

ADVERTISEMENT FOR BIDS

Project No: P1098-00 – North Ferry Dock Repairs
Location: Liberty State Park, Jersey City, NJ, Hudson County

A MANDATORY PRE-BID MEETING IS SCHEDULED FOR 10:00 A.M., OCTOBER 17, 2013. LOCATION: LIBERTY STATE PARK, NORTH FERRY DOCK, JERSEY CITY, HUDSON COUNTY, NJ. CONTACT PERSON: DON DELUCA (609) 306-1584 (CELL). ONLY BIDS SUBMITTED BY CONTRACTORS WHO ATTEND THIS MEETING WILL BE ACCEPTED.

Sealed proposals must be received and time-stamped in the Plan Room, Division of Property Management & Construction, 33 West State Street, 9th Floor, (PO Box 034) Trenton, NJ 08625 until 2:00 p.m. on October 31, 2013 for:

**Single Bid (lump sum all trades)
Site Work (C054) or
Bulkhead and Docks (C083)
\$814,000.**

IN ACCORDANCE WITH N.J.S.A. 52:32-2, THIS PROJECT SHALL BE BID AS A SINGLE BID (LUMP SUM ALL TRADES). BIDDER MUST BE CLASSIFIED THEMSELVES OR NAME THEIR CLASSIFIED SUBCONTRACTOR(S) FOR THE FOLLOWING TRADE(S):

Electrical (C047)

FAILURE TO LIST CLASSIFIED SUBCONTRACTORS WILL DEEM THE BID NON-RESPONSIVE.

CLASSIFIED DPMC CONTRACTORS/SUBCONTRACTORS MAY BE FOUND AT DPMC'S WEBSITE LISTED BELOW:

http://www.state.nj.us/treasury/dpmc/contract_search.shtml

Bid Documents may be examined at the above address or obtained for a document fee based on the individual trade estimate shown above, as follows: Trade Estimate up to \$100,000 – No Fee, in excess of \$100,000 - \$65.00. An additional \$10.00 fee is required for mailing of bid documents. All fees are non-refundable and must be received by the Division before documents will be released. A company check payable to the "Treasurer, State of New Jersey" is required. Contact **Janet Goleniecki at (609) 777-1796** for further information. Mailing address is as follows: Regular Mail (DPMC, P.O. Box 034, Trenton, NJ 08625) or Overnight Mail (DPMC, 33 West State St, 9th Fl, Trenton, NJ 08608).

Bidders must be classified by the Division under N.J.S.A. 52:35 and must submit bid security as provided in Instructions to Bidders and General Conditions/Supplementary Instructions to Bidders and General Conditions, Revised March 18, 2011. No bidder may withdraw his bid for 60 calendar days after the opening. The State may reject any and all bids.

Bidders are required to comply with the requirements of P.L. 1975, c. 127, N.J. Law Against Discrimination.

RICHARD M. FERRARA, ASSISTANT DEPUTY DIRECTOR
CONTRACTS & PROCUREMENT
DIVISION OF PROPERTY MANAGEMENT & CONSTRUCTION
STATE OF NEW JERSEY
DEPARTMENT OF THE TREASURY
P. O. BOX 034
TRENTON, NJ 08625-0034

C: Jenise Henson



State of New Jersey

DEPARTMENT OF TREASURY
DIVISION OF PROPERTY MANAGEMENT & CONSTRUCTION
P O BOX 034
TRENTON NJ 08625-0034

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

ANDREW P. SIDAMON-ERISTOFF
State Treasurer

STEVEN SUTKIN
Director

October 24, 2013

SUBJECT: Bulletin "A" dated October 24, 2013
RE: Project #P1098-00 – North Ferry Dock Repairs
Liberty State Park, Jersey City, NJ, Hudson County

Gentlemen:

We are forwarding a copy of the above referenced bulletin. Please acknowledge receipt by returning this form to the address listed below. Fax copy will also be acceptable.

Division of Property Management & Construction
Attention: Richard Ferrara
Contracts & Procurement
P. O. Box-034
Trenton, New Jersey 08625-0034
FAX #: 609-777-1970

Very truly yours,

Richard Ferrara, Assistant Deputy Director
Contracts & Procurement

Date Received

Firm Name

Address

Signature

Title

Attachment (s)

ODC-513
(2/99)

STATE OF NEW JERSEY
DEPARTMENT OF TREASURY
DIVISION OF PROPERTY MANAGEMENT AND CONSTRUCTION
PO BOX 034, TRENTON, NJ 08625-0034

PROJECT # P1098-00
North Ferry Dock Repairs
Liberty State Park
Jersey City, NJ

A/E: Civil Dynamics, Inc.

DATE: October 24, 2013

BULLETIN "A"

Bidder must acknowledge receipt of this Bulletin on bid form in the space provided therefor.

This Bulletin is issued for the purpose of amend ng certain requirements of the original Contract Documents, as noted hereinafter, and is hereby made part of and incorporated in full force as part of the Contract Documents. Unless specifically noted or specified hereinafter, all work shall comply with the applicable provisions of the Contract Documents.

GENERAL ITEMS

1. General Conditions Article 6.1: A DPMC Field Office Trailer is not required for this project.
2. The Contractor shall provide sanitary facilities for their workers.
3. The minutes and sign-in sheet for the November 4, 2010 Mandatory Pre-Bid Meeting are attached.

QUESTIONS AND DISCUSSION FROM PRE-BID MEETING

1. Electric service to the North Ferry Dock lighting is not live. The Contractor shall be responsible for supplying a generator to test the new lighting.
2. The number of precast slab beams for the dock repair shall be five (5). One detail on Sheet 7 and one on Sheet 9 indicate four beams which is incorrect.
3. Demolition debris shall be properly disposed of and shall not enter the river.
4. The Bidders shall include some concrete repair of small areas of the subgrade of the Terminal Walkway area in addition to the subsidence repair area. See "localized void area" on Sheet 2.
5. What is the load limit for the existing dock?
Response: The load limit of the existing North Ferry Dock is not known. Bidders shall consider this in their approach to the work on the dock.

As additional information, the Park maintenance regularly drives mason dump trucks across the Terminal Walkway area.

6. Are all the existing soil materials to be removed from the subgrade of the Terminal Walkway area prior to placement of filter fabric? Can these materials remain on the Park property?
Response: Yes, in accordance with the notes on Sheet 3, "Clear the entire terminal walkway surface of all remaining wood block pavers, sand and debris to expose the areas of concrete and timber substructure noted on the plan."
7. Can these materials (noted in Item 5 above) remain on the Park property?
Response: Yes, sand material removed from the walkway surface may be stockpiled within the Park property at a location identified by the Owner. The same note states that "Wood block pavers shall be stockpiled on-site, as directed by the Owner." All other debris and foreign materials shall not remain on the property and shall be properly disposed.

ATTACHMENTS

1. Pre-Bid Meeting Minutes and Sign-In Sheet

END OF BULLETIN "A"

**PRE-BID MEETING MINUTES
NORTH FERRY DOCK REPAIRS at LIBERTY STATE PARK**

ARCHITECT/ENGINEER OF RECORD: Civil Dynamics, Inc.
LOCATION: Liberty State Park, Jersey City, Hudson County, NJ
MEETING: Pre-Bid **DPMC PROJECT No.:** P1098-00
DATE: 10/17/13 **TIME:** 10:00 AM

ATTENDEE

REPRESENTING

See attached Mandatory Pre-Bid Meeting Sign-in Sheet

MEETING ITEMS

1. Don DeLuca of the NJDEP Office of Resource Development initiated the meeting by introducing the State Project Team Members and the Project Engineer, Civil Dynamics, Inc.
2. Don DeLuca directed the potential bidders to sign in for the meeting, and told them that failure to do so would prevent them from having their bids accepted.
3. Don DeLuca indicated that all bidders must be classified with DPMC for the trade classification Site Work (C054) or Bulkhead and Docks (C083). A pre-qualified electrical (C047) subcontractor is also required.
4. Questions regarding bidding, contact Janet Golnecki at 609-777-1796.
5. Bids are due October 31, 2013 by 2:00 pm at 33 West State Street in Trenton. Late bids are not accepted.
6. Bid Bond is 50% of bid amount.
7. The Bid is a Lump Sum.
8. Contract Performance Period is 120 calendar days from NTP.
9. Don DeLuca indicates that they are planning to award quickly.
10. Questions prior to the bid are due by Thursday October 24, 2013 at 12:00 P.M. Questions must be faxed to Chris Adams of Civil Dynamics at 973-697-1678 on company letterhead. Responses to questions will be included in a bulletin.
11. Don DeLuca states that the site is not open for follow-up visits, but he will be on-site next Tuesday, October 22, 2013 at 9:00 AM for a second site visit for bidders and their subcontractors.
12. Chris Adams of Civil Dynamics provided a brief overview of the work.
13. Bidders were free to walk the site.

Prepared by: Chris Adams

Date: 10/18/13

MANDATORY PRE-BID MEETING: SIGN IN SHEET

PROJECT #: P1098-00

TRAFFIC: Site Work (C054)/Bulkhead & Docks (C08)

PROJECT TITLE: North Ferry Dock Repairs/Liberty State Park

DATE & TIME:

October 17, 2013 - 10:00 a.m.

NOTE: Your firm is responsible to consider in its bid all material and information presented at this Mandatory Pre-Bid Meeting.

COMPANY NAME (PRINT)	REPRESENTATIVE (PRINT)	SIGNATURE	TELEPHONE NUMBER	FAX NUMBER
NTIDEP	Pon DeLuca		609 306 1584	
FLAWEGAN'S CONTRACTING GROUP, INC.	ROGER FLAWEGAN		908 429-1400 X102	908-429-0211
Fernando Const. Corp.	Lou Ferrans		973-827-0947	973-827-7143
ATLANTIC SUBSEA	V. D. MENDEZ		856 241-3544	856 241-3545
Bird Construction	TIM HARRIS		732 269-1333	732-269-4747
BIRD CONSTRUCTION	MARTY GARLUCCI		732-269-1333	752-269-4747
CRISDEI GROUP	ROBERT REIGLE		908 561 7550	908 561 5534
Ferron Construction Don Ferron, Sr.	Don Ferron, Sr.		908-580-0200	908-580-0533
Civil Dynamics	Chris Adams		913-6973496	

MANDATORY PRE-BID MEETING SIGN-IN SHEET

PROJECT #: P1098-00

TRADE: Site Work (C054)/Bulkhead & Docks (C08)

PROJECT TITLE: North Ferry Dock Repairs/Liberty State Park

DATE & TIME: October 17, 2013 - 10:00 a.m.

NOTE: Your firm is responsible to consider in its bid all material and information presented at this Mandatory Pre-Bid Meeting.

COMPANY NAME (PRINT)	REPRESENTATIVE (PRINT)	SIGNATURE	TELEPHONE NUMBER	FAX NUMBER
Sparwick Contracting	Nigud A. Mula	[Signature]	(973) 300-4709	(973) 300-4761
Penn Marine Corp	Joe Budis	[Signature]	908 665 9796	968 464 1313
LSP (Parks + Facility)	Jonathan Luk	[Signature]	609-310-0986	

PROJECT COST ANALYSISDPMC NUMBER: P1098-00Date: 11/4/2013Project Phase:
Construction Contract AwardProject Name: North Ferry Dock RepairLocation: Liberty State Park**Cost Phase "C" - Construction**

1 General Construction	0
2 Structural Steel	0
3 Plumbing	0
4 HVAC	0
5 Electrical	0
6 Other Trades (specify): <u>Historical Restoration C024</u>	799,442
7 TOTAL CONSTRUCTION COST ESTIMATE (CCE) (Lines 1 thru 6)	<u>799,442</u>

Cost Phase "D" - Design

8 Consultant Design Fee	0
9 Consultant Construction Administration Fee	0
10 Asbestos Remediation Design Fee	0
11 Asbestos Monitoring Fees	0
12 Survey Services	0
13 Testing Services	0
14 Roofing Inspection	0
15 Other (specify): _____	0
16 TOTAL DESIGN SERVICES (Lines 8 thru 15)	<u>0</u>

Cost Phase "K" - Affirmative Action

17 Affirmative Action (1/2 % of Line 7)	0
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Cost Phase "M" - Management Fees

18 DPMC Management Fee (3% of Line 7)	23,983
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Cost Phase "N" - Construction Management

19 Construction Management Services (CM/CPM)	0
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Cost Phase "O" - Contingency

20 Construction (5% of Line 7)	39,972
21 Design (N/A)	0
22 TOTAL PROJECT CONTINGENCY (Lines 20 & 21)	<u>39,972</u>

Cost Phase "P" - Permits

23 U.C.C. (DCA or DPMC) Plan Review Fee	0
24 U.C.C. Permit/Field Inspection/C.O. Fee	0
25 Soil Conservation	0
26 Other (specify): _____	0
27 TOTAL PERMIT FEES (Lines 23 thru 26)	<u>0</u>

Cost Phase "R" - Arts Inclusion

28 Arts Inclusion Allowance	0
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Cost Phase "B" - Other Costs

29 Other (specify): _____	0
30 Other (specify): _____	0
31 TOTAL OTHER COSTS (Lines 29 & 30)	<u>0</u>

32 CURRENT WORKING ESTIMATE (CWE) (Lines 7+16+17+18+19+22+27+28+31) \$863,397

CONTRACT DOCUMENTS
for the
NORTH FERRY DOCK REPAIRS
at
LIBERTY STATE PARK

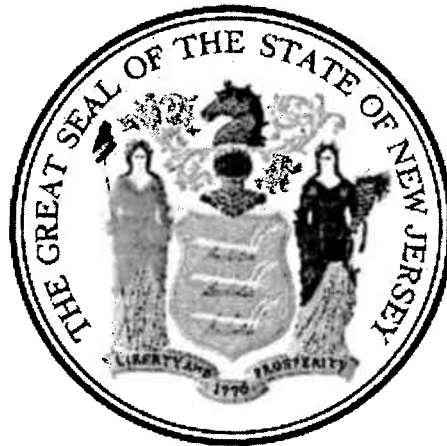
Jersey City, Hudson County, New Jersey

DPMC PROJECT NO. P1098-00

STATE OF NEW JERSEY

Honorable Chris Christie, Governor
Honorable Kim Guadagno, Lt. Governor

DEPARTMENT OF THE TREASURY
Andrew P. Sidamon-Eristoff, Treasurer



DIVISION OF PROPERTY MANAGEMENT AND CONSTRUCTION
Steven Sutkin, Director

AUGUST 2013

Prepared by:

CIVIL  DYNAMICS, inc.

109A County Rte. 515, P.O. Box 760, Stockholm, N.J. 07460-0760
Phone (973) 697-3496 Fax (973) 697-1678

Handwritten signature and date:
2/16/13
9/4/13

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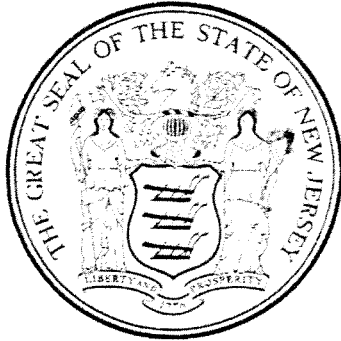
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State of New Jersey
Department of Treasury
Division of Property Management & Construction



A M E N D E D
JANUARY 1995
INSTRUCTIONS TO BIDDERS
AND
GENERAL CONDITIONS

INSTRUCTIONS TO BIDDERS AND GENERAL CONDITIONS

DATED APRIL 1993

Are hereby superseded

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I INSTRUCTIONS TO BIDDERS

IB 1 Bid Proposals

IB 1.1 Sealed proposals for the work described herein must be received and time-stamped in the Bid Room, Division of Building and Construction (DBC), 8th Floor, Taxation Building, CN 235, West State and Barrack Streets, Trenton, NJ 08625. The closing date and time for bids will be stated in the Advertisement and Invitation to Bid. Bidders are cautioned that reliance on the US Postal Service or other mail delivery or courier service for timely delivery of proposals is at the bidders' risk. Failure by a bidder to have a sealed proposal reach DBC by the prescribed time will result in a return of the unopened submission.

IB 1.2 Bids will be received on the following branches of work, as applicable:

- Contract No. 1 - General Construction
- 2 - Structural Steel
- 3 - Plumbing
- 4 - Heating, Ventilating and Air Conditioning
- 5 - Electrical
- 6 - Special Categories as may be required

IB 1.3 Contractors prequalified by DBC may obtain contract documents at the Office of the Division of Building and Construction or upon written request, subject to payment of applicable fees. Each bidder is herewith put on notice that its general classification by DBC is not the sole basis for qualification for the award of work. The Director reserves the right to deny award to any bidder that is not clearly responsible, based upon experience, past performance, financial capability or other material factors, to perform the work required herein.

IB 1.4 The schedule of non-refundable bid fees below is based upon individual trade construction cost estimates. Upon request and at no cost, DBC will furnish a set of the contract documents for review in the offices of the division at the address noted in paragraph IB1.1 above.

DBC BID DOCUMENTS FEE SCHEDULE (PER PACKAGE):

<u>TRADE ESTIMATE</u>	<u>DOCUMENT FEE</u>	<u>MAILING FEE</u>
\$100,000 or less	No charge	\$10.00
Greater than \$100,000	\$ 65.00	\$10.00

IB 1.5 Bid proposals based upon the plans, specifications, general, special and supplementary conditions and bulletins shall be deemed as having been made by the contractor with full knowledge of the conditions therein. Bidders are required to visit the site prior to submitting proposals for the work herein described, and to have thoroughly examined the conditions under which the contract is to be executed, including those reasonably observable conditions of the premises which would hinder, delay, or otherwise affect the performance of the contractor required under the terms of the contract. The State will not allow claims for additional costs as a result of the contractor's failure to become aware of the reasonably observable conditions affecting its required performance. The bidder is required to make appropriate allowances in the preparation of the bid for the accommodation of such conditions. Bidders must warrant in the bid documents that the bidder is familiar with conditions existing at the site at the time the bid is submitted.

IB 1.6 Bid proposals shall be submitted on the standard form provided by DBC, enclosed in a sealed envelope issued by DBC. The name and address of the bidder must be indicated on the envelope, as well as indication of the DBC project number, project location and other appropriate identification.

IB 1.7 All amounts in the bid documents shall be stated in numerical figures only.

IB 1.8 The bidder must include in the bid envelope: (1) the proposal signed by the bidder, (2) the executed affidavit of non-collusion, and (3) bid security as further described in Section IB6 hereafter.

IB 1.9 Proposals shall remain open for acceptance and may not be withdrawn for a period of 60 calendar days after the bid opening date.

IB 1.10 Proposals not submitted and filed in accordance with instructions contained herein and in the Advertisement for Bids may be considered informal and rejected as non-responsive.

IB 2 Bid Modification

IB 2.1 A bidder may modify its bid proposal by telegram or letter at any time prior to the scheduled closing time for receipt of bids, provided such communication is received by the State prior to such closing time. A written confirmation of any telegraphic modification signed by the bidder must have been mailed and time-stamped by the US Postal Service prior to specified closing time. Such confirmation shall be accompanied by a newly executed affidavit of non-collusion.

IB 2.2 Telegraphic communications shall not reveal the basic bid price but shall only provide the amount to be added, subtracted or modified so that the final prices or terms will not be revealed until the sealed proposal is opened. If written confirmation of the telegraphic modification is not received within two working days after the scheduled closing time, no consideration will be given to the telegraphic modification.

IB 2.3 Bids may be withdrawn upon receipt of a bidder's written request prior to the time fixed for the bid opening. A bidder's right to withdraw a bid is lost after a bid has been opened. If an error has been made in the bid amount, request for relief from the bid may be made in writing to the Director. The written request shall be signed by an authorized corporate officer. A determination of whether the bidder will be released shall be at the sole discretion of the Director, who shall issue a finding within five working days of receipt of all pertinent information relating to such request for relief.

IB 3 Consideration of Bids

IB 3.1 Award of Contracts or Rejection of Bids:

- a. Contracts will be awarded to the lowest responsible bidder. The awards will be made, or the bids rejected, within 60 calendar days from the date of the opening of bids.
- b. The Director reserves the right to award the contract on the basis of the single bid for the entire work, or on the basis of a separate bid and alternate, or any combination of separate bids and alternates, which the Director deems best serves the interest of the State.
- c. The Director reserves the right to waive any bid requirements when such waiver is in the best interests of the State, and where such waiver is permitted by law. Such waiver shall be at the sole discretion of the Director.
- d. The Director reserves the right to reject any and all bids when such rejection is in the best interests of the State. The Director also may reject the bid of any bidder which, in the Director's judgment, is not responsible or capable of performing the contract obligations based on financial capability, past performance, or experience. A bidder whose bid is so rejected may request a hearing before the Director by filing a written notice.

IB 3.2 The bidder to be awarded the contract shall execute and deliver the requisite contract documents, including payment and performance bonds, within the time specified. Upon the bidder's failure or refusal to comply in the manner and within the time specified, the Director may either award the contract to the next low responsible bidder or re-advertise for new proposals. In either case, the Director may hold the defaulting bidder and its surety liable for the difference between the applicable sums quoted by the defaulting bidder and the sum which the State may be obligated to pay to the contractor which is contracted to perform and complete the work of the defaulting bidder.

IB 4 Awards

IB 4.1 In executing a contract, the successful bidder agrees to perform the required work in a good and workmanlike manner to the reasonable satisfaction of the Director, and to complete all work within the number of calendar days specified in its Contract.

IB 4.2 Successful bidders will be notified of the time and place for the signing of contracts. Key requirements in the conduct of the contract, including, but not limited to, the number of days of performance of the contract, manner and schedule of payments, and other administrative details will be reviewed at the award meeting. The time and place of the first job meeting will be announced at the award meeting.

IB 4.3 The State of New Jersey reserves the right to award the contract upon the basis of a single bid for the entire work, or on the basis of separate bids for each prime trade when the total of the separate bids is less than the single bid. Alternates will be accepted or rejected in numerical sequence as cited in the bid documents and shall not be selected at random except as provided herein. Add alternates and deduct alternates will be specified separately. The State may choose from the add and deduct alternates without priority between the two groups so long as selection within each group is in numerical sequence from the first to the last. This limitation shall not apply, however, to any alternates concerning proprietary items. The Director, with the approval of the Using Agency, may accept alternates out of sequence, provided the Director states the reasons for so doing, in writing, within five working days following the opening of bids.

IB 4.4 Should submission of unit prices be required for specified items of work in bid proposals, they will be considered in the evaluation of bids.

IB 5 Qualification of Bidders

IB 5.1 If the successful bidder is a corporation not organized under the laws of the State of New Jersey or is not authorized to do business in this State, the awards of the contract shall be conditioned upon the prompt filing by the said corporation of a certificate to do business in this State and complying with the laws of this State in that regard. This filing must be made with the Department of State. No award of contract will be made until the Department of State confirms this authorization.

