3. If the total concrete quantity under the Contract for any type of mix is less than 50 cubic yards, it will constitute one Lot and will be divided into a minimum of 3 Sublots, regardless of the placement schedule.

B. Quality Assurance Testing Standards and Frequency of Testing: Some or all of the following procedures will be used by the Engineer to approve the concrete mix proportions and evaluate the in-place concrete for Adjustments to Contract Compensation:

1. Compressive Strength: In accordance with ASTM C 31 and ACI 318 Part 3, Chapter 5, Item 5.6, entitled "Evaluation and Acceptance of Concrete", except that the Engineer will take samples on a random basis and 4" x 8" cylinders will be used when the nominal maximum size of the coarse aggregate allows. Latex Modified Concrete samples will be wet cured by the Engineer for 1 day and dry cured for 27 days. The cylinders will be tested in accordance with ASTM C 39. The Engineer will calculate the average of two test specimens at the compressive strength time requirement. The average of the two test specimen result values for each Sublot will be considered the Sublot compressive strength value.

2. Flexural Strength: From each Sublot sample, cast beams in accordance with ASTM C 31. The Engineer will test the beams in accordance with ASTM C 78 and will calculate the average of two test specimens at the flexural strength time requirement. The average of the two test specimen result values for each Sublot will be considered the Sublot flexural strength value.

3. Slump Test: Performed by the Engineer at the point of delivery during the time of placement in accordance with ASTM C 143 or ASTM C 1611 when self-consolidating concrete is used. For Latex Modified Concrete, the Engineer will perform slump tests 5 minutes after sampling from the mixer. For pile concrete applications, the slump shall be no less than 4 inches and no greater than 6 inches.

4. Air Content Test: Performed during the placement in accordance with ASTM C 138, ASTM C 173 or ASTM C 231. The Engineer will perform one test for each Sublot, which will be considered the Sublot air content test value.

   a. When results for either two consecutive tests or three tests in one lot or one day's production indicate that the air content is outside the Quality Limits specified in 2.04 A.6 by +1.0 or –0.50% do not place the next load until it has first been tested and satisfactory test results have been obtained. If the air content for the next load is outside the Quality Limits specified in 2.04 A.6, it will be rejected. The Engineer will test subsequent loads until the air content is found to be within the specified limits of 2.04 A.6.

5. Unit Weight: The Engineer will determine the plastic unit weight of concrete (taken at the same frequency as specified in 3.05 B.4 according to ASTM C 138). For lightweight concrete, the plastic unit weight, as determined in accordance with ASTM C 567, shall not exceed 125 pounds per cubic foot, unless otherwise specified.

6. Water Content Test: The Engineer will test for water content during the placement using a Microwave Drying Oven, in accordance with AASHTO T 318. He may adjust drying times depending on the mix constituents to achieve a constant dry weight. Once the water content has been determined, it will be divided by the cementitious content in the mix design to determine the water to cement ratio. When the maximum aggregate size exceeds 1-1/2 inches, the Engineer will obtain a sample of approximately 5000 grams. This sample will be split and the Engineer will perform two separate analyses. The weighted average of the two separate analyses will be considered the Sublot water content value. Likewise, the Engineer will compute the sublot water cement ratio as given above.

a. When results for either two consecutive tests or three tests in one lot or one day's production indicate that the water content exceeds the limits given in 2.03 A.4 by 0.10, do not place the next load until it has first been tested and satisfactory test results have been obtained. If the water content for this load is greater than the Upper Limit given in 2.04 A.5, it will be rejected. The Engineer will test subsequent loads until the water content is found to be within the limit given in 2.04 A.5.

7. Coulomb Test: To evaluate the permeability of the concrete the Upper Quality Limit, UQL, shall be 1700 Coulombs for mixes without a corrosion inhibitor and 2200 Coulombs for mixes containing a corrosion inhibitor, as tested by the Engineer in accordance with AASHTO T 277 after a 28-day wet cure. For mixes containing only fly ash or slag (no silica fume or metakaolin) permeability will be evaluated at 90 days, using the same performance requirements stated above (1700 Coulombs for mixes without a corrosion inhibitor and 2200 Coulombs for mixes with a corrosion inhibitor). For Latex Modified Concrete applications, samples will be wet cured for 7 days and dry cured for 21 days. For each Sublot, the Engineer will cast two (2) 4" x 8" cylinder specimens for each Sublot. The Engineer will cut 2-inch thick samples from the center of each cylinder for testing. The average of the two test specimen result values for each Sublot will be considered the Sublot Coulomb test value.

8. Bond Strength: The bond strength between overlay concrete and parent concrete will be evaluated in accordance with ASTM C 1583. For each Sublot, the Engineer will perform three tests. Three 4-inch diameter cores will be cut 1/2 inch into the parent concrete to isolate the overlay concrete. The average of the three test result values for the Sublot will be considered the Sublot bond strength test value. The locations for each test will be randomly determined by the Engineer.

9. Chloride Ion Concentration by Weight of Cement: The Engineer may perform testing for both the acid soluble and water soluble chloride ion concentrations by weight of cementitious material, which will be evaluated as follows. Powder samples from 28-day concrete cylinders, cast from the concrete mix delivered to the construction site, will be tested to assess both the acid soluble and water soluble chloride ion concentrations by weight of cementitious material. Samples will be obtained using a rotary hammer drill from the mid-height of a minimum of two Sublot specimens from each Lot. The sample will be obtained from the inner three inches of the cylinder specimen, and must be a minimum of 40 grams in weight. The acid soluble and water soluble chloride ion concentrations by weight of cementitious material will be determined by the Materials Engineering Unit in accordance with preparatory standards ASTM C 1152 and ASTM C 1218, respectively, followed by ASTM C 114 (silver nitrate titration) for both the acid soluble and water soluble chloride ion analysis.

10. Pavement Thickness: The Engineer will perform acoustical testing using Impact Echo instrumentation to determine the pavement thickness. Areas indicating pavement thickness below the requirements shown on the Contract Drawings will be cored for verification. The cores will be measured in accordance with ASTM C 174. The average of three test result values for the Sublot will be considered the Sublot test value.

11. Where specified the Engineer will place Remote Temperature Sensing Devices in the in situ concrete to record maximum core temperature and maximum drop of temperature for 24 hours after protection has been removed.

12. Test Cores for Tremie Concrete

    a. The Engineer will drill test cores for every 100 cubic yards of concrete placed in mass pours, such as tremie seal, or one core for every 1000 square feet of surface of thin pours, such as bulkheads or wall facings. Cores will be obtained in accordance with ASTM C 42 and will be drilled full depth (or thickness) through the pour horizontally or vertically as applicable.

    b. Recovery of less than 95 percent will be considered to indicate defective concrete requiring corrective action by the Contractor.

    c. If the cores reveal voids, honeycombing, seams or other defects, the concrete will be subject to rejection for non-uniformity. Additional cores may be obtained by the Engineer for further investigation. The number and location of cores will be determined by the Engineer. All additional cores will be taken at the sole expense of the Contractor.

    d. Fill all test core holes by pressure grouting from the bottom upward, or from the inside out, as the case may be.

    e. Clean out and fill all voids, honeycombing, seams and other defects by pressure grouting with cement or sand-cement to the Engineer's satisfaction. At the Engineer's request and at the sole expense of the Contractor, drill additional cores to verify grouting.

C. In accordance with the Section of Division 1 entitled "Inspections and Rejections", provide labor and means for obtaining all samples required for trial batches and field testing performed by the Engineer. At no additional cost to the Authority, furnish and deliver the following when requested by the Engineer:

1. Provide a representative sample, in the quantity requested by the Engineer, of all cement, fly ash, slag, silica fume, fine and coarse aggregate, admixtures, corrosion inhibitor, latex, fibers, pigment, evaporation retardant and liquid membrane forming curing compound during any day of production the Engineer requests a sample. Take such samples in the presence of the Engineer at the point of storage used for the Work of this Contract. For cement, fly ash, slag and silica fume samples, only use a sampling port on the silo, or drop material in a loader bucket between loads, or take samples from the boot using a "Sample Thief" during loading. Notify the Engineer of aggregates being loaded at their source of supply at least 48 hours in advance of each loading.

2. Provide the cement, fly ash, slag, silica fume or metakaolin manufacturer's Mill Test Certificate and Bill of Lading, if such documents are requested by the Engineer.

3. Allow the Engineer to sample any mix proportion constituents at any time.

D. The Engineer may direct an inspection of the Contractor's concrete plant or precast concrete fabricator to observe operations and review the Quality Control procedures being implemented. Notify the Engineer, in writing, a minimum of 15 days prior to the commencement of production and submit a schedule and Quality Control Plan for all production for the Work of the Contract.

E. Precast Concrete: Obtain from the fabricator and submit to the Engineer a set of approved shop drawings for the Work of the Contract. Fabrication without shop drawings will not be permitted. Clearly mark all precast units with identification numbers for each unit. The Engineer will provide a manifest ticket to be attached to the driver's shipping ticket listing the approved unit identification numbers. Any units shipped to the construction site that are not approved or are not listed on the manifest will not be permitted to be unloaded at the construction site. Shipments not accompanied by a manifest upon delivery will not be permitted to be unloaded at the construction site.

F. For concrete where riding surface tolerances are required, other than pavements, as indicated on the Contract Drawings, the following requirements must be met:

1. The Engineer will test the entire surface of the hardened concrete with a rolling straight edge for conformance to the smoothness requirements. Surface smoothness deviations must not exceed 1/4 inch in 16 feet. Tests will be made in both the longitudinal and transverse direction of the slab and shall span joints. Correct any deficiencies as specified in 4.01 G.1.H and at no cost to the Authority.

2. The Engineer will survey the slab surface for vertical deviation from grade. Vertical deviation from the grade shown on the Contract Drawings must not exceed plus or minus 0.04 foot at any point.

3. The Engineer will determine finished grade by running levels at intervals of 25 feet longitudinally and transversely. Correct all deficiencies as specified in 4.01 G.1.H and at no cost to the Authority.

G. Specified concrete finishes, as shown on the Contract Drawings, must conform to the requirements set forth in 3.03 H.2. Correct all deficiencies as specified in 4.01 G.1.I and at no cost to the Authority.

PART 4. ADJUSTMENTS TO CONTRACT COMPENSATION

4.01 GENERAL

A. Unless otherwise shown on the Contract Drawings, acceptance of material will be based on the method of estimating Percentage of Lot Within Specification Limits (PWL), where the PWL will be determined in accordance with this Section. All Sublot test result values for a Lot, as defined in 3.05 A, Table 1, will be analyzed statistically to determine the total estimated Percent of the Lot that is Within specification Limits, as shown in 4.01 B. The PWL is computed using the Lot sample Average value, $\overline{X}$, as defined in 4.01 D.3 and the Lot sample standard deviation, S_N, as defined in 4.01 D.4, for the specified number of Sublots, n, and for the specification Quality Acceptance Limits, as defined in 2.04 A, where LQL represents the Lower Quality Limit, and UQL represents the Upper Quality Limit, as they apply to each particular acceptance parameter. From these values, the respective Quality Index(ices), Q_L for Lower Quality Index and/or Q_U for Upper Quality Index, is computed in accordance with 4.01 D.5 and 4.01 D.6. Then the PWL for the Lot for the specified number of Sublots, n, is determined from Table 4, "Percent of Lot Within Limits (PWL) (Standard Deviation Method)". The Adjustment to Contract Compensation for each Lot is then calculated using the formulas specified in 4.01 F.

B. Depending on the application, concrete will be tested for the properties shown below. The PWL of each Lot for each parameter will be determined as specified in 4.01 D. Payments will be based on the concrete application for a Lot and the criteria defined below.

Performance Parameters	Minimum PWL
Flexural Strength	95
Compressive Strength	95
Permeability	90
Bond Strength	80
Water to Cement Ratio	80
Air Content	70*
Pavement Thickness	90
Chloride Content	100**

*denotes that in addition to the minimum PWL, the air content will also be evaluated for the average of test results for a given Lot of concrete as per 3.05 B.4 and 4.01 J.

**denotes that the chloride content (acid soluble and water soluble) will be analyzed only for the average of test results for any given Lot of concrete, as per 3.05 B.9 and 4.01 G.1.b.

Table 2 defines the Quality Acceptance performance criteria to be evaluated for Adjustments to Contract Compensation for a given concrete application. In addition, all concrete shall conform to the requirements of 4.01 G. Any deficiencies found to exist as specified in 4.01 G will govern and the Contractor shall either:

1. Remove and replace the concrete in that particular Lot at no cost to the Authority, or

2. Accept a deduction of 50% of the Base Price per cubic yard, as indicated on the Contract Drawings, for that particular Lot of concrete.

TABLE 2
PERFORMANCE CRITERIA PARAMETERS

Category/ Application	Water/Cement Ratio (W/C)	% Air	Permeability	Bond Strength	Compressive Strength	Flexural Strength	Pavement Thickness
Category I - Full Depth Pavements & Unbonded Overlays							
	I	I	---	---	---	P	
LQL:	---	*	---	---	---	700 psi	97%
UQL:	0.45	*	---	---	---	---	---
Category II - Bonded Pavement Overlays							
	I	I	---	P	I	---	---
LQL:	---	*	---	150 psi	***	---	---
UQL:	0.45	*	---	---	---	---	---
Category III - Elevated Structural Overlays							
	I	I	I	P	I	---	---
LQL:	---	*	---	150 psi	***	---	---
UQL:	0.45	*	**	---	---	---	---
Category IV - Structural (exposed to freeze-thaw and/or sulfates, in addition to chlorides or a marine environment)							
	I	I	P	---	I	---	---
LQL:	---	*	---	---	***	---	---
UQL:	0.45	*	**	---	---	---	---
Category V - Structural (exposed to freeze/thaw and/or sulfates only; no exposure to chlorides or a marine environment)							
	I	I	---	---	P	---	---
LQL:	---	*	---	---	***	---	---
SQL:	0.45	*	---	---	---	---	---
Category VI - Standard Structural (not exposed to freeze-thaw cycles) and Miscellaneous Applications (at-grade sidewalks, at-grade curbs, kerfs, foundations, footings, drainage structures, manholes, pipe pile fill and all concrete applications below grade)							
	---	---	---	---	P	---	---
LQL:	---	---	---	---	***	---	---
UQL:	---	---	---	---	---	---	---

* - Refer to 2.04 A.6.

** - 1700 Coulomb counts for mixes without a corrosion inhibitor and 2200 Coulomb counts for mixes with a corrosion inhibitor.

*** - The proportion compressive strength at 28 days or as specified on the Contract Drawings.

P - Used to Calculate Pay Factor per cubic yard. It denotes the concrete property that will be used to calculate payment for a given concrete application. No incentive payments will be made if the performance criteria parameters labeled 'I' for a given application have a PWL less than specified in 4.01 B.

I - Used to Calculate Incentive only when the Pay Factor for the parameter labeled 'P' is greater than 0.00.

C. Full Depth Pavement and Unbonded Overlay (Category I) Final Pay Factor: The Pay Factor for Pavement Thickness will govern only when the Pay Factor for Pavement Thickness is less than the Pay Factor for Flexural Strength, with the exception of when the Pay Factor for Pavement Thickness is 0.00.

D. Method of Estimating Percentage of Material Within Limits (PWL)

1. Locate sampling positions on the Lot by use of random sampling procedures specified in 3.05 A.

2. Take a test sample and make the test specimens on the test sample in accordance with 3.05 A.

3. Determine the Lot sample Average value, $\overline{X}$, by calculating the average of all Sublot test values.

4. Find the Lot sample standard deviation, S_N, by using the following formula:

$$S_N = \sqrt{\frac{d_1^2+d_2^2+d_3^2+ +d_n^2}{n-1}}$$

Where:

S_N = standard deviation of the Sublot test values

$d_1, d_2....$ = deviation from the individual Sublot test values

$X_1, X_2, ...$from the Average value, $\overline{X}$, that is,

$d_1 = (X_1 - \overline{X}), d_2 = (X_2 - \overline{X}), ..., d_n = (X_n - \overline{X})$

n = number of Sublots

5. Find the Lower Quality Index, Q_L, by subtracting the Lower Quality Limit, LQL, from the Average value, $\overline{X}$, and dividing the result by S_N.

$$Q_L = \frac{\overline{X} - LQL}{S_N}$$

6. Find the Upper Quality Index, Q_U, by subtracting the Average value, $\overline{X}$, from the Upper Quality Limit, UQL, and dividing the result by S_N.

$$Q_U = \frac{UQL - \overline{X}}{S_N}$$

7. The percentage of material above lower tolerance limit, P_L, and the percentage of material below upper tolerance limit, P_U, will be found by referring to Table 4, "Percent of Lot Within Tolerance Limit (PWL) (Standard Deviation Method)". Locate Q_L and/or Q_U in the column appropriate to the total number of Sublots, n, and reading the number under the column heading "PWL".

8. For concrete properties with only an Upper Quality Limit (ratio of water to cementitious material, permeability), PWL equals P_U. For concrete properties with a Lower Quality Limit (bond strength, compressive strength, flexural strength, pavement thickness), PWL equals P_L. For concrete properties with both Upper and Lower Quality Limits (air content), first calculate of the Upper Quality Index, Q_U, and the Lower Quality Index, Q_L, by using the Upper Quality Limit, UQL, and the Lower Quality Limit, LQL, respectively, as stipulated in 2.03 A.6. Then determine PWL using the following formula:

$$PWL = (P_U + P_L) - 100$$

E. Pay Factors for each Lot will be computed in accordance with the formulas contained in 4.01 F, Table 3 entitled, "Adjustments to Contract Compensation", by entering the PWL value and performing the calculation indicated for the appropriate PWL range to determine the Pay Factor.

F. Adjustments to Contract Compensation shall be calculated as follows:

TABLE 3

ADJUSTMENTS TO CONTRACT COMPENSATION PER CUBIC YARD

Percent Within Limits (PWL)	Compressive Strength Pay Factor
98 - 100	0.02 (PWL-100) +0.06
95 - 97	0.0
55 - 94	(PWL-95)/100
0 - 54	-0.50

Percent Within Limits (PWL)	Permeability & Bond Strength Pay Factor
91 - 100	0.006 (PWL - 90)
80 - 90	0.0
55 - 79	$0.00017PWL^2 - 0.0105PWL - 0.30$
0 - 54	-0.50

Percent Within Limits (PWL)	Flexural Strength Pay Factor
95 - 100	(PWL-95/100)+.01
55 - 94	(PWL-95)/100
0 - 54	-0.50

Percent Within Limits (PWL)	Pavement Thickness Pay Factor
90 - 100	0.00
55 - 89	(PWL-90)/100
0 - 54	-0.50

Pay Factors are multiplied by the Base Price per cubic yard established in the table below, unless otherwise indicated on the Contract Drawings. The result is the amount to be added or deducted from the compensation for that particular Lot of concrete.

Category	Base Prices for Adjustments to Contract Compensation Per Cubic Yd
I	$100
II	$90
III	$130
IV	$130
IV	$110 when silica fume or metakaolin are not included
V	$90
VI	$80

G. Correction or Cost Adjustments for Deficiencies

1. Remove and Replace Concrete: Remove and replace concrete in a manner approved by the Engineer and at no additional cost to the Authority if any of the following deficiencies exist, unless the Engineer elects to accept the concrete, at which time the Contractor will be compensated at 50% of the Base Price per cubic yard, regardless of the Pay Factors calculated in 4.01 F, Table 3:

   a. Percent Within Limits (PWL) for compressive strength, flexural strength, permeability, bond strength or pavement thickness is below 55.

   b. The average acid soluble chloride ions by weight of cementitious material test results for any given Lot of concrete exceed the limit of 0.10% (reinforced concrete) or 0.08% (prestressed concrete) weight of chloride ions by weight of cementitious material, in accordance with ASTM C 1152 and ASTM C 114, and the average water soluble chloride ions by weight of cementitious material test results for any given Lot of concrete exceed the limit of 0.08% (reinforced concrete) or 0.06% (prestressed concrete) weight of chloride ions by weight of cementitious material, in accordance with ASTM C 1218 and ASTM C 114. The Soxhlet test referenced in ACI 222R will not be considered for chloride evaluations.

   c. For all concrete applications, the cylinder compressive strength shall conform to the following:

      (1) The calculated average of any three consecutive compressive strength tests shall be equal to or shall exceed the specified compressive strength.

      (2) No individual compressive strength test result shall be below the specified compressive strength by more than 500 psi. When the required strength is 5000 psi or less, or by more than 0.10 of the specified strength when greater than 5000 psi is required.

      (3) If either or both of the requirements specified in 4.01 G.1.c.1 and 4.01 G.1.c.2 are not met, investigate the in-place compressive strength in accordance with ACI 318-02, Section 5.6.5, at no additional cost to the Authority. If the compressive strength test results of the in-place concrete fail to meet either or both of the requirements specified in 4.01 G.1.c.1 and 4.01 G.1.c.2, the concrete will be considered deficient, and 4.01 G.1 will apply.

d. Concrete slabs or structures that exhibit any cracks prior to opening to vehicular/aircraft operations or loading will be subject to the actions specified in 4.01 G.1. If the concrete is accepted by the Engineer, seal cracks in accordance with Specification Section 03734 entitled "Concrete Crack Repair" in a manner approved by the Engineer, and at no cost to the Authority.

e. Delamination Testing: The Engineer will check all concrete overlays using the chain drag method in accordance with ASTM D 4580. If more than 5.00% of the total surface area of the Lot is found to be delaminated, remove these areas and replace them at no cost to the Authority. The determination by the Engineer as to the existence of delaminations shall be final and binding.

f. Slabs showing high or low spots exceeding 1/2 inch when tested in accordance with 3.05 F.2.

H. Diamond Grinding and Partial Depth Removal

1. Cured riding surfaces, except pavements, that do not meet the smoothness or finished grade requirements set forth in 2.04 B shall be corrected, to obtain the specified smoothness deviation, as follows:

a. High spots between 1/4 inch and 1/2 inch and surfaces that exceed the finished grade requirements shall be identified and ground with diamond grinding equipment.

b. Low spots between 1/4 inch and 1/2inch and surfaces that are below the finished grade requirements shall be corrected by partial depth removal of the entire slab to 1 inch below rebars by hydrodemolition, or by hydromilling and constructing an overlay in conformance with this Specification.

2. The diamond grinding equipment shall be as approved by the Engineer and shall have a grinding head at least 36-inches wide.

3. Where grinding is required, grind the entire width of the riding surface by the length of defective area. In the sole opinion of the Engineer, if the deficiencies are closely spaced and grinding individual areas will adversely affect ride, grind the entire surface.

4. Dispose of slurry produced from grinding operations off Authority property.

5. Perform diamond grinding, partial depth removal and construction of an overlay, if required to correct deficiencies, at no additional cost to the Authority.

I. If concrete finishes do not meet the requirements set forth for the specified finishes, refinish the hardened concrete as directed by the Engineer, at no additional cost to the Authority.

J. If the average air content for a Lot exceeds either the LQL or the UQL by more than 1% (with the exception of concrete not exposed to freeze/thaw cycles) 10% of the Base Price per cubic yard will be deducted from the compensation for that particular Lot of concrete.

K. If the core temperature of the in situ concrete exceeds 160 deg F, the Engineer will evaluate concrete quality using cores taken from the concrete in question. The cores will be tested in accordance with ASTM C 42 and their compressive strength results will be used to calculate the PWL for payment adjustments.

TABLE 4

PERCENT OF LOT WITHIN TOLERANCE LIMIT (PWL)

(STANDARD DEVIATION METHOD)

Positive Values of Quality Index (QI)

(n = Number of Sublots in the Lot)

PWL	n=3	n=4	n=5	n=6	n=7	n=8
99	1.1541	1.4700	1.6714	1.8008	1.8888	1.9520
98	1.1524	1.4400	1.6016	1.6982	1.7612	1.8053
97	1.1496	1.4100	1.5427	1.6181	1.6661	1.6993
96	1.1456	1.3800	1.4897	1.5497	1.5871	1.6127
95	1.1405	1.3500	1.4407	1.4887	1.5181	1.5381
94	1.1342	1.3200	1.3946	1.4329	1.4561	1.4716
93	1.1269	1.2900	1.3508	1.3810	1.3991	1.4112
92	1.1184	1.2600	1.3088	1.3323	1.3461	1.3554
91	1.1089	1.2300	1.2683	1.2860	1.2964	1.3032
90	1.0982	1.2000	1.2290	1.2419	1.2492	1.2541
89	1.0864	1.1700	1.1909	1.1995	1.2043	1.2075
88	1.0736	1.1400	1.1537	1.1587	1.1613	1.1630
87	1.0597	1.1100	1.1173	1.1191	1.1199	1.1204
86	1.0448	1.0800	1.0817	1.0808	1.0800	1.0794
85	1.0288	1.0500	1.0467	1.0435	1.0413	1.0399
84	1.0119	1.0200	1.0124	1.0071	1.0037	1.0015
83	.9939	.9900	.9785	.9715	.9672	.9643
82	.9749	.9600	.9452	.9367	.9325	.9281
81	.9550	.9300	.9123	.9025	.8966	.8928
80	.9342	.9000	.8799	.8690	.8625	.8583
79	.9124	.8700	.8478	.8360	.8291	.8245
78	.8897	.8400	.8160	.8036	.7962	.7915
77	.8662	.8100	.7846	.7716	.7640	.7590
76	.8417	.7800	.7535	.7401	.7322	.7271
75	.8165	.7500	.7226	.7089	.7009	.6958
74	.7904	.7200	.6921	.6781	.6701	.6649
73	.7636	.6900	.6617	.6477	.6396	.6344
72	.7360	.6600	.6316	.6176	.6095	.6044
71	.7077	.6300	.6016	.5878	.5798	.5747
70	.6787	.6000	.5719	.5583	.5504	.5454
69	.6490	.5700	.5423	.5290	.5213	.5164
68	.6187	.5400	.5129	.4999	.4924	.4877
67	.5878	.5100	.4836	.4710	.4638	.4592
66	.5563	.4800	.4545	.4424	.4354	.4310
65	.5242	.4500	.4255	.4139	.4073	.4031
64	.4916	.4200	.3967	.3856	.3793	.3753
63	.4586	.3900	.3679	.3575	.3515	.3477
62	.4251	.3600	.3392	.3295	.3239	.3203
61	.3911	.3300	.3107	.3016	.2964	.2931
60	.3568	.3000	.2822	.2738	.2691	.2660
59	.3222	.2700	.2537	.2461	.2418	.2391
58	.2872	.2400	.2254	.2186	.2147	.2122
57	.2519	.2100	.1971	.1911	.1877	.1855
56	.2164	.1800	.1688	.1636	.1613	.1592
55	.1806	.1500	.1408	.1363	.1338	.1322
54	.1447	.1200	.1125	.1090	.1070	.1057

END OF SECTION

SECTION 03301

PORTLAND CEMENT CONCRETE, LONG FORM

APPENDIX "A"

SUBMITTALS

Submit the following in accordance with the requirements of "Shop Drawings, Catalog Cuts and Samples" of Division 1 - GENERAL PROVISIONS:

A. List of materials for Work of this Section.

B. Shop Drawings of forms and test pour details at least 15 calendar days before the test.

1. Proposed number, location and details of contraction, control, expansion and construction joints at least 15 days prior to concrete placement.

C. Catalog Cuts, Material Certification and Test Results

1. At least 35 calendar days prior to concrete placement, the following:

a. Name and address of proposed concrete supplier, type of plant, documentation of State Certification for plant and ready mix trucks, AASHTO Accreditation certification for the independent testing laboratory and certification for an on-site individual in a supervisory capacity from one of the programs specified in 3.03 A.

b. Material certifications, source, brand name and test results (where required) of cement, fine and coarse aggregate, fly ash, slag, silica fume, metakaolin and concrete admixtures following guidelines of Appendix "B". In addition, arrange for an independent testing laboratory to verify that Very High Early Strength Cement meets compressive strength, absolute drying shrinkage and setting time requirements specified in 2.02 B at the testing frequency specified therein.

c. Brand names and chemical compositions of form oil or release agents, evaporation retardant and liquid membrane curing compounds. For Architectural Concrete include this information also for forms, form liners and pigments.

d. Certification of compatibility and five-year performance record for liquid membrane forming curing compound, when used under conditions specified in 3.04 C, and the requirements of 2.02 R.2.

e. Test data and field use history for corrosion inhibitor admixtures (when specified on the Contract Drawings) as per 2.02 O.4:

(1) Manufacturer's test method to determine the concentration of the active component of the inhibitor.

(2) Procedures for the production of concrete mixes containing a corrosion inhibitor for the range of concrete temperatures from 50 deg F to 90 deg F and a procedure for the placement of concrete when a retarder is being used.

f. Certification that admixtures conform to the requirements of 2.02 M submitted with Appendix "B" "Concrete Materials and Mix Proportion Data". Include dosing and re-dosing charts, which shall demonstrate the effects of concrete temperatures from 50 deg F and 90 deg F.

g. A chemical analysis report of the percent by weight of silica fume solids by an approved independent testing laboratory when a wet slurry type of silica fume is being used.

h. Source of expansion and/or contraction joints.

i. Type, number and method of application of concrete vibrators.

D. Samples

1. Concrete ingredients for trial batches including cement, stone, sand, fly ash, slag, silica fume, metakaolin, admixtures, corrosion inhibitor, fibers, latex, pigment and anti-washout agent. Furnish these to the Engineer in whatever quantities he may require at least 35 days prior to concrete placement. This applies to all mixes, including changes to an approved mix.

2. At the request of the Engineer, submit cement, fly ash, slag and/or silica fume samples to check the Mill Certification at any time in accordance with 3.05 C.

3. For architectural concrete, provide two (2) sample panels (12" x 12" x 2" minimum size) for each mix for approval of color and texture. Provide catalog cuts for forms, form liners and form oil or release agents.

E. Construction Procedures and Quality Control Documents and Plans

1. At least 35 calendar days prior to concrete placement, the following:

a. Contractor's Quality Control Plan in accordance with 1.04 B.

b. Precast concrete fabricator's planned schedule for all production and a Quality Control Plan a minimum of 15 days prior to the commencement of production.

c. Cold and Hot Weather Concreting Plans in accordance with 1.03 of the Specification. Materials and methods for protecting concrete from freezing.

d. Pumping Procedure Plan, including, at a minimum, the pumping scheme, pump description, line diameter, line length and the number of turns and line offsets.

e. Written placement procedures that are in conformance with ACI 304R, Chapter 8 if concrete is being placed underwater.

f. Method of adding concrete admixtures, high range water reducers, non chloride accelerators, corrosion inhibitors, anti-washout agent, latex, fibers, pigment, slag, fly ash and silica fume.

g. Mixing and placement procedures and methods, as well as catalog cuts of equipment for installation. For hand mixes, submit the methods of proportioning, mixing (including minimum time requirements), transferring and placing the concrete.

h. Method of concrete placement in pipe piles (including elephant trunk size, length and material type).

i. Method of concrete placement and consolidation adjacent to joint assemblies and embedded hardware.

j. Curing Procedure Plan in accordance with 3.04, including the method and materials for curing.

k. Control Joint Location Plan.

l. Materials and procedures for filling cracks and patching honeycombs and/or spalls.

2. Daily copy of batch records in accordance with 1.04 A.1.a.

F. Concrete Mix Proportions

1. Appendix "B" "Concrete Materials and Mix Proportion Data" at least 35 calendar days prior to concrete placement in accordance with 2.03 A of the Specification. To substantiate the mix proportions, submit all data and field results in accordance with 2.03 A.

2. ACI Grade I certification for all personnel performing concrete testing.

3. Written request to the Engineer for approval if a change in the weights of fine and coarse aggregate and cement is required in the approved mix proportions.

G. For Information Only

1. Pre-concrete construction meeting agenda a minimum of 15 days prior to the scheduled date of the meeting.

2. Minutes of the pre-concrete construction meeting within 5 days of the meeting.

H. Design Computations

1. If required by the Engineer or noted on the Contract Drawings, have design computations signed and sealed by the Professional Engineer licensed in the state where Work is being done.

END OF APPENDIX "A"

SECTION 03301

PORTLAND CEMENT CONCRETE, LONG FORM

APPENDIX "B"

CONCRETE MATERIALS AND MIX PROPORTION DATA

A. Materials:

1. Cement: Type.....Source/Brand.....

2. Sand: Fineness Modulus.....Source.....

3. Stone: Size.....Class.....Source.....

4. Fly Ash: Type.....Source.....

5. Slag: Grade.....Source.....

6. Microsilica (Silica Fume): Source/Brand.....

7. Metakaolin: Source/Brand.....

8. Admixtures (Source/Brand):

   Air Entraining Agent.....

   Non-Chloride Accelerator.....

   Retarder.....

   Water Reducer.....

   Water Reducer - Retarder.....

   High Range Water Reducer.....

   High Range Water Reducer - Retarder.....

   Polycarboxylate High Range Water Reducer

   Anti-Washout Admixture.....

   Corrosion Inhibitor.....

   Latex.....

   Pigment.....

B. Mix Proportions

1. Proposed method of placement:.....Tremie/Mobile

.....Mixer/Transit Mixer/Portable Mixer/

Pumping/Tube Diameter:.....

2. Proportion of Ingredients:

Cement.....lbs./cu. yd.

Fly Ash.....lbs./cu. yd.

Slag.....lbs./cu. yd.

Silica Fume.....lbs./cu. yd.

Metakaolin.....lbs./cu. yd.

Pigment.....lbs./cu. yd.

Stone.....lbs./cu. yd.

Sand.....lbs./cu. yd.

Water.....lbs./cu. yd.....gallons

Air Entraining Agent:.....ounces/cu. yd.

Admixtures (specify type and amount):

.....at.....ounces/cu. yd.

.....at.....ounces/cu. yd.

.....at.....ounces/cu. yd.

.....at.....ounces/cu. yd.

3. Mix Properties:

Compressive Strength: f'c =.....psi at.....days/hours

Flexural Strength:.....psi at.....days/hours

Permeability at 28 days:.....Coulombs

Slump:.....inches

Water to Cementitious Ratio:.....

Air Entrainment:.....%

Sand/Stone Ratio:

Combined aggregate gradation chart (% retained on each sieve)

Unit Weight:.....lbs./cu. ft.

C. Conformance with ACI 318

Attach a report on mix proportion and test/statistical data documenting conformance with ACI 318, Chapter 5, or ACI 304R, Chapter 8, as they apply to the Work of the Contract.

D. Concrete Supplier/Batch Plant

1. Name:.....
2. Address:.....
3. Contact Name:.....
4. Telephone number/Fax number/E-mail address:.....
5. Quality Control technician(s):.....

   Name(s):.....

   Telephone number(s):.....

END OF APPENDIX "B"

DIVISION 3

SECTION 03364

PLACEMENT OF PORTLAND CEMENT CONCRETE UNDERWATER

PART 1. GENERAL

1.01 SUMMARY

This Section specifies requirements for placing Portland cement concrete in underwater locations by the tremie method or by direct pumping. Placement using pre-placed aggregate is not included in this Section. For requirements for furnishing Portland cement concrete see Section 03301, entitled PORTLAND CEMENT CONCRETE, LONG FORM.

1.02 REFERENCES

The following is a listing of the publications referenced in this Section:

American Concrete Institute (ACI)

ACI 304.2R	Placing Concrete by Pumping Methods

Port Authority Standard Specification sections:

#03301	Portland Cement Concrete, Long Form
#03200	Concrete Reinforcement
#03100	Concrete Formwork

1.03 ENVIRONMENTAL REQUIREMENTS

A. For Cold Weather Requirements see Section 03301, entitled PORTLAND CEMENT CONCRETE, LONG FORM.

B. For Hot Weather Requirements see Section 03301, entitled PORTLAND CEMENT CONCRETE, LONG FORM.

1.04 QUALITY ASSURANCE

A. The Contractor shall be responsible for the quality of the concrete and concrete construction. Quality of concrete will be evaluated by the Engineer, based on conformance with the requirements of this Section.

B. The Contractor shall provide labor and means for obtaining all samples of concrete required for tests and for curing and protecting concrete cylinders at the construction site.

C. When required by the Contract Drawings, the test placement shall be scheduled at least two weeks prior to production placement of concrete.

D. For formwork design and performance requirements see Section 03100 entitled Concrete Formwork.

1.05 SUBMITTALS

For submittals, see Appendix "A".

PART 2. PRODUCTS

2.01 MATERIALS

See Section 03301, entitled PORTLAND CEMENT CONCRETE, LONG FORM.

PART 3. EXECUTION

3.01 PREPARATION

A. Forms

1. Form materials and design shall be subject to approval by the Engineer and shall suit the requirements of the Work indicated on the Contract Drawings. Ensure structural adequacy of the forms under the action of environmental forces as well as forces due to placement of concrete.

2. Form Ties and Spreaders

   Use standard, non-corrosive metal form clamp assembly of type acting as spreaders and leaving no metal within one inch of concrete face. No wire ties, wood spreaders or through bolts will be permitted, except for wales, blocking or other accommodations when approved by the Engineer.

3. Form coating shall not be used.

4. Forms shall be mortar tight and shall provide a still water environment in the space to be filled with concrete. Side forms shall extend above top of concrete as required. A diver shall be engaged by the Contractor to monitor the placement of the concrete continuously and shall caulk any joints or leaks which show evidence of loss of mortar or cement such as in the form of a cloud of discoloration emanating from the form.