IB 5.2 The State requires that each contractor, except in the case of a single contractor, shall perform a minimum of 35 percent of the contract work by the contractor's own forces. However, the Director has the sole discretion to reduce this percentage depending upon the nature and circumstances in any particular case, if the Director determines that to do so would be in the best interests of the State, and provided that the bidder submits a written request with the original bid proposal.

IB 5.3 The State reserves the right to reject a bidder at any time prior to the signing of a contract if information or data is obtained which, in the opinion of the Director, adversely affects the responsibility and/or the capability of the bidder to undertake and to complete the work, regardless of the bidder's previous qualification or classification. The State may conduct any investigation as it deems necessary to determine the bidder's responsibility and capacity, and the bidder shall furnish all information and data for this purpose as requested by the State.

IB 5.4 Each bidder must be prequalified by DBC in accordance with the provisions of the classification statute (NJSA 52:35-1, et seq.). In the case of a single bid for all of the work, the bidder shall include in the bid the names of its principal subcontractors (in categories as listed in IB1.2 above), which must also be classified in accordance with the said statute.

IB 6 Deposit and Bid Bond

IB 6.1 Each proposal shall be accompanied by a bid bond or by a certified check, made payable to the State of New Jersey, equal to five percent of the amount of the proposal, as evidence of good faith, which guarantees that if the proposal submitted by the bidder is accepted, the bidder will enter

into the contract and furnish the required contract documents and surety bonds. If a bid bond is submitted, it shall also provide that the surety issuing the bid bond be bound to issue the required payment and performance bonds if the bidder is awarded the contract. If the bidder whose proposal is accepted is unable to provide the performance and payment bonds or fails to execute a contract, then such bidder and the bid bond surety shall be obligated to pay to the State the difference between the amount of the bid and the amount which the State contracts to pay another party to perform the work. The State reserves the right to retain any certified check deposited hereunder as reimbursement for the difference as described above and shall return any un-required balance to the bidder. Should there be a deficiency in excess of the bid deposit, the bidder shall make immediate payment to the State for any such deficiency. If a bid bond has been submitted, the bidder and the surety shall pay, upon demand, the entire amount of the State's difference in cost. Nothing contained herein shall be construed as a waiver of any other legal remedies that the State may have by reason of a default or breach by the contractor. Certified checks or bonds submitted by unsuccessful bidders will be returned after the contract has been executed. Contractors electing to furnish a bid bond must include Consent of Surety, both in forms acceptable to DBC.

IB 6.2 Attorneys-in-fact who sign bid bonds or contract bonds must file a certified power-of-attorney with the State indicating the effective date of that power.

IB 7 Performance and Payment Bond

IB 7.1 The successful bidder shall furnish within ten calendar days after notice of award both a performance bond in statutory form in an amount equal to 100 percent of the total contract price as security for the faithful performance of this contract and a payment bond in statutory form in amount equal to 100 percent of the contract price as security for the payment of all persons and firms performing labor and furnishing materials in connection with this contract. The performance bond and the payment bond may be combined or in separate instruments in accordance with law. No contract shall be executed unless and until each bond is submitted to and approved by the State. The surety must be presently authorized to do business in the State of New Jersey.

IB 7.2 The cost of bonds shall be paid for by the contractor.

IB 7.3 If at any time the State, for justifiable cause, is dissatisfied with any surety which has issued or proposes to issue a performance or payment bond, the contractor shall, within ten calendar days after notice from the State to do so, substitute an acceptance bond (or bonds). The substituted bond(s) shall be in such form and sum and executed by such other surety or sureties as may be satisfactory to the State. The premiums on such bond(s) shall be paid by the contractor. No contract shall be executed and/or no payment made under a contract until the new surety or sureties shall have furnished such an acceptable bond to the State.

IB 7.4 Bonds must be legally effective as of the date the contract is signed. Each must indicate the contractor's name exactly as it appears on the contract. Current attorney-in-fact instruments and financial statement of the surety must be included with the bonds. Bonds must be executed by an authorized officer of the surety. Bonds furnished under this section shall conform in all respects to the requirement and language of NJSA 2A:44143 to 147.

IB 8 Bulletins and Interpretations

IB 8.1 No interpretation of the meaning of the plans, specifications or other pre-bid documents will be provided to any bidder unless such interpretation is made in writing to all prospective bidders prior to the opening of bids. Any such interpretations must be identified in bid proposals submitted. Any interpretations which are not entered in accordance with this provision shall be unauthorized and not binding upon the State.

IB 8.2 Every request for an interpretation relating to clarification or correction of the plans, specifications, or other bid documents must be made in writing, addressed to the architect/engineer and the DBC Director, and must be received at least five working days prior to the date fixed for the opening of the bids. Any and all interpretations, clarifications or corrections and any supplemental instructions must be issued by the Director in the form of written bulletins and mailed by certified mail, return receipt requested, or by telegraphic notice to all prospective bidders not later than three

working days prior to the date of the opening of bids. All bulletins issued shall become part of the contract documents and shall be acknowledged in all bid proposals. Failure of a bidder to acknowledge receipt of all such bulletins and interpretations by the time of bid opening shall result in its proposal being considered non-responsive, at the option of the Director.

IB 8.3 Each bidder shall be responsible for thoroughly reviewing the contract documents prior to the submission of bids. Bidders are advised that no claim for expenses incurred or damages sustained on account of any error, discrepancy, omission, or conflict in the contract documents shall be recognized by the State unless, and only to the extent that, a written request for interpretation, clarification or correction has been submitted in compliance with Section IB8.2 and provided the matter has not been addressed by the State through the issuance of a bulletin interpreting, clarifying or correcting such error, discrepancy, omission or conflict.

IB 9 Assignments

IB 9.1 The contractor shall not assign all or any part of this contract without written consent of the State. Money due (or to become due) the contractor hereunder shall not be assigned for any purposes whatsoever.

IB 10 Federal Excise Taxes and State Sales Tax

IB 10.1 In general, bidders, in preparing bids, must take into consideration applicable Federal and State tax laws.

IB 10.2 Under Chapter 32 of the Internal Revenue Code, an exemption certificate must be on file with the Director of the Division of Purchase and Property (Number 22-75-005).

IB 10.3 Materials, supplies or services for exclusive use in erecting structures or buildings or otherwise improving, altering or repairing all State-owned property are exempt from the State sales tax.

IB 10.4 Bidders must determine the current status and applicability of any tax laws, and the contractor may make no claim based upon any error or misunderstanding as to the applicability of any tax laws.

IB 10.5 Purchases or rentals of equipment are not exempt from any tax under the State Sales Tax Act.

IB 11 Restrictive Specifications

IB 11.1 Should any bidder determine before the bid due date that any portion of the specifications or drawings specify a particular product which can be provided by only one supplier or manufacturer, with the result that competitive prices are not available, the bidder shall immediately notify the Director in writing of such fact.

IB 11.2 If such notice is not given in a timely manner, it shall be assumed that the bidder has included the estimate of such sole source in the bid. However, if the Director is notified in a timely manner of the sole source of supply or manufacture, the Director may order the product re-bid or take other lawful action.

IB 12 Offer of Gratuities

IB 12.1 Bidders are advised that the laws of New Jersey (NJSA 52:34-19) make it a misdemeanor to offer, pay or give any fee, commission, compensation, gift or gratuity to any person employed by the State. Also, Executive Order #189 (1988) requires that all requests for proposals and contracts issued by the State specify prohibitions on vendor (contractor) activities, the violation of which shall render the vendor liable to ineligibility for State contracts, pursuant to the debarment procedures set forth in NJAC 17:19-3.1 et seq. These prohibited activities include the following:

- a. No vendor shall pay, offer to pay, or agree to pay, either directly or indirectly, any fee, commission, compensation, gift, gratuity, or other thing of value of any kind to any State officer or employee or special State officer or employee, as defined by NJSA 52:34D-13b. and e., in the Department of Treasury or any

other agency with which such vendor transacts or offers or proposes to transact business, or to any member of the immediate family, as defined by NJSA 52:13D-13i., of any such officer or employee, or any partnership, firm, or corporation with which they are employed or associated, or in which such officer or employee has an interest within the meaning of NJSA 52:13D-13g.

- b. The solicitation of any fee, commission, compensation, gift, gratuity or other thing of value by any State officer or employee or special State officer or employee from any State vendor shall be reported in writing forthwith by the vendor to the Attorney General and the Executive Commission on Ethical Standards.
- c. No vendor may, directly or indirectly, undertake any private business, commercial or entrepreneurial relationship with, whether or not pursuant to employment, contract or other agreement, express or implied, or sell any interest in such vendor to, any State officer or employee or special State officer or employee having any duties or responsibilities in connection with the purchase, acquisition or sale of any property or services by or to any State agency or any instrumentality thereof, or with any person, firm or entity with which he is employed or associated or in which he has an interest within the meaning of NJSA 52:13D-13g. Any relationships subject to this provision shall be reported in writing forthwith to the Executive Commission on Ethical Standards, which may grant a waiver of this restriction upon application of the State officer or employee or special State officer or employee upon a finding that the present or proposed relationship does not present the potential, actuality or appearance of a conflict of interest.
- d. No vendor shall influence, or attempt to influence or cause to be influenced, any State officer or employee or special State officer or employee in his official capacity in any manner which might tend to impair the objectivity or independence of judgment of said officer or employee.
- e. No vendor shall cause or influence, or attempt to cause or influence, any State officer or employee or special State officer or employee to use, or attempt to use, his official position to secure unwarranted privileges or advantages for the vendor or any other person.
- f. The provisions cited above in paragraphs IB12.1.a. through e. shall not be construed to prohibit a State officer or employee or special State officer or employee from receiving gifts from or contracting with vendors under the same terms and conditions as are offered or made available to members of the general public subject to any guidelines the Executive Commission on Ethical Standards may promulgate under paragraph IB12.1.c. above.

II. GENERAL CONDITIONS

ARTICLE 1

CONTRACT DOCUMENTS

1.1 Definitions for the purpose of this contract:

1.1.1 Administration: As used in this contract shall mean the General Services Administration in the Department of the Treasury, State of New Jersey.

1.1.2 Administrator: As used in this contract shall mean the General Services Administrator.

1.1.3 Architect/Engineer: The architectural or the engineering (A/E) consultant engaged by the State to act as the authorized representative of the contracting officer.

1.1.4 Where "as shown," "as indicated," "as detailed," or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provided complete in place," that is, "furnished and installed."

1.1.5 Bulletin or Addendum: A document, issued by DBC prior to opening of bids, which supplements, revises or modifies the solicitation document(s) furnished for bidding purposes.

1.1.6 Change Order Request: A request for equitable adjustment made by the contractor in response to written direction by the contracting officer pursuant to Article 14 entitled "Changes to Contract."

1.1.7 Claims: Differences between the State and a contractor concerning extra work, alleged errors or omissions in the specifications or drawings, unreasonable delays, damages to work, informal suspensions or interference by State personnel, and like matters.

1.1.8 Contract Documents: This contract, together with any plans, drawings, specifications or other documents which are attached hereto or incorporated herein by reference, together with any such plans, drawings, specifications, schedules, or other documents which may be produced pursuant to or derived from this contract and which are intended to bind the contractor hereunder.

1.1.9 Contract Limit Lines: Refers to those lines shown on the contract drawings which limit the boundaries of the project, and beyond which no construction work or activities shall be performed by the contractor unless otherwise noted on the drawings or specifications.

1.1.10 Contract Line Item Number (CLIN): A specifically described unit of work for which a price is provided in this contract.

1.1.11 Contractor: The person or persons, partnership or corporation named as contractor in this contract, operating as an independent contractor and not as an agent of the State in the performance of its functions. Whether referred to as "contractor," "prime contractor," "prime," "separate contractor," or "single contractor," it shall be understood to mean contractor. It does not include suppliers or materialmen.

1.1.12 DBC: The abbreviation for the Division of Building and Construction, Department of the Treasury, State of New Jersey.

1.1.13 Department: As used in this contract shall mean the Department of the Treasury, State of New Jersey.

1.1.14 Director: The Director of the Division of Building and Construction, who is authorized to administer the design, engineering and construction of all State buildings and facilities. The Director is the contracting officer representing the State personally or through authorized representatives in all relationships with contractors, consultants and architect/engineers. This includes a duly appointed successor or an authorized administrative contracting officer acting within the limits of his or her authority. The Director is the interpreter of the conditions of the contract and the judge of its performance. The Director shall not take arbitrary positions benefiting either the State or the

contractor, but shall use the powers specified under the contract to enforce its faithful performance by both.

1.1.15 Wherever in the specifications or upon the drawings the words "directed," "required," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the "direction," "requirement," "order," "designation," or "prescription" of the Director is intended. Similarly, the words "approved," "acceptable," "satisfactory," or words of like import shall mean "approved by," or "acceptable to," or "satisfactory to" the Director unless otherwise expressly stated.

1.1.16 General Construction Contractor: Either the contractor for general construction whenever separate prime contractors are involved in a project, or the sole contractor if there are no other prime contractors involved.

1.1.17 Notice: A written directive or communication served on the contractor to act or perform work or carry out some other contractual obligation. It shall be deemed to have been duly served if delivered to an individual or member of the firm or entity or to an officer of the corporation for whom it was intended. This includes delivery by courier or registered or certified mail or telegram to the business address cited in the contract documents.

1.1.18 Plans: Any drawings or reproductions thereof pertaining to the details of the work contemplated by this contract.

1.1.19 Project: A general term for identification of the total contract. It includes the work and all administrative aspects required to fully satisfy the contract requirements.

1.1.20 Public Contract: Any contract or agreement entered into by the State of New Jersey or any instrumentality of the State to purchase goods, services, or both.

1.1.21 Site, Construction Site or Project Site refers to the geographical area of the entire State facility or property at which the work under the contract is to be performed.

1.1.22 Specifications: All written agreements, instructions or other documents in or pursuant to this contract pertaining to the method of performing the work and the results to be obtained.

1.1.23 State, Owner, Agency of the State or Division of Building and Construction (DBC) means the State of New Jersey.

1.1.24 Subcontractor: The person or persons, partnership, or corporation that enters into a contract with the contractor for the performance of work under this contract, or the subcontractors of any tier of such individual or corporation.

1.1.25 Substantial Completion: The date the building or facility is operational or capable of serving its intended use even though all permanent installations are not in place. The determination as to the date of substantial completion shall be made pursuant to article 8.3 of these General Conditions.

1.1.26 Systems Assurance: The totality of all quality control and assurance requirements specified in the contract documents.

1.1.27 Unit Schedule Breakdown: A detailed list of the work activities required for project construction, other elements associated with fulfilling the requirements of the contract (bonds, insurance, etc.), major items of material or equipment, and the prices associated with them.

1.1.28 Using Agency: The State agency for which the project is being undertaken.

1.1.29 Work: All construction efforts required by the contract documents, including the work and all supervision, labor, material and equipment necessary to complete such construction.

1.2 Intent of the Contract

1.2.1 The drawings and specifications of the contract are intended to require the contractor to provide for everything reasonably necessary to accomplish the proper and complete finishing of the work. All work and materials included in the specifications and not shown on the drawings, or shown on the drawings and not in the specifications, shall be performed and/or furnished by the contractor as if described in both. Any incidental materials and/or work not specified in the drawings and/or the specifications which is, nevertheless, necessary for the true development thereof and reasonably inferable therefrom, the contractor shall understand the same to be implied and required, and shall perform all such work and furnish all such materials as if particularly delineated or described therein. Should there be an obvious error or omission in the drawings or specifications, it shall be the contractor's responsibility to complete the work as reasonably required, consistent with the intent of such drawings and specifications as may be interpreted by the Director.

1.2.2 Each contractor shall abide by and comply with the true intent and meaning of the drawings, the specifications and other contract documents taken as a whole, and shall not avail itself of any unintentional error or omission, should any exist. Should any error, omission or discrepancy appear or should any doubt exist, or any dispute arise as to the true intent and meaning of the drawings, specifications or other contract documents, or should any portion thereof be obscure, or capable of more than one interpretation, the contractor shall immediately notify the architect/engineer and seek correction or interpretation thereof prior to commencement of affected work. The architect/engineer shall issue a written interpretation with reasonable promptness. However, the contractor shall make no claim against the State for expenses incurred or damages sustained on account of any error, discrepancy, omission, or conflict in the contract documents unless and only to the extent that the contractor has submitted a written request for interpretation, clarification, or correction to the architect/engineer and the Director, and such written request has been received by the architect/engineer and the Director at least five working days prior to the date fixed for the opening of bids. In addition, such claim shall only be recognized by the State if the matter raised by the written request has not been addressed by the State through the issuance of a bulletin interpreting, clarifying, and/or correcting such error, discrepancy, omission or conflict. In case of dispute, the matter shall be referred to the Director for a decision.

1.2.3 Each and every provision required by law to be inserted in the contract documents shall be deemed to have been inserted therein. If any such provision has been omitted or has not been correctly inserted, then upon application of either party, the contract shall be physically amended to provide for such insertion or correction.

1.2.4 The organization of the specifications into divisions, sections and articles, and the arrangement of drawings shall not be construed by the contractor as being intended to divide or allocate the work among subcontractors in any manner or to establish the extent of the work to be performed by any trade.

1.2.5 Unless otherwise provided in the contract documents, the Director will furnish to each contractor free of charge three copies of the drawings and specifications, and additional instructions by means of supplemental drawings as otherwise necessary for the proper execution of the work. Upon request, additional drawings will be furnished at the contractor's expense.

1.2.6 The contractor shall do no work without proper drawings and instructions, unless written authorization to proceed from the Director is received by the contractor. In giving such additional instructions, the Director may make minor changes in the work, not involving extra cost.

1.2.7 All drawings referred to, and any supplementary details as may be furnished and approved from time to time as the work progresses, are understood as being included as part of the contract to which they relate.

1.2.8 The sequence of precedence pertaining to interpretation of contract documents is as follows:

- a. Executed Contract
- b. Addenda/Bulletins/Instructions

- c. Supplemental General Conditions
- d. Specifications, including General Conditions
- e. Drawings, in the following order of precedence:
 - (1) Notes on drawings
 - (2) Large scale details
 - (3) Figured dimensions
 - (4) Scaled dimensions

Where there may be a conflict in the specifications or drawings not resolvable by application of the provisions of this paragraph, then the more expensive labor, materials, or equipment shall be assumed to be required and shall be provided by the contractor.

1.2.9 On all work involving alterations, remodeling, repairs or installation within existing buildings, it shall be the responsibility of each contractor, by personal inspection of the existing building, facility, plant or utility system, to ascertain the accuracy of any information given which may affect the quantity, size and/or quality of materials required for a satisfactorily completed contract, whether or not such information is indicated on the drawings or included in the specifications. All contractors shall include the costs of all material and labor required to complete the work based on reasonably observable conditions.

ARTICLE 2

DIRECTOR

2.1 Director's Right to Stop the Work

2.1.1 If the contractor fails to correct defective work or persistently fails to carry out the work in accordance with the contract documents, the Director or the Director's authorized representative may order the contractor to stop the work, or any portion thereof, until the cause for such order has been eliminated. Stoppage of the work of one or more contractors, however, shall not render the State liable for claims of any kind, including delays sustained by one contractor as the result of the stoppage of the work of another contractor.

2.2 Director's Right to Terminate

2.2.1 If the contractor persistently or repeatedly refuses or fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials so as to avoid or eliminate delays in the orderly progress of the work in accordance with the approved schedule; if the contractor fails to make prompt payment to subcontractors or for materials or labor; or persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction; or if the contractor or any of its subcontractors is guilty of a substantial violation of a provision of the contract documents or otherwise defaults or neglects to carry out the work in accordance with the contract documents, then the Director may, without prejudice to any right or remedy, and after giving the contractor and its surety three working days written notice to forthwith commence and continue correction of such default or neglect with diligence and promptness, terminate the employment of the contractor by the issuance of a written notice to that effect to the contractor and its surety should both or either of them fail to comply with the demands of the original above mentioned three day notice.

2.2.2 Upon such termination, the Director may take possession of the site and of all the materials, equipment, and tools on the site, and may finish the work by whatever method the Director may deem expedient. In such case, the contractor shall not be entitled to receive any further payment until the work is finished. The person or firm designated to carry out such work will be paid as authorized by the Director, without entailing any personal liability upon the officers of the State issuing certificates or making such payments.

2.2.3 If the unpaid balance of the contract sum exceeds the cost of finishing the work (including liquidated damages for delays and all consequential damages sustained by the State originating from such breach of contract), such excess shall be paid to the contractor. If such costs exceed the unpaid balance, the contractor and/or its surety shall pay the difference to the Department of the Treasury promptly upon receipt of billing from the State, and this obligation shall survive the termination of the contract.

2.2.4 If, within three working days following receipt of Notice of Termination by the contractor's surety (the issuer of the performance and payment bonds), the said surety exercises its right to take over the work and expeditiously commences to prosecute the same to completion, the Director shall permit the surety to do so under the following terms and conditions:

- a. Evidence of the surety's intention to take over and complete the contract shall be in writing over the signature of an authorized representative and served upon the Director within three working days after receipt by the surety of the Notice of Termination.
- b. The execution of a written agreement by the Director, between the State and the surety, whereby the latter undertakes and assumes the obligation to complete the balance of the work of its defaulting contractor in accordance with the terms and conditions of the Director-Contractor agreement, is to be performed by a substituted contractor satisfactory to the Director at the surety's sole cost and expense. Provision for payments to the surety or to the substituted contractor of unpaid contract balances, if any, then in the hands of the State.

- c. The said agreement shall also expressly provide that the surety shall not be relieved from any of its obligations under the performance and payment bonds, and that it furnish the State with an additional performance and payment bond to secure the faithful performance of the substituted contractor.
- d. All current obligations for labor and materials incurred and outstanding by the defaulting contractor on this project shall be paid without delay, subject to allowance of reasonable time to verify such claims by the surety.
- e. The parties expressly understand and agree that this agreement is without prejudice and is subject to such rights and remedies as either party (including the contractor) may elect to assert after final completion and acceptance of the work.

2.3 Director's Representation

2.3.1 The Director will be represented on the construction site by DBC engineers and project inspectors or other designated representatives. This technical staff will conduct on-site inspections, maintain logs of construction progress and problems encountered, review and process contractors' invoices including stored materials on site, attend job meetings, serve as liaison between the architect/engineer and contractors, prepare and submit reports on special problems associated with the job, evaluate and process change orders, and generally remain fully cognizant and informed by the contractors of every aspect of ongoing construction. The Director's representatives have only those duties which are required of an owner; responsibility for completion of this project, pursuant to the contract documents, remains that of the contractor(s).

2.4 Review of Contractor Claims and Disputes

2.4.1 Upon presentation by the contractor of a request in writing, the Director may review any decision or determination of the State or the architect/engineer as to any claim, dispute or any other matter in question relating to the execution or progress of the work or the interpretation of the contract documents. Consistent with the intent of this contract, the Director may schedule a conference for the purpose of settling or resolving such claims, disputes or other matters. Where such a conference is conducted, the contractor shall be afforded the opportunity to be heard on the matter in question. Following review of the contractor's request, the State and the contractor may settle or resolve the disputed matter, provided however that any such settlement or resolution shall be subject to all requirements imposed by law, including where applicable, the New Jersey Contractual Liability Act (NJSA 59:13-1 *et seq.*).

ARTICLE 3

ARCHITECT/ENGINEER

3.1 The Architect/Engineer

3.1.1 When the State provides full supervision and management of a project, the architect/engineer's role is that of consultant to DBC.

3.2 Administration of the Contract

3.2.1 The architect/engineer will provide a certain portion of the administration of the contract as hereinafter described.

3.2.2 The architect/engineer will monitor the execution and progress of the work and will immediately notify the Director of any related problems. The architect/engineer will at all times be provided access to the work. The general construction contractor shall provide facilities for such access so as to enable the architect/engineer to perform its functions under the contract documents.

3.2.3 The architect/engineer will not be responsible for, nor have control or charge of, construction means, methods, techniques, sequences of procedures, or safety precautions and programs in connection with the work. The architect/engineer will not be responsible for, nor have control or charge of, the acts or omissions of the contractors, subcontractors, or any of their agents or employees, or any other person performing any of the work, but shall have the obligation to immediately inform the Director of any inadequate performance of the project.

3.2.4 The architect/engineer will recommend rejection of work which it believes does not conform to the contract documents. Whenever the architect/engineer considers it necessary or advisable, it may request the Director to provide special inspection or testing of the work, whether or not such work has been fabricated, installed or completed.

3.2.5 The architect/engineer will review, approve or take other appropriate action relating to contractors' submittals, such as shop drawings, product data and samples, to assure conformance with the design requirements and the plans and specifications of the work. Such actions shall be taken with reasonable promptness. Approval of a specific item shall not indicate approval of an assembly of which the item is a component.

3.2.6 The architect/engineer will periodically review the contractors' as-built drawings to ensure that they are up to date.

3.3 Inspections - Substantial and Final Completion

3.3.1 The architect/engineer, accompanied by the contractor and the Director's authorized representative, will conduct site inspections to determine the dates of substantial and final completion and will receive and compile written warranties and all other requisite documents assembled and supplied by the contractor. The architect/engineer will forward these documents to the Director for review and certify final contract acceptance.

ARTICLE 4

THE CONTRACTOR

4.1 Review of Contract

4.1.1 The contractor has the duty to do the following: to thoroughly examine and become familiar with all the contract documents, including but not limited to the complete set of drawings and specifications of the entire project; to note cases where it is specified that certain work or materials or both are to be omitted by one contractor and to be furnished or installed by another; to carefully examine the site; to investigate and accurately determine the nature and location of the work, the current equipment, labor and material conditions, and all matters which may in any way affect the work or its performance. The contractor is responsible to check and verify reasonably observable conditions outside the contract limit lines to determine whether any conflict exists with the work the contractor is required to perform under the contract. This includes a check on elevations, utility connections and other site data. As a result of such examination and investigation, the contractor warrants and represents the full understanding of the intent and purposes of the contract documents and the contractor's obligation thereunder and that the contractor accepts responsibility for, and is prepared to execute and fulfill completely, by its construction work, the intent of the contract, without exception and without reservation, at the price specified in the contract.

4.1.2 The contractor shall carefully study and compare the contract documents during the progress of the work and shall immediately report any error, inconsistency or omission to DBC upon discovery. The contractor shall immediately report any error, inconsistency or ambiguity detected during the course of the project to the State, and shall not continue with any work which may be affected by such error until the State has had the opportunity to respond to and clarify the work it wants performed in view of this information. Wherever any error, inconsistency or omission appears, it shall be disposed of pursuant to appropriate procedures set forth elsewhere herein.

4.1.3 Unless otherwise ordered in writing by the Director, the contractor shall perform no portion of the work without approved change orders, approved shop drawings, samples, or other approvals as may be applicable and required by the contract documents.

4.1.4 Unless otherwise provided in the contract documents, the contractor shall provide and pay for all labor, equipment, materials, tools, construction equipment and machinery, water, heat, utilities, transportation and other facilities and services necessary for the proper execution and completion of the work, whether or not incorporated or to be incorporated in the work.

4.1.5 The contractor shall at all times enforce strict discipline and good order among its employees and shall not employ on the work any unfit person or anyone not skilled in the task assigned to him.

4.1.6 The contractor shall be obligated to pay the prevailing wage rates set forth in the specifications and shall abide by the requirements of the State's Affirmative Action Program. The contractor also shall be responsible to ensure that all principles of safety are carried out, as detailed in article 12 of this document.

4.2 New Jersey Prevailing Wage Act

4.2.1 Each contractor and subcontractor shall comply with the New Jersey Prevailing Wage Act Laws of 1963, Chapter 150, (NJSA 34:11-56.25 *et seq.*) and all amendments thereto, and this act is hereby made a part of every contract entered into on behalf of the State of New Jersey through the Division of Building and Construction, except those contracts which are not within the contemplation of the act. Provisions of the act include the following stipulations and requirements:

- a. All workers employed in the performance of every contract in which the contract sum is in excess of \$2,000 and to which the Division of Building and Construction is a party shall be paid not less than the prevailing wage rate as designated by the Commissioner, Department of Labor or his or her duly authorized representative.

- (1) Each contractor and subcontractor performing public work for the Division of Building and Construction on behalf of the Department of the Treasury, and which is subject to the provisions of the Prevailing Wage Act, shall post the prevailing wage rates for each craft and classification involved as determined by the Commissioner, Department of Labor. This posting shall include the effective date of any changes thereof, and shall be displayed in prominent and easily accessible places at the site of the work or at such place or places as are used by the contractor/subcontractor to pay workers' wages.
 - (2) The contractor's signature on the proposal is its guarantee that neither the contractor nor any of its subcontractors is currently listed or on record by the Commissioner, Department of Labor, as one that has failed to pay the prevailing wages according to the Prevailing Wage Act.
- b. In the event it is found that any worker, employed by any contractor or subcontractor covered by any contract in excess of \$2,000 for any public work to which the Division of Building and Construction is a party, has been paid a rate of wages less than the prevailing wage required by such contract, the Director of the Division of Building and Construction may terminate the contractor's or subcontractor's right to proceed with the work, or such part of the work as to which there has been failure to pay required wages, and may otherwise prosecute the work to completion.
 - c. Nothing contained in the Prevailing Wage Act shall prohibit the payment of more than the prevailing wage rate to any worker employed on a public work.

4.3 Supervision and Construction Procedures

4.3.1 The contractor shall supervise and direct the work as skillfully and attentively as possible. The contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the contract.

4.3.2 The contractor shall employ a full-time competent superintendent and necessary foremen and assistants, who shall be in attendance on the project site during the progress of the work. The superintendent shall represent the contractor, and all communications given to the superintendent shall be as binding as if given to the contractor. Important communications shall be confirmed in writing. The State reserves the right to require a change in superintendent if the superintendent's performance, as judged by the Director, is deemed to be inadequate. Upon application in writing to the Director, this requirement for a full-time superintendent may be waived by the Director should the Director determine that such staffing is not required by the State.

4.3.3 Each contractor shall employ qualified competent craftsmen in their respective lines of work.

4.3.4 The various subcontractors shall likewise have competent superintendents and/or foremen in charge of their respective portions of the work at all times. They shall not employ a person unfit or unskilled in the assigned area of work. If it should become apparent that a subcontractor does not have its portion of the work under control of a competent foreman, the responsible prime contractor shall have the obligation to take appropriate steps to immediately provide proper supervision.

4.3.5 If, due to a trade agreement, standby personnel are required to supervise equipment installation or for any other purpose during the normal working hours of other trades, the contractor normally required to provide the standby services shall evaluate and include the costs thereof in its bid price and shall provide said services without additional charge.

4.4 Responsibility for the Work

4.4.1 The contractor shall be responsible to the Director and to any separate contractors having a contract with the State on this project, for the acts and omissions of its employees, subcontractors and their agents and employees which injure, damage or delay such other contractors in the performance of their work. This responsibility is not limited by the applicable provisions stated elsewhere in this document, but is in conjunction with and related to these provisions.

4.4.2 Each contractor shall be responsible for all damage or destruction caused directly or indirectly by its operations to all parts of the work, both temporary and permanent, and to all adjoining property.

4.4.3 Each contractor shall, at its own expense, protect all finished work liable to damage and keep the same protected until the project is completed and accepted. In the case of substantial completion accompanied by beneficial occupancy by the State, the contractor's obligation to protect its finished work shall cease simultaneously with the occupancy of the portion or portions of the structure.

4.4.4 Each contractor shall defend, protect, indemnify and save harmless the State from all claims, suits, actions, damages and costs of every name and description arising out of or resulting from the performance of the contractor's work under this contract. This responsibility is not limited by the provisions of other indemnification provisions included elsewhere in this document.

4.4.5 In order to protect the lives and health of its employees, the contractor shall comply with all applicable statutes and pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc. and shall maintain accurate records of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work arising out of and in the course of employment on work under the contract. The contractor alone shall be responsible for the safety, efficiency, and adequacy of its plant, appliances and methods, and for any damage or injury which may result from the contractor's failure or improper construction, maintenance or operation.

4.5 Permits - Laws - Regulations

4.5.1 Unless otherwise provided in the contract documents, the contractor shall secure and pay for all permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the work, and which are legally required at the time of receipt of bids.

4.5.2 All general construction, plumbing and electrical work is to be done in accordance with the New Jersey Uniform Construction Code. No work requiring inspections and approval of construction code officials is to be covered or enclosed prior to inspection and approval by appropriate code enforcement officials.

4.5.3 The work under this contract is exempt from local ordinances, codes and regulations as related to the building and the site on which it is located, except where construction could adversely affect adjacent property, public sidewalks and/or streets. The contractor shall coordinate its activities with municipal and/or highway authorities having appropriate jurisdiction.

4.5.4 Soil conservation measures are to be in accordance with County Soil Conservation District requirements.

4.5.5 All sewage disposal work shall conform with the regulations of the State's Department of Environmental Protection and Energy.

4.5.6 The State will engage and pay for all code inspection; however, it is each contractor's responsibility to request inspections in a timely manner.

4.5.7 The State, upon the contractor's request, will name the inspector/inspection agency responsible for code enforcement at the time of project award. A Certificate of Electrical Code Compliance is to be obtained from the electrical code inspector prior to the issuance of the Certificate of Final Acceptance for electrical work.

4.5.8 Consistent with section 4.4.4 of this document, each contractor shall be responsible for and save harmless the State from all fines, penalties or loss incurred for, or by reason of, the violation of any municipal ordinance or regulation or law of the State while the said work is in progress.

4.5.9 All contractors shall comply with the Federal Occupational Safety and Health Act of 1970 and all of the rules and regulations promulgated thereunder.

4.5.10 As a result of a finding by an appropriate finder of fact that a contractor caused a substantial violation of a State, local or federal statute or regulation on said project, DBC may declare the contractor to be in default.

4.5.11 Prior to the start of any crane equipment operations, each contractor shall make all necessary applications and obtain all required permits from the Federal Aviation Administration (F.A.A.). The sequence of operations, timing and methods of conducting the work shall be approved by the F.A.A. to the extent that it relates to its jurisdiction.

4.6 Storage, Cleaning and Final Clean Up

4.6.1 Each contractor shall confine its apparatus, the storage of its equipment, tools and materials, and its operations and workers to areas permitted by law, ordinances, permits, and contract limit as established in the contract documents, the rules and regulations of the Using Agency, or as ordered by the Director. The contractor shall not unreasonably encumber the site or the premises with materials, tools and equipment.

4.6.2 Each contractor shall at all times during the progress of the work keep the premises and the job site free from the accumulation of all refuse, rubbish, scrap materials and debris caused by its operations, to ensure that at all times the premises and site shall present a neat, orderly and workmanlike appearance. This is to be accomplished as frequently as is necessary by the removal of such material, debris, etc. from the site and the State's premises. Loading, cartage, hauling and dumping will be at the contractor's expense.

4.6.3 At the completion of the work, all contractors shall remove all of their tools, construction equipment, machinery, temporary staging, falsework, formwork, shoring, bracing, protective enclosures, scaffolding, stairs, chutes, ramps, runways, hoisting equipment, elevators, derricks, cranes, etc. from the project site.

4.6.4 Should any contractor not promptly and properly discharge its obligation relating to cleaning and final clean up, the State shall have the right to employ others and to charge the resulting cost to the contractor(s) deemed by the Director to be responsible therefor, after first having given the contractor a three working day written notice of such intent.

4.6.5 The contractor's responsibilities in final clean up include:

- a. Removal of all debris and rubbish resulting from or relating to the contractor's work. Rubbish shall not be thrown from building openings above the ground floor unless contained within chutes.
- b. Removal of putty stains from glass and mirrors. Glass shall be washed and polished inside and outside.
- c. Removal of marks, undesirable stains, fingerprints, soil, dust or dirt from painted, decorated or stained woodwork, plaster or plasterboard, metal acoustic tile and equipment surfaces.
- d. Removal of spots, paint and soil from resilient, glazed and unglazed masonry and ceramic flooring and wall work.
- e. Removal of temporary floor protections; and cleaning, washing or otherwise treating and/or polishing, as directed, all finished floors.
- f. Cleaning of exterior and interior metal surfaces, including doors, window frames and hardware, of oil stains, dust, dirt, paint, etc. Polishing and removal of fingerprints or blemishes from such surfaces shall be completed, as applicable.

- g. Restoration of all landscaping, roadways and walkways to preexisting condition. Damage to trees and plantings shall be repaired in the next planting season, and such shall be guaranteed for one year from the date of repair and/or replanting.

4.6.6 In each instance, the clean-up work shall be performed by the contractor responsible for the portion of the work requiring the clean-up service. In the event of dispute as to responsibility, the Director's representative shall make the determination, which shall be binding on all contractors.

4.6.7 All construction equipment, materials or supplies of any kind, character or description of value belonging to the contractor and which remain on the job site for more than 30 calendar days from the date of the Certificate of Final Acceptance and Completion issued by the State to the contractor, shall become the absolute property of the State. It will be disposed of in any manner the State shall deem reasonable and proper.

4.7 Cut-Overs, Interruptions to Existing Buildings

4.7.1 All cut-overs of mechanical and electrical services to existing buildings shall be scheduled and coordinated in advance with the Director's representative and performed at a time convenient to the Using Agency so as not to unreasonably interfere with its operations.

4.8 Non-Regular Workdays

4.8.1 Regular working hours shall be 8:00 a.m. to 4:30 p.m., Monday through Friday. Changes thereto may be granted with written approval of the Director's representative. Any work required to be performed after regular working hours or on Saturdays, Sundays, or legal holidays as may be reasonably required and consistent with contractual obligations, shall be performed without additional expense to the State. The contractor shall obtain approval of the Director's representative for performance of work after regular working hours or on non-regular work days at least 24 hours prior to the commencement of overtime, unless such overtime work is caused by an emergency.

4.9 Drawings, Specifications, Shop and As-Built Drawings

4.9.1 The Director will furnish, after becoming aware of such need, additional instructions for the proper execution of the work. All drawings and instructions issued by the Director shall be consistent with the contract documents and reasonably inferable from and executed in conformity with the contract documents. The contractor shall do no work without proper drawings and instructions. In giving such additional instructions, the Director will have the authority to make minor changes in the work, not involving extra cost. Drawings and instructions with such supplementary details furnished or approved are understood to be included and a part of the contract.

4.9.2 Where certain of the work is shown in complete detail, but not repeated in similar detail in other areas of the drawings, or if there is an indication of continuation with the remainder being shown only in outlines, the work shown in detail shall be understood to be required in other like portions of the project.

4.9.3 No contractor shall, at any time after the execution of its contract, make any claims whatever based upon insufficient data or the contractor's incorrectly assumed conditions, nor shall the contractor claim any misunderstandings with regard to the nature, conditions or character of the work to be done under the contract. The contractor shall assume all risks resulting from any changes in conditions not under the control of the State, which may occur during the progress of the work.

4.9.4 Each contractor shall, together with the Director or Director's representative, prepare a schedule of the proposed progress of the work, fixing the dates when the various details and supplemental drawings, if any, may be required. Within two weeks of the first field meeting, each contractor shall submit to the architect/engineer a shop drawing submission schedule which shall be used as a basis for complying with the overall progress schedule. Each contractor shall also promptly submit, so as to cause no delay in its own work or that of any other prime contractor, a reproducible transparent copy of all shop or setting drawings, details and schedules required for the work of the various trades. The architect/engineer will review them with reasonable promptness. The contractor shall promptly make any corrections, if required by the architect/engineer, and

resubmit a reproducible transparent copy for approval. Within five working days of final approval, the contractors shall send the architect/engineer a minimum of six prints of the finally approved drawings as well as six copies of all catalog cuts, plus the required number of approved prints for all other prime contractors. The architect/engineer will make proper distribution of all drawings as directed by the Director.

4.9.5 The contractor shall not use the contract drawings for submission of shop drawings. All shop drawing sizes shall be in multiples of 9" x 12" (e.g., 18" x 24", 24" x 27", 24" x 36", etc.) as approved by the architect/engineer.

4.9.6 Attached to the contractor's initial submission of such drawings or catalog data shall be an itemized schedule listing dates by which all other submissions will be forwarded to the architect/engineer. The general construction contractor also has the responsibility to submit coordinated drawings whenever two or more trades are occupying common space. Any list of drawings prepared by the architect/engineer is for the Director's convenience only, and shall not be construed as limiting the number of drawings the contractor shall furnish.

4.9.7 Any contractor desiring to make any deviations or changes from the requirements of the contract documents shall obtain the consent of the Director to such changes before submitting drawings showing such proposed changes. All drawings submitted by the contractor shall have been checked and approved by the contractor before submission. The DBC project number and the drawings and specification references shall be noted on all submissions. Failure to comply with these instructions will be sufficient reason to return such drawings to the contractor without any action being taken.

4.9.8 Each contractor shall keep on the project site at all times one set of drawings to be marked "AS-BUILT." During the course of the project, the contractor shall mark these drawings with colored pencils to reflect any changes, as well as dimension the location of all pipe runs, conduits, traps, footing depths or any other information not already shown on the drawings or differing therefrom. All buried utilities outside the building shall be located by a metes and bounds survey performed by a licensed surveyor who shall certify as to its accuracy. These marked-up drawings and surveys shall be made available to the Director upon request at any time during the progress of the work. These shall include the drawings of principal sub-contractors as well.

4.9.9 In instances where sepias, shop drawings and/or erection drawings, of a scale larger than the contract drawings, are prepared by a contractor, such drawings and sepias will be acceptable in lieu of marked-up contract drawings, provided they are updated as per section 4.9.8 above. A master sheet of the same dimensions as the contract drawings shall be prepared by the contractor on a tracing which shall indicate, sheet by sheet, a cross-reference to all shop drawings pertaining to that drawing. All drawings and sepias as required in section 4.9.8 and this section shall be labeled "AS-BUILT" above the title block and dated.

4.9.10 Each contractor shall submit the "as-built" documents to the architect/engineer, whether altered or not, with a certification as to the accuracy of the information thereon at the time of contract completion and before final payment will be made to the contractor. After acceptance by the architect/engineer, the contractor will furnish two sets of all shop and/or erection drawings used for "as-built" documentation.

4.9.11 The architect/engineer shall obtain original tracings at the office of the Division of Building and Construction. No original tracings will be mailed. All "as-built" drawings as submitted by contractors shall be labeled "AS-BUILT" above the title block and dated. This information shall be checked, edited and certified by the architect/engineer, which shall then transpose such information from the contractor's "as-built" drawings to the original tracings, certify that such tracings reflect as-built status, and deliver said tracings to DBC. Where shop drawings have been used by the contractor for "as-built" documentation, the tracing providing cross reference information, as described in section 4.9.9 of this document, shall be included in the set of "as-built" drawings furnished to DBC.

4.10 Samples

4.10.1 Each contractor shall furnish, for approval, all samples as directed. The work shall be in accordance with approved samples. Such samples shall be submitted promptly to the Director, through the architect/engineer, at the beginning of the work, so as to give the Director time to examine them. Any list of samples prepared by the architect/engineer is for the Director's convenience only, and shall not be construed as limiting the number of samples the contractor shall furnish upon request of the architect/engineer.

4.11 Miscellaneous Drawings, Charts and Manuals

4.11.1 Roughing Drawings and Operating Manuals: Plumbing, HVAC, electrical and other machinery and mechanical equipment items requiring utility service connections shall have their respective shop drawings accompanied by manufacturer's certified roughing drawings, indicating accurate locations and sizes of all service utility connections.

4.11.2 Sleeve and Opening Drawings: Prior to installing service utilities or other piping, etc. through structural elements of the building, the contractor shall prepare and submit, for approval of the architect and structural engineer, accurate dimensional drawings indicating the positions and sizes of all sleeves and openings required to accommodate the work and installation of the contractor's piping, equipment, etc. All such drawings must contain reference to the established dimensional grid of the building. Such drawings must be submitted in sufficient time to allow proper coordination with reinforcing steel shop drawings and proper placing in the field.

4.11.3 Control Value and Circuit Location Charts and Diagrams: Plumbing, HVAC and electrical contractors shall prepare a complete set of inked or typewritten control valve and circuit location diagrams, charts and lists identifying and locating all such items, and shall place the charts, diagrams and lists under frame glass in appropriately designated equipment rooms, as directed. These contractors shall also furnish one-line diagrams, as well as such color coding of piping and wiring and identifying charges as specified or required. This information is to be framed under glass and displayed where directed.

4.11.4 Operating and Manuals: Four copies of all operating and maintenance manuals, as identified and described in the contract specifications, are to be furnished by the appropriate contractors. Operating and maintenance manuals shall include a complete description of all systems and equipment; diagrams indicating connectors, coiling requirements and types of lubricants to be used; and method of operating equipment. These manuals must be submitted to the architect/engineer for review and approval at the earliest date possible, but in all cases prior to final acceptance. Included within the manuals shall be a list of names, addresses and telephone numbers of subcontractors involved in the installations and of firms capable of performing services for each mechanical item.

4.11.5 As a pre-condition to the acceptance of a facility for beneficial use, contractors shall provide a "throwaway" copy of operations and maintenance manuals to allow the using agency's staff to operate the equipment prior to receiving the hard bound copies required by the contract.