B. Standby Facilities

To ensure a continuous concrete placement, prior arrangements shall be made to have an alternate concrete plant on standby. Backup cranes, pumps and other equipment necessary to continue the placement shall be readily available on site. All standby facilities shall be subject to the same requirements as applicable to the primary facilities and shall be approved by the Engineer.

C. Tube Details

The word "tube" in this Section shall refer to either tremie tube or the pipe line, except where specific reference is made to either the tremie tube or the pipe line. The following types of end sealable, watertight tubes will be permitted:

1. End Plate Sealed Tubes: Loss of seal occurs when the embedded end of this tube is removed from the fresh concrete. Therefore, a separate tube is required at each deposition point. Plate sealed tubes shall not be relocated or removed until completion of the concrete placement.

2. End Valve Sealed Tubes: The seal is maintained even when the embedded end of this type is removed from the fresh concrete. Therefore, the number of tubes will depend on the placement rate. The valve shall be closed with the tube at least partially full of concrete, before the valved sealed tube is carefully removed and relocated without loss of seal.

3. Use of a "Go-devil" or "Pig" in lieu of end plate sealed tube will be permitted. However, as for the end plate sealed tube, a separate tube will be required at each deposition point. Tubes shall not be relocated or removed until completion of the concrete placement.

4. A pipeline may consist of hard pipe or flexible hose, but in order to facilitate reinsertion into the fluid concrete, should a loss of seal occur, its end shall be a hard pipe of a length that can be inserted into the forms.

5. Tubes shall be steel pipe, not aluminum, and shall be minimum one-quarter inch wall thickness (or stronger, if the depth of placement requires). Flexible pipe lines may be any material having the strength to resist the incident pumping pressure and the stiffness to permit insertion into form, reinsertion should a loss of seal occur and the handling incident to the placement procedure.

6. Diameter of tube shall be sufficient to permit unimpeded, smooth flow of concrete through the tube into final position.

7. Each tube shall be clearly marked to show the depth of its outlet. Underwater joints shall be watertight and capable of being easily disconnected and reconnected in 5 minutes or less under project placement conditions. The Engineer may require a demonstration of these requirements and shall be provided with a safe means of inspecting assembled tubes for watertightness prior to concrete placement.

8. A hopper or funnel of 1/2 cubic yard minimum capacity shall be provided to transfer concrete to the top of a tremie tube.

D. Pumping Equipment

Mixing and pumping equipment used in mixing and handling of pumped concrete shall be as approved by the Engineer. All oil and other rust inhibitors shall be removed from the mixing drums, stirring mechanisms and other portions of the equipment that would be in contact with the concrete before the mixers are used.

E. Construction and Expansion Joints

1. Vertical construction joints are permitted in order to accommodate the methods of placement proposed by the Contractor and approved by the Engineer. However, unless specifically permitted by the Engineer, these joints shall not be spaced closer than 30 feet.

2. Number, locations and details of construction joints shall be as shown on the approved shop drawings and shall include suitable keys and dowels.

3. Expansion joints if required, shall be located and detailed as shown on the Contract Drawings.

F. All dowels and steel which will be embedded in concrete shall be cleaned of all debris, marine growth, loose rust and oily deposits.

3.02 APPLICATION

A. General

Concrete placement shall be continuous and over the full height. Horizontal construction joints are not permitted, unless specifically shown on the Contract Drawings.

Placement shall begin at the tube which has its outlet at the lowest elevation.

All vertical movement of the tube shall be carefully regulated to prevent loss of seal. Horizontal movement of the tube is not permitted. The mouth of the tube shall, at all times, remain sufficiently immersed in the concrete so as to exert the necessary resistance on the pump to prevent vacuum build-up from causing blockage in the pipe line.

B. Use of a "Go Devil" or "Pig": Any floatable object which will not collapse under incident pressure and which prevents direct contact between fresh concrete and water in the tube may be used for starting the flow of concrete into the tube. For shallow depths, a semi-solid floatable object may be used as a plug. After the object has been forced to the bottom by concrete, the tube shall be slowly lifted just enough to expel the object, and quickly lowered upon expulsion. Use of a Go-Devil or Pig will not be permitted for restarting an interrupted placement operation.

C. Initial Start: The tube with end seal or "Pig" or "Go-Devil" shall be lowered to bottom of the proposed pour; the hopper and tube charged with concrete and the flow of concrete started as follows:

When a tremie tube is used - slowly raise the tube until the concrete flows out of the tube.

When a pipe line is used - start pumping, slowly increasing the pumping pressure until concrete flows out of the pipe line.

D. Control the rate of flow of concrete by slowly raising or lowering tremie tube or by adjusting the valve on the pipe line.

1. A power hoist or other device permitting control of the level of the end of the tube within two inches of the desired level shall be used to support and provide uniform control of the vertical movement.

2. Use of a crane to regulate vertical position of the end of the tube will not be permitted.

3. The operation of handling the tube shall be done off a fixed platform, not a floating platform.

E. During placement, the end of the tube should be maintained with an embedment of 3 to 5 feet in fresh concrete. If a blockage or loss of seal occurs, concrete placement shall cease immediately; the tube shall be withdrawn and restart procedure executed. Restart procedure may also be required if placement is interrupted for an hour or more. If it is feasible to clear the blockage without removing the tube, that maybe permitted if approved by the Engineer.

F. Restart Procedure: Same as for initial start except that the tube shall be sealed at the lower end; water evacuated and prevented from entering the tube and the initial placement of concrete shall be through an empty tube.

G. If concrete level in the tremie tube lowers to the vicinity of the bottom of the hopper, the concrete flow shall be slowed or stopped until the hopper is refilled except that where deep placement is involved, it will be permitted to maintain a concrete level below the hopper to prevent the weight from causing the tremie tube to penetrate the stiffening concrete below.

H. The tube may be raised and moved to another location if the mouth remains sealed and the tube at least partially filled with concrete.

I. Laitance Removal:

1. Remove laitance from top of submerged pour surfaces at horizontal construction joints (or cold joints) by use of waterjet and air lift or other device as may be dictated by the depth of water and approved by the Engineer.

2. If the concrete is to function as a seal and the top surface is to be uncovered by dewatering, remove laitance after dewatering by a suitable method approved by the Engineer.

J. Spacing of tubes: Unless tests are conducted which demonstrate that more liberal limits can be permitted with the specific mix and under the specific conditions which prevail, spacing of tubes in a concrete pour shall not exceed 15 ft. and the distance from the ends of the pour shall not exceed 7 ft. See Paragraph K below for special requirements.

K. Special procedures for placing concrete in facings for bulkheads or other walls:

1. Clean contact surfaces: Before installing forms, the surfaces of the existing wall, tie rods, anchorages and wales which will be in contract with the concrete shall be cleaned by a high pressure water jet or by brushing with a power operated wire brush to remove all grease, marine growth, loose wood splinters, deteriorated wood, loose concrete, or loose rust. Required jet velocity shall be sufficient to remove said materials.

2. Recleaning Contact Surfaces: After forms are in place, and just before placing concrete, clean interior of form by use of a rotating water jet. Overflow to remove displaced material.

3. Placing Concrete:

a. The concrete shall be placed by pumping using pipe lines of flexible hoses with hard pipe ends, with an air vent on the main supply line and under an air pressure sufficient to assure a smooth and continuous flow.

b. The discharge end of the pipe line shall be inserted into the form until the bottom is reached before any concrete is pumped into place. As the level of the concrete rises in the form, the discharge ends shall be slowly withdrawn, care being taken that the ends remain continuously immersed in the newly placed concrete. Kinking the hose or other possible causes of sudden surge in concrete flow shall be avoided. Concrete shall be placed in a smooth and continuous operation at a rate which will avoid damage to the forms and permit the concrete to flow along the length of the form to the adjacent discharge ends, and in such manner as to avoid segregation of the concrete. A manifold shall be provided on the hose leading from the concrete pump and sufficient number of hoses shall lead from the manifold into the form so that the discharge ends are spaced at intervals not to exceed 8 feet. Additional concrete pumps may be used in lieu of a manifold.

c. All concrete in place shall be free of voids, streaks, honeycombs, or other evidence of segregation for porous construction.

d. Build forms several inches higher than the required construction and with a removable top section to trap laitance. Scalp off the laitance after the concrete has set.

e. When appropriate during the placing of the concrete, the forms may be vibrated lightly on the outside to assure the complete filling of the form. The vibrating shall be done using equipment approved by the Engineer. Use of vibrators inside the form is not permitted.

L. The allowable lapse of time between mixing and placing of concrete shall be predetermined with the approval of the Engineer and carefully monitored during placement. The Engineer, at his discretion, may reject any mixed concrete that has not been placed within the time limit.

3.03 FIELD TESTS

See Section 03301, entitled PORTLAND CEMENT CONCRETE, LONG FORM.

END OF SECTION

SECTION 03364

PLACEMENT OF PORTLAND CEMENT CONCRETE UNDERWATER

SUBMITTALS

APPENDIX "A"

The following shall be submitted to the Engineer, except as otherwise noted.

A. Shop Drawings

1. As per Division 1 "Shop Drawings, Catalog Cuts and Samples".
2. Proposed locations and details of construction joints. Submit at least 15 days prior to concrete placement.
3. Formwork working drawings. Submit at least 21 days prior to ordering any material or constructing any formwork.
4. Test placement details. Submit at least 15 days before test placement.

B. Catalog Cuts

1. As per Division 1 "Shop Drawings, Catalog Cuts and Samples".

C. Samples

1. As per Division 1 "Shop Drawings, Catalog Cuts and Samples".
2. Formwork ties and spreaders. Submit at least 21 days prior to ordering any material.

D. Construction Procedure and Quality Assurance Documents

Submit the following at least 15 days prior to concrete placement.

1. Qualifications of labor and supervisory personnel for concrete placement.
2. Cold and/or hot weather concreting procedures.
3. Details of plant, equipment, tremie pipe/pipe line and procedures for concrete placement.
4. Details of standby facilities for concrete production and placement.
5. Proposed method of sealing and resealing of tremie pipe or pipe line.
6. Method of removing laitance from construction joints.
7. Placement procedures that are in conformance with ACI 304R, Chapter 8.

E. Design Computations

1. Formwork design calculations and catalog cuts. Submit at least 21 days prior to ordering any material or constructing any formwork.

F. Concrete Mix Design

1. Submit Appendix "B" – "Concrete Materials and Mix Design Data of Section 03301, entitled PORTLAND CEMENT CONCRETE, LONG FORM" at least 15 days prior to concrete placement.

END OF APPENDIX "A"

DIVISION 3

SECTION 03602

GROUTING (NON-METALLIC)

PART 1. GENERAL

1.01 SUMMARY

This Section specifies requirements for non-metallic, non-shrink, cement-based grouting.

1.02 REFERENCES

1.03 The following is a listing of the publications referenced in this Section:

American Society for Testing and Materials (ASTM)

ASTM C 109	Test Method for Compressive Strength of Hydraulic Cement Mortars
ASTM C 191	Test Method for Time of Setting of Hydraulic Cement by Vicat Needle
ASTM C 827	Test Method for Early Volume Change of Cementitious Mixtures

1.04 JOB CONDITIONS

1.05 Do not mix or place grout when the ambient temperature is below 40 degrees F or conditions indicate that the ambient temperature will fall below 40 degrees F within 72 hours, unless the areas to be grouted are enclosed and heated in an approved manner or otherwise approved by the Engineer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver grout in the manufacturer's sealed original bags or containers bearing the manufacturer's name and product identification, in a manner to prevent damage by breakage, water or moisture.

B. Store all material on platforms and cover as necessary to protect it from water and moisture.

C. Deliver, protect and handle all tools and equipment in a manner to prevent damage that may make them defective for the purpose for which they are intended.

1.07 SUBMITTALS

1.08 See Appendix "A" for Submittal Requirements.

PART 2. PRODUCTS

2.01 MATERIALS

A. Grout shall be one of the following:

1. "Masterflow 713" - manufactured by Master Builders
2. "Five Star Grout" - manufactured By U.S. Grout Corporation
3. "Euco N-S Grout" - manufactured by Euclid Chemical Co.

B. Grout shall be premeasured and prepacked by the manufacturer, requiring only addition of potable water for mixing.

PART 3. EXECUTION

3.01 PREPARATION

3.02 Areas to be grouted as shown on the Contract Drawings shall be cleaned of all foreign materials, to the satisfaction of the Engineer.

3.03 MIXING AND PLACING

A. Use only the crew trained by the manufacturer's representative.

B. Mix and place the grout in accordance with manufacturer's methods approved by the Engineer.

C. Placement shall be continuous to avoid cold joints and voids. Grout shall be rodded or spaded to prevent the formation of air pockets.

3.04 FIELD TESTS

A. The Engineer may take and test samples of the grout being placed in accordance with ASTM C 109, C 191 and C 827.

B. In the event that tests of the grout placed reveal any failure to meet requirements of this Section, the Engineer will require removal and replacement of all portions of grout from the batch from which the sample was taken and the discontinuance of grouting until the Contractor has demonstrated to the satisfaction of the Engineer that the causes for failure have been corrected.

END OF SECTION

SECTION 03602

GROUTING (NON-METALLIC)

APPENDIX "A"

SUBMITTALS

A. Submit to the Manager, Materials Engineering Division, Port Authority Technical Center, 241 Erie Street, Jersey City, NJ 07310-1397, a sample of the grout material for approval.

B. Submit manufacturer's instructions and methods for handling, storage, mixing and placing of the grout, for approval.

END OF APPENDIX "A"

PERMITS

PERMIT

Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
PORT AUTHORITY OF NEW YORK & NEW JERSEY
225 PARK AVE SOUTH
NEW YORK, NY 10003

Facility:
THE PORT AUTH OF NY & NJ-CITY-WIDE

NEW YORK
NEW YORK, NY

Facility Location: in SEVERAL COUNTIES in THIS REGION **Village:** New York City
Facility Principal Reference Point: NYTM-E: NYTM-N:
Latitude: Longitude:
Project Location: Surface waters, tidal wetlands, and regulated tidal wetlands adjacent areas.
Authorized Activity: Maintenance of Port Authority of New York & New Jersey waterfront structures within The City of New York, or elements thereof, as defined in the special conditions of this permit.

Permit Authorizations

Tidal Wetlands - Under Article 25
Permit ID 2-6500-00010/00004
Renewal Effective Date: 5/21/2008 Expiration Date: 5/21/2013
Water Quality Certification - Under Section 401 - Clean Water Act
Permit ID 2-6500-00010/00005
Renewal Effective Date: 5/21/2008 Expiration Date: 5/21/2013
Excavation & Fill in Navigable Waters - Under Article 15, Title 5
Permit ID 2-6500-00010/00006
Renewal Effective Date: 5/21/2008 Expiration Date: 5/21/2013

NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: JOHN F CRYAN, Regional Permit Administrator
Address: NYSDEC REGION 2 HEADQUARTERS
47-40 21ST ST
LONG ISLAND CITY, NY 11101 -5407

Authorized Signature: _____ Date ___/___/____

Permit Components

Issued Permit

NATURAL RESOURCE PERMIT CONDITIONS

WATER QUALITY CERTIFICATION SPECIFIC CONDITION

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following Permits: TIDAL WETLANDS; WATER QUALITY CERTIFICATION; EXCAVATION & FILL IN NAVIGABLE WATERS

1. **Conformance With Plans** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans were prepared by The Port Authority of New York & New Jersey or agent's of the Port Authority of New York & New Jersey.

2. **Scope of General Permit** Maintenance of waterfront structures, or elements thereof, of the Port Authority of New York & New Jersey within New York City including:

-piers, wharves, bridge piers and bridge pier protection cells, involving the following elements:
-piles (wood*, steel, concrete filled steel);
-pile caps;
-beams, fenders and walers;
-decking;
-timber or steel sheet bulkheads** (In place reconstruction limited to existing bulkhead);
-spalled concrete surfaces (repair by application of shotcrete);
-cathodic protection of metal surfaces;
-storm water outfall(s) - limited to in-place repair or replacement of an outfall(s) due to deterioration or to maintenance of the waterfront structure of which it is a part;
-repair, replacement or relocation of paved service roads within tidal wetland adjacent areas;
-repair or replacement of boat ramps and in-place (for security and emergency use only with no asphalt);
-aids to navigation - prior approval by and installed in accordance with the requirements of the U.S. Coast Guard.
-the mowing or cutting of vegetation leading to, or immediately adjacent to, facility structures such as aircraft navigation aids, manholes, fences, outfalls, roads, boat ramps, taxiways and runways where such vegetation hinders the operation of, or maintenance and security activities at, such structures.
-mowing or cutting to provide a vehicle access lane through the wetland adjacent area from an existing road to a structure, limited to a width of twelve feet along the route of least impact to site vegetation. Hand mowing or hand cutting adjacent to structures in wetlands, limited to a width of three feet on either side of the structure and a mowing height of six inches.

*including wrapping of piles to prevent or minimize deterioration (including manual side casting and replacement of sediment at the base of pile to facilitate placement of sheeting below the mudline).
*concrete jacketing (structural reinforcement) of damaged or deteriorated wood piles.
**excavation of incidental obstructions (rip rap, fill material) from the base of deteriorated bulkhead sections to facilitate maintenance work.
**replacement of rip rap underlain with geo-textile fabric at base of reconstructed bulkhead sections or under or adjacent to piers and wharves to re-establish structural stability.

3. **Definitions** **Maintenance:** The repair or in-place replacement of any functional waterfront structure provided that the structure is not to be put to uses differing from past uses or from those specified in prior permits. Minor deviations in the structure's configuration or filled area including those due to changes in materials, construction techniques, or current construction codes or safety standards which are necessary to make repair or replacement are permitted, provided the environmental impacts resulting from such repair are not significant.

Incidental: Occurring merely by chance or without intention or calculation, with minor consequence.

Minimal Impacts: Those that are consistent with a SEQR finding of no significant impacts.

Minor Deviations: Those changes to the in-place characteristics of the structure that are consistent with: a SEQR finding of no significant impacts; 6NYCRR Part 661.5 use category of GCP (generally compatible use-permit required); and applicable development restrictions contained in 6NYCRR Part 661.6.

Mowing or Cutting: The lowering of the height of vegetation by the use of mechanical or hand equipment, at a frequency and over an area required by routine operation, maintenance and security measures and programs for the structure. This approval does not allow for the removal of vegetation to mineral soil within a wetland area.

Repair: To bring back to or put back into a former or original state, including replacement in part or whole.

Replacement: The filling of a place once occupied by something lost, destroyed, deteriorated, or no longer usable or adequate.

Shotcrete: A quick setting mortar or concrete mix pneumatically conveyed through a hose and applied directly to vertical and overhead surfaces, being capable of supporting itself without sagging or sloughing; suitable for repair work and new construction.