4.12 Openings - Channels - Cutting and Patching

4.12.1 Each contractor shall be responsible for furnishing and setting of sleeves, built-in items, anchors, inserts, etc. for its work and for all cutting, fitting, closing in, patching, finishing, or adjusting of its work in new and/or existing construction, as required for the completed installation. Where applicable, the contractor for general construction shall build these items into the construction.

4.12.2 The contractor for general construction shall build recesses, channels, chases, openings and flues and shall leave or create holes where indicated on drawings, or where directed, for steam, water or other piping, electrical conduits, switch boxes, panel boards, flues and ducts, or any other feature of the heating and ventilating work. All contractors requiring recesses, channels, chases, openings, etc. shall furnish to the contractor for general construction, through the architect/engineer, complete detailed drawings for all such openings required in connection with such work in ample time to allow the construction work to proceed without interruption or delay. At least three copies shall be furnished to the Director.

4.12.3 The contractor for general construction shall close, build in and finish around or over all openings, chases, channels, pockets, etc., after installation has been completed. Should any contractor fail to furnish the above required information in time, the contractor shall, at its own expense, arrange for all cutting, rebuilding, patching and finishing, but shall employ the contractor for general construction for such work.

4.12.4 Approval in writing from the Director must first be obtained by the contractor before cutting or boring through any floor beams, floor construction or supporting members.

4.13 Tests

4.13.1 The contractor shall notify the Director or Director's authorized representative in writing of all work required to be inspected, tested or approved. The notice shall be provided no later than five working days prior to the scheduled inspection, test or request for approval. The contractor shall bear all costs of such inspections, tests or approvals, except for code inspections as stated in section 4.5.6 of this document.

4.13.2 When mechanical, electrical or other equipment is installed, it shall be the responsibility of the installing contractor to maintain, warrant and operate it for such period of time as required by the contract documents or as necessary for the proper inspecting and testing of the equipment and for adequately instructing the State's operating personnel. All costs associated with the maintenance, warranty, operations, inspection and testing of equipment, as well as instructing State personnel, shall be borne by the contractor installing the equipment. All tests shall be conducted in the presence of, and upon timely notice to, the Director prior to acceptance of the equipment.

4.13.3 When the Director requires special or additional inspections, testing or approvals, the Director will direct the contractor in writing to secure the service for such special or additional inspections, testing or approvals, and the contractor shall give notice as detailed in section 4.13.1 of this document. In the event such special or additional inspections or testing reveal a failure of the work to comply with the terms and conditions of the contract, the contractor shall bear all costs thereof, including all costs incurred by the State made necessary by such failures; otherwise the State shall bear all costs and an appropriate change order will be issued.

4.13.4 The contractor shall acquire inspection or testing services using only those firms/entities pre-qualified by DBC. A list of those prequalified firms/entities is contained within the contract specifications. Failure to use a firm/entity pre-qualified by DBC shall be grounds for rejection of the inspection or test as non-conformance.

4.13.5 All submittals of inspections and test reports or requests for approval shall be accompanied by a certification signed by the contractor, attesting to the contractor's knowledge of the submittal, acceptance of its findings, acknowledgment that material testing meets the required standards, and certification of the report's representation of the facts. Failure to provide the written certification shall be grounds for rejection of the submittal.

4.13.6 In addition to the above, the contractor agrees to insert in all contracts/purchase orders for inspection and testing the requirement for the inspection or testing firm/entity to submit, in conjunction with the report to the contractor, a copy of the report directly to the Director. The copy shall be held pending receipt of the contractor's certification of the report. Further, the contractor agrees to require all reports to be submitted within 14 calendar days of the test or inspection. Failure to provide reports within the required time shall be addressed pursuant to section 10.3.9 of these General Conditions.

4.13.7 Testing requirements for real property installed equipment (RPIE) to be furnished by the contractor, when such testing is required by code, contract, or the manufacturer, shall be performed by a testing laboratory pre-qualified by DBC, or, in the absence of such, by the manufacturer or its authorized representative. The contractor shall provide the five working days notice to the State. The State shall witness all tests.

4.14 Equipment - Materials

4.14.1 The contractor warrants to the Director and the architect/engineer that all materials and equipment furnished under the contract will be new, unless otherwise specified, and that all work will be of good quality, free from faults, defects, and in conformance with contract documents. All work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective and rejected by the Director or the architect/engineer. If required by the architect/engineer or the Director, the contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. This warranty is not limited by the provisions of the other paragraphs contained in this document.

4.14.2 The original and six copies of the request for approval of materials prepared on the appropriate DBC form shall be forwarded to the architect/engineer for approval. Each item of material listed shall be marked "As Specified" or "Unspecified" as the case may be.

4.14.3 Each contractor shall furnish and deliver the necessary equipment and materials in ample quantities and as frequently as required to avoid delay in the progress of the work and shall store them so as not to cause interference with the orderly progress of the project.

4.14.4 Each contractor shall furnish and pay for all necessary transportation, storage, scaffolding, centering, forms, water, labor, tools, light and power and mechanical appliances and all other means, materials and supplies for properly prosecuting the work under this contract, unless expressly specified otherwise. The contractor shall make arrangements to have its representatives at the site to accept delivered materials. State agencies will not accept materials, nor will they be held responsible for damage, theft, or disappearance of contractor's materials, equipment, tools, etc.

4.14.5 Manufactured products of the United States, whenever available, shall be used in this work. Wherever practicable, preference shall be given at all times to material and equipment manufactured or produced in the State of New Jersey, where such preference is reasonable and will best serve the interest of the State.

4.14.6 No materials, equipment, or supplies for the work shall be purchased by the contractor or any subcontractor subject to any lien or encumbrance or other agreement by which an interest is retained by the seller. The contractor warrants, by signing its invoice, that it has good and sufficient title to all such material, equipment and supplies used by it in the work, free from all liens, claims or encumbrances.

4.15 Substitutions

4.15.1 In the event a contractor should propose a substitution of the specified equipment or materials, it shall be its responsibility to submit proof of equality and to provide and pay for any tests which may be required by the Director in order to evaluate such proposed substitution.

4.15.2 Where any particular brand or manufactured article is specified, it shall be regarded as a standard. Similar products of other manufacturers, capable of equal performance and quality, in the opinion of the Director, will be accepted if approved.

4.15.3 On forms supplied by the State, the application for approval of a substitution by the contractor shall include or conform to the following requirements:

- a. Furnish full and complete identification information.
- b. Note whether the item is included in the specifications; in which case, identify the specification paragraph and section.
- c. Attach data indicating in detail whether and how the substitution differs, if at all, from the article specified.
- d. If a credit is to be offered for the substitution, provide a detailed itemization of the amount of credit.
- e. If the proposed substitution involves a change in scope of the work of this or any other contractor or trade under the contract documents, then the contractor requesting

approval undertakes and agrees to be responsible for any and all resulting added costs in its work, the work of other contractors and trades, including any redesign.

- f. When requesting approval of an out-of-state subcontractor or material manufacturer or supplier, include a statement indicating that reasonable effort was first made to find and utilize New Jersey firms and/or materials, at comparable costs, terms and performance capabilities.
- g. Submit documents which demonstrate proof of equality, along with an agreement to have such tests performed at the contractor's own expense as may be required for approval by the Director or the architect/engineer.
- h. No contractor shall base a bid on substitutions which may have been approved on previous projects. Bids shall be based solely on plans and specifications of the subject project.

4.15.4 Since substitutions are primarily for the financial benefit of the contractor, a credit change order shall accompany each request for substitution.

4.16 Subcontractor Approvals

4.16.1 Approval of a subcontractor or material supplier by the Director and architect/engineer shall not relieve the contractor of the responsibility of complying with all provisions of the contract documents. The approval of a subcontractor does not imply approval of any material, equipment or supplies.

4.17 Pay Limits for Excavation

4.17.1 The method of measurement and establishment of pay limits for additions or deductions for excavation where expressly authorized in these General Conditions and/or specifications, shall be as follows:

- a. Basement excavations: Pay limit for excavation shall be in accordance with cross-section limited by vertical parallel planes extending 24 inches outside of foundation walls as shown on contract drawings, and horizontal plane along bottom of basement concrete slab or footings.
- b. All pipelines and encased utilities: Pay limit for trench excavation shall be limited to width of 36 inches or the largest diameter or pipe barrel plus 24 inches, whichever is greatest, and depth at bottom of pipe barrel. When rock is encountered, the contractor shall excavate to six inches below bottom of pipe barrel. A compacted granular fill for the pipe shall be provided by the contractor. No additional payment will be made for this additional six inches of granular fill.
- c. Encased electrical conduit, steam transmission lines, unformed foundation footings: Width and depth of trench shall be limited to same width and elevations of structure shown on contract drawings.
- d. Unsuitable foundation material: Where unsuitable foundation material is encountered, the contractor shall excavate to elevations as directed by the Director. Unit prices for additional excavation and replacement with approved compacted granular fill stated in the proposal form shall be used as a basis for additional payment by the State. In the event that no unit price is included in the proposal form, the unit prices shall be negotiated with the Director prior to performance of the work or shall be done, at the option of the Director, on a time and material basis plus ten percent profit.

4.18 Soil Borings

4.18.1 Soil borings or test pits or other subsurface information may be secured by an independent contractor for the State prior to design and construction of a project and may be included in the contract documents for the contractor's use. The contractor assumes full responsibility for

interpretation of said borings, and the State shall have no responsibility or liability should the data provided prove to be incorrect or not representative.

4.19 Separate Contracts

4.19.1 The State may execute this project by awarding separate contracts, the work of which shall proceed simultaneously.

- a. Each contractor shall coordinate its operations with those of other contractors under the supervision and general control of the contractor for general construction.
- b. Cooperation will be required of all contractors in the arrangements for the storage of materials and in the detailed execution of the work.
- c. The contractor, including its subcontractors, shall keep informed of the progress and the details of work of other contractors and shall notify the architect/engineer immediately of any lack of progress or defective workmanship on the part of other contractors as such may affect its work.
- d. Failure of a contractor to keep informed of the work progressing on the site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by the contractor of the status of the work as being satisfactory for proper coordination with its own work.
- e. It is agreed that no contractor shall be entitled to any damages or extra compensation from the owner on account of any work performed by other contractors, or any lack of coordination or supervision of the work of the contractors that in any way affects the work under its contract.
- f. The contractors shall rely upon the organization, management skill, cooperation and efficiency of the contractor for general construction to supervise, direct and manage the conduct of the construction and the efforts of all prime contractors so as to deliver the project as required under the contract.
- g. Project planning, scheduling and control ("critical path method"): As an aid to the contractor for general construction and all other contractors to bring the completion of the project within the time allocated, the owner may have contracted for the services of a critical path method (CPM) scheduling consultant for project planning, scheduling, and control. If such consultant has been retained, the general construction contractor shall incorporate and enforce the combined schedule as its own, and each contractor agrees to cooperate and coordinate its own operations in order to meet effectively all scheduled task deadlines, as further described in article 9 of these General Conditions.

4.20 Mutual Responsibility of Separate Contractors

4.20.1 The contractors shall cooperate with each other and secure the effective cooperation of the various craftsmen employed on the work, so that no portion of the work is delayed or not properly performed as a result of the failure of any workers to properly and efficiently perform the tasks assigned them. Should it at any time appear that the progress of the work is being delayed or adversely impacted by such failure, upon notice from the Director, the responsible contractor shall immediately discharge the delinquent workers and employ others for the tasks.

4.21 Protection of Contractor's Property

4.21.1 Each prime contractor shall adequately secure and protect its own tools, equipment, materials and supplies. The State assumes no liability for any damage, theft or negligent injury to the contractor's property.

4.22 Patents

4.22.1 The contractor shall hold and save the State and its officers, agents, servants, and employees harmless from liability of any nature or kind, including cost and expenses for or on account of any patented or non-patented invention, process, article or appliance manufactured or

used in the performance of the contract, including its use by the State, unless otherwise specifically stipulated in the contract documents.

4.22.2 License and/or royalty fees for the use of a process which is authorized by the State must be reasonable, and paid to the holder of the patent or his or her authorized licensee directly by the State and not by or through the contractor.

4.22.3 If the contractor uses any design, device or materials covered by letters, patent or copyright, it shall provide for such use by suitable agreement with the State or such patented or copyrighted design, device or material. It is mutually agreed and understood that, without exception, the contract prices shall include all royalties or costs arising from the use of such design, device or material in any way involved in the work. The contractor and/or its sureties shall indemnify and save harmless the State from any and all claims for infringement by reason of the use of such patented or copyrighted design, device or material, or any trademark or copyright in connection with work agreed to be performed under this contract, and shall indemnify the State for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during the prosecution of the work or after the completion of the work.

4.23 Right to Audit

4.23.1 The State reserves the right to audit the records of the contractor in connection with all matters related to its contract. The contractor agrees to maintain its records in accordance with generally accepted accounting principles, for a period of not less than three years after receipt of final payment. "Generally accepted accounting principles" is defined as follows: Accounting records must identify all labor and material costs and expenses, whether they be direct or indirect. The identity must include at least the project number for direct expenses and/or account number for indirect expenses. All charges must be supported by appropriate documentation, including, but not limited to canceled checks.

4.23.2 The contractor shall develop, maintain and make available to the Director on request such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, change orders, all original estimates, takeoffs and other bidding documents, all subcontractors and supplier contracts and changes, all records showing all costs and liabilities incurred or to be incurred in connection with the project (including all subcontractor and supplier costs), all payment records and all records showing all costs incurred in labor and personnel of any kind, records and other data as the State may request concerning work performed or to be performed under this contract.

4.23.3 The contractor acknowledges and agrees that no claim for payment which is premised to any degree upon actual costs of the contractor shall be recognized by the State except and to the extent that such actual costs are substantiated by records required to be maintained under these provisions.

4.23.4 The contractor shall require each subcontractor, to the extent of the work to be performed by the subcontractor, to be bound to the contractor to the terms of the State's contract documents, and to assume toward the contractor all the obligations and responsibilities which the contractor assumes, by these documents, to the State and its contractual parties.

4.23.5 The contractor shall not grant to any subcontractor terms more favorable than those extended to the contractor by the State.

4.23.6 The contractor shall not permit its subcontractors to subcontract work without the express written approval of the Director or the Director's designate.

4.23.7 The contractor acknowledges and agrees that its obligation to establish, maintain and make available records and the State's right to audit as delineated herein shall extend to actual costs incurred by subcontractor in performing work required under the contract or any supplemental agreement thereto. The contractor shall require in each subcontract that the subcontractor establish, maintain and make available to the State all records as defined and delineated herein, relating to all work performed under the subcontractor including work performed by a sub-subcontractor.

4.24 Control Wiring

4.24.1 The prime contractor which furnishes and installs mechanical equipment, including, but not limited to, heating, ventilating and air conditioning systems, ATC systems, boilers, remote monitoring systems, and so forth, which systems require electrical control wiring, shall include in its bid the cost of all such control wiring and its installation. The prime contractor shall employ a subcontractor approved by the Division of Building and Construction for all such control wiring. The subcontractor shall provide a Final Certificate of Electrical Inspection of the control wiring. Installed or control wiring must connect to a point of electrical power supply as shown on the contract documents.

4.25 Standby Personnel

4.25.1 Each prime contractor which is obligated to employ standby personnel by trade agreement to which it is a party shall determine and include all such costs thereof in its bid proposal. No contractor shall, at any time, make a claim to the State for costs relating to standby maintenance or standby supervision for electric motor-driven or other equipment. The State will not, under any condition, entertain or consider a claim in this regard unless such claim is made as a result of the State's unreasonable refusal to accept beneficial occupancy of the completed project.

ARTICLE 5

CONTRACTOR FOR GENERAL CONSTRUCTION: SPECIAL RESPONSIBILITIES

Wherever the term "general construction contractor" is used herein, it is intended to mean either the contractor for general construction whenever separate prime contracts are involved or the sole contractor if there are no other prime contractors engaged on the project.

5.1 Unique Role of Responsibility - Staffing

5.1.1 Wherever separate contracts are awarded to separate prime contractors for the different branches of the work or where there is a single prime contractor, the contractor for general construction (hereinafter referred to as the general construction contractor) has the responsibility for being the supervisor, manager, overseer, coordinator and expeditor of all of the contractors and of the total construction process and all of its parts, in accordance with the contract documents. In pursuance of these duties, the general construction contractor will have the right to request the denial or reduction of progress payments to other contractors, should the general construction contractor have cause to be dissatisfied with the performance of another contractor. The Director has the power to modify or reject the general construction contractor's recommendation. The general construction contractor shall not claim any damages resulting from the Director's exercise or failure to exercise these discretionary powers. In executing the duties assumed by these responsibilities, the general construction contractor shall provide sufficient executive and supervisory staff in the field to accomplish efficient and expeditious handling of these matters. There shall be at least one full-time project manager assigned by the general construction contractor, as well as the field staff referred to above, who shall attend each progress meeting at the site. The general construction contractor shall include in its bid a sum sufficient to perform these responsibilities.

5.2 Control and Coordination of Construction

5.2.1 The Director relies upon the organization, management, skill, cooperation and efficiency of the general construction contractor to supervise, direct, control and manage the general construction work and the efforts of the other contractors, so as to deliver the completed project in conformance with the contract documents and within the scheduled time.

5.2.2 The contractor for general construction shall include in its bid an amount sufficient to cover the cost of furnishing necessary administrative and supervisory forces to coordinate its own work and that of its subcontractors, and the work of the other prime contractors. All of the other prime contractors shall be responsible to the contractor for general construction for performance of their contract work and for meeting those dates within the final project progress schedule, as approved by all parties to the various multiple contracts. It must be clearly understood that the Director will rely on the fact that the contractor for general construction has included in its bid sufficient funds to perform this function. The other prime contractors must consider and reflect within their bids the impact of this requirement on their performance and their resulting responsibility to cooperate and coordinate their work as directed and required by the contractor for general construction.

5.3 Layout and Dimensional Control -- Surveying

5.3.1 The general construction contractor shall be responsible for locating and laying out the building and all of its parts on the site, in strict accordance with the drawings, and shall accurately establish and maintain dimensional control. The general construction contractor shall employ and pay for the services of a competent and licensed New Jersey engineer or land surveyor (who shall be approved by DBC) to perform all layout work, and to test the level of excavations, footing base plates, columns, walls and floor and roof lines, and furnish to the architect/engineer, as the work progresses, certifications that each of such levels is as required by the drawings. The plumb lines of walls, etc., shall be tested and certified by the surveyor as the work progresses.

5.3.2 The engineer/surveyor, in the course of layout work both on the site and within the building, shall establish all points, lines, elevations, grades and bench marks for proper control and execution of the work. The engineer/surveyor shall establish a single permanent bench mark as directed, to which all three coordinates of dimensional control shall be referred. The engineer/surveyor shall verify all owner-furnished topographical and utility survey data and all points, lines, elevations,

grades and bench marks. Should any discrepancies be found between information given on drawings and the actual site or field conditions, the general construction contractor shall notify the architect/engineer of such discrepancy, and shall not proceed with any work affected until receipt of written instructions from the architect/engineer.

5.4 Construction Access Routes

5.4.1 The general construction contractor shall be responsible for providing and maintaining unobstructed traffic lanes on the designated construction access routes either shown on the contract drawings or reasonably required so as to perform the work, and shall provide and maintain all reasonably required safety devices. The general construction contractor shall provide any necessary additional materials, their grading and compaction, and shall remove snow and debris as necessary to provide and maintain the general serviceable condition of the access roadbed, as well as pedestrian ways.

5.5 Project Sign

5.5.1 The general construction contractor shall erect and maintain one sign at the project site, as shown on the drawings and located as directed by the architect/engineer. Painting shall be done by a professional sign painter, with two coats of exterior paint, colors, letter face and layout as shown. No other sign will be permitted at the site. Upon completion of the project, and when directed by the architect/engineer or the Director, the general construction contractor shall remove the sign. Should there be a change in the listed State officials, the general construction contractor shall make appropriate changes to the sign at its expense.

5.6 Dust Control

5.6.1 The general construction contractor, at its expense, shall provide and maintain necessary temporary dust-proof partitions around areas of work in any existing building or in new building areas as directed by the architect/engineer or the Director.

5.7 Repair of Finished Surfaces, Applied Finishes, Glass

5.7.1 The general construction contractor accepts sole responsibility for repair of uncontrolled dislodging, cracking, delamination or peeling of finished surfaces such as concrete, pre-cast concrete, cast and natural stone, unit masonry, millwork, plaster, glass and applied finishes such as paint, and special coatings, within the contract scope and the limits of specified guarantee periods, regardless of the cause.

5.7.2 The general construction contractor shall be responsible for replacement of all broken glass installed by it or by its subcontractors, after same has been installed, no matter by whom or what caused. The general construction contractor shall replace all broken, scratched or otherwise damaged glass before the completion and acceptance of the work. The general construction contractor shall wash all glass on both sides at completion, or when directed, removing all paint spots, stains, plaster, etc.

5.7.3 Nothing herein is intended to limit the right of the general construction contractor to seek payment from the party responsible for damages.

5.8 Photographs

5.8.1 With each application for payment until the exterior is completed, the general construction contractor shall submit monthly progress photographs of the building, in duplicate to the Director or the Director's representative, giving two views of each building as selected by the architect/engineer, taken from the same points each month. This requirement shall apply to the creation of the new space only.

5.8.2 The photographs shall be 8" by 10", mounted on muslin, and the negative shall bear the date of the exposure, the DBC project number and title and the names of the contractor and the architect/engineer.

5.9 Guarantee

5.9.1 Neither the final certificate of payment, nor any provision in the contract documents, nor partial or entire occupancy of the premises by the State shall constitute an acceptance of work not done in accordance with the contract documents, nor shall it relieve the contractor of liability with respect to any expressed or implied warranties or responsibility for faulty materials or workmanship. The State will give notice of observed defects with reasonable promptness.

5.9.2 In addition to guarantees otherwise specified in other sections of the specifications, each prime contractor and each individual subcontractor shall guarantee and warrant, in writing, the work to be performed and all materials to be furnished under this contract against defects in materials or workmanship, and shall pay for the value or repair of any damage to other work resulting therefrom for a period of one year from the date of project acceptance. All guarantees, bonds, etc. required by the specifications shall be in writing in requisite legal form and delivered to the Director at the time of submission of the invoice for final payment. All subcontractors' guarantees, bonds, etc. shall be underwritten by the prime contractor, which shall obtain and deliver same to the Director before the work shall be deemed finished and accepted.

5.9.3 The contractor shall, at its own expense and without cost to the State, within a reasonable time after receipt of written notice thereof, make good any defects in material or workmanship which may develop during stipulated guarantee periods, as well as any damage to other work caused by such defects or by their repairs. Any other defects in materials or workmanship not reasonably observable or discovered during the guarantee period shall be repaired and/or replaced at the contractor's expense, and such shall be completed within a reasonable time after written notice is given to the contractor.

5.9.4 It is anticipated that certain permanent equipment will have to be activated during construction of the project to support construction operations. This would particularly be the case with respect to service elevators and those portions of the permanent heating system which might be required to provide temporary heat for interior finish operations. Regardless of when equipment is activated for use during construction, all equipment warranties must extend for the time periods required in these specifications, starting as of the date of occupancy or final acceptance (whichever is the earliest) of the project by the State. All contractors shall include in their base bids all costs necessary to provide extended warranties as necessary for any equipment which may be activated prior to final building acceptance by the State.

5.10 Inspection of Roadway Subgrades

5.10.1 The general construction contractor shall notify the DBC representative at least 48 hours prior to the anticipated completion of all roadway subgrade work. DBC may request an inspection by an appropriate agency to ensure that the subgrade meets the compaction standards. All subgrade shall be proof-rolled for such inspection. If compaction soils tests are required, these tests will be done by soils testing laboratories through DBC, unless contrary provisions are made elsewhere in the specifications. The contractor shall not proceed with base course until the results of the compaction tests are determined and upgrade approved by DBC.

5.11 Security Services

5.11.1 The general construction contractor shall provide security services throughout the period of construction to adequately protect the work, stored materials and temporary structures located on the premises, and to prevent unauthorized persons from entering the construction site. The period of time and the hours of the day or night required for such services shall be established by the contractor for general construction and must be sufficient to insure all contractors adequate protection as described herein. If the Director determines that adequate protection is not being provided and directs the contractor for general construction to increase the service, such protection shall be provided at no extra cost to the State.

ARTICLE 6

TEMPORARY FACILITIES, UTILITIES AND SERVICES

6.1 Field Offices

6.1.1 Each contractor will provide on site and maintain during the project construction a suitable weather-tight insulated field office conveniently located for reception and continuous use, and shall maintain therein a complete set of contract documents including plans, specifications, CPM network diagrams, change orders, logs and other details and correspondence. The field office shall contain approved and safe heating facilities and lighting, convenience outlets, a fire extinguisher, a minimum of two operating windows of 15 square feet each, and an outside door with a handle, hasp and padlock. The field office may be removed upon enclosure of the building at a time directed by the architect/engineer; contents and operations will be transferred to the interior of the project building by the general construction contractor, and said offices shall be maintained by the general construction contractor until final acceptance of the project.

6.1.2 The general construction contractor will provide on site suitable, separate, weather-tight, insulated (floor, walls, ceilings) field office facilities for the use of DBC personnel, all to be conveniently located for the functions designated. The contractor shall also furnish in these facilities approved and safe means of heating (available beyond regular working hours), fire extinguishers, operating windows of 15 square feet each, 12,000 BTU air conditioning units, 3' x 5' plan tables, conference tables, folding chairs and an outside door with a handle and a hasp for a State-furnished padlock. At a time determined by the Director or the architect/engineer, the contractor shall remove field facilities upon enclosure of the project building and shall relocate the contents and operations of the field office to the interior of the project building until completion of the project.

6.1.3 The general construction contractor shall be responsible for the maintenance of both offices and the meeting room, including the cost of heating, electric current, janitorial service and other incidentals.

6.1.4 Each contractor shall provide its own telephones. Coin-operated pay phones in the field offices are acceptable. The State will be responsible only for the cost of calls made by its employees.

6.2 Temporary Storage, Staging and Shelter Structures

6.2.1 Each contractor will provide and maintain, for its own use and as each deems necessary, suitable and safe temporary storage, tool shops, and employees' sheds for proper protection, storage work and shelter, respectively. Each contractor shall maintain these structures properly and remove them at the completion of work. Locations shall be directed by the general construction contractor. Rooms in the building may be used as shops and store rooms, with the approval of the general construction contractor and DBC. The contractor making use of these areas shall be responsible for correcting defects and damage caused by such use and for keeping these areas clear and clean.

6.3 Temporary Construction Operations/Services Facilities

6.3.1 Each contractor shall be responsible for providing for its own requirements relative to storage areas, employee vehicular parking, equipment marshaling areas, excavation borrow/spoils designated areas, commercial canteen areas, etc. The general construction contractor shall locate these areas to suit project requirements, with the State's concurrence.

6.4 Temporary Toilet Facilities

6.4.1 The general construction contractor shall provide and pay for suitable temporary toilets at an approved location on the site and prior to the start of any field work. They shall comply with State and local laws and regulations. The general construction contractor will be responsible for maintenance, removal and relocation as described hereinafter.

6.4.2 Toilets shall be serviced by a firm qualified and experienced in such functions.

6.4.3 Toilets shall be of the portable chemical type, mounted on skids, with screened enclosures with doors, each having a urinal and water closet.

6.4.4 One unit shall be provided for each 30 employees. In addition, one unit, together with a lavatory, shall be provided in DBC's office. The lavatory and toilet will be so arranged as to accommodate the meeting room and the architect/engineer's office, as well as DBC's office.

6.4.5 Each unit shall be serviced at least twice a week, including the removing of waste matter, sterilizing, recharging tank, refilling tissue holders, and thoroughly cleaning and scrubbing of entire interior, which shall be maintained in a neat and clean condition.

6.4.6 Toilet facilities in a multiple-story building shall be located on no less than every other floor, unless otherwise directed.

6.4.7 Toilet service shall be relocated inside the building and connected to water and sewer as soon as the progress of the work will allow.

6.4.8 When toilets are connected to water and sewer lines, precautions shall be taken to prevent freezing.

6.4.9 The temporary toilet units shall be removed from the work site at the completion of the work, or when so directed by the Director or the architect/engineer.

6.4.10 Workers are not to use the finished bathroom and toilet facilities in the project buildings. Reasonable steps must be taken by the general construction contractor to enforce this rule.

6.5 Temporary Drives and Walks

6.5.1 The general construction contractor shall be responsible for keeping all roadways, drives and parking areas within or proximate to the site free and clear of debris, gravel, mud or any other site materials by ensuring that all reasonably necessary measures are taken to prevent such materials from being deposited on such surfaces. This includes, as may be appropriate, the cleaning of vehicle wheels, etc., prior to exit from the construction site. Should such surface require cleaning, the general construction contractor will clean these surfaces without additional cost to the State. The general construction contractor will be held accountable for any citations, fines or penalties imposed on the State for failing to comply with local rules and regulations.

6.5.2 Should the general construction contractor elect to commence construction of permanent driveways, parking areas or walks (other than general grading of temporary shop areas), the contractor shall not do so without the approval of the Director or the Director's representative. The contractor shall not do so without having prepared the subgrade, as may be elsewhere required by the specifications, nor will the contractor be relieved from any responsibility for providing additional materials or for reworking the subgrade prior to completion of the work, if so required to make the improvements conform fully with the specifications.

6.5.3 The general construction contractor shall obtain permission in writing from the State before using any existing driveways or parking areas not specifically designated for such use in the contract documents for construction purposes. The contractor shall maintain such driveways and areas in good condition during the construction period, and at completion of the project shall leave them in the same condition as at the start of the work. Conditions before use should be carefully photographed or documented by the contractor.

6.6 Temporary Water

6.6.1 The plumbing contractor (or in the event there is no plumbing contract to be executed for the project, the general construction contractor) shall provide, protect and maintain an adequate valved water supply to a convenient location for the use of all contractors on the project during the period of construction, either by means of the permanent water supply line, or by the installation of a temporary water supply line. The water supply line shall be made available within 15 calendar days after the written request has been made to the plumbing contractor by any prime contractor requiring this service. Copies of the request will be sent to the architect/engineer and the Director. If the source of water supply is a well, provisions covering the supply water will include the installation of

necessary power-driven pumping facilities by the plumbing contractor. The well shall also be protected against contamination. The water supply shall be tested periodically by the plumbing contractor, and if necessary, shall be chlorinated and filtered. All costs in providing water, other than the cost of the water itself, will be borne by the plumbing contractor (or the general construction contractor if there is no plumbing contractor). Electrical services and hookups will be provided by the electrical contractor, which will pay all costs for this electrical work. Should pumps be installed in connection with this water supply, electrical connections will be provided and paid for by the electrical contractor.

6.6.2 Temporary water will be provided by the State using agency at no charge to the contractor, provided and to the extent it may be existing and available at the site immediately prior to and during construction. It is the obligation of any prime contractor requiring temporary facilities to investigate and make specific arrangements with the using agency for such facilities and to include in its proposal the cost of any additional facilities the contractor may require for proper conduct of its work.

6.6.3 The plumbing contractor shall install its temporary and/or permanent water lines to the boiler room and heating equipment in sufficient time to be available for supplying water for testing and operation of the heating system, when such are needed to supply heat for the project.

6.6.4 The plumbing contractor is responsible to protect all water lines from damage or freezing, be they permanent or temporary. Should water connections be made to an existing line, the plumbing contractor shall provide a positive shut-off valve at its own cost and expense.

6.6.5 If the plumbing contractor fails to carry out its responsibility in supplying water as set forth herein, the plumbing contractor shall be held responsible for such failure, and the Director shall have the right to take such action as is deemed proper for the protection and conduct of the work and may deduct the cost involved in so doing from any sums due the plumbing contractor.

6.7 Temporary Light and Power

6.7.1 The electrical contractor shall extend electrical service to the building or buildings at locations approved by the Director; temporary electrical service shall be independent of the existing permanent service. Initial temporary service shall be three phase or single phase, depending upon closest availability to the project. Temporary light and power installations, wiring, and miscellaneous electrical hardware must meet the electric code. This service shall be installed within 15 calendar days after written request has been made to the electrical contractor by any prime contractor regarding such service (with copies to the architect/engineer and the Director). When the contract calls for three phase permanent service, the electrical contractor shall install same within a reasonable time to permit use by any other prime contractors. Electrical characteristics shall be provided to meet all temporary light and power reasonably required as herein and hereafter specified, or as included under supplementary general conditions. The electrical contractor shall provide the necessary distributing facilities and a meter, and shall pay the cost of running temporary services from the nearest utility company power pole. All costs shall be included in the electrical contractor's bid.

6.7.2 The electrical contractor shall extend the service into the building and shall provide receptacles and lighting as described hereinafter, and one five horsepower 208, 220 or 230 volts power outlet for each building, and one separate power outlet for each contractor for the proper conduct of its work. Power outlets shall be fed independently of the temporary lighting system. The extension of service shall include the necessary wiring of sufficient capacity to the location of the well for the operation of the well pump in the event a water well is the source of water supply for the project. Where service of a type other than herein mentioned is required, the contractor requiring same shall install and pay all costs of such special service. The size and incoming service and main distribution switch and panel shall be sized as any service by NEC requirements.

6.7.3 The electrical contractor shall provide double sockets at a maximum of 30 feet on centers in large areas. One socket shall contain a 150 watt lamp, and the other socket shall be a grounding type to accept a receptacle plug for small single-phase loads to be used for short periods of time. The electrical contractor shall provide double sockets of the type described above in all individual

rooms, one double socket for each 500 square feet, or fraction thereof, of room area (for example: a room 30' by 30' is equal to 900 square feet and would require two double sockets).

6.7.4 The electrical contractor shall provide all electrical service for the operation of elevator equipment during construction, as well as for permanent installation.

6.7.5 The general construction contractor shall pay for the cost of all electric energy used on distribution lines installed by the electrical contractor until the project is accepted by DBC. The electrical contractor shall provide and pay for all maintenance, servicing, operation and supervision of the service and distribution facilities. The electrical contractor shall also connect, maintain and service any electrical equipment installed by the HVAC contractor which may be necessary for maintaining heat whenever heat is required in the building, whether from the temporary or permanent system.

6.7.6 Any contractor which fails to carry out its responsibility in the supplying of uninterrupted light and power or other utility as set forth herein shall be held responsible for such failure, and the Director shall have the right to take such action as is deemed proper for the protection and conduct of the work, and shall deduct the costs involved from the amount due the contractor at fault.

6.7.7 There shall be no additional cost to the State or other prime contractors because of standby requirements due to conflict in the normal working hours of the various trades. The electrical contractor shall provide temporary light and power to all trades during normal working hours of such trades. Where overtime work by any contractor necessitates standby electricians or other trades, such contractor shall be responsible for making appropriate arrangements, financial and otherwise, for such service at no cost to the State.

6.7.8 The electrical contractor shall observe the requirements of the Federal Occupational Safety and Health Act of 1970 with regard to temporary light and power.

6.8 Temporary Electric Service for Special Equipment

6.8.1 The electrical contractor shall provide, at locations acceptable to the prime contractors involved, two outlets -- 208, 220, or 230 volts, 60 cycle - three phase (single phase if three phase is not available), 7.5 horsepower maximum capacity -- for each of the prime contractors using electric welding equipment, terrazzo grinders, pipe threading equipment and/or floor sanders. Should any contractor desire additional outlets or service of this type beyond the specified two outlets, or service of a greater capacity or of different characteristics or for any other power equipment, that contractor shall arrange with the electrical contractor for the installation and shall pay all costs involved.

6.8.2 Any conflict arising among any of the prime contractors with regard to financial obligations for standby personnel or standby supervisory employees, should they be required by trade agreement, shall be resolved between the parties involved by allocating such costs in direct proportion to the number of standby units caused to be on the site by each of the respective contractors.

6.9 Temporary Heat

6.9.1 Prior to the building being enclosed by walls and roof, if the outside temperatures shall fall below 40 degrees F. at any time during the day or night, and heat is required for work in progress or for its protection, the respective contractors responsible for such phase of work shall furnish, at their expense, acceptable means to provide sufficient temporary heat to maintain a temperature of not less than 45 degrees F. for that portion of the work for which they are directly responsible.

6.9.2 Heating of field offices, storage spaces, concrete and masonry materials and working area, as required, shall be provided by the responsible contractors. Field offices shall be heated to a minimum of 68 degrees F. and shall be air conditioned in the summer.

6.9.3 As soon as the Director determines that the building, or a major unit thereof, is "generally enclosed" by walls and roof, the responsibility of supplying working area heat shall rest with the general construction contractor. When the outside temperature falls below 40 degrees F. at any time during the day or night, the general construction contractor shall furnish sufficient heat by the use and maintenance of LP gas heaters or other acceptable means to maintain a temperature of not

less than 45 degrees F. within the enclosed area of the building at all times, and shall remove such heaters when no longer required. The general construction contractor will be held responsible for providing temporary heat for all damages resulting from freeze-ups, for a period which will extend 60 calendar days beyond the date the Director determines that the building is temporarily enclosed (without the use of temporary enclosures or materials, except in circumstances having the prior written approval of the Director). The general construction contractor shall remove soot, smudges, and other deposits from walls, ceilings, and all exposed surfaces which are the result of the use of heating equipment, including the permanent heating system, during the period of its use for supplying heat. The contractors shall not do any finish work until the areas are properly cleaned. The general construction contractor shall provide or arrange, at its own expense, supervision of the heating equipment at all times prior to the start of the HVAC contractor's obligation to provide heat, using the permanent heating system. This obligation shall commence 60 calendar days after the acknowledged permanent enclosure of the building or buildings, as confirmed by the Director. The general construction contractor shall furnish and pay for all fuel for heat required during the entire construction period.

6.9.4 The general construction contractor shall not assume that the permanent heating system or any part thereof will be available for furnishing of temporary heat during the period for which temporary heat is the responsibility of the general construction contractor. The general construction contractor's base bid price shall therefore include the cost of all equipment necessary for providing temporary heat as required under these specifications.

6.9.5 All heating equipment shall be NFPA-approved and connected to approved flues to the atmosphere. Gas cylinders within the building shall not exceed 100 pounds capacity, shall have Interstate Commerce Commission approval, and shall be fitted with a permanent cap to protect the valve when not in use. Heaters shall be approved by a recognized testing laboratory and must be equipped with a positive shut-off safety valve. Cylinders and heaters shall stand at least six feet apart, and shall be connected with two braid neoprene hoses that will withstand 250 psi test pressure.

6.9.6 Storage of cylinders within the building will not be permitted at any time. Fire extinguishers shall be provided by the general construction contractor on each floor where heaters are used, and the areas must be adequately ventilated.

6.9.7 Contractors responsible for providing temporary heat shall train at least two dependable persons to oversee temporary heat operations.

6.9.8 For the purposes of establishing the beginning of the general construction contractor's obligation to provide temporary heat, a building or major unit thereof shall be considered generally enclosed when (a) the exterior walls have been erected, (b) a temporary roof or permanent roof is installed and in watertight condition, and (c) temporary or permanent doors are hung and window openings are closed with either permanent or temporary weather-tight enclosures (cardboard or woven materials are not to be used; however, any impervious transparent material reasonably intended for such purpose is acceptable). A major unit of buildings as referred to herein shall be: (a) an entire separate structure, or (b) a fully enclosed wing which shall have a floor area equal to a least 50 percent of the total floor area of the project.

6.9.9 On the 60th calendar day after the building, buildings or major unit thereof is (are) permanently enclosed and the Director has determined that heat is required for the proper execution of the construction work, the HVAC contractor shall provide the heat. A building or major unit thereof shall be considered "permanently enclosed" when (a) the exterior and enclosure work including walls, windows, glazing, louvers, and doors have been permanently installed, (b) a permanent building roof has been completed and satisfactorily tested, (c) the permanent building roof drain system has been completed and made operational, and (d) all building openings have been closed such that the building is weather tight. Regardless of whether the boiler room is within the confines of the major unit or not, it must be enclosed and its floor installed at least 60 calendar days prior to the time when the HVAC contractor becomes responsible to supply heat.

6.9.10 When the building or major unit thereof, including the boiler room area, is generally enclosed as herein defined, and appropriate notice has been given, it shall be the obligation of the Director or the Director's authorized representative to so acknowledge at a job conference at the site. The minutes of said meeting shall contain any such acknowledgment. If the architect/engineer and Director's representative at the site concur that the building or major unit is properly generally enclosed, then as of the date of the job conference at which notice was given, the supply of heat (including cost of fuel) and the payment of any repair costs for damage created by freeze-ups shall become the responsibility and obligation of the general construction contractor. Confirmation of the time that such responsibility and obligation becomes effective shall be incorporated in the minutes of the job conferences, as prepared by the architect/engineer. The contractors so notified shall give due attention to their obligations in connection with the transfer of said responsibility and obligation to the general construction contractor.

6.9.11 When the building or a major unit thereof, including the boiler room area, is permanently enclosed as herein defined, and appropriate notice has been given, it shall be the obligation of the Director or the Director's authorized representative to so acknowledge at a job conference at the site. The minutes of said meeting shall contain any such acknowledgment. If the architect/engineer and Director's representative at the site concur that the building or major unit is properly permanently enclosed, then on the 60th calendar day from the date of the job conference at which notice was given, the supply of heat (not including cost of fuel) and the payment of any repair costs for damage created by freeze-ups shall become the responsibility and obligation of the HVAC contractor. Confirmation of the time that such responsibility becomes effective shall be incorporated in the minutes of the job conference, as prepared by the architect/engineer. The contractors so notified shall give due attention to their obligations in connection with the transfer of said responsibility and obligation to the general construction contractor.

6.9.12 The general construction contractor shall continue to provide acceptable means of heat until the obligation of the HVAC contractor to supply heat becomes effective, as herein stated. At the time the HVAC contractor becomes responsible for providing heat, if the permanent heating system is not acceptable to the Director or the Director's representative, and therefore may not be used for providing temporary heat, the general construction contractor shall continue to provide temporary heat as may be ordered by the Director. The costs involved, however, shall be paid by the HVAC contractor. The fuel costs shall be paid by the general construction contractor regardless of which entity provides and maintains the heat or equipment.

6.9.13 The State reserves the right to permit the substitution of limited temporary enclosures in lieu of permanent construction for the attainment of a permanently tight building if such action is deemed by the State to be in the best interest of the project. This action will not be such as to create a future jeopardy to the environmental integrity of the building as construction proceeds.

6.9.14 On the 60th calendar day after notice has been given (and confirmed by the job meeting minutes) that the building, or a major unit thereof, is permanently enclosed, the HVAC contractor shall operate the permanent heating system, if the system has been completed to the extent necessary to allow such use. The HVAC Contractor shall provide such heat to a minimum temperature of 45 degrees F., or to such higher temperature, not to exceed 75 degrees F., as may be directed by the Director for the proper conduct and protection of the work. The HVAC contractor shall do so until such time as its work is completed and accepted and the contractor is relieved of this requirement in writing by the Director. Should the HVAC contractor fail to meet this obligation, the Director has the discretion to take any action deemed necessary to have the heating system operated, or will authorize the general construction contractor to continue use of temporary units as described in 6.9.9 above. All costs involved shall be deducted from any moneys due the HVAC contractor. The HVAC contractor shall pay for and be responsible for the maintenance, operation and supervision of the heating system, not including the cost of fuel, throughout the period that the heat is needed and until the Director's final acceptance of the work required by the HVAC contract, regardless of the contract completion date.

6.9.15 When the permanent heating system provided by the HVAC contractor is the source of the heat, the general construction contractor shall be responsible for paying for all water, electricity, and

fuel required for the operation of the permanent heating system until the State assumes beneficial occupancy/use of the project, except for the cost of fuel during the test period, as previously provided. The HVAC contractor shall install adequate controls and shall arrange, at its own cost, with the plumbing and electrical contractors for making such temporary connection as required for the operation of the heating system. Should the heating system provided by the HVAC contractor be designed for the tie-in to existing steam lines for resource of heat, the State will provide steam for temporary heat through the project permanent heating system, at no cost to any contractor, after tie-in is completed by the HVAC contractor.

6.9.16 Should electricians be required to supervise and maintain electrical equipment required for the provision of heat, the payment for the services of the supervisors and/or maintenance personnel shall be the responsibility of the electrical contractor. Should the proper type of electric service not be available to supply electrical energy for the operation of the heating system in supplying temporary heat, it shall be the responsibility of the electrical contractor to provide a motor-driven generator unit of sufficient capacity, voltage, and phasing to provide uninterrupted service for the operation of the heating system. The general construction contractor shall pay the cost of all fuel consumed in the operation of the generating unit for supplying temporary heat. The electrical contractor shall provide uninterrupted electrical service to the heating, water and pumping equipment.

6.9.17 Valves, traps and other parts of the heating system (except air filters) which are permanently installed by the HVAC contractor and used for supplying heat during the construction period need not be replaced, provided that the system was in acceptable condition prior to its use and was properly maintained. The system shall be properly cleaned and adjusted to operate after the permanent system is in use. Seven calendar days prior to acceptance by the State of the heating system as substantially complete, the HVAC contractor shall replace disposable filters with clean filters of the type specified, or turn over spare sets of filters to the using agency, as directed by the Director.