4. **Regulated Activities Authorized By This Permit** This permit authorizes only those regulated activities/structures identified in Natural Resources Permit Condition 2. NYSDEC does not issue after-the-fact or as-built permits. This permit does not authorize activities, or legitimize the existence of structures, which would have required a permit but for which no permit or other authorization has been granted by NYSDEC.

5. **Notification to NYSDEC** Not less than fifteen (15) days prior to the start of work, The Port Authority of New York and New Jersey must provide one copy of the following items to: NYSDEC Division of Environmental Permits, 47-40 21st Street, Long Island City, New York 11101 (Attention: Regional Permit Administrator) and one copy of the following items to: NYSDEC Bureau of Marine Resources, 47-40 21st Street, Long Island City, New York 11101 (Attention: Marine Resources Program Manager).

a. Project Description

b. Work Schedule

c. Current color photographs showing the entire project site at low tide, including a photo

location/direction labeling plan.

d. Construction equipment to be used.

e. Project plans to scale which include the following:

1) Sediment/erosion controls methods/locations if any sediment/vegetation disturbance or fill placement is proposed.

2) Tidal wetland boundary, mean high water and mean low water line locations and elevations referenced to NAD 88.

3) Staging locations for storage of construction equipment/materials.

4) Temporary or permanent project limiting fence.

5) Access route for construction equipment.

6) Type(s) & volume(s) & source(s) of fill to be used if applicable.

7) North arrow

8) Property lines and names of adjacent landowners.

9) Dimensions of the work areas and limits of disturbance.

10) Name of preparer and date prepared.

11) Type(s) & size(s) of material proposed.

12) Existing grades.

13) Size(s) and amount(s) of rock rip rap if applicable.

6. **Post Construction Photographs** Within 30 days of the completion of work, Permittee must submit post-construction photographs of the work area to: NYSDEC Bureau of Marine Resources, 47-40 21st Street, Long Island City, New York 11101 (Attention: Marine Resources Program Manager).

7. **Best Management Practices** Best management practices must be employed to prevent the loss of construction materials, debris and sediments from entering the wetlands or waterways. Such practices may include, but are not limited to, construction fencing, staked hay bales, silt fencing, floating platforms, netting, containment booms.

8. **Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

9. **Concrete/Leachate Discharges Prohibited** During construction, concrete or leachate must not escape or be discharged, nor will washings from transit mix trucks, mixers, or other devices enter tidal

wetlands and or protected buffer areas or navigable waters.

10. Storage of Construction Equipment and Materials The storage of construction equipment and materials must be confined to within the project work site and or upland areas greater than 50 linear feet from the tidal wetland boundary.

11. Excavation for Bulkhead/Structure Prior to any construction or removal of bulkheads and other shoreline stabilization structures all backfill must be excavated landward of the structure and retained so as not to enter the waterway, tidal wetlands or protected buffer areas.

12. Complete Construction Before Backfilling Construction of all peripheral riprap berms, cofferdams, rock revetment, gabions, bulkheads, etc., must be completed prior to placement of any fill material behind such structures.

13. Clean Fill Material Only All fill material must consist of "clean" sand, gravel, or soil. The use of material such as asphalt, slag, fly-ash, broken concrete, or demolition debris is strictly prohibited.

14. Installation of Pilings All pilings must be driven in place. The jetting of pilings is prohibited.

15. Disturbance to Vegetated Tidal Wetland & Adjacent Areas Disturbance to vegetated tidal wetlands, tidal wetlands adjacent areas and protected buffer areas is limited only to mowing and cutting as per scope and definition contained in Natural Resource Permit Conditions 2 & 3.

16. No Floats, Ramps in Vegetated Tidal Wetlands Floats and ramps may not rest on or be stored in any vegetated tidal wetland.

17. Stabilize Disturbed Areas All areas of soil disturbance resulting from this project shall be stabilized immediately following project completion or prior to permit expiration, whichever comes first. The approved methodologies are as follows:

a. Stabilization of the entire disturbed area with appropriate vegetation (grasses, etc.).

b. Stabilized as per specifications identified on approved plans.

c. Temporarily stabilized with straw mulch or jute matting or other similar natural fiber matting within 1 week of final grading. Temporary stabilization shall be maintained until a mature vegetative cover is established.

18. Debris Removal Should any demolition or construction debris fall into the waterway or enter the tidal wetlands, it must be removed immediately.

19. Debris Disposal All demolition and construction debris must be properly disposed of a facility permitted to accept such materials.

20. Removal & Disposal of Debris/Excess Material Any debris or excess material from construction of this project must be completely removed from the adjacent area (upland) and removed to an approved upland area for disposal. No debris is permitted in tidal wetlands or tidal wetlands adjacent area or protected buffer areas or navigable waters.

21. Dewatering Prohibited Dewatering is prohibited without prior written approval from NYSDEC.

22. **In-Water Use of Wood Preservatives** a. Pressure treated wood used for construction of in-water structures must have been treated with a preservative and must have undergone a treatment process approved (stamped or otherwise marked as certified) by the American Wood Preservative Association.

b. Wood treated with Pentachlorophenol (PCP) must not be used in wetlands or surface waters.

c. Within Existing Marinas - Wood treated with creosote may only be used until January 1, 2010.

Any unused creosote treated wood must be disposed of in accordance with section 27-2505 of the Environmental Conservation Law at a specially authorized facility. The burning of creosote treated wood is strictly prohibited.

d. Chromated Copper Arsenate (CCA) pressure treated wood must be clean and free of CCA surface deposits. Wood with surface deposits must be washed for at least 5 minutes under running water prior to use. (Note the following condition for the handling of wash water.)

e. Any wood debris such as sawdust or wash water must not enter any water body, including wetlands, or protected buffer areas.

23. **Minimize Adverse Impacts to Wetlands, Wildlife, Water** All work must be performed in a manner which minimizes adverse impacts to wetlands, wildlife, water quality and natural resources.

24. **No Interference With Navigation** There shall be no unreasonable interference with navigation by the work herein authorized.

25. **Prior Approval of Changes** If the Permittee desires to make any changes in construction techniques, species to be planted, the site plan, any mitigation plan, scheduling or staging of construction, or any other aspect of this project, the Permittee shall submit a written request to the Regional Permit Administrator to make such proposed changes and shall not make such changes unless authorized in writing by the Department.

26. **Failure to Meet Permit Conditions** Failure of the permittee to meet all the conditions of this permit is a violation of this permit and grounds for an order to immediately cease the permitted activity at the project site.

27. **State May Require Site Restoration** If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

28. **State May Order Removal or Alteration of Work** If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the

owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

29. **State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

WATER QUALITY CERTIFICATION SPECIFIC CONDITIONS

1. **Water Quality Certification** The NYS Department of Environmental Conservation hereby certifies that the subject project will not contravene effluent limitations or other limitations or standards under Sections 301, 302, 303, 306 and 307 of the Clean Water Act of 1977 (PL 95-217) provided that all of the conditions listed herein are met.

GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. **Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. **Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. **Applications For Permit Renewals, Modifications or Transfers** The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC REGION 2 HEADQUARTERS
47-40 21ST ST
LONG ISLAND CITY, NY11101 -5407

4. **Submission of Renewal Application** The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Tidal Wetlands, Water Quality Certification, Excavation & Fill in Navigable Waters.

5. **Permit Modifications, Suspensions and Revocations by the Department** The Department reserves the right to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. **Permit Transfer** Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

(47)

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

(See Issuing Division below)

PERMIT*

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

Permit No. 0000-02-0033.1 [click here to insert FWW PERMIT No.]	Application No. 0000-02-0033.1

Issuance Date	Effective Date	Expiration Date
September 17, 2002	September 17, 2002	September 17, 2007

Name and Address of Applicant	Name and Address of Owner	Name and Address of Operator
Port Authority of NY & NJ 2 Gateway Center Newark, New Jersey 07102	Same as Applicant	Various Leases

Location of Activity/Facility *(Street Address)*	Issuing Division	Statute(s)
Port Newark / Port Elizabeth Port Jersey Lot: various Block : various	Office of Dredging and Sediment Technology	NJSA 12:5-3 NJSA 58:10A

Type of Permit	Maximum Approved Capacity, if applicable
Waterfront Development Water Quality Certificate	

This permit grants permission to:

Perform routine maintenance and repair work to the existing port facilities at Port Newark and Port Elizabeth (Berths 2 through 98, and at the Northeast Automobile Terminal at Port Jersey as needed during the five year term of this permit, including the following types of typical repair work:

1. repair / replace damaged or broken piles
2. repair / replace decking
3. repair / replace piles, pile caps and concrete beams
4. repair / replace sheet piling
5. repair / replace fender pilings, dolphins and fender systems
6. repair / replace existing subaqueous revetments

The extent of the port facilities and examples of typical repairs covered by this permit are shown on drawings 1 through 12 of 15 sheets titled, "THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY NEW JERSEY MARINE TERMINALS GENERAL MAINTENANCE AND REPAIR FOR BERTHS 2 THROUGH 98," and sheets 13 through 15 of 15 titled, "THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY NEW JERSEY MARINE TERMINALS AUTOMOBILE MARINE TERMINAL GENERAL MAINTENANCE AND REPAIR," dated July 12, 2002 and prepared by the Port authority of New York and New Jersey.

Prepared By: _____
Lawrence J. Baier

(See page [click here to insert LAST PAGE #] for Chief's signature.)

Revised Date	Approved by the Department of Environmental Protection
	Name (Print or Type) _____ Title _____
	Signature _____ Date _____

**The word permit means "approval, certification, registration, etc."*

(General Conditions are on Page Two)

This permit is subject to the following general conditions:

1. This permit is revocable, or subject to modification or change at any time, pursuant to the applicable regulations, when in the judgement of the Department of Environmental Protection of the State of New Jersey such revocation, modification or change shall be necessary.

2. The issuance of the permit shall not be deemed to affect in any way action by the Department of Environmental Protection of the State of New Jersey on any future application.

3. The works, facilities, and/or activities shown by plans and/or other engineering data, which are this day approved, subject to the conditions herewith established, shall be constructed and/or executed in conformity with such plans and/or engineering data and the said conditions.

4. No change in plans or specifications shall be made except with the prior written permission of the Department of Environmental Protection of the State of New Jersey.

5. The granting of this permit shall not be construed to in any was affect the title or ownership of property, and shall not make the Department of Environmental Protection or the State a party in any suit or question of ownership.

6. This permit does not waive the obtaining of Federal or other State or local government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained.

7. A copy of this permit shall be kept at the work site, and shall be exhibited upon request of any person.

8. In cases of conflict, the conditions of this permit shall supersede the plans and/or engineering data.

This permit is authorized under and in compliance with the Rules on Coastal Zone Management (N.J.A.C. 7:7E) governing: Navigation Channels (3.7), Ports (3.11), Filled Waters Edge (3.23), Special Urban Areas (3.43), Commercial Docks and Piers (4.2d), Port Use (7.9) and Coastal Engineering (7.11).

This permit is approved subject to, and in accordance with, all applicable Tidelands conveyances issued for the subject property. Issuance of this permit does not in any way relinquish the State's ownership interest in the subject property, if any exists. The project site is located on Tidelands Map No. 665-2160 and Newark Elizabeth Meadowlands.

This permit is issued subject to and provided that the following conditions can be met to the satisfaction of the Office of Dredging and Sediment Technology. All conditions must be met prior to construction unless otherwise specified. Compliance with Administrative conditions shall be determined once copies of all specified permits, certifications, plans, agreements, etc. have been received, not less than 30 days prior to construction, and approved by the Office of Dredging and Sediment Technology. All Physical Conditions are subject to on-site compliance inspection by the Bureau of Coastal and Land Use Enforcement. As per N.J.A.C. 7:7-1.4, you must notify the Bureau of Coastal and Land Use Enforcement, (P O Box 422, Trenton, New Jersey 08625), in writing at least 3 days prior to commencement of construction or site preparation.

This permit shall be RECORDED in the office of the County Clerk (the REGISTRAR OF DEEDS AND MORTGAGES in the applicable counties) in the county wherein the lands included in the permit are located within ten (10) days after the receipt of the permit by the applicant and verified notice shall be forwarded to the Land Use Regulation Program immediately thereafter.

This permit is NOT VALID until the permit acceptance form has been signed by the applicant, accepting and agreeing to adhere to all permit conditions, and returned to the Office of Dredging and Sediment Technology, 6th floor Assistant Commissioner's Suite, P.O. Box 028, Trenton, New Jersey 08625.

Administrative Conditions:

1. The permittee shall allow an authorized representative of the Department the right to inspect construction pursuant to N.J.A.C. 7:7-1.5.

2. The permittee shall provide the Office a copy of an Army Corps of Engineers authorization for this project.

3. The permittee shall obtain all appropriate local, state, and federal approvals.

4 At least two weeks prior to each individual repair project, the permittee shall submit plans to the Department showing the precise work to be performed. No formal written acknowledgement from the Department is required before that work proceeds, except that if the Department determines that the proposed work is outside of the scope of this authorization, the Department shall so notify the permittee within two weeks and a separate authorization shall be required.

Physical Conditions

1. This permit does not authorize any expansion of the existing facilities or structures, nor does it allow the placement of fill other than as backfill in strict compliance with this authorization or maintenance dredging activities.

2. This permit authorizes replacement structures only and does not authorize any new structures including sheet piling or bulkheads where those structures do not presently exist.

3. All replacement sheet piling or bulkheads shall be replaced entirely within 18 inches of the face of the existing structure, except that where corrugated materials are used such replacements shall be replaced entirely within 24 inches of the face of the existing structure.

Lawrence J. Baier, Chief
Office of Dredging and Sediment Technology

September 17, 2002
Date

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

NOV 19 2009

REPLY TO
ATTENTION OF:

Regulatory Branch-Eastern Permits Section

SUBJECT: Application No. NAN-2009-01238-EBU by Port Authority of New York & New Jersey

Dr. Marc Helman
Supervisor, Permits & Governmental Approvals
Environmental Engineering Unit
The Port Authority of New York & New Jersey
Two Gateway Center
Newark, New Jersey 07102

Dear Dr. Helman:

On October 29, 2009 the New York District Corps of Engineers received a request for Department of the Army authorization for the discharge of fill material into and/or the placement of structures in and over navigable waters of the United States for the maintenance of marine terminals, including sheet pile reinforcement at Port Newark/Elizabeth Marine Terminal and fender system repair at numerous locations at the Port Authority's marine facilities. The sites are located in the Newark Bay, in the Cities of Newark and Elizabeth, Essex and Union County, New Jersey; in the East River at the Borough of Brooklyn, Kings County, New York; and in the Hudson River at the Borough of Manhattan, New York County, New York.

Based on the information submitted to this office, and accomplishment of notification in accordance with the applicable federal requirements, our review of the project indicates that an individual permit is not required. It appears that the activities within the jurisdiction of this office could be accomplished under Department of the Army Nationwide General Permit Number 3. The nationwide permits are prescribed as an Issuance of Nationwide Permits in the Federal Register dated March 12, 2007 (FR Vol. 72, No. 47). The work may be performed without further authorization from this office provided the activity complies with the permit conditions listed in Section B, No. 3, Section C, any applicable New York District regional conditions, and any applicable regional conditions added by the State of New York, copies enclosed.

Special Conditions

1) **The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the**

permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2) **During the course of any work on the project site involving the dismantling, demolition, or removal of any structures in the waterway or sections of such structures, the permittee shall insure that an adequate debris containment boom is in place surrounding the work at all times, in such a manner as to prevent the discharge of members and appurtenances of such structures into the waterway. The permittee shall be responsible for the monitoring of the debris containment boom, and for the immediate correction of any deficiencies in the debris containment boom, at all times during such work. The permittee shall immediately report any deficiencies or failures in the containment of debris at the project site to the Harbor Supervision and Compliance Section of the New York District of the U.S. Army Corps of Engineers at 917-790-8419, and to the Vessel Traffic Service of the U.S. Coast Guard - Activities New York at 718-354-4088. The permittee shall further be responsible for clearing and disposing of debris impounded by the debris containment boom in a timely manner, and for the immediate retrieval of any floatable debris that enters the waterway from the project site.**

This determination covers only the work described in the submitted material. Any major changes in the project may require additional authorizations from the New York District.

Care should be taken so that construction materials, including debris, do not enter any waterway to become drift or pollution hazards. You are to contact the appropriate state and local government officials to ensure that the subject work is performed in compliance with their requirements.

Please note that this nationwide permit (NWP) verification is based on a preliminary jurisdictional determination (JD). A preliminary JD is not appealable. If you wish, prior to commencement of the authorized work you may request an approved JD, which may be appealed, by contacting the New York District, U.S. Army Corps of Engineers for further instruction. To assist you in this decision and address any questions you may have on the differences between preliminary and approved jurisdictional determinations, please review U.S. Army Corps of Engineers Regulatory Guidance Letter No. 08-02, which can be found at: http://www.usace.army.mil/CECW/Documents/cecwo/reg/rgls/rgl08-02.pdf

This verification is valid for a period of two years from the date of this letter, unless the nationwide permit is modified, reissued, or revoked. This verification will remain valid for two years from the date of this letter if the activity complies with the terms of any subsequent modifications of the nationwide permit authorization. If the nationwide permits are suspended, revoked, or modified in such a way that the activity would no longer comply with the terms and conditions of a nationwide permit, and the proposed activity has commenced, or is under contract to commence, the permittee shall have 12 months from the date of such action to complete the activity. All of the existing NWPs are scheduled to

be modified, reissued, or revoked March 18, 2012. It is incumbent upon you to remain informed of changes to the NWPs. We will issue a public notice when the NWPs are reissued.

Within 30 days of the completion of the activity authorized by this permit and any mitigation required by this permit, you are to sign and submit the attached compliance certification form to this office.

If any questions should arise concerning this matter, please contact Ms. Denise Butts, of my staff, at (917) 790-8513.

Sincerely,

Stacey M. Jensen
Acting Chief,
Eastern Permits Section

Enclosures

STATE OF NEW YORK
DEPARTMENT OF STATE
41 STATE STREET
ALBANY, NY 12231-0001

GEORGE E. PATAKI
GOVERNOR

March 27, 2003

RANDY A. DANIELS
SECRETARY OF STATE

Matthew Masters
Port Authority of New York & New Jersey
2 Gateway Center 14th Floor SW
Newark, NJ 07102

Re: F-2003-0239
U.S. Army Corps of Engineers/New York District Permit Application - Port Authority of NY & NJ - Structural repairs to fender systems at Port Authority Marine terminals in NY State waters
East River, New York City, Kings, Queens, Richmond Counties

General Concurrence

Dear Mr. Masters:

The Department of State received your Federal Consistency Assessment Form and consistency certification and supporting information for this proposal on March 20, 2003.

The Department of State has determined that this proposal meets the Department's general consistency concurrence criteria. Therefore, further review of the proposed activity by the Department of State is not required, nor is the Department's concurrence with an individual consistency certification for it.

When communicating with us regarding this matter, please contact us at (518) 474-6000 and refer to our file #F-2003-0239.

Sincerely,

Vance A. Barr
Coastal Resource Specialist
Consistency Review Unit

sm
c: COE/New York District - Marc Helman
NYSDEC/Region 2- John Cryan
NYC LWRP- Eddie Greenfield

GENERAL DECISION: NY20100003 04/23/2010 NY3

Date: April 23, 2010
General Decision Number: NY20100003 04/23/2010

Superseded General Decision Number: NY20080003

State: New York

Construction Types: Building, Heavy, Highway and Residential

Counties: Bronx, Kings, New York, Queens and Richmond
Counties in New York.

BUILDING & RESIDENTIAL CONSTRUCTION PROJECTS (includes single family homes and apartments up to and including 4 stories),
HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/12/2010
1	03/26/2010
2	04/16/2010
3	04/23/2010

ASBE0012-001 01/04/2010

	Rates	Fringes
Asbestos Workers/Insulator Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems	$ 51.38	28.87
HAZARDOUS MATERIAL HANDLER	$ 24.45	8.50

BOIL0005-001 01/01/2007

	Rates	Fringes
BOILERMAKER	$ 44.98	28.95+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Thanksgiving Day, Memorial Day, Independence Day, Labor Day and Good Friday, Friday after Thanksgiving, Christmas Eve Day and New Year's Eve

---

BRNY0001-001 07/01/2009

	Rates	Fringes
BRICKLAYER	$ 48.50	20.94
MASON - STONE	$ 55.34	22.13

BRNY0001-002 07/01/2009

	Rates	Fringes
Pointer, cleaner and caulker.....	$ 41.19	20.39

BRNY0003-001 07/01/2006

	Rates	Fringes
TERRAZZO FINISHER.....	$ 38.75	21.75
TERRAZZO WORKER/SETTER.....	$ 40.09	21.75

BRNY0004-001 07/01/2009

	Rates	Fringes
MARBLE SETTER.....	$ 50.53	24.00

BRNY0020-001 07/01/2009

	Rates	Fringes
MARBLE FINISHER.....	$ 41.30	23.83

BRNY0024-001 01/01/2010

	Rates	Fringes
BRICKLAYER		
MARBLE POLISHERS.....	$ 36.26	19.55

BRNY0052-001 06/08/2009

	Rates	Fringes
Tile Layer.....	$ 46.42	24.56

BRNY0088-001 06/08/2009

	Rates	Fringes
TILE FINISHER.....	$ 37.27	21.31

CARP0001-009 07/01/2008

	Rates	Fringes
Carpenters:		
Carpenters & Soft floor layers.....	$ 43.02	35.96

CARP0740-001 07/01/2005

	Rates	Fringes
MILLWRIGHT.....	$ 38.13	35.40

CARP1456-004 07/01/2008

	Rates	Fringes
Dock Builder & Piledrivermen		
DOCKBUILDERS...	$ 43.61	38.06

CARP1456-005 07/01/2008

	Rates	Fringes
Diver Tender.....	$ 39.18	38.06
Diver.....	$ 54.63	38.06

CARP1536-001 07/01/2003

	Rates	Fringes
Carpenters:		
TIMBERMEN.....	$ 34.47	26.05

ELEC0003-001 05/14/2009

	Rates	Fringes
ELECTRICIAN		
Electricians...	$ 49.00	34.81
Jobbing, and maintenance and repair work	$ 25.30	15.13+a

PAID HOLIDAYS:

a. New Years Day, Martin Luther King, Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Election Day, Thanksgiving Day, the day after Thanksgiving Day, and Christmas Day

---

ELEC1049-001 04/06/2008

QUEENS COUNTY

	Rates	Fringes
Line Construction (Substation and Switching structures pipe type cable installation and maintenance jobs or projects; Railroad electrical distribution/transmission systems maintenance (when work is not performed by railroad employees) Overhead and Underground transmission/distribution line work. Fiber optic, telephone cable and equipment)		

Groundman	$ 24.83	17.91
Heavy Equipment Operator	$ 33.10	17.91
Lineman and Cable Splicer	$ 41.38	17.91
Tree Trimmer	$ 23.06	9.84

---

* ELEV0001-002 03/17/2010

	Rates	Fringes
ELEVATOR MECHANIC		
Elevator Constructor	$ 51.47	23.605+a+b
Modernization and Repair	$ 40.93	23.455+a+b

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Good Friday, President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

b. PAID VACATION: An employee who has worked less than 5 years shall recieve vacation pay credit on the basis of 4% of his hourly rate for all hours worked; an employee who has worked 5 to 15 years shall receive vacation pay credit on the basis of 6% of his hourly rate for all hours worked; an employee who has worked 15 or more years shall receive vacation pay credit on the basis of 8% of his hourly rate for all hours worked.

ENGI0014-001 07/01/2009

	Rates	Fringes
Pavement equipment operator		
Asphalt Plants	$ 44.04	27.35+a
Asphalt roller	$ 52.55	27.35
Asphalt spreader	$ 54.03	27.35+a
Power Equipment Operator		
(HEAVY & HIGHWAY)		
GROUP 1	$ 70.63	27.35+a
GROUP 2	$ 57.77	27.35+a
GROUP 3	$ 59.69	27.35+a
GROUP 4	$ 58.22	27.35+a
GROUP 5	$ 57.02	27.35+a
GROUP 6	$ 54.64	27.35+a
GROUP 7	$ 55.69	27.35+a
GROUP 8	$ 54.03	27.35+a
GROUP 9	$ 52.81	27.35+a
GROUP10	$ 50.40	27.35+a
GROUP11	$ 46.89	27.35+a
GROUP12	$ 47.97	27.35+a
GROUP13	$ 48.40	27.35+a
GROUP14	$ 35.82	27.35+a
GROUP15	$ 33.07	27.35+a
Steel erector		
Compressors, Welding Machines	$ 35.03	27.35+a

Cranes, Hydraulic Cranes,		
2 drum derricks,		
Forklifts, Boom Trucks.....	$ 60.37	27.35+a
Three drum derricks.....	$ 62.92	27.35+a
Utility Laborer		
Horizontal boring rig.....	$ 51.24	27.35+a
Off shift compressors.....	$ 42.12	27.35+a
Utility Compressors.....	$ 32.85	27.35

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Tower crane

GROUP 2: Backhoes, power shovel, Hydraulic clam shells, moles and machines of a similar type

GROUP 3: Mine hoists and crane, etc. used as mine hoists

GROUP 4: Gradalls, keystones, cranes (with digging buckets), bridge cranes, trenching machines, vermeer cutter and machines of a similar nature

GROUP 5: Piledrivers, derrick boats, tunnel shovels

GROUP 6: All drills, and machines of a similar nature

GROUP 7: Back filling machines, cranes, mucking machines, dual drum pavers

GROUP 8: Mixers (concrete w/loading attachments), concrete pavers, cableways, land derricks, power house (low pressure units), concrete pumps

GROUP 9: Concrete plants, well drilling machines, stone crushers double drum hoist, power house (other than above)

GROUP 10: Concrete mixers

GROUP 11: Elevators

GROUP 12: Concrete breaking machine, Hoists (single drum), load masters, locomotive and dinkies over 10 tons

GROUP 13: Vibratory console

GROUP 14: Compressors (portable 3 or more in battery), tugger machine (caissons), well point pumps, chum drill

GROUP 15: Boilers, (high pressure, compressors (portable, single, or 2 in battery, not over 100' apart), pumps (river cofferdam and welding machines (except where arc is operated by members of local 15) push button machines, all engines irrespective of power (power pac) used to drive auxilliary equipment, air, hydraulic etc.

PREMIUMS ON CRANES (Crawler or Truck):
100' to 149' boom - add .50

150' to 249' boom - add .75
250' to 349' boom - add 1.00
350' to 450' boom - add 1.50

Premiums for Cranes on Steel Erection:
100' to 149' boom - add 1.75
150' to 249' boom - add 2.00
250' to 349' boom - add 2.25
350' to 450' boom - add 2.75
Tower crane - add 2.00

FOOTNOTE:
a. Paid Holidays: New Year's Day; Lincoln's Birthday; Washington's Birthday; Memorial Day; Independence Day; Labor Day; Veterans Day; Columbus Day; Election Day; Thanksgiving Day; and Christmas Day; provided the employee works one day the payroll week in which the holiday occurs.

ENGI0014-002 07/01/2009

	Rates	Fringes
Power Equipment Operator		
BUILDING & RESIDENTIAL		
GROUP 1	$ 56.58	27.35+a
GROUP 2	$ 60.04	27.35+a
GROUP 3	$ 54.58	27.35+a
GROUP 4	$ 49.47	27.35+a
GROUP 5	$ 36.56	27.35+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Double drum

GROUP 2: Stone derrick, cranes, hydraulic cranes, boom trucks

GROUP 3: 4 pole Hoist, Single Drum Hoists

GROUP 4: Fork lift, house cars, plaster (platform machine), plaster bucket, concrete pump and all other equipment used for hoisting material

GROUP 5: Compressors, welding machines (cutting concrete work), paint spraying, sand blasting, pumps (with the exclusion of concrete pumps), house car (settlement basis only), all engines irrespective of power (power pac) used to drive auxiliary equipment, air, hydraulic, etc., boilers

Premiums for Cranes:
100'-149' boom - add 1.75
150'-249' boom - add 2.00
250'-349' boom - add 2.25
350'-450' boom - add 2.75
Tower cranes add 2.00

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Lincoln's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Columbus Day, Election Day, Thanksgiving Day, and Christmas Day, provided the employee works one day in the payroll week in which the holiday occurs

---

IRON0040-002 07/01/2009

BRONX, NEW YORK, RICHMOND

	Rates	Fringes
IRONWORKER, STRUCTURAL.....	$ 41.05	43.91

IRON0046-003 07/01/2009

	Rates	Fringes
IRONWORKER		
METALLIC LATHERS.....	$ 39.00	41.37

IRON0197-001 07/01/2009

	Rates	Fringes
IRONWORKER		
STONE DERRICKMAN.....	$ 40.50	38.32

IRON0361-002 07/01/2009

KINGS, QUEENS

	Rates	Fringes
Ironworkers:		
(STRUCTURAL).....	$ 41.05	43.91

IRON0580-001 01/01/2009

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	$ 39.85	39.67

LABO0006-001 07/01/2003

	Rates	Fringes
Laborers:		
BUILDING CONSTRUCTION CEMENT AND CONCRETE WORKERS.....	$ 31.50	15.27

LABO0029-001 07/01/2001

	Rates	Fringes
Laborers:		

Heavy		
Blasters (hydraulic trac drill)	$ 32.08	16.70
Blasters	$ 31.53	16.70
Hydraulic Trac Drill	$ 28.38	16.70
Jackhammers, Chippers, Spaders, Concrete Breakers, All Other Pneumatic Tools, Walk Behind Self-Propelled Hydraulic Asphalt and Concrete Breaker	$ 27.14	16.70
Powder Carriers	$ 24.50	16.70
Wagon; Airtrac; Quarry Bar Drill Runners	$ 27.83	16.70

LABO0078-001 12/01/2009

	Rates	Fringes
LABORERS		
BUILDING CONSTRUCTION		
ASBESTOS (Removal, Abatement, Encapsulation or Decontamination of asbestos); LEAD; & HAZARDOUS WASTE LABORERS (Hazardous Waste, Hazardous Materials, Biochemical and Mold Remediation, HVAC, Duct Cleaning, Re-spray Fireproofing, etc)	$ 31.50	12.45

LABO0079-001 07/01/2009

	Rates	Fringes
Laborers Building Construction		
Demolition Laborers		
Tier A	$ 30.38	18.91
Tier B	$ 20.74	12.41
Mason Tenders	$ 32.99	20.56

CLASSIFICATIONS

TIER A: Responsible for the removal of all interior petitions and structural petitions that can consist of sheet rock, block or masonry. Also, all structural slab openings for ducts, mechanical, shafts, elevators, slab openings and exterior walls where the building is not being completely demolitioned.

TIER B: Responsible for shoveling of debris into containers, pushing containers from the inside to the outside of the building.

LABO0147-001 07/01/2003

	Rates	Fringes
Laborers:		
LABORERS	$ 28.86	30.51

FREE AIR TUNNEL WORKERS Tunnel Workers (including Maintenance Men, Inside Muck Lock Tenders, Pump Men, Electricians, Cement Finishers, Caulkers, Hydraulic Men, Shield Men, Monorail Operators, Motor Men, Conveyor Men, Powder Carriers, Pan Men, Riggers, Chuck Tenders, Track Men Painters, Nippers, Brakemen, Cable Men, Hose Men, Grout Men, Gravel Men, Form Workers, Concrete Workers, Tunnel Laborers, Mole Nipper (one (1) Mole Sipper per Working Shaft per Shift for up to and including Two (2) Moles)

LABO0731-001 07/01/2009

	Rates	Fringes
Laborers:		
Building, Heavy and Residential Construction		
UNSKILLED	$ 36.64	26.21
UTILITY LABORER	$ 36.49	26.21
Heavy & Highway Construction		
LABORER/EXCAVATION (Asbestos, Lead, Hazardous Waste Removal (including soil)	$ 36.64	26.21

Paid Holidays: Labor Day and Thanksgiving Day

LABO1010-001 07/01/2001

	Rates	Fringes
Laborers:		
HIGHWAY CONSTRUCTION		
Fence Installer & Repairer	$ 28.84	15.55+a
FORMSETTERS	$ 32.04	15.55+a
LABORERS	$ 28.94	15.55+a
Landscape Planting & Maintenance	$ 28.84	15.55+a
Maintenance Safety Surface	$ 28.44	15.55+a
Slurry/Sealcoater/Play Equipment Installer	$ 28.69	15.55+a
Small Equipment Operator (Not Operating Engineer)	$ 28.94	15.55+a
Small Power Tools Operator	$ 28.44	15.55+a

FOOTNOTES:

a. PAID HOLIDAYS: Memorial Day, Fourth of July, Labor Day,

Columbus Day, Election Day and Thanksgiving Day, provided the employee has worked one (1) day in the calendar week in which the said holiday occurs.

LABO1018-001 07/01/2001

	Rates	Fringes
Laborers:		
Asphalt Rakers	$ 32.36	15.55+a
Asphalt Tampers	$ 29.92	15.55+a
Landscape Planting & Maintenance Fence Installer/Maintenance	$ 29.81	15.55+a
Line Striping Installers	$ 29.56	15.55+a
Play Equipment/Safety Surface Installer	$ 29.31	15.55+a
Screedman/Micropaver	$ 32.73	15.55+a
Shoveler, General Laborers/ All other incidental work	$ 29.81	15.55+a
Slurry/Sealcoater	$ 29.31	15.55+a
Small Equipment Operator	$ 29.56	15.55+a

FOOTNOTE:
a. Paid Holidays: Memorial Day, Independence Day, Labor Day, Columbus Day, Election Day, Veterans Day, and Thanksgiving Day

---

PAIN0009-001 05/01/2009

	Rates	Fringes
GLAZIER	$ 39.00	31.94
Painters:		
Painters, Drywall Finishers, Lead Abatement Worker	$ 34.50	19.84
Spray, Scaffold and Sandblasting	$ 37.50	19.84

PAIN0806-001 10/01/2009

	Rates	Fringes
Painters:		
Structural Steel and Bridge	$ 45.50	28.76

PAIN1974-001 07/01/2009

	Rates	Fringes
Painters:		
Drywall Tapers/Pointers	$ 41.32	20.81

PLAS0260-001 07/01/1999

BRONX, NEW YORK AND RICHMOND COUNTIES:

	Rates	Fringes
PLASTERER	$ 27.91	15.55

PLAS0260-002 07/01/1999

KINGS AND QUEENS COUNTIES

	Rates	Fringes
PLASTERER	$ 27.91	15.16

PLAS0530-001 08/03/2005

	Rates	Fringes
PLASTERER		
DRYWALL PLASTERERS	$ 37.03	18.30

PLAS0780-001 07/01/2009

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 47.50	26.50

PLUM0001-001 07/01/2009

	Rates	Fringes
PLUMBER		
MECHANICAL EQUIPMENT AND SERVICE		
Any repair and/or replacement of the present plumbing system that does not change the existing roughing	$ 31.61	14.45
PLUMBERS:	$ 49.11	35.26

PLUM0638-001 07/05/2006

	Rates	Fringes
PLUMBER		
SERVICE FITTERS	$ 26.30	2.55
SPRINKLER FITTERS, STEAMFITTERS	$ 43.82	32.72

Service Fitter work shall consist of all repair, service and maintenance work on domestic, commercial and industrial refrigeration, air conditioning and air cooling, stoker and oil burner apparatus and heating apparatus etc., including but not exclusively the charging, evacuation, leak testing and assembling for all machines for domestic, commercial and industrial refrigeration, air conditioning and heating

apparatus. Also, work shall include adjusting, including capacity adjustments, checking and repairing or replacement of all controls and start up of all machines and repairing all defects that may develop on any system for domestic, commercial and industrial refrigeration and all air conditioning, air cooling, stoker and oil burner apparatus and heating apparatus regardless of size or type.

ROOF0008-003 07/01/2008

	Rates	Fringes
ROOFER, Including Built Up, Composition and Single Ply Roofs	$ 36.25	26.34

SHEE0028-002 07/30/2009

	Rates	Fringes
Sheet metal worker	$ 45.40	37.40

TEAM0282-001 07/01/2009

	Rates	Fringes
Truck drivers:		
TRUCK DRIVERS:		
Asphalt	$ 35.40	29.2025+a+b
Euclids & Turnapulls	$ 35.50	29.2025+a+b
High Rise	$ 42.21	29.2025+a+b

FOOTNOTES:

PAID HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Election Day, Veterans' Day (Armistice Day), Thanksgiving Day and Christmas Day. Employees working two (2) days in the calendar week in which a holiday falls are to be paid for such holiday, provided that they shape each remaining workday during such calendar week.

b. VACATION: For each 15 days worked within the contract year an employee will receive one day's vacation with pay with a maximum vacation of 3 weeks per year.