6.9.18 If plastering, parging or finishing of any surface is necessary to enable the HVAC contractor to install the heating system in a manner to permit its use for supplying heat during the construction period, the finishing, plastering and parging of such surfaces shall be done by the general construction contractor sufficiently in advance of the HVAC contractor's work so as not to delay the installation of the permanent system. In the event this plastering, parging or other finishing work is not completed in ample time to make possible the installation of permanent piping and heating units in a particular area, the HVAC contractor shall install temporary piping and heating units. The cost of such temporary installation and its removal shall be paid by the general construction contractor.

6.9.19 If additional heat is required beyond that specified herein, the contractor requiring such additional heat shall arrange and pay the additional costs thereof, at no expense to the State.

6.10 Temporary Enclosures

6.10.1 Whenever necessary in order to maintain proper temperatures for the prosecution or protection of the work, the general construction contractor shall furnish and maintain temporary enclosures for all openings in exterior walls that are not enclosed with finished materials. Temporary wood doors shall be provided at door openings.

ARTICLE 7

SUBCONTRACTORS

7.1 Contractor - Subcontractor Relationship

7.1.1 Within 30 calendar days after award of the contract, each contractor shall provide written notification to the Director, through the architect/engineer, of the names of subcontractors, other than those required to be listed in the bid, proposed to perform the principal parts of the work and of such others as the Director may direct. Contractors shall not employ any subcontractor without prior written approval of the Director, or any subcontractor that the Director may reject within a reasonable time. The original and six copies of the appropriate DBC form shall be forwarded to the architect/engineer for approval. The list of proposed contractors may be considered approved by the Director if no reply is forwarded to the contractor within 15 calendar days following receipt of the list by the Director.

7.1.2 If the Director has reasonable objection to any such proposed subcontractor, the contractor shall substitute another subcontractor to which the Director has no reasonable objection. Under no circumstances shall the State be obligated for additional cost due to such substitution.

7.1.3 The contractor shall make no substitution for any subcontractor, person or firm previously selected and approved, without written notification to the Director and receipt of the Director's written approval for such substitution.

7.1.4 Each contractor acknowledges its full responsibility to the State for the acts and omissions of its subcontractors, and of persons and firms either directly or indirectly employed by them, equally to the extent that the contractor is responsible for the acts and omissions of persons and firms directly or indirectly employed by it. Each contractor acknowledges that it remains fully responsible for the proper performance of its contract irrespective of whether work is performed by the contractor's own forces or by subcontractors engaged by the contractor.

7.1.5 Nothing contained in the contract documents shall create any contractual relationship between any subcontractor and the State.

7.1.6 By an appropriate agreement, written where legally required for validity, the contractor shall require each subcontractor, to the extent of the work performed by the subcontractor, to be bound to the contractor by the terms of the contract documents, and to assume toward the contractor all the obligations and responsibilities which the contractor, by these documents, assumes toward the State, the architect/engineer and the other separate prime contractors. Where appropriate, the contractor shall require each subcontractor to enter into similar agreements with its sub-subcontractors.

7.1.7 The contractor and all subcontractors agree that, in the employment of both skilled and unskilled labor, preference shall be given to residents of the State of New Jersey, if such labor force is available.

7.1.8 Approval by the Director or architect/engineer of a subcontractor or material supplier shall not relieve the contractor, the subcontractor or the material supplier of the responsibility of complying with all provisions of the contract documents. The approval of a subcontractor does not imply approval of any material, equipment or supplies.

ARTICLE 8

RELATIONSHIP BETWEEN OWNER AND PRIME CONTRACTORS

8.1 Owner's Right to Perform Work

8.1.1 The State may, and reserves the right to, enter upon the premises at any and all times during the progress of the work, or cause others to do so, for the purpose of installing any apparatus or carrying on any construction not included in these specifications or for any other reasonable purpose.

8.1.2 Each contractor shall examine all work or materials installed by other contractors, the installation of which may affect the work in its contract, and should the same be imperfect, incorrect or insecure, the contractor shall notify the Director immediately in order that the same be rectified.

8.2 Mutual Responsibility

8.2.1 Each contractor shall afford the Director and other separate contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work. Each contractor shall coordinate its work with adjacent work and with other trades, so that no portion of the work is delayed or not properly undertaken due to such lack or failure of cooperation.

8.2.2 Each contractor shall lay out and install its work at such time or times and in such manner as to facilitate the general progress of the project.

8.2.3 If, based on a written report by the general construction contractor regarding another prime contractor or a written report of a prime contractor regarding the general construction contractor or upon notification from the CPM consultant, the Director is of the opinion that a contractor on the project is failing to coordinate its work with the work of another contractor or others or is delaying the project, the Director may issue such directions to the delinquent contractor(s) as the situation may require, including an order to accelerate as provided in section 8.5 herein. The State, however, shall not be liable for any damages suffered by any contractor by reason of another contractor's default, delinquency or timing of performances; it being understood that the State does not assume responsibility for the acts or omission of any contractors.

8.2.4 Before the completion of the work contemplated herein, should it be deemed necessary by the State to do any work whatsoever in or about the building or structure, other than as provided for in the contract documents, the contractor shall fully cooperate with such other individual or firm as the State may employ to do such work, so that such additional work may be performed without unreasonable interference. The contractor shall afford said other individual or firm all reasonable facilities for doing such work. Other than for an extension of time, the contractor shall make no claim to the State as a result of such work as is contemplated herein.

8.2.5 The Director shall at all times have access to the work whether it is in preparation or in progress, and the contractor shall provide proper facilities for such access and for inspection. The Director reserves the option to employ the services of a professional consultant to evaluate any phase of the work deemed to be in the best interest of the State, but no evaluation performed shall in any way relieve the contractor of its responsibilities under the contract. The contractor shall cooperate with the consultants and provide access to the work and facilities for inspection. Should any portion of the work or materials be found deficient or defective, the contractor will pay the applicable fees of such consultant and be responsible for replacing the deficient or defective work as required by the provisions stated elsewhere herein.

8.2.6 Any costs caused by defective or ill-timed work shall be borne by the responsible party.

8.2.7 If the contractor should destroy, damage or disturb the work of any other contractor in or about the building or premises, the contractor shall immediately either replace the destroyed work and make good the damaged and disturbed work to the satisfaction of the architect/engineer and the Director, or shall reimburse the contractor whose work has been destroyed, damaged or disturbed for the expense of replacing such work.

8.2.8 Should a contractor sustain any damage through any act or omission of any other contractor having a contract with the State, or through any act or omission of a subcontractor of any such contractor, or through any act or omission of the architect/engineer, the contractor shall have no claims against the State for such damage, but shall have a right of action to recover such damages from the causing party or parties, in accordance with section 8.4.2, which is included in the State's contract with all other such contractors and the architect/engineer.

8.3 Substantial Completion

8.3.1 At the request of the State, the architect/engineer, the contractor and the using agency representative shall make a joint inspection of the work, and if all determine that the work is substantially completed, the State shall give Notice of Substantial Completion for Beneficial Use. Such certification shall in no way relieve the contractor of any contractual obligation or in any way relieve the contractor from responsibility to promptly complete punch list work.

8.3.2 Standard guarantee period for equipment, workmanship and materials shall commence on the date of acknowledgment of substantial completion of the project or portions thereof so certified, or from the time of completion and acceptance of equipment, work or materials in question, whichever is later, unless specified to the contrary as a condition of partial acceptance.

8.3.3 Use and possession prior to completion: The State shall have the right to take possession of or use any completed or partially completed part of the work. Prior to such possession or use, the Director shall furnish the contractor with an itemized list of work remaining to be performed or corrected on such portions of the project as are to be possessed or used by the State, provided that failure to list any item of work shall not be deemed an acceptance of any work under the contract. While the State has such possession or use, the contractor, notwithstanding the provisions of section 4.5 of this contract entitled "Permits - Laws - Regulations," shall be relieved of the responsibility for the loss or damage to the work resulting from State possession or use. If such prior possession or use by the State delays the progress of the work or causes additional expense to the contractor, an equitable adjustment in the contract time of completion will be made and the contract shall be modified in writing accordingly.

8.4 Contractor's Claims for Damages

8.4.1 Any claims made by a contractor against the State for damages or extra costs are governed by and subject to the New Jersey Contractual Liability Act, N.J.S.A. 59:13-1 et seq., as well as all the provisions in this contract.

8.4.2 Any contractor or architect/engineer having, or which shall hereafter have, a contract with the State, which by its own acts, errors or omissions, damages or unnecessarily delays the work of the owner or other contractors by not properly cooperating with them or by not affording them reasonably sufficient opportunity or facility to perform work as may be specified, by reason of which act, error or omission of the said contractor, the architect/engineer or any other contractor shall sustain damages, including delay damages, during the progress of the work hereunder, then and in the event, the culpable party agrees to pay all costs and expenses incurred by the damaged contractor(s) or architect/engineer due to any such delays and/or damages whether by settlement, compromise or arbitration and the injured contractor or architect/engineer shall have a right to redress enforcement in court directly against the culpable party. In addition, the culpable party agrees to defend, indemnify and save harmless the State from all such claims and damages. Nothing contained in this paragraph shall be construed to relieve the culpable contractor or architect/engineer from any liability or damage sustained on account of such acts, errors or omissions.

8.4.3 The State shall not be liable to any contractor for any damages or extra costs caused by any acts or omissions as specified in the above paragraph, and the contractor's exclusive remedy shall be against the culpable party.

8.5 Director's Right to Accelerate

8.5.1 The Director may order and direct the contractor responsible for delay as described in section 8.2.3 of this document or as may be apparent as a result of observation of the work, to

accelerate that contractor's work at any particular place or places by increasing its forces, working overtime and/or on Saturdays, Sundays, and holidays as may be required to enable others to carry on with their own work in accordance with the project progress schedule. The cost of such acceleration efforts shall be borne entirely by the responsible contractor and shall not be billed to the State.

8.6 Time of Completion - Delay - Liquidated Damages

8.6.1 In the event of the failure of the contractor to complete the said work within the time stated in its proposal, the contractor shall be liable to the State in the sum of \$250.00 per day, or the sum equal to 1/20 of one percent (0.05%) per day of the total consideration provided for under this contract, or that sum mentioned in the contract, whichever is greater, for each and every calendar day that the said work remains incomplete. This sum shall be treated as liquidated damages (and not a penalty) for the loss to the State of the use of premises in a completed state of construction, alteration or repair, and for added administrative and inspection costs to the State on account of the delay; provided, however, that the said liquidated damages shall be in addition to other consequential losses or damages that the State may incur by reason of such delay, such as, but not limited to, added costs of the project and the cost of furnishing temporary services, if any. Any such sums for which the contractor is liable may be deducted by the State from any moneys due or to become due to the contractor.

8.6.2 It is hereby understood and mutually agreed by and between the contractor and the State that the date of the initiation, the dates of required intermediate milestones, and the time for completion, as specified in the contract of the work to be done hereunder are essential conditions of this contract.

8.6.3 The contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will ensure full completion thereof within the time specified. It is expressly understood and agreed, by and between the contractor and the State, that the time for the completion of the work herein is a reasonable time, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality. If the said contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Director, then the contractor does hereby agree, as a part consideration for the awarding of its contract, to pay the State the amount specified in section 8.6.1 above, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the contractor may be held in default after the stipulated date in the contract for completing the work.

8.6.4 The said amount is fixed and agreed upon by and between the contractor and the State because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the State would in such event sustain, and said amount is agreed to be the amount of damages which the State would sustain, and said amounts shall be retained by the State as necessary to cover projected untimely completion of the contract work due to contractor-caused delays.

8.6.5 It is further agreed that time is of the essence of each and every portion of this contract and of the specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension should be of the essence of this contract.

8.6.6 If job progress has been adversely affected by nonattendance of any contractor at a scheduled job meeting of which it has been duly notified, such adverse effect shall be considered as job delay, and the contractor shall be subject to payment of damages to the State in an amount not to exceed \$100.00 for each occurrence.

8.6.7 The contractor shall not be charged with liquidated damages, or any excess cost when the State determines that the contractor is without fault and the contractor's reasons for the time extension are acceptable to the State; provided further, that the contractor shall not be charged with liquidated damages or any excess cost when the delay in the completion of the work is due:

- a. To any preference, priority or allocation order duly issued by the government;

- b. To unforeseen cause(s) beyond the control and without the fault or negligence of the contractor including, but not restricted to, acts of God or of the public enemy, acts of the State, acts of another contractor in the performance of a contract with the State which acts are contrary to the terms of such contract, fires, flood, epidemics, quarantine restrictions, strikes, freight embargoes and severe weather; and
- c. To any delays of subcontractors or suppliers occasioned by any of the causes specified in the immediately preceding subsections a. and b.

8.6.8 The contractor shall, within five calendar days from the beginning of such delay, unless the Director shall grant a further period of time prior to the date of final settlement of the contract, notify the State in writing of the causes of the delay. The Director shall first ascertain the facts and the extent of the delay and shall notify the contractor within a reasonable time that good cause has been shown to warrant the granting of such extension.

8.7 No Damage for Delay

8.7.1 The State shall have the right to defer the beginning or to suspend the whole or any part of the work herein contracted to be done whenever, in the opinion of the Director, it may be necessary or expedient for the State to do so. If the contractor is delayed in the completion of the work by act, neglect or default of the State, of the architect/engineer or of any of the contractors employed by the State upon the work; by changes ordered in the work; by strikes, lockouts, fire, unusual delay by common carriers, unavoidable casualties or any cause beyond the contractor's control; or by any cause which the Director shall decide to justify the delay; then for all such delays and suspensions, the contractor shall be allowed one calendar day addition to the time herein stated for each and every calendar day of such delay so caused in the completion of the work as specified in section 8.6 above, the same to be determined by the Director, and a similar allowance of extra time will be made for such other delays as the Director may find to have been caused by the State. No such extension shall be made for any one or more of such delays unless, within ten calendar days after the beginning of such delay, a written request for additional time shall be filed with the Director. Apart from extension of time, no payment or allowance of any kind shall be made to the contractor as compensation for damages on account of hindrance or delay from any cause in the progress of the work, whether such delay be avoidable or unavoidable.

8.7.2 The contractor shall not be entitled to any damages or extra compensation from the State on account of any work performed by the State or any other contractor or the architect/engineer or any other party, or by reason of any delays whatsoever, whether caused by the State or any other party including, but not limited to, the delays mentioned in this contract.

8.8 Indemnification

8.8.1 The contractor shall assume all risk of and responsibility for, and agrees to indemnify, defend and save harmless the State of New Jersey and its employees from and against, any and all claims, demands, suits, actions, recoveries, judgment and costs of expenses in connection therewith on account of the loss of life, property, injury or damage to the person, body or property of any person or persons whatsoever, resulting from the performance of the project or through the negligence of the contractor, or through any improper or defective machinery, implements or appliances used by the contractor in the project, or through any act or omission on the part of the contractor or its agents, employees or servants, which shall arise from or result directly or indirectly from the work and/or materials supplied under this contract. This indemnification obligation is not limited by, but is in addition to, the insurance obligations contained in this agreement.

8.8.2 In any and all claims against the State or the architect/engineer or any of their agents or employees by any employees of the contractor or subcontractor or anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation under this section 8.8 shall not be limited in any way as to the amount or type of damages compensation or benefits payable by or for the contractor or any subcontractor under worker's or workmen's compensation acts, disability benefit acts, or other employee benefit acts.

8.9 Contract Time - Notice to Proceed

8.9.1 Contract time shall commence on the date of the contractor's receipt of a written Notice to Proceed issued by the Director. The Notice to Proceed will be issued by the State after the Director's receipt and acceptance of properly executed contract documents, including performance and payment bonds. Unless otherwise ordered by the Director in writing, the contractor shall initiate its contract work at the site no later than 30 calendar days after its receipt of the Notice to Proceed.

8.9.2 Provided the contract is not terminated pursuant to section 3.2 of the Instructions to Bidders if, in the opinion of the Director, the contractor's delay in furnishing financial responsibility and performance or payment bonds causes a delay in the issuance of the Notice to Proceed, the time to complete the work as specified in the contract may be reduced to reflect such delay.

8.9.3 The contractor shall perform no work under this contract until the required evidence of financial responsibility and bonds has been furnished. Thereafter, work at other than the contract site may be undertaken. The contractor shall perform no work at the contract site except pursuant to a Notice to Proceed given by the Director.

8.9.4 A Notice to Proceed may be issued by the State at its convenience. Any right of the contractor to any adjustment because of a delay in issuing a Notice to Proceed shall be determined in accordance with section 2.1 entitled "Director's Right to Stop Work."

ARTICLE 9

CONSTRUCTION PROGRESS

9.1 CPM Consultant

9.1.1 The State may have contracted for the services of a Critical Path Method (CPM) scheduling consultant for project planning, scheduling and control. If such has been arranged, then section 9.3 shall be applicable. In the event that a CPM consultant has not been retained by the State, then section 9.2 shall pertain. In the absence of a statement in the bid documents that a CPM consultant has been retained, the contractor shall assume that there will be no CPM consultant associated with the project.

9.2 Construction Progress Schedule (No CPM)

9.2.1 This program shall be completed within the specified number of calendar days from date of execution of the Notice to Proceed.

9.2.2 The general construction contractor shall be responsible for preparing and furnishing to the Director through the architect/engineer, before the first contract requisition date or other date specified by the State, a coordinated combined progress schedule which incorporates the progress schedules of all prime contractors engaged on the project. The schedule shall be in the form of an arrow network diagram, bar chart or other recognized graphic progress schedule format, in sufficient detail to satisfy the architect/engineer and the Director.

9.2.3 The general construction contractor shall submit copies of its initial draft of this schedule to all prime contractors. Each prime contractor shall then prepare a progress schedule for its own work, properly coordinated with the general construction contractor's initial draft, and then submit to the general construction contractor for its preparation of the final draft of a single coordinated progress schedule. Contract requisitions will not be processed by the State until and unless such a single coordinated progress schedule has been submitted to and approved by the architect/engineer and the Director. This submission shall be no later than thirty (30) calendar days after the award of the contract. If any contractor delays its submission, the project schedule will be submitted without this input and any payments otherwise due the contractor will be withheld pending compliance.

9.2.4 The progress schedule, based upon the contractor's logic and time estimates, shall indicate in suitable detail for display, all significant features of the work of each contractor, including the placing of orders and anticipated delivery dates for critical items, submissions and approvals of shop drawings, all work activities to be performed by each contractor, the beginning and time duration thereof, and the dates of substantial and final completion of the various branches of the work.

9.2.5 Immediately upon such approval, the general construction contractor shall prepare and distribute ten copies of the progress schedule to the Director plus two copies to each prime contractor and to the architect/engineer. In the event a new prime contractor is added to the job, the general construction contractor shall furnish a revised schedule immediately with copies as indicated. The final coordinated schedule shall be signed and dated by all prime contractors involved.

9.2.6 Each contractor shall furnish sufficient labor and construction plant and equipment to ensure the prosecution of the work in accordance with the project schedule. If the latest completion time for any significant job does not come within the time allowed by the project schedule, the sequence of jobs and/or the time for performance of jobs shall be revised by the contractor and the general construction contractor through concurrent operations, additional manpower, additional shifts, overtime, etc. until it is assured that the contract completion date will be met. No additional charges to the State will be allowed the contractor(s) for overtime, additional manpower, equipment, additional shifts, etc. (except as may be provided elsewhere in the contract), if such expediting procedures or measures are necessary to meet the agreed completion date.

9.2.7 Each contractor agrees that it will make no claim for, and have no right to, additional payment or extension of time for completion of the work, or any other concession because of any misinterpretation or misunderstanding on the contractor's part of the project schedule, the

contractor's failure to attend the pre-bid conference, or because of any failure on the contractor's part to become fully acquainted with all conditions relating to the project schedule and the manner in which it will be used on the project, or because of any other contractor's failure to properly participate in the development of a schedule or to perform the contract in accordance with the schedule.

9.3 Construction Progress Schedule (CPM)

9.3.1 Critical Path Method (CPM):

- a. The project shall be monitored by a detailed critical path method scheduling system. This system shall be the basis for the evaluation of all contractors' performance and for progress payments to all contractors.
- b. The CPM consultant shall be retained by DBC. The duty of the CPM consultant is to aid all contractors in efficiently coordinating their work. If the CPM consultant becomes aware of any inefficiencies, it shall report same to DBC. If such inefficiencies cannot be voluntarily resolved among the contractors, the matter shall be referred to the DBC representative on the project. The Director shall order the resolution of the problem by requiring each contractor to undertake certain activities to ameliorate the inefficiency. The CPM consultant is not an agent of the State but is an independent contractor.
- c. All contractors shall provide all the information necessary for the CPM consultant employed by DBC to develop a CPM network plan demonstrating complete fulfillment of all construction contract requirements as necessary for the CPM consultant to keep the network plan up to date in accordance with the requirements of this section. Construction logic and activity time duration shall be established by all contractors consistent with contract requirements and reflective of proper coordination between trades. The level of detail to be reflected on the CPM schedule shall be established by the CPM consultant. All contractors shall utilize the plan in planning, coordinating and performing the work under this contract (including all activities of subcontractors, equipment vendors and suppliers).
- d. A pre-bid conference will be conducted at the discretion of DBC to explain to prospective bidders how this section will be implemented and to answer questions regarding the scheduling operations.
- e. Upon completion of the CPM system, as defined in this section, all contractors agree that the CPM consultant's project network schedule is the designated plan for completion of all work in the allotted time, and each contractor will assume full responsibility for the prosecution of the work as shown. All contractors shall indicate formal acceptance of the schedule by signing the finalized initial network diagrams and computer schedule listing.
- f. All contractors shall furnish sufficient labor and construction plant and equipment to ensure the prosecution of the work in accordance with the approved progress schedule. If, in the opinion of the Director, a contractor falls behind the progress schedule, the contractor shall take such steps as may be necessary to improve its progress, and the Director may require the contractor to increase the number of shifts, days of work and/or the amount of construction plant and equipment, all without additional cost to the State and as provided in section 8.5.1.

9.3.2 Initial Submittal

- a. To the extent necessary for the CPM consultant to reflect in the arrow diagrams the plan for completion of this contract, all contractors shall meet with and assist the CPM consultant and furnish, within ten calendar days after award of this contract, all necessary information for the preparation of the scheduling system. This information shall include, but not necessarily be limited to a logical sequencing of work operations, activity time estimates, intended crew flow, activity costs and estimated manpower requirements for each activity.

The contractor shall be responsible to reflect on the network diagram all subcontractor work, as well as its own work, in proper coordinated sequence with the work of all other prime contractors and their subcontractors. The contractor shall be prepared to meet as many times as necessary with the CPM consultant and all other prime contractors to develop the information required for the timely development of the project CPM schedule.

The initial CPM schedule that is submitted to DBC will show a coordinated plan for work for all contractors, thereby providing a common basis of acceptance, understanding, and communication. This schedule shall be approved by all prime contractors prior to submittal for DBC review.

The CPM consultant will submit for DBC review an arrow diagram describing the activities to be accomplished and their dependent relationships, together with a computer-produced calendar-dated schedule showing starting and completion dates for each work item. All completion dates shown shall be within the period specified for contract completion and in compliance with all intermediate milestones.

In conformance with article 10 of these General Conditions relating to "Payments," each prime contractor shall furnish a breakdown of the total contract price by assigning dollar values (costs estimates) to each applicable network activity, which cumulatively equals the total contract amount. Upon acceptance by DBC, the values will be used as a basis for determining progress payments. The contractor's overhead and profit shall be prorated through all activities. Progress payments to the contractor shall be dependent upon final acceptance by DBC of the costed CPM system.

- b. The arrow diagram shall show the sequence and interdependence of activities required for complete performance. In preparing the arrow diagram, all contractors shall assist the CPM consultant by breaking up the work into activities of a duration of no longer than ten working days each, except as to non-construction activities (such as procurement of materials, delivery of equipment and concrete curing) and any other activities for which the consultant may approve the showing of longer duration. The diagram shall show not only the activities for actual construction work for each category of the project but also such activities as the contractor's submittal of shop drawings, templates and equipment, material fabrication, delivery of equipment and material, and the delivery of owner-furnished equipment, if applicable. Activity duration (i.e., the contractor's single best estimate, considering the scope of the activity) shall be furnished by the contractor to the CPM consultant for each activity on the diagram. If requested by the CPM consultant, the contractor shall furnish any information needed to justify the reasonableness of activity time duration. Such information shall include, but not be limited to, estimated activity manpower, unit quantities, and production rates. To the extent that the arrow diagram or revised arrow diagram shows anything not jointly agreed upon or fails to show anything jointly agreed upon, it shall not be deemed to have been approved by DBC. Failure by either the contractor or the CPM consultant to include any element of work required for the performance of the contract shall not excuse the contractor from completing all work required within any applicable date, notwithstanding DBC approval of the arrow diagrams. The level of detail to be reflected in the CPM system shall be established by the CPM consultant.
- c. Seasonal weather conditions shall be considered in the planning and scheduling of all work influenced by high or low ambient temperatures for the completion of all contract work within the allotted contract time. In addition, appropriate allowances shall be made for anticipated time losses due to normal rain and snow conditions by statistically expanding the estimated time duration for weather-sensitive activities.

Accompanying the arrow diagram and computer scheduling listing, the CPM consultant shall furnish a computer-generated cost requisition listing, which shall provide a separate tabulation of each activity shown on the CPM schedule in order of bid item or trade responsibility code as agreed to by DBC. This listing shall show, for each activity,

the estimated dollar value of work in place for totally or partially completed activities, including subtotals by bid items and grand totals for the entire project. The cost requisition listing shall also contain monthly activities reflecting the cost of project overhead and administrative expenses, and activities reflecting the monthly cost of administering project General Conditions.

The cost requisition listing shall generate the contractor's monthly payment requisition directly from the CPM updating, utilizing the cost information furnished by the contractor and approved by DBC, and current project status determined in accordance with the requirements of section 9.3.4.

9.3.3 Review and Approval:

Within ten calendar days after receipt of the initial arrow diagram, computer-produced schedule and cost requisition listing, the DBC representative shall meet with the contractor and CPM consultant for joint review, correction, or adjustment of the proposed plan and schedule to evaluate the cost values assigned to each activity. Within ten calendar days after the joint review, the CPM consultant will revise the arrow diagram and/or computer-produced schedule in accordance with agreements reached during the joint review, and shall submit two copies each of the revised arrow diagram, computer-produced schedule and cost requisition listing to DBC. The re-submission will be reviewed by DBC and, if found to be as previously agreed upon, will be approved. An approved copy of each will be returned to the CPM consultant. Each contractor shall approve the schedule at that time. However, if any contractor objects to the schedule to be adopted, the contractor shall, within ten calendar days, state these objections in writing to the Director, specifying the precise position of the schedule to which the contractor objects and the reasons therefor, and identifying the basis of the objection. Each contractor will be deemed to have accepted the schedule as adequate, proper and binding in all respects and shall not raise objections to the schedule except to the extent as required in this article. The contractor will then meet with the DBC representative, the CPM consultant, and all other contractors as necessary to develop a contractually compliant schedule which removes all of the contractors' objections. The CPM consultant will revise the arrow diagram and the computer-produced schedule in accordance with the agreements reached during this final review and shall submit two copies each of the revised arrow diagram, computer-produced schedule and cost requisition listing to DBC. The re-submission will be reviewed by DBC and, if found to be as previously agreed upon, will be approved. An approved copy of each will be returned to the CPM consultant. Each contractor shall review the schedule to ensure that it reflects all charges agreed to and if all changes have been made, each contractor shall approve and sign the network diagrams, computer-produced schedule and cost requisition listing at that time. Approval will be without reservation, and each contractor will be deemed to have accepted the schedule as adequate, proper and binding in all respects and shall not raise objections to the schedule. After the network diagrams and computer-produced schedule have been signed, the CPM consultant shall forward to each contractor one set of copies of the network diagrams and computer-produced schedule. The arrow diagram and the computer-produced schedule with approved signatures shall constitute the project work schedule until subsequently revised in accordance with the requirements of this section.

9.3.4 Progress Reporting and Changes:

- a. Once every month, or more often if required by DBC, all contractors shall meet with the CPM consultant and DBC's representative(s) and provide the information necessary for the CPM consultant to prepare and submit to DBC a revised (updated) arrow diagram and computer-generated schedule listing showing:
 - (1) Approved changes in activity sequencing;

- (2) Changes in activity duration for not started or partially completed activities where agreed upon;
- (3) The effect to the network of any delays in any activities in progress, and/or the impact of known delays which are expected to affect future work;
- (4) The effect of contractor modifications (activity duration, logic and cost estimates) to the network;
- (5) Changes to activity logic, where agreed upon, to reflect revision in the contractor's work plan, i.e., changes in activity duration, cost estimates, and activity sequences for the purposes of regaining lost time or improving progress; and
- (6) Changes to milestones, due dates, and the overall contract completion date which have been agreed upon by DBC since the last revision of the CPM schedule.

The CPM schedule shall accurately reflect the manner in which the contractors intend to proceed with the project and shall incorporate the impact of all delays and change orders as soon as these factors can be defined. All changes made to the schedule shall be subject to approval by DBC prior to inclusion in the CPM schedule. If the DBC representative and the contractor are unable to agree as to the amount of time to be allowed for change order work, or the manner in which the work is to be reflected on the arrow diagram, the CPM consultant shall reflect the logic and time duration furnished by the contractor for the change order work pending final DBC decision. If non-approved contractor logic and time duration are used, the contractor agrees that any time which is projected to be lost on the project as a result of these schedule changes will be considered the responsibility of the contractor until a final agreement has been made or a final decision rendered by DBC regarding the manner in which the change order work is to be reflected on the schedule. When this final decision has been made by DBC, the CPM consultant shall revise the CPM schedule in accordance with such decision and issue a final analysis of the effect of the change on the project.

If the contractor desires to revise the logic of the approved CPM schedule so as to reflect a sequence of construction which differs from that originally agreed to, the contractor must first obtain the approval of the general construction contractor and all contractors whose work may be affected by the changes, and then must obtain the approval of DBC. If this change extends the completion date of the project or delays the work of other trades, the contractor agrees that these impacts and all associated costs will be considered a claim to be assessed against the contractor initiating the change and will not be the basis for a project time extension.

- b. Once each month, at the same time the network is updated, the CPM consultant, the contractor and the DBC representative(s) shall jointly make entries on the proceeding network diagram schedule to show actual progress, identify those activities started by date and those completed by date during the previous period, show the estimated time required to complete each activity started but not yet completed, show activity percent completed and/or dollars earned, and reflect any changes in the arrow diagram approved in accordance with the preceding paragraph. After completion of the joint review and DBC's approval of all entries, the CPM consultant will submit updated network diagrams, an updated computer-produced calendar-dated schedule and cost requisition listing to DBC and all contractors.

The resultant monthly CPM computer printout and network diagrams shall be recognized by the contractor as its sole updated construction schedule to complete all remaining contract work, except that portion affected by interim DBC decision.

- c. In addition to the foregoing, once each month all contractors will receive a narrative report prepared by the CPM consultant. The narrative report will include a description of

the amount of progress during the last month in terms of completed activities in the plan currently in effect, a description of problem areas, current and anticipated delaying factors and their estimated impacts on the performance of other activities and completion dates, and recommendations on corrective action for the contractor. Within seven calendar days after receipt of this report, the contractor shall submit to DBC a written explanation of corrective action taken or proposed. The Director, after reviewing written submissions, shall make a decision binding all parties.

9.3.5 Payments to Contractor:

- a. The monthly submission of the computer-produced calendar-dated schedule shall be an integral part and basic element of the estimate upon which progress payments shall be made pursuant to the provisions of article 10 of these General Conditions. The contractor shall be entitled to progress payments only upon receipt by DBC of an updated computer-produced calendar-dated schedule and cost requisition listing as mentioned under 9.3.4b above.
- b. Payments to all contractors shall be based upon the results of the computer-generated cost requisition listing which shall be prepared in conjunction with each updating of the CPM system as described above. Wherever required by the DBC-authorized representative, the contractors shall provide sufficient documentation to confirm reported progress for any costed items appearing in the scheduling and requisition system (e.g., bills of lading for delivered material and equipment).
- c. Payments to contractors shall be dependent upon the contractor furnishing all of the information and data which in the judgment of DBC is necessary to ascertain actual progress, and all the information and data necessary to prepare any necessary revisions to the computer-produced calendar-dated schedule, cost requisition listing and/or the network arrow diagram. DBC's determination that the contractor has failed or refused to furnish the required information and data shall constitute a basis for withholding payments until the required information and data is furnished and the schedule and/or diagram is prepared or revised on the basis of such information and data.

9.3.6 Biweekly Progress Meetings:

- a. Every two weeks the CPM consultant will conduct a coordination and scheduling meeting on the job site. At this meeting, each contractor shall provide detailed information regarding the work schedule to be performed during the upcoming two weeks so that the CPM consultant can prepare bar chart schedules for the period. Biweekly scheduling by the contractors shall be in accordance with the priorities and degree of concurrent work required by the official CPM schedule for the project. Each contractor shall be prepared to explain any difference between the contractor's biweekly schedules and the priorities required by the latest updating of the official CPM schedule.

At the biweekly scheduling meeting, the CPM consultant shall review the bar charts for the proceeding two weeks, and each contractor shall report the progress actually achieved for each activity which was scheduled to be performed during the two weeks, including the actual dates on which the work was performed. All contractors agree that this information shall constitute the official historical record of project progress.

At each biweekly scheduling meeting, each contractor shall document any current delays to work operations. In addition, contractors shall provide any available information regarding any potential delays which they anticipate (i.e., procurement delays, expected strikes, etc.).

- b. Following the biweekly scheduling meeting, the CPM consultant shall issue to each contractor a set of biweekly bar charts as developed at the meeting which shall constitute the construction schedule for the coming two weeks. The CPM consultant shall also issue a narrative biweekly progress analysis documenting progress achieved

during the preceding two weeks and analyze delays reported to constitute current or anticipated impacts to timely construction.

- c. Each prime contractor shall be represented at the biweekly scheduling meeting by its project manager, who shall have complete authority to provide the information required for the development of the next two weeks bar chart schedule, documentation of past progress and documentation of delays. Contractor representatives shall also be authorized to discuss at these meetings corrective action planned to overcome delaying conditions.

9.3.7 Responsibility for Completion:

Each contractor agrees that whenever it becomes apparent from the current monthly computer-produced calendar-dated schedule that any contract completion date will not be met, the contractor will take some or all of the following actions at no additional cost to the State:

- a. Increase construction manpower in such trades and numbers as will substantially eliminate, in the judgment of the Director, the backlog of work.
- b. Increase the number of working hours per shift, shifts per working days, working days per week, or the amount of construction equipment, or any combination of the above sufficiently to substantially eliminate, in the judgment of the Director, the backlog of work; and/or
- c. Reschedule activities to achieve maximum practical concurrence of accomplishment of activities.

9.3.8 Adjustment of Contract Completion Time:

- a. The contract completion time or times will be adjusted only for causes specified in this contract. In the event a contractor requests an extension of any contract completion date, the contractor shall furnish such justification and supporting evidence that DBC requires to evaluate the contractor's request. The Director shall then make a finding of fact and advise the contractor in writing thereof. If the Director finds that the contractor is entitled to any extension of any contract completion date under the provisions of this contract, the determination as to the total number of calendar days extension shall be based upon the currently approved computer-produced calendar-dated schedule and on all data relevant to the extension. Such data will be included in the next updating of the schedule.
- b. Two types of time extensions may be issued for this project as follows:
 - (1) A total project time extension may be issued if delays which are determined to be beyond the control of the contractor affect the main project critical path shown on the CPM schedule, thereby directly extending the final project completion date.
 - (2) A concurrent project time extension may be issued in those instances where it is found that specific delays beyond the control of the contractor would have affected the final project completion date were it not for overriding delays due to other causes. If a concurrent project time extension is issued, it will cover that time which would have been lost due to the specific issues cited if no other delays have occurred, according to the CPM consultant's analysis. A concurrent project time extension will also excuse the contractor from responsibility for liquidated damages for the period of time extension.
- c. All contractors acknowledge and agree that the evaluation of project delays and determinations regarding project time extension will be based upon the project CPM schedule and the following criteria:

(1) Float time shown on the CPM schedule is not for the exclusive use of either the contractor or DBC. It is agreed that float time is available for use by all parties to facilitate the effective use of available resources and to minimize the impact of problems of change orders which may arise during construction. Each contractor specifically agrees that float time may be used by DBC or their representatives or consultants in conjunction with their review activities or to resolve project problems. Each contractor agrees that there will be no basis for a project time extension as a result of any project problem, change order or delay which only results in the loss of available positive float on the project CPM schedule. Each contractor further agrees that there will be no basis for a claim for cost escalation for any activity which is completed on or before its initially required late end date as shown on the initial approved CPM schedule, regardless of the justifiability or any delaying factors which might have resulted in the elimination of float which was originally available for the activity. Float time shown on the CPM schedule shall not be used arbitrarily by any contractor in a manner which, in the opinion of the Director, unnecessarily delays other contractors from proceeding with their work in a way which is detrimental to the interests of the State. If any contractor refuses to perform work which is available to it, the Director may, regardless of the float shown to be available for the work, consider the contractor to be in violation of the contract documents. In such instances, the Director may, without prejudice to any right or remedy, and after giving the contractor and its surety a three working day written notice to forthwith commence and continue with the work with diligence and promptness, terminate the employment of the contractor by the issuance of a written notice to that effect to the contractor and its surety at any time subsequent to three working days thereafter, should either or both of them fail to comply with the directive of the original three working day notice mentioned above.

(2) Each contractor agrees that no time extension will be granted for time lost due to normal seasonal weather conditions. In order to qualify for consideration for a time extension due to adverse weather conditions, it must be shown that the weather conditions during a given quarterly period (summer, fall, winter, spring) were more severe than the previous five-year average for the project geographical area, and that these weather conditions critically impacted the final project completion date by delaying the performance of work on the main project critical path. If abnormal weather losses can be shown to have affected the project critical path, a non-compensable time extension will be considered for that portion of the proven weather-related delays, which exceeded normal weather losses which should have been anticipated for the quarterly period in question.

No time extensions will be considered for any weather impacts which do not affect work on the main project critical path. Each contractor agrees that there will be no basis for a claim for any additional compensation resulting from any time extension issued for weather-related delays.

(3) In order for a given issue (i.e., delay, change order, etc.) to be considered as a basis for a total project time extension, it must meet both of the following criteria:

(a) It must be totally beyond the control of the contractor and due to no direct or indirect fault of the contractor; and

(b) It must result in a direct delay to work on the main project critical path.

(4) Each contractor acknowledges and agrees that actual delays to activities which, according to the computer-produced calendar-dated schedule, do not directly affect the main project critical path do not have any effect on the contract completion date or dates and will not be the basis for a change therein.

- (5) Concurrent delays are defined as two or more delays or areas of work slippage which are totally independent of one another and which, if considered individually, would each affect the final project completion date according to the CPM schedule. Where the CPM consultant determines that concurrent delays exist, each contractor acknowledges and agrees that the following criteria will be used to evaluate time extension:
- (a) If the current CPM schedule shows two or more concurrent delays, with one analyzed to be the responsibility of DBC and the other analyzed to be the responsibility of the contractor, a non-compensable time extension will be considered only if the excusable delay affects the main project critical path and this delay is shown to be a greater amount than the other concurrent delays when their impacts are independently considered. In this event, a compensable time extension will be considered only for that portion of time by which the excusable delay exceeds all concurrent non-DBC caused delays. For example, if an excusable impact delays the project by 100 calendar days and concurrent contract-caused slippage independently delays the final completion date by 90 calendar days, a time extension will only be considered for a maximum of ten calendar days, provided the excusable delay is on the project critical path.
 - (b) If the CPM schedule shows concurrent delays with some excusable delays and some the fault of the contractor, and if the contractor-caused delays are analyzed to be the main determining impact to the main project critical path, then there will be no basis for a total project time extension regardless of the nature of the concurrent excusable delays. A concurrent time extension may, however, be considered for that portion of the total project slippage which is shown on the CPM schedule to be totally attributable to excusable delays.
 - (c) If a time extension request is being made for concurrent delays which did not affect the project critical path, this must be clearly stated in the contractor's time extension request and all CPM activities which are claimed to have been affected by the cited delay must be specifically identified with all applicable impact dates.

ARTICLE 10

PAYMENTS

10.1 Contractor Payment Process

10.1.1 The State will make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Director, on estimates approved by the Director. Unless otherwise directed, the contractor shall furnish a schedule of amounts for contract payments (Unit Schedule Breakdown, Form DBC-12A) of the total contract price, showing the amount included therein for each principal category of the work, in such detail as requested, to provide a basis for determining progress payments. The schedule, as approved, shall be used only as a basis for the contractor's estimates for progress payments, and approval by the Director does not constitute acceptance of the allocability and allowability of costs to a specific element of work. The contractor is cautioned that no payment requests shall be approved until the Unit Schedule Breakdown has been approved in writing by the Director or the Director's authorized representative.

10.1.2 In the preparation of estimates, the Director has the discretion to authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the contractor at locations other than the site may also be taken into consideration if (a) such consideration is specifically authorized by the contract and (b) the contractor furnishes Form DBC 11-3 and 11-3A entitled "Prime Contractors Summary of Stored Materials" and "Agreement and Bill of Sale Certification for Stored Materials," respectively.

10.1.3 In making such progress payments for contract work completed, the State will retain ten percent of the approved invoice amount until final acceptance and completion of all work covered by the contract.

The contractor may, after 50 percent of the contract work is in place and if such work is proceeding on schedule, apply for a reduction in the amount to be retained by the State for the duration of the contract. Such application must be in writing and accompanied by documentation denoting formal consent of surety to the reduction in retainage. If the Director determines that the contractor's performance has been satisfactory and that the reduction is warranted and appropriate, the State will, with the next progress payment, release any portion of the accumulated retainage in excess of five percent of the adjusted contract amount and retain an amount equal to five percent of the adjusted contract amount for the duration of the contract. If progress of the work is not maintained in accordance with the approved schedule, the Director may elect to re-institute retainage of ten percent of the work in place for the duration of the contract.

Upon acceptance and completion of each building or other clearly definable severable portion of the contract work for which the price is stated separately within the contract, payment may be made in full at the discretion of the Director, including retained amounts thereon, minus authorized deductions.

All material and work covered by progress payments made shall hereupon become the sole property of the State, but this provision shall not be construed as relieving the contractor from the sole responsibility for all material and work upon which payments have been made, or for the restoration of any damaged work, or as waiving the right of the State to require the fulfillment of all of the terms and conditions of the contract.

10.1.4 If performance or payment bonds are required under this contract, the State shall pay to the contractor the total premiums paid by the contractor to obtain the bonds. This payment shall be paid at one time to the contractor together with the first progress payment otherwise due after the contractor has (1) furnished the bonds (including coinsurance and reinsurance agreements, when applicable), (2) furnished evidence in full payment to the surety company, and (3) submitted a request for such payment. This payment of the bond premiums by the State to the contractor shall not be made as increments of the individual progress payments and shall not be in addition to the contract price.

10.1.5 Upon completion and acceptance of all work, the amount due the contractor under this contract shall be paid upon satisfactory completion, by the contractor, of all contract close-out

requirements, completion of a State audit on all contract values and payments, and after the contractor has furnished the State with a release of claim against the State, arising by virtue of this contract, other than claims in stated amounts as may be specifically excepted by the contractor from the release.

10.1.6 Upon satisfying the above conditions, the contractor shall submit a properly executed invoice for final payment to the DBC project representative who will initiate the process of final payment review and approval. The invoice will be considered properly executed when it is received and time-stamped by DBC's project accounting unit.

10.1.7 If for any reason the contractor refuses final payment, the project shall be closed out by the State by the processing of a Final Contract Acceptance certification. All residual funds will be held in escrow by the State until all claims of the State and all contractors are satisfied.

10.1.8 In addition to other warranties required by provisions of the contract and specifications, the contractor warrants that title to all work, materials and equipment covered by an application for payment will pass to the State, either upon incorporation into the construction or upon receipt of payment by the contractor, whichever occurs first, free and clear of all liens, claims, security interests or encumbrances. This provision shall not be construed as relieving the contractor from sole responsibility for the care and protection of materials and work upon which payments have been made, or for the restoration of any damaged work, or as a waiver by the State of its rights to require fulfillment of all terms of the contract.

10.1.9 Recommendation for approval of an invoice will constitute a representation by the architect/engineer to the Director, based on inspections at the site and data contained in the invoice, that the work has progressed to the point indicated; that, to the best of the architect/engineer's knowledge, information and belief, the quality of the work is in accordance with the contract documents; and that the contractor is entitled to payment in the amount certified. By recommending approval of the invoice, however, the architect/engineer shall not thereby be deemed to represent that it has made exhaustive or continuous on-site inspections to check the quality or quantity of the work, or that it has reviewed the construction means, methods, techniques, sequences or procedures, or that it has made any examination to ascertain how and for what purpose the contractor has used the moneys previously paid on account of the contract sum.

10.1.10 If any corporation licensed to do business in New Jersey shall be or become delinquent in the payment of taxes due the State, unless under an active appeal process, the Director may withhold moneys due the said corporation for the purpose of assuring the payment to the State of such taxes.