TEAM0813-001 12/01/1998

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 19.49	3.61+a
GROUP 2	$ 19.76	3.61+a
GROUP 3	$ 19.90	3.61+a
GROUP 4	$ 20.23	3.61+a
GROUP 5	$ 20.40	3.61+a
GROUP 6	$ 21.29	3.61+a

GROUP 7.....$ 22.40 3.61+a
GROUP 8.....$ 19.90 3.61+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Martin Luther King, Jr.'s Birthday, Presidents' Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Thanksgiving Day, Christmas Day, Employee's Birthday, Two (2) Personal Days, and any holiday or day of mourning proclaimed as such by the State or Federal Government.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Closed body trucks with self contained loading unit up to and including 22 yard capacity

GROUP 2: Open trucks, rack body or trucks with no self contained mechanical loading device, up to 22 yard capacity. One-container tractor hoist

GROUP 3: 10 wheel, open trucks, container loaders, dino-master, over-cab loaders, rack body trucks, or any trucks 22 yards to and including 25 yards capacity

GROUP 4: Rubbish and garbage trucks, 26 yards to and including 31 yards

GROUP 5: Single axle working non-compactor containers up to 15 yards capacity on rubbish and garbage removal

GROUP 6: Roll-off trucks up to and including 42 yard capacity

GROUP 7: Roll-off truck with more than 42 yard capacity or any tractor trailer trucks

GROUP 8: One-container tractor hoist on construction and alteration debris removal

---

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION

GENERAL DECISION: NJ20100070 07/09/2010 NJ70

Date: July 9, 2010
General Decision Number: NJ20100070 07/09/2010

Superseded General Decision Number: NJ20080070

State: New Jersey

Construction Type: Heavy

County: Union County in New Jersey.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/12/2010
1	03/19/2010
2	03/26/2010
3	07/09/2010

BRNJ0004-001 11/01/2009

	Rates	Fringes
BRICKLAYER (Cement Mason).....	$ 36.70	23.47

CARP0006-009 05/01/2009

	Rates	Fringes
CARPENTER (Scaffold Builder).....	$ 39.45	49.75%

The first sixty feet at the regular rate, 10% per hour additional for each additional fifty feet thereafter.

CARP0006-013 05/01/2009

	Rates	Fringes
CARPENTER (Including Form Work).....	$ 39.45	49.75%

The first sixty feet at the regular rate, 10% per hour additional for each additional fifty feet thereafter.

CARP0715-007 05/01/2009

	Rates	Fringes
Millwright.....	$ 40.27	49.75%

Work of erection and dismantling of elevators and towers, such as concrete conveyors and temporary material elevators, scaffolding or other structures to be used as scaffolding inside or outside of buildings: the first sixty

feet at the regular rate, 10% per hour additional for each additional fifty feet thereafter.

ELEC0102-026 06/01/2009

	Rates	Fringes
ELECTRICIAN		
Cable splicer	$ 51.55	51.25%
Electrician	$ 46.86	51.25%

Work forty ft. or more above the ground or protective rigging (does not apply to pole work, or to use of a manlift or high reach-type lift): 10% per hour additional.

Work with, or the removal of, asbestos materials: 114% times the journeyman rate.

---

* ENGI0825-021 07/01/2010

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 41.02	25.75
GROUP 2	$ 39.43	25.75
GROUP 3	$ 37.52	25.75
GROUP 4	$ 35.89	25.75
GROUP 5	$ 34.18	25.75

Hazardous waste removal work:
Work on a state or federally designated hazardous waste site, where the worker is in direct contact with hazardous material, and when personal protective equipment is required for respiratory, skin and eye protection: 20% per hour additional.

PAID HOLIDAYS:
New Year's Day, Washington's Birthday observed, Memorial Day, Independence Day, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day and Christmas Day; provided 1) that the worker works three of the preceding five work days before the holiday; or, the work day before the holiday and the work day after the holiday; and, 2) that the worker works the work day before and the work day after the holiday.

DEFINITION OF GROUPS:

GROUP 1:
Backhoe, Including Backhoe Track; Boom; Concrete Paving Machine; Crane (all types, including overhead and straddle traveling type); Drill (down-the-hole drill, rotary drill, self-propelled hydraulic drill, self-powered drill); Elevating Grader; Excavator; Front End Loader (5 cu. yd. and over); Piledriver (length of boom, including length of leads, shall determine premium rate applicable)

GROUP 2:
Backhoe Loader Combo; Concrete Pumper; Grader/Blade (Finish); Hoist; Hydraulic Crane, 10 Tons and under; Front End Loader (2 cu. yd. but less than 5 cu. yd.); Scraper; Side Boom

GROUP 3:
Asphalt Spreader; Bulldozer; Compressor(2 or 3) (in Battery) (within 100 ft.); Crusher; Forklift; Front End Loader (1 cu. yd. and over but less than 2 cu. yd.); Lull; Mechanic; Paver, Asphalt; Roller, Blacktop; Tractor;

GROUP 4:
Broom; Compressor (Single); Farm Tractor; Front End Loader (under 1 cu. yd.); Roller, Grade; Pump

GROUP 5:
Oiler

IRON0011-012 07/01/2009

	Rates	Fringes
Ironworkers:		
Reinforcing	$ 34.34	35.60
Structural, Ornamental	$ 37.14	35.60

LABO0172-007 03/01/2010

	Rates	Fringes
Laborers:		
Landsacpe Laborer, Power Tool Operator	$ 30.85	20.40
Pipelayer	$ 31.55	20.40

Hazardous waste removal work:
Work on a state or federally designated hazardous waste site, where the worker is required to wear Level A, B or C personal protection: $3.00 per hour additional.

Work on a state or federally designated hazardous waste site, where the worker is not required to wear Level A, B, or C personal protection: $1.00 per hour additional.

PAID HOLIDAYS:
New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day and Christmas Day; provided that the worker works three days for the same employer within a period of ten working days consisting of five working days before and five working days after the day upon which the holiday falls or is observed.

LABO0222-013 05/01/2009

	Rates	Fringes

LABORER
MASON TENDER:
Cement/Concrete.....$ 28.55 19.42

PAIN0711-023 05/01/2009

	Rates	Fringes
Painters:		
Work on bridges (Major Bridges Designed for Commercial Navigation).....	$ 46.50	19.13

PAIN0711-024 11/01/2008

	Rates	Fringes
Painters:		
New Construction		
Brush and roller.....	$ 34.47	16.14
Spray.....	$ 37.92	16.14
Steel.....	$ 35.81	16.30
Repaint work, on projects on which no major alterations occur.		
Brush and roller.....	$ 26.67	13.80
Spray.....	$ 29.34	13.80
Steel.....	$ 27.74	13.93

PLUM0475-020 11/01/2009

	Rates	Fringes
PIPEFITTER.....	$ 48.43	23.77

SUNJ2004-041 01/02/2009

	Rates	Fringes
LABORER: Common or General.....	$ 26.73	13.67

TEAM0408-003 05/01/2008

	Rates	Fringes
TRUCK DRIVER		
Dump Truck.....	$ 33.00	12.16+a
Off the Road Truck, Flatbed Truck, Pickup Truck, Vacuum Truck.....	$ 32.85	12.16+a

a. Employer contributes $1304.35 per month per worker for health and welfare.

Hazardous waste removal work, where the worker is in direct contact with hazardous material, and when personal

protective equipment is required for respiratory, skin and eye protection: $3.00 per hour additional.

Hazardous waste removal work, where the worker is working in a hazardous waste site, in a zone requiring Level A personal protection for any of the workers: $3.00 per hour additional.

Hazardous waste removal work, where the worker is not working in a zone requiring Level A, B or C personal protection: $1.00 per hour additional.

PAID HOLIDAYS:
New Year's Day, President's Day, Decoration Day, Independence Day, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day and Christmas Day; provided that the worker has been assigned to work, or, "shapes", one day of the calendar week during which the holiday occurs.

TEAM0469-009 05/01/2008

Union County (South of Wood Ave.)

	Rates	Fringes
Truck drivers:		
Dump Truck.....	$ 33.00	19.185
Off the Road Truck, Flatbed Truck, Pickup Truck, Vacuum Truck.....	$ 32.85	19.185

Hazardous waste removal work:
Work on a state or federally designated hazardous waste site, where the worker is in direct contact with hazardous material, and when personal protective equipment is required for respiratory, skin and eye protection: $3.00 per hour additional.

Work on a state or federally designated hazardous waste site, in a zone requiring Level A personal protection for any workers other than the truck driver: $3.00 per hour additional.

Work on a state or federally designated hazardous waste site where the worker is not working in a zone requiring Level A, B or C personal protection: $1.00 per hour additional.

PAID HOLIDAYS:
New Year's Day, President's Day, Decoration Day, Independence Day, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day and Christmas Day.

VACATION PAY CREDIT:
Workers working or receiving pay for 80 days within a year receive one week paid vacation (48 hours); 125 days receive two weeks paid vacation (96 hours); 145 days receive 15

days paid vacation (120 hours); 15 years seniority and 145 days receive 4 weeks paid vacation (160 hours).

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in he matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

GENERAL DECISION: NJ20100057 07/09/2010 NJ57

Date: July 9, 2010
General Decision Number: NJ20100057 07/09/2010

Superseded General Decision Number: NJ20080057

State: New Jersey

Construction Type: Heavy

County: Essex County in New Jersey.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/12/2010
1	03/19/2010
2	03/26/2010
3	07/09/2010

BRNJ0004-001 11/01/2009

	Rates	Fringes
BRICKLAYER (Cement Mason).....	$ 36.70	23.47

CARP0006-009 05/01/2009

	Rates	Fringes
CARPENTER (Scaffold Builder).....	$ 39.45	49.75%

The first sixty feet at the regular rate, 10% per hour additional for each additional fifty feet thereafter.

CARP0006-013 05/01/2009

	Rates	Fringes
CARPENTER (Including Form Work).....	$ 39.45	49.75%

The first sixty feet at the regular rate, 10% per hour additional for each additional fifty feet thereafter.

CARP0715-007 05/01/2009

	Rates	Fringes
Millwright.....	$ 40.27	49.75%

Work of erection and dismantling of elevators and towers, such as concrete conveyors and temporary material elevators, scaffolding or other structures to be used as scaffolding inside or outside of buildings: the first sixty

feet at the regular rate, 10% per hour additional for each additional fifty feet thereafter.

ELEC0164-008 06/02/2008

	Rates	Fringes
ELECTRICIAN		
Cable splicer	$ 54.00	54%
Electrician	$ 47.37	54%

Work on line voltage of 440 or 480 volts: 10% per hour additional.

Work from trusses, scaffolds, frames, ladders and poles, 40 ft. or more above the ground or floor (does not include work from a manlift): 20% per hour additional.

Work on radio towers, transmission towers and smokestacks: 21% per hour additional.

---

* ENGI0825-021 07/01/2010

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 41.02	25.75
GROUP 2	$ 39.43	25.75
GROUP 3	$ 37.52	25.75
GROUP 4	$ 35.89	25.75
GROUP 5	$ 34.18	25.75

Hazardous waste removal work:
Work on a state or federally designated hazardous waste site, where the worker is in direct contact with hazardous material, and when personal protective equipment is required for respiratory, skin and eye protection: 20% per hour additional.

PAID HOLIDAYS:
New Year's Day, Washington's Birthday observed, Memorial Day, Independence Day, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day and Christmas Day; provided 1) that the worker works three of the preceding five work days before the holiday; or, the work day before the holiday and the work day after the holiday; and, 2) that the worker works the work day before and the work day after the holiday.

DEFINITION OF GROUPS:

GROUP 1:
Backhoe, Including Backhoe Track; Boom; Concrete Paving Machine; Crane (all types, including overhead and straddle traveling type); Drill (down-the-hole drill, rotary drill, self-propelled hydraulic drill, self-powered drill); Elevating Grader; Excavator; Front End Loader (5 cu. yd.

and over); Piledriver (length of boom, including length of leads, shall determine premium rate applicable)

GROUP 2:
Backhoe Loader Combo; Concrete Pumper; Grader/Blade (Finish); Hoist; Hydraulic Crane, 10 Tons and under; Front End Loader (2 cu. yd. but less than 5 cu. yd.); Scraper; Side Boom

GROUP 3:
Asphalt Spreader; Bulldozer; Compressor(2 or 3) (in Battery) (within 100 ft.); Crusher; Forklift; Front End Loader (1 cu. yd. and over but less than 2 cu. yd.); Lull; Mechanic; Paver, Asphalt; Roller, Blacktop; Tractor;

GROUP 4:
Broom; Compressor (Single); Farm Tractor; Front End Loader (under 1 cu. yd.); Roller, Grade; Pump

GROUP 5:
Oiler

IRON0011-012 07/01/2009

	Rates	Fringes
Ironworkers:		
Reinforcing	$ 34.34	35.60
Structural, Ornamental	$ 37.14	35.60

LABO0172-009 03/01/2010

	Rates	Fringes
Laborers:		
Common or General Laborer; Landsacpe Laborer, Power Tool Operator	$ 30.85	20.40
Pipelayer	$ 31.55	20.40

Hazardous waste removal work:
Work on a state or federally designated hazardous waste site, where the worker is required to wear Level A, B or C personal protection: $3.00 per hour additional.

Work on a state or federally designated hazardous waste site, where the worker is not required to wear Level A, B, or C personal protection: $1.00 per hour additional.

PAID HOLIDAYS:
New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day and Christmas Day; provided that the worker works three days for the same employer within a period of ten working days consisting of five working days before and five working days after the day upon which the holiday falls or is observed.

LABO0222-013 05/01/2009

	Rates	Fringes
LABORER		
MASON TENDER:		
Cement/Concrete.....	$ 28.55	19.42

PAIN0711-023 05/01/2009

	Rates	Fringes
Painters:		
Work on bridges (Major Bridges Designed for Commercial Navigation).....	$ 46.50	19.13

PAIN0711-024 11/01/2008

	Rates	Fringes
Painters:		
New Construction		
Brush and roller.....	$ 34.47	16.14
Spray.....	$ 37.92	16.14
Steel.....	$ 35.81	16.30
Repaint work, on projects on which no major alterations occur.		
Brush and roller.....	$ 26.67	13.80
Spray.....	$ 29.34	13.80
Steel.....	$ 27.74	13.93

PLUM0475-020 11/01/2009

	Rates	Fringes
PIPEFITTER.....	$ 48.43	23.77

TEAM0408-003 05/01/2008

	Rates	Fringes
TRUCK DRIVER		
Dump Truck.....	$ 33.00	12.16+a
Off the Road Truck, Flatbed Truck, Pickup Truck, Vacuum Truck.....	$ 32.85	12.16+a

a. Employer contributes $1304.35 per month per worker for health and welfare.

Hazardous waste removal work, where the worker is in direct contact with hazardous material, and when personal protective equipment is required for respiratory, skin and eye protection: $3.00 per hour additional.

Hazardous waste removal work, where the worker is working in a hazardous waste site, in a zone requiring Level A personal protection for any of the workers: $3.00 per hour additional.

Hazardous waste removal work, where the worker is not working in a zone requiring Level A, B or C personal protection: $1.00 per hour additional.

PAID HOLIDAYS:
New Year's Day, President's Day, Decoration Day, Independence Day, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day and Christmas Day; provided that the worker has been assigned to work, or, "shapes", one day of the calendar week during which the holiday occurs.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in he matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries

of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

GENERAL DECISION: NJ20100059 07/09/2010 NJ59

Date: July 9, 2010
General Decision Number: NJ20100059 07/09/2010

Superseded General Decision Number: NJ20080059

State: New Jersey

Construction Type: Heavy

County: Hudson County in New Jersey.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/12/2010
1	03/19/2010
2	03/26/2010
3	07/09/2010

BRNJ0002-018 11/01/2009

	Rates	Fringes
BRICKLAYER.....	$ 36.70	23.47

Work on high stacks: 22% per hour additional.

BRNJ0004-001 11/01/2009

	Rates	Fringes
BRICKLAYER (Cement Mason).....	$ 36.70	23.47

CARP0006-013 05/01/2009

	Rates	Fringes
CARPENTER (Including Form Work).....	$ 39.45	49.75%

The first sixty feet at the regular rate, 10% per hour additional for each additional fifty feet thereafter.

CARP0715-007 05/01/2009

	Rates	Fringes
Millwright.....	$ 40.27	49.75%

Work of erection and dismantling of elevators and towers, such as concrete conveyors and temporary material elevators, scaffolding or other structures to be used as scaffolding inside or outside of buildings: the first sixty feet at the regular rate, 10% per hour additional for each

additional fifty feet thereafter.

CARP1456-013 05/01/2008

	Rates	Fringes
CARPENTER (Dock Builder)		
Concrete form work.....	$ 37.00	27.02
All other work.....	$ 37.00	32.90

Work on land pile driving, floating marine construction and the construction of wharves, while handling and working with creosote and creosote-impregnated products: $.25 per hour additional.

Work on hazardous/toxic/contaminated waste removal, on a hazardous/toxic/contaminated waste site, where the worker comes into contact with hazardous/toxic/contaminated waste material, and when A, B or C personal protective equipment is required and used for respiratory, skin or eye protection: 20% per hour additional.

ELEC0164-008 06/02/2008

	Rates	Fringes
ELECTRICIAN		
Cable splicer.....	$ 54.00	54%
Electrician.....	$ 47.37	54%

Work on line voltage of 440 or 480 volts: 10% per hour additional.

Work from trusses, scaffolds, frames, ladders and poles, 40 ft. or more above the ground or floor (does not include work from a manlift): 20% per hour additional.

Work on radio towers, transmission towers and smokestacks: 21% per hour additional.

---

* ENGI0825-021 07/01/2010

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	$ 41.02	25.75
GROUP 2.....	$ 39.43	25.75
GROUP 3.....	$ 37.52	25.75
GROUP 4.....	$ 35.89	25.75
GROUP 5.....	$ 34.18	25.75

Hazardous waste removal work:
Work on a state or federally designated hazardous waste site, where the worker is in direct contact with hazardous material, and when personal protective equipment is required for respiratory, skin and eye protection: 20% per hour additional.

PAID HOLIDAYS:
New Year's Day, Washington's Birthday observed, Memorial Day, Independence Day, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day and Christmas Day; provided 1) that the worker works three of the preceding five work days before the holiday; or, the work day before the holiday and the work day after the holiday; and, 2) that the worker works the work day before and the work day after the holiday.

DEFINITION OF GROUPS:

GROUP 1:
Backhoe, Including Backhoe Track; Boom; Concrete Paving Machine; Crane (all types, including overhead and straddle traveling type); Drill (down-the-hole drill, rotary drill, self-propelled hydraulic drill, self-powered drill); Elevating Grader; Excavator; Front End Loader (5 cu. yd. and over); Piledriver (length of boom, including length of leads, shall determine premium rate applicable)

GROUP 2:
Backhoe Loader Combo; Concrete Pumper; Grader/Blade (Finish); Hoist; Hydraulic Crane, 10 Tons and under; Front End Loader (2 cu. yd. but less than 5 cu. yd.); Scraper; Side Boom

GROUP 3:
Asphalt Spreader; Bulldozer; Compressor(2 or 3) (in Battery) (within 100 ft.); Crusher; Forklift; Front End Loader (1 cu. yd. and over but less than 2 cu. yd.); Lull; Mechanic; Paver, Asphalt; Roller, Blacktop; Tractor;

GROUP 4:
Broom; Compressor (Single); Farm Tractor; Front End Loader (under 1 cu. yd.); Roller, Grade; Pump

GROUP 5:
Oiler

IRON0011-012 07/01/2009

	Rates	Fringes
Ironworkers:		
Reinforcing	$ 34.34	35.60
Structural, Ornamental	$ 37.14	35.60

LABO0172-008 03/01/2010

	Rates	Fringes
Laborers:		
Landsacpe Laborer, Power Tool Operator	$ 30.85	20.40

Hazardous waste removal work:
Work on a state or federally designated hazardous waste site, where the worker is required to wear Level A, B or C personal protection: $3.00 per hour additional.

Work on a state or federally designated hazardous waste site, where the worker is not required to wear Level A, B, or C personal protection: $1.00 per hour additional.

PAID HOLIDAYS:
New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day and Christmas Day; provided that the worker works three days for the same employer within a period of ten working days consisting of five working days before and five working days after the day upon which the holiday falls or is observed.

LABO0222-013 05/01/2009

	Rates	Fringes
LABORER		
MASON TENDER:		
Cement/Concrete.....	$ 28.55	19.42

PAIN0711-023 05/01/2009

	Rates	Fringes
Painters:		
Work on bridges (Major Bridges Designed for Commercial Navigation).....	$ 46.50	19.13

PAIN0711-024 11/01/2008

	Rates	Fringes
Painters:		
New Construction		
Brush and roller.....	$ 34.47	16.14
Spray.....	$ 37.92	16.14
Steel.....	$ 35.81	16.30
Repaint work, on projects on which no major alterations occur.		
Brush and roller.....	$ 26.67	13.80
Spray.....	$ 29.34	13.80
Steel.....	$ 27.74	13.93

SUNJ2004-030 01/02/2009

	Rates	Fringes
LABORER: Common or General.....	$ 28.82	8.46

LABORER: Pipelayer.....$ 24.05 13.67

TEAM0560-003 05/01/2009

	Rates	Fringes
TRUCK DRIVER		
Dump Truck; Flatbed Truck...	$ 32.00	22.68
Off the Road Truck; Pickup Truck.....	$ 31.85	22.68

Hazardous waste removal work:

Work on a state or federally designated hazardous waste site, where the worker is in direct contact with hazardous material, and when personal protective equipment is required for respiratory, skin and eye protection: $3.00 per hour additional.

Work on a state or federally designated hazardous waste site, in a zone requiring Level A personal protection for any workers other than the truck driver: $3.00 per hour additional.

Work on a state or federally designated hazardous waste site, in a zone requiring Level B, C or D personal protection for any workers other than the truck driver: $1.00 per hour additional.

PAID HOLIDAYS:
New Year's Day, President's Day, Decoration Day, Independence Day, Labor Day, Presidential Election Day, Veteran's Day, Thanksgiving Day and Christmas Day; provided that the employee has been assigned to work, or, "shapes", one day of the calendar week during which the holiday occurs.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined

to be prevailing.

--

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in he matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7).
Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data,

project
description, area practice material, etc.) that the requestor considers
relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested
party may appeal directly to the Administrative Review Board (formerly the
Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

NOTIFICATION
OF
MINORITY BUSINESS ENTERPRISES
AND
WOMEN'S BUSINESS ENTERPRISES
ON-LINE DIRECTORY
AND
FORMS

The Port Authority has a long-standing practice of making its contract available to as many firms as possible and has taken affirmative steps to encourage Minority Business Enterprises (MBEs) and Women's Business Enterprises (WBEs) to seek business opportunities with it. The Port Authority's on-line Directory of Qualified MBE/WBEs lists the firms that are registered to assist Contractors in meeting and exceeding their Good Faith Goals.

The MBE/WBE Directory specifies the firms the Authority has determined to be (1) MBEs/WBEs and (2) experienced in performing work in the trades and contract dollar ranges indicated.

Contractors are provided with an interactive directory and the ability to view and print a current listing of M/WBE contractors. Information may be selected and sorted according to categories, state, dollar range, and type (MBE, WBE, DBE, and SBE).

To view the directory, type in www.panynj.gov/business-opportunities/mwsbe-search.cfm. For further information about MWBE Qualified Vendors, contact the Office of Business and Job Opportunity at (212) 435-7802.

Revised 12/17/2008

THE PORT AUTHORITY OF NY & NJ

Certification Application for the Minority and Women-owned Business Enterprise Program

PLEASE PRINT OR TYPE CLEARLY

General Instructions:

- DO NOT LEAVE ANY SPACES BLANK ON THE APPLICATION - if a question is not applicable to your business insert "N/A" in the space provided for your answer
- Whenever the space is insufficient to answer the questions completely, attach additional sheets as necessary. Use the question number to identify any answer continued on an additional sheet
- For questions, call the Certification Helpline at 212-435-7808 or E-mail objocert@panynj.gov.
- Once you have completed the application, please return it and all required documentation to:

The Port Authority of NY & NJ
Office of Business & Job Opportunity - Certification Unit
233 Park Avenue South, 4th floor
New York, NY 10003

SECTION I: MAIN COMPANY INFORMATION

1. Business Name

Legal name of company applying to be certified

2. D.B.A.

"Doing Business As"- Complete if company does business under a name which is different from its legal name.

3. Business Address (must represent a physical location; cannot be a Post Office Box)

Street Address | Suite / Apt / Room/ Unit

City | State | Zip/Zip+4

County

4. Business Mailing Address (complete only if different from the address given in Question 3)

Street Address | Suite / Apt / Room/ Unit

City | State | Zip/Zip+4

5. Business Phone ( ) ---

5a. Business Fax ( ) ---

6. Business Website

7. Your E-mail Address

7a. Your Cell Phone Number ( )

8. Federal EIN or SSN

9. Name/title of an authorized representative to contact during the application review process:

Mr./Miss/Mrs./Ms. First Name Last Name

Title Phone Ext. E-Mail Address

10. This company is applying for certification as ("X"all that apply)

Minority-owned Business Enterprise (MBE) ☐

Women-owned Business Enterprise (WBE) ☐

Refer to page _____ of the Application Guidelines to determine the appropriate designation for your company.

11. Are you currently involved in the bidding process or other contract/purchase order negotiations with the Port Authority or Port Authority tenants?

Yes_____ No_____

If "Yes", identify the department within the Port Authority and/or name of tenant and contact name

12. Has your company ever applied for certification as an M/W/SBE, or a DBE (whether SBA 8(a), Transportation, or other) with another governmental agency, department, or authority?

Yes_____ No_____

If "Yes", provide the following details

Name of Governmental Entity	Program (MBE, WBE, SBE, DBE)	Status (Pending, Certified, Decertified, Denied, Rejected, Revoked, On Appeal)	Date (mm/yy)

13. How did you first hear about The Port Authority of NY & NJ's M/W/DBE Certification program(s)? (please choose only one)

Letter/Call/E-mail ☐

Port Authority Web site ☐

Event ☐

Please specify name or sponsor of event and date

Other ☐

Please specify what and when

SECTION II: COMPANY OWNERSHIP

14. Business Structure

Sole Proprietorship	☐	Partnership (including LLP)	☐
Limited Liability Company (LLC)	☐	Corporation (including S-Corp.)	☐

15. Date company was established _____/ _____/ _____

16. Has the business existed under a different type of business structure prior to the Date Established indicated in question? 16

    Yes_____ No_____

    If "Yes", please provide copy of original Business Certificate

17. Has your Certificate of Incorporation, Business Certificate, or Certificate of Trade Name been amended?

    Yes_____ No_____

    If "Yes", please provide copy of amended Business Certificate

18. Method of Business Origination or Acquisition (check all applicable)

Started New Business	☐	Secured Franchise	☐
Bought Existing Business	☐	Secured Concession	☐
Merger or Consolidation	☐	Inherited Business	☐
Other	☐	_____	

19. Date of origination (or acquisition, if later) _____/ _____/ _____

For the remaining questions in Section II which ask for ethnic identification of owners, shareholders, officers, board members, and managers, please use the following group codes to identify the ethnicity of each individual where required.

01	Black	02c	Spanish	04	Native American
02a	Hispanic	03a	Asian-Pacific	05	White (Non-Minority)
02b	Portuguese	03b	Asian-Indian	06	Other

20. Please provide the following information for all person(s) with ownership interest in the company (all proprietors, partners, and members OR, in the case of a corporation, all shareholders).

Name (First and Last)	Position In Company	% Owned	Date Ownership Established (mm/yy)	Gender (M/F)	Ethnicity (see group code table)	US Citizen or Permanent Resident Alien (Y/N)

*** QUESTIONS 22-24 APPLY ONLY TO CORPORATIONS. *** *** IF YOUR COMPANY IS NOT A CORPORATION, SKIP TO QUESTION 25 ***

21. If the company is a corporation, please provide the following information for all shareholders identified in Question 21

Name (First and Last)	Position In Company	Number of Shares Owned	Unit Share Price Paid When Purchased

22. State the number of company shares in each of the following

Common Authorized _____ Common Issued _____

Preferred Authorized _____ Preferred Issued _____

23. Name and position of current Officers and/or Board of Directors

Name (First and Last)	Position	Position Effective Date (mm/yy)	Gender (M/F)	Ethnicity (see group code table)

** ALL APPLICANTS SHOULD RESUME COMPLETING THE APPLICATION HERE **

24. Please identify the capital contributions to the company by each person identified in Question 21, including cash, equipment, property, and expertise

Name (First and Last)	Type of Contribution	Total Dollar Value	Date of Contribution (mm/yy)

25. If your company is owned in whole or in part by another company, please identify the company and the percentage of ownership interest. Include venture capitalists and other similar investors

Company Name	Percentage Owned	Date Ownership Established (mm/yy)

SECTION III: COMPANY MANAGEMENT

26. Identify individuals responsible for managerial operations (*state if owner or non-owner*). Refer to group code definitions on prior page.

Name & Title	Gender (M/F)	Group Code	Owner? (Y/N)
a) Financial Decisions			
b) Estimating			
c) Preparing Bids			
d) Negotiating Bonding			
e) Marketing & Sales			
f) Hiring & Firing			
g) Supervising Field Operations			
h) Purchasing Equipment/Supplies			
i) Managing & Signing Payroll			
j) Negotiating Contracts			
k) Signatures for Business Accounts			

27. Do any principals, officers, employees and/or owners of the firm have an affiliation, i.e. business interest or employment with any other firm?

Yes_____ No_____ (If "Yes", complete the following)

Name (First and Last)	Name and Address of Affiliated Firm	Nature of Business	Nature of Affiliation

28. Number of Employees (if necessary, average over the past year)

Permanent		Temporary		Field	
Full-Time	_____	Full-Time	_____	Full-Time	_____
Part-Time	_____	Part-Time	_____	Part-Time	_____

SECTION IV: COMPANY FINANCES

29. Does your company have a Line of Credit?

Yes_____ No_____ If "Yes", please provide details:

_____

Bank Dollar Limit Name of Guarantor(s)

30. Please list all major current lenders to the company

Name of Lender	Amount of Loan	Terms of Repayment

31. Identify bank(s) where company accounts are maintained

Bank Name	Address	Contact Name	Contact Title	Type of Account

32. Please provide gross receipts (sales) for each of the last three fiscal years. (If in business for less than three years, complete as applicable)

Current Year _____ $_____

Last Year _____ $_____

Previous Year _____ $_____

SECTION V: COMPANY OPERATIONS

33. Check the industry which best describes your PRIMARY line of business

- ☐ Construction-related
- ☐ Consultants
- ☐ Consumer Service
- ☐ Manufacturer/Supplier
- ☐ Professional Service
- ☐ Purchasing
- ☐ Technical Service
- ☐ Other _____

34. If a license, permit or certification (e.g. Master Electrical License, PE for engineers, CDL for truck drivers, etc.) is required to conduct any part of your company's business, please identify the individual(s) holding the license, permit or certification and provide a copy

Name of the Holder/Registrant	Type of License/ Permit/Certification	Issued by	Issue Date (mm/yy)	Exp. Date (mm/yy)

35. Is your company bonded? Yes_____ No_____

If "Yes", please provide detail:

Name of Agent/Broker	Surety Co.	Bonding Limit Single $	Aggregate $

36. Is your company insured? Yes_____ No_____ If "Yes", please provide detail:

Carrier Name _____ $ Amount of Liability Insurance _____

37. Please list the company's major equipment or machinery

Type	Depreciated $ Value	Acquisition Date (mm/yy)	Owned or Leased

38. List rented, leased or owned warehouse, plant and office facilities – Submit copy of lease, deed or mortgage

Facility Type	Owner or Name of Lessor and/or rental agent	Amt of yearly payment

39. Does your company share office space, personnel or equipment with any other company?

Yes_____ No_____

If "Yes", please provide details.

Company Name	Phone	Personnel (X)	Office Space ("X")	Yard Space (X)	Equipment ("X")	Machinery (X)

ACKNOWLEDGEMENTS AND VERIFICATION

FIRST, this certification application form, the supporting documents, and any other information provided in support of the application is considered part of the application. Any false statements or misrepresentations in the application may result in the applicant's disqualification from certification as Minority and/or Woman-owned Business Enterprise (M/WBE) by The Port Authority of New York and New Jersey for him/herself and its subsidiaries, which are included in the term "Port Authority".

SECOND, the information contained herein is subject to the Port Authority's Freedom of Information policy as reflected in the resolution adopted by the Committee on Operations of the Port Authority on August 13, 1992.

THIRD, the Port Authority may require further proof of eligibility for certification in addition to the information disclosed in this application and the applicant shall cooperate with the Port Authority in supplying the additional information. By completing this application, the applicant agrees to submit the additional proof required and acknowledges that the Port Authority may decide to deny the application if the additional proof is not submitted within 30 days after it is requested.

FOURTH, by filing this application, the applicant consents to examination of its books and records and interviews of its principals and employees by the Port Authority for the purpose of determining whether the applicant is, or continues to be, an eligible M/WBE. The applicant acknowledges that its certification may be denied if such examinations or interviews are refused or if the Port Authority determines, as a result of the examinations or interviews, that the applicant does not qualify for certification as a M/WBE.

FIFTH, by filing this application, the applicant consents to inquiries being directed by the Port Authority to the applicant's bonding companies, banking institutions, credit agencies, contractors, clients and other certifying agencies for the purpose of ascertaining the applicant's eligibility for certification. If the applicant fails to permit such inquiring to be made, such failure may be grounds for denying or revoking the applicant's certification.

SIXTH, the applicant agrees that it will advise the Port Authority of any change in the ownership or operational and managerial control of applicant's business after the certification application has been filed within 30 days of such change.

SEVENTH, certification is normally granted for a period of five (5) years. However, the Port Authority may require submission of a new application, additional information, examinations of the applicant's principals and employees at any time before the expiration of the five-year certification period. The applicant's failure to submit such material or to consent to such examinations and interviews will be grounds for revocation of certification.

EIGHT, the filing of this application, its acceptance by the Port Authority, and any subsequent certification of the applicant by the Port Authority, is not intended to and does not create any procedural or substantive rights enforceable at law by the applicant against the Port Authority, its Commissioners, officers, agents or employees and any such certification is only intended to facilitate the identification of qualified and bona fide M/WBEs.

NINTH, the Code of Ethics certification attached hereto shall be considered part of this certification application and the applicant is advised to familiarize him/herself with the terms of the certification prior to submitting this application.

TENTH, in submitting this application the applicant and each person signing on behalf of the applicant certifies that, to the best of their knowledge and belief, the following statements are true and correct:

A) No individual who is current or former employee of the Port Authority or its subsidiaries (i.e., Port Authority Trans-Hudson Corporation (PATH), Newark Legal and Communications Center Urban Renewal Corporation) other than those individuals identified in the space immediately below (1) owns an interest in; or (2) has involvement in a relationship with the applicant firm (a) from or as a result of which the individual has received within the past year, or is entitled to receive in any future year, more than $1,000 or its equivalent; or (b) which has a market value in excess of $1,000. *(List here any such current or former Port Authority Employee (s))

_____

B) No individual who is a current or former employee of the Port Authority or its subsidiaries other than those individuals identified in the space immediately below (1) holds a position in the applicant firm such as an officer, director, trustee, partner, employee, or a position of management: or (2) acts as a consultant, agent or representative of the firm in any capacity. *(List here any current or former Port Authority Employee (s))

_____

*Included within the scope of this certification are the individuals identified by the applicant in response to questions 4, 4a, 8d, 9, 10, 10a, 17, 18, 19, 24 and 25.

ELEVENTH, the criteria for certification by the Port Authority as a Small Business Enterprise are outlined in the documentation entitled "Small Business Enterprise Program (SBE) Administered by The Port Authority of New York and New Jersey" which accompanies this application. If the applicant believes that he/she is eligible for SBE certification, he/she may request that this application also be treated as
an SBE certification application by signing below. If signature is provided, all acknowledgments and provisions of this M/WBE certification shall also apply.

Applicant _____ *Date* _____

VERIFICATION

STATE OF _____)

SS:

COUNTY OF_____)

(A) (For Sole Proprietorships, Partnerships, and Limited Liability Partnerships)

_____, being duly sworn, states that he or she is the owner of (or a Partner in) the entity making the foregoing application and that the statements and representations made in the application are true to his/her own knowledge.

_____ _____
Signature Date

(B) (For Corporations and Limited Liability Companies)

_____, being duly sworn, states that he/she is the
Name of Corporate Officer

_____ of _____,
Title of Corporate Officer Name of Corporation

the entity making the foregoing application, that he/she has read the application and knows its contents, that the statements and representations made in the application are true to his/her knowledge, and that the application is made at the direction of the Board of Directors of the Corporation.

Corporate Seal _____
Signature Date

Sworn to before me this _____ day of _____, 20_____

_____
Notary Public

Mail to: ***The Port Authority of New York and New Jersey***
Office of Business & Job Opportunity – Certification Unit
233 Park Avenue South, 4th Floor
New York, NY 10003

CODE OF ETHICS CERTIFICATION

In signing and submitting the annexed Certification Application, each applicant and each person signing on behalf of any applicant certifies that they have not made any offers or agreements or given or agreed to give anything of value or taken any other action with respect to any employee or former employee of The Port Authority of New York and New Jersey or any of its subsidiaries (hereinafter referred to as the "Authority") or any immediate family member of either which would constitute a breach of ethical standards under the Code of Ethics and Financial Disclosure dated as of July 18, 1994 (a copy of which is available upon request to the Office of Regional and Economic Development /Business & Job Opportunity), nor do they have any knowledge of any act on the part of such employee or former employee relating either directly or indirectly to the applicant which constitutes a breach of the ethical standards set forth in said code.

> As used herein, "anything of value" shall include but not be limited to any (a) favors, such as meals, entertainment, transportation (other than that contemplated by an Authority contract), etc., which might tend to obligate the Authority employee to the Contractor and (b) gift, gratuity, money, goods, equipment, services, lodging, discounts not available to the general public, offers or promises of employment, loans or the cancellation thereof, preferential treatment or business opportunity. Such term shall not include compensation contemplated by any Authority contract.

The foregoing certification shall be deemed to have been made by the applicant as follows: If the applicant is a corporation, such certification shall be deemed to have been made not only with respect to the application itself, but also with respect to each director and officer, as well as, to the best of the certifier's knowledge and belief, each stockholder with an ownership interest in excess of 10%; if the applicant is a partnership, such certification shall be deemed to have been made not only with respect to the applicant itself, but also with respect to each partner. Moreover, the foregoing certification, if made by a corporate applicant, shall be deemed to have been authorized by the Board of Directors of the applicant, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of such certification as the act and deed of the corporation.

In any case where the applicant cannot make the foregoing certification, the applicant shall so state and shall furnish with the application, a signed statement that sets forth in detail the reasons thereof.

The foregoing certification or signed statement shall be deemed to have been made by the applicant with full knowledge that it would become part of the records of the Authority and that the Authority will rely on its truth and accuracy in granting certification.

Applicants are advised that knowingly providing a false certification or statement pursuant hereto may be the basis for prosecution for offering a false instrument for filing (see e.g., New York Penal Law, Section 175.30 et. Seq.). Applicants are also advised that the inability to make such certification will not, in and of itself disqualify an applicant, and that in each instance the Authority will evaluate the reasons therefore provided by the applicant.

Supporting Documentation Checklist

REQUIRED FOR ALL APPLICANTS Attach copies of the following documents, as applicable. Indicate documents submitted by checking appropriate boxes. PLEASE PROVIDE COPIES OF SUPPORTING DOCUMENTS ONLY - NOT THE ORIGINALS. The minimum documentation required for certification is listed below, but is not limited to this list. A representative may request additional documents during the application review process, if warranted.

☐ 1 Résumés for all principals, partners, officers and/or key employees of the firm. Provide home address, telephone number, education, training, and employment with dates and specific duties with the company

☐ 2 Proof of ethnicity for each person with ownership interest (valid passport, ethnic birth certificate)*

☐ 3 Proof of U.S. Citizenship (valid U.S. passport, ethnic birth certificate, naturalization certificate)*

☐ 4 Proof of permanent resident alien status (valid permanent resident alien "green" card showing expiration date)*

☐ 5 Bank signature card, bank resolution or letter from bank identifying persons authorized to conduct transactions on each account

☐ 6 Lease agreement or proof of ownership (deed/mortgage) for business location(s)

☐ 7 Proof of any certification (including SBA 8(a)), decertification, or denial from another governmental agency, department, or authority

☐ 8 Copies of any licenses, permits and/or accreditations required for conducting business

☐ 9 Proof of sources of capitalization/investments (purchase receipts, any loan agreements)

☐ 10 Any employment agreements

☐ 11 All third party agreements including: equipment rental, purchase agreements, management service agreements, etc.

☐ 12 Vehicle registration(s) for any vehicle used for business purposes

☐ 13 Current financial statement (statement of cash flows, balance sheet, or profit and loss statement)

☐ 14 Most recent three years' business Federal, State and City tax returns (all pages, all schedules); Prior two (2) years of personal tax returns (1040's) for each person with ownership interest, including all applicable W-2 forms and schedules if in business less than three years

If you have one document that satisfies the requirements for numbers 2 – 4, submit only one copy.

REQUIRED FOR A SOLE PROPRIETORSHIP

☐ Copy of Business Trade Name or Certification Trade Name filed with County Clerk (If doing business under an assumed name)

REQUIRED FOR A PARTNERSHIP AND JOINT VENTURE PARTNERSHIP

Attach copies of the following: (Indicate documents submitted by checking appropriate boxes)

☐ 1. Business Certificate

☐ 2. Partnership Agreement

REQUIRED FOR A LIMITED LIABILITY COMPANY (Check appropriate boxes below)

☐ 1. Sole Proprietorship

☐ 2. Corporation

☐ 3. Partnership Agreement

Attach required documents and indicate documents submitted by checking appropriate boxes

☐ 1. Certificate of formation and/or organization

☐ 2. Operating and/or managing agreements

☐ 3. Franchise and/or third-party agreement

REQUIRED FOR A CORPORATION

Attach documents of the following: (Indicate documents submitted by checking appropriate boxes)

☐ 1. Articles of incorporation, including date approved by State

☐ 2. Corporation By-Laws

☐ 3. Minutes of first corporate organizational meeting and amendments

☐ 4. Copies of all issued stock certificates front and back, as well as next un-issued certificate

☐ 5. Copy of stock ledger

☐ 6. If applicable, furnish copies of agreements relating to:

a. stock options
b. shareholder agreements
c. shareholder voting rights
d. restriction on the disposal of stock loan agreements
e. facts pertaining to the value of shares
f. buy-out rights
g. restrictions on the control of the corporation

SMALL BUSINESS ENTERPRISE PROGRAM
ADMINISTERED BY
THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

The Small Business Enterprise Programs are designed to promote New York and New Jersey businesses and to provide them with the advantage of competing against firms of like size and expertise in a limited competitive environment. In order to be eligible to participate in opportunities set-aside for the programs, the Port Authority must certify a firm as a Small Business Enterprise. To be eligible for certification, firms at a minimum:

- Must have a principal place of business in either New York or New Jersey.
- Must have operated that specific type of business for at least three (3) years.
- Must not exceed the average annualized gross revenue limitations cited below for the last three (3) fiscal years.

Average Annualized Gross Revenue Limitation and other Port Authority Pre-requisites by Procurement Category.

- **Construction - $14 million**
  The Port Authority's Engineering Department must also qualify construction firms. This requires the submittal of acceptable references for completed contracts. A minimum of three acceptable references is required for each construction specialty area.

- **Architectural & Engineering (A&E) - $4.5 million**
  - ***Landscape Architectural Services - $7 million***
  - ***Marine Engineering & Naval Architecture - $18.5 million***

  In addition to adhering to maximum gross revenues Thresholds, A&E firms must also have minimum average annual revenues of more than $100,000 over the last three (3) fiscal years.

- **Commodity - $7 million**
  Commodity firms eligible to participate are provided a five percent (5%) price preference in designated contracts solicited by the Port Authority's Procurement Division.

- **Janitorial Maintenance - $16.5 million**

- **Unarmed Guard Service - $18.5 million**

- **Financial Services - $7 million**

INFORMATION FOR DETERMINING JOINT VENTURE ELIGIBILITY

Return your submittal to:	*The Port Authority of NY & NJ* *Office of Business and Job Opportunity* *233 Park Avenue South, 4th Floor* *New York, NY 10003*
Firms not currently certified should call (212) 435-7808 for information	

**(NOTE: This form need not be completed if all joint venture firms are *M/W/DBEs*
The Joint Venture approval is valid through the duration of the Port Authority contract)**

1. NAME OF JOINT VENTURE: _____

2. ADDRESS OF JOINT VENTURE: _____

_____

_____

3. TELEPHONE NUMBER (S) OF JOINT VENTURE: _____

_____

4. (A) IDENTIFY THE FIRMS WHICH COMPRISE THE JOINT VENTURE. (THE MINORITY OR WOMAN-OWNED OR DISADVANTAGED BUSINESS ENTERPRISE PARTNER MUST COMPLET A UNIFORM CERTIFICATION APPLICATION – SCHEDULE A)

_____

_____

(B) DESCRIBE THE ROLE OF THE M/W/DBE IN THE JOINT VENTURE:

_____

_____

_____

5. NATURE OF THE JOINT VENTURE'S BUSINESS: _____

_____

_____

6. PROVIDE A COPY OF THE JOINT VENTURE AGREEMENT.

SCHEDULE B

7. WHAT IS THE CLAIMED PERCENTAGE OF MBE OR WBE OF DBE OWNERSHIP? _____

8. OWNERSHIP OF JOINT VENTURE: (THIS NEED NOT BE FILLED IN IF DESCRIBED IN THE JOINT VENTURE AGREEMENT)

(A) PROFIT AND LOSS SHARING: _____

_____

(B) CAPITAL CONTRIBUTIONS, INCLUDING EQUIPMENT:

_____

_____

_____

(C) OTHER APPLICABLE OWNERSHIP INTERESTS:

_____

_____

_____

9. CONTROL OF AND PARTICIPATION IN THIS CONTRACT. IDENTIFY BY NAME, RACE, SEX AND "FIRM" THOSE INDIVIDUALS AND THEIR TITLES WHO ARE RESPONSIBLE FOR DAY-TO-DAY MANAGEMENT AND POLICY DECISION-MAKING, BUT NOT LIMITED TO, THOSE WITH PRIME RESPONSIBILITY FOR:

NAME & TITLE	SEX		GROUP CODE*	FIRM
FINANCIAL DECISIONS				
_____	☐M	☐F	_____	_____
_____	☐M	☐F	_____	_____
MANAGEMENT DECISIONS, SUCH AS:				
ESTIMATING				
_____	☐M	☐F	_____	_____
_____	☐M	☐F	_____	_____
MARKETING AND SALES				
_____	☐M	☐F	_____	_____
_____	☐M	☐F	_____	_____

-2-

HIRING AND FIRING OF MANAGEMENT PERSONNEL

_____ _____ ☐M ☐F _____ _____

_____ _____ ☐M ☐F _____ _____

PURCHASING OF MAJOR ITEMS OR SUPPLIES

_____ _____ ☐M ☐F _____ _____

_____ _____ ☐M ☐F _____ _____

SUPERVISION OF FIELD OPERATIONS

_____ _____ ☐M ☐F _____ _____

_____ _____ ☐M ☐F _____ _____

*GROUP CODE KEY

01 – BLACK	02A – HISPANIC	03A – ASIAN-PACIFIC	04 – NATIVE AMERICAN
	02B – PORTUGUESE	03B – ASIAN-INDIAN	05 – NON-MINORITY
	02C – SPANISH		06 - OTHER

Affidavit

"The undersigned swear that the foregoing statements are correct and include all material information necessary to identify and explain the terms and operation of the joint venture and the intended participation by each joint venturer in the undertaking. Further, the undersigned agree to provide to the grantee current and complete information and any proposed changes to the joint venture arrangement. The undersigned also agree to permit authorized representatives of the grantee or the Federal-funding agency to audit and examine the books, records and files of the joint venture, or those of each joint venturer relevant to the joint venture. Any material misrepresentation will be grounds for terminating any contract which may be awarded and for initiating action under Federal or State laws concerning false statement."

NAME OF FIRM	NAME OF FIRM
SIGNATURE	SIGNATURE
NAME	NAME
TITLE	TITLE
DATE	DATE

State of _____ County of _____

On this _____ day of _____, 20____, before me appeared (name) _____ to me personally known, who, being duly sworn, did execute the foregoing affidavit, and did state that he or she was properly authorized by (name of firm) _____ to execute the affidavit and did so as his or her free act and deed.

_____
Notary Public

State of _____ County of _____

On this _____ day of _____, 20____, before me appeared (name) _____ to me personally known, who being duly sworn, did execute the foregoing affidavit, and did state that he or she was properly authorized by (name of firm) _____ to execute the affidavit and did so as his or her free act and deed.

_____
Notary Public

-4-

Office of Business and Job Opportunity

PAGE _____ OF _____

NOTE: The Contractor is required to submit to the Engineering Dept. a MODIFIED PLAN for any changes to the original plan: i.e.; subcontractor, dollar amount or work performed.
If more than 1 page is used, complete totals on last page.

Contract Number: _____ **Contract Description:** _____

Contractor Name: _____

Mailing Address: _____ **Contract Amount:** _____

Telephone Number: _____ **Contract Goals:** **MBE** _____ **WBE** _____ **DBE** _____

Name, Address, _Phone Number of PA Certified MBE/WBE/DBE subcontractor (including name of contact person)	Indicate MBE, WBE Or DBE	Description of Work, Services to be provided. Where applicable, specify, "supply" or "install or both "supply" and "install."	Anticipated date work will start and finish	*Approximate $ amount of M/W/DBE Subcontract	MBE/WBE/DBE % of Total Contract Amount
			TOTAL:		

Signature of Contractor: _____

Print Name: _____

Title: _____ Date _____

FOR OBJO USE ONLY
Contract Goals: ☐ Approved ☐ Waived ☐ Rejected
Reviewed by: _____
OBJO Business Development Representative
Print Name: _____ Date _____

Distribution: Original – OBJO; Copy 2 – Engineer of Construction; Copy 3 – Contractor; Copy 4 – Line Department
*Please Note: supplies, equipment and material men are only credited 60% towards the M/W/DBE goal. Please adjust calculations accordingly.

Schedule C

INSTRUCTIONS

CONTRACTOR INSTRUCTIONS: Contractor is required to submit a MBE/WBE Participation Plan and/or best efforts documentation to the designee identified in the contract book within 7 days after the opening of the Proposals for this Contract.

ENGINEER OF CONSTRUCTION INSTRUCTIONS: After the review of the submitted MBE/WBE Participation plan, forward to the Office of Business and Job Opportunity via fax at (212) 435-7828 or PAD to 233 PAS 4th Floor for review and approval. Approved/waived/rejected plan will be returned within 10 business days of receipt of this document. Engineer of Construction will advise vendor of the results of the MBE/WBE Participation Plan review.

PA 3749 A/ 5-07

THE PORT AUTHORITY OF NY & NJ
Office of Business and Job Opportunity

CONSTRUCTION
MBE/WBE/DBE PARTICIPATION PLAN
MODIFIED

PAGE _____ OF _____

Contract Number: _____

Contractor Name: _____

Mailing Address: _____

Telephone Number: _____

Contract Description: _____

Contract Amount: _____

Contract Goals: **MBE** _____ **WBE** _____ **DBE** _____

Name, Address, Phone Number of PA Certified MBE/WBE/DBE subcontractor (including name of contact person)	Indicate MBE, WBE Or DBE	Description of Work, Services to be provided. Where applicable, specify "supply" or "install or both "supply" and "install."	Anticipated date work will start and finish	*Approximate $ amount of M/W/DBE Subcontract	MBE/WBE/DBE % of Total Contract Amount
			TOTAL:		

Signature of Contractor: _____

Print Name: _____

Title: _____ Date _____

FOR OBJO USE ONLY

Contract Goals: ☐ Approved ☐ Waived ☐ Rejected

Reviewed by: _____
OBJO Business Development Representative

Print Name: _____ Date _____

Distribution: Original – OBJO; Copy 2 – Engineer of Construction; Copy 3 – Contractor; Copy 4 – Line Department

*Please Note: supplies, equipment and material men are only credited 60% towards the M/W/DBE goal. Please adjust calculations accordingly.

Schedule C

STATEMENT OF PAYMENTS TO M/W/DBE SUBCONTRACTORS/LESSORS/SUPPLIERS

Contract No: _____ Period Reporting: _____ (Example: 10/1/98 - 10/31/98)

Contract Title: _____ Payment Appl #: _____

Contractor: _____ % Project Completed: _____

SUBCONTRACTOR'S NAME	(Indicate) MBE WBE DBE	ESTIMATED TOTAL SUBCONTRACT AMOUNT	Column A + Column B = Column C AMOUNTS PAID: Prior Statement	This Statement	Cumulative To-Date
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0

SUPPLIERS/LESSORS	(Indicate) MBE WBE DBE	TOTAL AMOUNT SUPPLIER AGREEMENT	AMOUNTS PAID (Amounts entered should reflect 100% paid. The 50% check will be handled by the office.): Prior Statement	This Statement	Cumulative To-Date
					$0
					$0
					$0
					$0
					$0
					$0

Date Prepared: _____

Prepared by: _____

Title: _____

Officer's Signature: _____

The Port Authority of NY & NJ
Resident Engineer's Office

Date Received: _____

Reviewed By: _____

Title: _____

Schedule D

FINAL

STATEMENT OF PAYMENT
TO M/W/DBE SUBCONTRACTORS/LESSORS/SUPPLIERS

Contract No:	Period Reporting: (Example: 10/1/98 - 10/31/98)
Contract Title:	Payment Appl #: & Final
Contractor:	% Project Completed: 100%

SUBCONTRACTOR'S NAME	(Indicate) MBE WBE DBE	TOTAL SUBCONTRACT AMOUNT	Column A AMOUNTS PAID & TO BE PAID: Prior Statement	+ Column B This Statement	= Column C Cumulative To-Date
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0
					$0

SUPPLIERS/LESSORS	(Indicate) MBE WBE DBE	TOTAL AMOUNT SUPPLIER AGREEMENT	AMOUNTS PAID & TO BE PAID (Amounts entered should reflect 100% paid. The 60% credit will be handled by the office.) Prior Statement	This Statement	Cumulative To-Date
					$0
					$0
					$0
					$0
					$0
					$0

Date Prepared:	The Port Authority of NY & NJ Resident Engineer's Office
Prepared by:	
Title:	Date Received:
Officer's Signature:	Reviewed By:
	Title:

Schedule D

CONFORMED

THE PORT AUTHORITY OF NY & NJ

Lillian D. Valenti
Director, Procurement

December 1, 2010

VIA FACSIMILE AND UPS NEXT DAY DELIVERY

R.B. Conway & Sons, Inc.
532 Broadhollow Road
Suite 129
Melville, NY 11747

SUBJECT: NEW YORK & NEW JERSEY MARINE TERMINALS – MULTI-FACILITY FENDER SYSTEM REHABILITATION VIA WORK ORDER CONTRACT MFP-654.141 **PURCHASE ORDER UMFP654141**

Gentlemen:

The Port Authority of New York and New Jersey hereby accepts your proposal on the above Contract.

The Port Authority elects not to require you to furnish a performance and payment bond.

Your attention is directed to the clause of the Contract entitled "Time for Completion and Damages for Delay" and to the fact that before you may commence performance of the work you must furnish whichever of the documents mentioned in that clause are applicable.

Forwarded herewith for your use and compliance are "General Instructions Relating to the Direction and Processing of Correspondence and of Those Other Items Specified to be Submitted to the Port Authority Under the Terms of the Contract".

In order to ensure that payments are processed properly, please include the above-referenced Purchase Order No. on all payment invoices and correspondence.

Very truly yours,

THE PORT AUTHORITY OF NEW YORK
AND NEW JERSEY

BY Lillian Valenti
Director of Procurement

One Madison Avenue, 7th Floor
New York, NY 10010
T: 212 435 8437

UPS DELIVERED ON DECEMBER 6, 2010