10.2 Invoices

10.2.1 Requests for payment under the contract for materials delivered or services rendered require the proper completion and submittal of specific forms including, but not necessarily limited to, the following:

- a. DBC Form 11/AR50-1 - DBC Invoice;
- b. DBC Form 11-2 - Monthly Estimate for Payment to Contractor;
- c. DBC Form 11-2A - Certification of Prime Contractor;
- d. DBC Form 11-3 - Prime Contractors Summary of Stored Materials;*
- e. DBC Form 11-3A - Agreement and Bill of Sale Certification for Stored Materials;*
- f. Consent of Surety forms;*
- g. Certified Payroll Records;*
- h. Any other information or documentation required by other provisions of the contract.
as applicable or required

10.2.2 The contractor shall submit the completed request for payment packet to the DBC project representative as instructed at the pre-construction conference. Receipt of a properly completed request for payment packet will start the prompt payment clock, unless it is subsequently discovered to be incomplete or otherwise unacceptable and returned to the contractor within 30 calendar days for correction (see section 10.2.4d. below).

10.2.3 Request for payment packets shall be prepared and submitted in original plus two copies unless otherwise specified.

10.2.4 For purpose of determining if interest begins to accrue under the State's Prompt Payment Act (N.J.S.A. 52:32-32 et seq.):

- a. A proper invoice will be deemed to have been received when it is received by the office designated in the pre-construction conference for receipt of invoices and acceptance of the materials delivered or services rendered has occurred;
- b. Payment shall be considered made on the date on which a check for such payment is dated;
- c. Payment terms (e.g., "net 20") offered by the contractor will not be deemed a "required payment date"; and
- d. The following periods of time will not be included:
 - (1) After receipt of an improper invoice and prior to notice of any defect of impropriety, but not to exceed 30 calendar days; and
 - (2) Between the date of a notice of any defect or impropriety and the date a proper invoice is received. When the notice is in writing, it shall be considered made on the date shown on the notice.

10.3 Interest

10.3.1 Interest shall be paid on the amount due the contractor pursuant to a properly executed State invoice (see preceding section 10.2) if the required payment is not made on or before the required payment date.

10.3.2 The required payment date shall be 60 calendar days from the receipt of a properly executed State invoice or 60 calendar days from receipt of supplies or services, whichever is later.

10.3.3 Interest on amounts due shall be paid to the contractor for the period beginning on the day after the required payment date and ending on the date on which the check for payment is drawn. The interest shall be paid at a rate which the State Treasurer shall specify as applicable on the 30th calendar day after the end of each fiscal year.

10.3.4 In determining the rate, the Treasurer shall take into consideration current private commercial rates of interest for new loans maturing in approximately five years. The Treasurer shall publish the new rate.

10.3.5 No interest charge as required by this provision shall become a debt of the State until it exceeds \$5.00.

10.3.6 Interest may be paid by separate payment to the contractor, but shall be paid within 30 calendar days of payment of the original invoice.

10.3.7 The State Treasurer shall have the right to waive the interest payment for delinquencies due to circumstances beyond the control of the Director (or other State representatives involved in the processing of contractor invoices) including but not limited to strikes and natural disasters, and for contracts entered into prior to the effective date of the law.

10.3.8 Nothing in the provision nor the New Jersey Prompt Payment Act shall be construed as permitting the accrual of prejudgment interest in the case of a disputed contract for which notice of claim has been filed pursuant to N.J.S.A. 59:13-1 et seq., as provided in N.J.S.A. 59:13-8.

10.3.9 Withholding Payment for Non-Delivery of Data:

- a. If technical data such as "As Built" drawings, reports, spare parts lists, repair parts lists, etc., or instruction books (including additional and maintenance manuals), or any part thereof, are not delivered within the time specified by this contract or are deficient upon delivery, the Director has the discretion to withhold from each invoice a percentage (in

addition to any other retainage required by the contract) of the contract price in accordance with the following table:

When total contract price is: Percentage to be withheld is:

Less than \$250,000	10.0%
\$250,000 through \$1,000,000	5.0%
Over \$1,000,000	2.0%

- b. The withholding of any sums pursuant to this article shall not be construed as, or constitute in any manner, a waiver by the State of the contractor's obligation to furnish the data required under this contract. In the event the contractor fails to furnish these items, the State shall have those rights and remedies provided by law and pursuant to this contract, in addition to, and not in lieu of, the sums withheld in accordance with this article.

10.3.10 Allowances

The contractor shall include in its bid all allowances as may be set forth in the contract documents. The contractor shall purchase the "allowed materials" as directed by the Director on the basis of the lowest acceptable quote from at least three competitive offers. If the actual cost of the "allowed materials" is more or less than the stipulated allowance, the contract price shall be adjusted accordingly. The adjustment in contract price shall be made on the basis of the actual purchase cost without additional charges for overhead, profit, bond premium or any other incidental expenses. The cost of installation of the "allowed materials," unless otherwise specified, is to be included as the responsibility of the contractor in whose contract the allowance is included, and the contractor installing such "allowed materials" shall not be entitled to additional payment for such installation.

Unless otherwise provided in the contract documents:

- a. These allowances shall cover the contractor's true costs, including credit for any trade discount, of the materials and equipment required by the allowance, delivered at the site, including all applicable taxes;
- b. The contractor's costs for unloading and handling, labor, installation costs, overhead, profit and other expenses reasonably required in connection with such allowance items shall be included in the contract sum and not as part of the allowances; and
- c. Should the actual cost vary from the allowance, the contract sum shall be adjusted accordingly by change order, the amount of which will recognize changes, if any, of handling costs on the site, labor, installation costs, overhead, profit and other expenses resulting to the contractor from any change in quantity only (not price) beyond that contemplated by the allowance.

ARTICLE 11

UNCOVERING AND CORRECTION OF WORK

11.1 Uncovering of Work

11.1.1 If any portion of the work is covered prior to inspection by the Director or the architect/engineer, especially work specifically required by the contract documents to be inspected, it shall be uncovered for observation. Uncovering the replacement of covering shall be at the installation contractor's expense. The contractor is obligated to advise the Director or the architect/engineer of all work scheduled to be covered which is reasonably subject to prior inspection before actual covering.

11.1.2 If any other portion of the work not specifically required to be inspected has been covered, which the Director or the architect/engineer did not request to observe prior to being covered, a request may subsequently be made to inspect such work, and it shall be uncovered by the installation contractor. If such work is found to be in accordance with the contract documents, the cost of uncovering and replacement shall, by appropriate change order, be reimbursed by the Director. If such work is found not to be in accordance with the contract documents, the contractor shall pay all associated costs, unless it is found that this condition was caused by the State, in which event the Director shall be responsible for the payment of such costs.

11.2 Correction of Work

11.2.1 The contractor shall promptly correct all work rejected by the Director or the architect/engineer as defective or failing to conform to the contract documents, whether observed before or after final acceptance and whether or not fabricated, installed or completed. The contractor shall bear all costs of correcting such rejected work, including the architect/engineer's additional services, if any.

11.2.2 The contractor shall remove from the site all portions of the work which are defective or non-conforming and which have not been corrected, unless removal is waived by the Director.

11.2.3 If the contractor fails to correct defective or non-conforming work in a timely manner, the Director may make arrangements for such correction by others and charge the cost of so doing to the responsible contractor and/or its sureties.

11.2.4 If the contractor does not proceed with the correction of such defective or non-conforming work within a reasonable time, fixed by written notice from the Director or the architect/engineer, the Director may remove it and may store the materials or equipment at the expense of the contractor. If the contractor does not pay for the cost of such removal and storage within 14 calendar days thereafter, the Director may, upon 14 calendar days additional written notice, sell such material and equipment at auction or at private sale and shall account for the net proceeds thereof, after deducting all of the costs which are the responsibility of the contractor, including compensation for the architect/engineer's additional services, if any. If such proceeds of sale do not cover all costs which the contractor should have borne, the difference shall be charged to the contractor and an appropriate credit change order shall be issued. If the payments then or thereafter due the contractor are not sufficient to cover such amount, the contractor and/or its surety shall pay the difference to the State.

11.2.5 The contractor shall be responsible for the cost of making good all work destroyed or damaged by such correction or removal.

11.2.6 Nothing contained herein shall be construed to establish a period of limitation, with respect to any other obligation which the contractor might have under the contract documents.

11.3 Acceptance of Defective or Non-Conforming Work

11.3.1 The Director may determine that the best interests of the State will be served by accepting defective or non-conforming work instead of requiring its removal and correction. In such instance a change order will be issued to reflect an appropriate and equitable and reduction in the contract sum.

Such adjustment shall be effected regardless of final payment having previously been made, and the contractor and/or its surety shall be responsible for promptly providing any funds due the State as a result thereof.

ARTICLE 12

PROTECTION OF PERSONS AND PROPERTY

12.1 Safety Precautions and Programs

12.1.1 Each prime contractor shall be responsible, in cooperation with and under the leadership of the general construction contractor, for initiating, maintaining and supervising all safety precautions and programs in connection with the work. Each prime contractor shall designate a responsible member of its organization at the site, whose duty shall be the prevention of accidents. This person shall be the contractor's superintendent unless otherwise designated by the contractor, in writing, to the State and the architect/engineer.

12.2 Safety of Persons and Property

12.2.1 Each prime contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

- a. Every employee on the work and all other persons who may be affected thereby;
- b. All the work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the contractor, or any of its subcontractors or sub-subcontractors; and
- c. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

12.2.2 The contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.

12.2.3 The contractor shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection, including rails, night-lights, the posting of danger signs and other warnings against hazards, promulgating safety regulations, notifying owners and users of adjacent utilities and other means of protection against accidental injury or damage to persons and property.

12.2.4 When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the work, the contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.

12.2.5 No contractor shall load or permit any part of the work to be loaded so as to endanger its safety.

12.2.6 The contractor shall promptly remedy all damage or loss to any property caused in whole or in part by the contractor, any of its subcontractors, sub-subcontractors, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable and for which the contractor is responsible, except damage or loss attributable to the acts or omissions of the State or architect/engineer, or anyone directly or indirectly employed by either of them or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the contractor. The foregoing obligations of the contractor are in addition to its obligations stated elsewhere herein.

12.3 Emergencies

12.3.1 In any emergency affecting the safety of persons or property, the contractor shall act with diligence, at its discretion, to prevent threatening injury, damage or loss. In such case, the contractor shall immediately notify the Director, through the architect/engineer, of the action taken, and shall forthwith prepare and submit a detailed and documented request through the

architect/engineer to the Director for any additional compensation or extension of time claimed by the contractor on account of emergency work.

12.3.2 Wherever the contractor has taken no action, but has notified the Director or the architect/engineer, or wherever the Director has otherwise been made aware of any emergency threatening injury to persons, or loss or damage to work or adjacent property, the contractor shall act only as instructed or authorized by the Director.

ARTICLE 13

INSURANCE AND INDEMNITY

13.1 Contractor Insurance Requirements

The contractor shall secure and maintain in force, for the term of the contract, insurance coverages provided herein. The contractor shall provide the State of New Jersey with current certificates of insurance for all coverage and renewals thereof which must contain the provision that the insurance provided in the certificate shall not be canceled for any reason except after 30 calendar days written notice to the State of New Jersey, Division of Building and Construction.

13.1.1 Comprehensive General Liability

Comprehensive general liability insurance for the benefit of the contractor and any subcontractors is to be written as broad as the standard coverage form currently in use in the State of New Jersey, which shall not be circumscribed by any endorsements limiting the breadth of coverage. The policy shall include an endorsement (broad form) for contractual liability insurance, an endorsement for completed operations insurance, and an endorsement eliminating the explosion, collapse and underground (XCU) exclusion. Limits of liability shall not be less than \$1,000,000 per occurrence for bodily injury liability and \$1,000,000 per occurrence for property damage liability.

13.1.2 Comprehensive Automobile Liability

Comprehensive automobile liability insurance covering owned, non-owned, and hired vehicles must be carried by all contractors. The limits of liability shall not be less than \$1,000,000 per occurrence for bodily injury liability and \$500,000 per occurrence for property damage liability.

13.1.3 Workers' Compensation

Workers Compensation Insurance applicable to the laws of the State of New Jersey and other State or Federal jurisdiction is required to protect the employees of the contractor or any subcontractor who will be engaged in the performance of this contract. This insurance shall include employers' liability protection with a limit of liability not less than \$250,000.

13.1.4 Owner's and Contractor's Protective Liability Insurance (OCPL)

In addition to the insurance required above, the contractor shall obtain and maintain a separate owner's and contractor's protective liability insurance policy for the same limits of liability as specified for the comprehensive general liability insurance. The policy shall provide for the State of New Jersey to be named insured. The policy shall be maintained in force for the term of the contract or one year, whichever is longer.

13.2 Insurance to be Carried by the State of New Jersey

13.2.1 Fire Insurance

The State of New Jersey shall provide insurance protection for the benefit of the contractor and its subcontractors in the form of a builders' risk insurance policy, providing protection against the perils of fire with extended coverage (which is limited to destruction caused by fire and lightning, wind, storm and hail, leakage from fire protective equipment, explosion, smoke damage caused by vehicles colliding with the structure, and damage caused by aircraft, sonic shock, riot and civil commotion, damage resulting from civil and military authority, and vandalism and malicious mischief) upon the structure on which the work on this contract is to be done to 100 percent of the insurable value thereof, including items of labor and materials connected therewith, whether in or adjacent to the structure insured, and materials in place or to be used as part of the permanent construction including surplus materials.

13.2.2 Exclusions

The above insurance shall apply only to the construction of new buildings and new additions to existing buildings which result in the creation of additional habitable space; and shall not apply to alterations, repairs, maintenance and installations of systems, equipment and other items of work

which do not result in creating additional habitable space. This insurance shall not protect against damage or loss to any of the contractor's or subcontractor's tools, equipment, scaffolding, staging towers or forms, contractor's materials stored on site which are not part of the construction project, and sheds or other temporary structures erected for use by the contractor and subcontractors. It is understood that the contractor will, at its own expense, carry all insurance which may be required to provide the necessary protection against such loss or damage herein described which shall contain a waiver of any right of subrogation against the State of New Jersey.

13.2.3 Deductible Provisions

The insurance protection described herein may contain a deductible clause. The State of New Jersey agrees to indemnify the contractor against any insurable to the extent that such loss exceeds \$5,000 per occurrence. In these instances, the contractor shall assume responsibility for the first \$5,000 of any loss.

13.2.4 Loss Reporting and Loss Adjustment

In the event of loss, the contractor shall immediately notify the State of New Jersey, Division of Building and Construction, in writing, and take any other appropriate steps as may be required under the standard builders' risk insurance policy in effect. Upon the occurrence of any loss or damage prior to the acceptance of the building by the State, the contractor shall, at the State's option, replace and repair the damaged work as originally provided in the drawings and specifications at no additional compensation to that provided in the original contract.

13.2.5 Status Trustee for Loss Adjustment

All losses will be adjusted with, and payable to, the State of New Jersey, as trustee for the insured as their interests may appear. The contractor shall be named jointly with the State in all policies of insurance, all of which shall be open to inspection by the State.

13.2.6 The contractor shall not include any cost for builders' risk insurance premiums as described herein. However, this provision shall not relieve the contractor from its obligation to complete, according to plans and specifications, the project covered by the contract, and the contractor and its surety shall be obligated to full performance of the contractor's undertaking.

ARTICLE 14

CHANGES IN THE WORK

14.1 Changes to Contract

14.1.1 The Director may at any time, by written order designated or indicated to be a change order, make any change in the work within the general scope of the contract, including, but not limited to, changes:

- a. In the specifications (including drawings and designs);
- b. In the method or manner of performance of the work;
- c. In the State-furnished facilities, equipment, materials, services, or site; or
- d. Directing acceleration in the performance of the work.

14.2 Requests for Equitable Adjustment

14.2.1 The contractor agrees to prepare and submit, within 20 calendar days of encountering any conditions it considers a change, or upon receiving official notice of a proposed change or written direction to proceed with a change, a current DBC form entitled "Request for Change Order" to the Director or, if so instructed, to the Director's designated project representative. An original and two copies shall be submitted.

14.2.2 All requests for contract time extensions must be accompanied by copies of the current (approved) progress schedule and copies of the revised (proposed) progress schedule detailing the incorporation of the changed work and the effects of such incorporation on progress. Failure to provide the schedule data shall be grounds for rejection of the request.

14.2.3 Notwithstanding any other portion of this contract, any time extensions for changes in the work depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The contract modification making such time extension will provide for an extension of contract completion date only for those specific elements so delayed, and will not alter the contract completion dates for other portions of the work. This contract modification may further provide for an equitable readjustment of liquidated damages pursuant to the new completion schedule.

14.2.4 The contractor, in connection with any request it makes for an equitable adjustment, shall furnish a price breakdown, itemized as required by the Director. Unless otherwise directed, the breakdown shall cover all work involved in the change whether such work was deleted, added or changed. Further, the breakdown shall be in sufficient detail to permit an analysis of all material, labor, equipment, subcontract and overhead costs, as well as profit. Any amount proposed for subcontracts shall be supported by a similar price breakdown. In addition, if the request includes a time extension, a justification (see section 14.2.2) shall also be furnished. The request, together with the price breakdown and time extension justification, shall be furnished by the date specified.

14.2.5 If any change under this article causes an increase or decrease in the contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, an equitable adjustment may be made in the contract price or delivery schedule or both, and the contract modified in writing accordingly.

14.2.6 The following rates shall apply in computing indirect costs and profit for the negotiation of equitable adjustments, under all provisions of this contract which provide for such adjustments that do not exceed \$25,000. When the contract time is increased as a result of a change, the resulting change in contract amount will include the indirect impact cost of extended performance, computed in accordance with the terms of this article, and no further consideration of such costs arising from the specific modification will be given. The percentages for overhead and profit shall be negotiated and may vary according to the nature, extent and complexity of the work involved. The percentages shall be applicable for deleted work as well as additional work. When a change consists of both

added and deleted work, the applicable percentages shall be applied to the net cost or credit. In any event, the percentages shall not exceed the following:

- a. Overhead will be the sum of:
 - (1) 15 percent of direct labor costs. NOTE: For the purpose of this article, the term "direct labor" shall include all foremen, equipment operators and skilled, semi-skilled and common laborers directly assigned to the specified operation. The term "direct labor costs" shall consist of the contract or actual payroll rate of wage per hour and fringe benefits paid for each and every hour that such employees are actually engaged in the performance of the work.
 - (2) 15 percent of direct material costs. NOTE: For the purpose of this article, the term "direct material costs" shall consist of the actual costs of the materials including applicable tax and transportation charges.
- b. For rented equipment, an hourly rental rate will be used which will be determined by using the monthly rental rates taken from the current edition of the Rental Rate Blue Book for Construction Equipment and dividing it by 176. An allowance will be made for operating costs for each and every hour the equipment is actually operating in accordance with the rates listed in the aforesaid Rental Book. The contractor will be allowed only 65 percent of the rental rate on contractor-owned equipment.
- c. Bond premiums, insurance, payroll taxes, and travel subsistence, if applicable, will be allowed at actual cost for the equitable adjustment allowed.
- d. The prime contractor's profit on the subcontractor's work will be six percent of the subcontractor's costs. Subcontractor indirect costs will be computed in the same manner as for the prime contractor. The prime contractor agrees to incorporate this article in each of its subcontracts. NOTE: When more than one tier of subcontractors exists, for the purpose of markups, they shall be treated as one subcontractor.
- e. A profit of six percent, where profit is allowable by the terms of the applicable contract provision, shall be added to the contractor's total cost for the equitable adjustment allowed. Indirect costs will not be duplicated in direct costs.

14.2.7 The Director, in order to avoid delays in the progress of work or when in the best interests of the State, has the discretion to direct the contractor, in writing, to proceed with a change without a prior agreement on costs. Such direction shall be in the form of an un-priced change order or letter of direction. If the contractor intends to assert a request for an equitable adjustment under this article, the contractor must submit to the Director or, if instructed, to the Director's designated project representative a DBC form entitled "Request for Change Order", completed in sufficient detail and in accordance with this article within 20 calendar days after receipt of an un-priced change order or letter of direction.

14.2.8 Where the cost of property made obsolete or excess as a result of a change is included in the contractor's request for adjustment, the Director shall have the right to prescribe the manner of disposition of such property.

14.2.9 In order to avoid delays in the progress of work, the Director has the discretion to order a contractor to proceed, even in the absence of a formal change order. The contractor shall submit a follow-up change order request within 20 calendar days following the date of authorization to proceed with the changed work. The cost of such work shall then be evaluated by the Director on the basis of the reasonable expenditures and savings for those performing the work.

14.2.10 Failure to agree to any adjustment shall be a dispute concerning a question of fact within the meaning of section 2.4 of this document. However, nothing in this article shall excuse the contractor from proceeding with the contract as changed.

ARTICLE 15

ASSIGNMENT OF ANTITRUST CLAIM(S)

15.1 Assignment of Antitrust Claim(s)

15.1.1 The contractor recognizes that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the ultimate purchaser. Therefore, and as consideration for executing this contract, the contractor, acting herein by and through its duly authorized agent, hereby conveys, sells, assigns, and transfers to the State of New Jersey, for itself and on behalf of its political subdivisions and public agencies, all right, title and interest to all claims and causes of action it may now or hereafter acquire under the antitrust laws of the United States or the State of New Jersey, relating to the particular goods or services purchased or acquired by the State of New Jersey or any of its political subdivisions or public agencies pursuant to this contract.

In connection with this assignment, the following are the express obligations of the contractor:

- a. It will take no action which will in any way diminish the value of the rights conveyed or assigned hereunder.
- b. It will advise the Attorney General of New Jersey:
 - (1) in advance of its intention to commence any action on its own behalf regarding any such claim or cause(s) of action;
 - (2) immediately upon becoming aware of the fact that an action has been commenced on its behalf by some other person(s) of the pendency of such action.
- c. It will notify the defendants in any antitrust suit of the fact of the within assignment at the earliest practicable opportunity after the contractor has initiated an action on its own behalf or becomes aware that such an action has been filed on its behalf by another person. A copy of such notice will be sent to the Attorney General of New Jersey.

Furthermore, it is understood and agreed that in the event any payment under any such claim or cause of action is made to the contractor, it shall promptly pay over to the State of New Jersey the allotted share thereof, if any, assigned to the State hereunder.

ARTICLE 16

AFFIRMATIVE ACTION REQUIREMENTS

16.1 Policy Statement

The laws of New Jersey (N.J.S.A. 10:5-31 et seq.) provide that no public works contractor can be awarded nor any moneys paid until the prospective contractor has agreed to contract performance which complies with the approved Affirmative Action Plan. The law applies to each political subdivision and agency of the State and includes procurement and service contracts as well as construction contracts. This section was prepared to explain the affirmative action requirements and procedures for public agencies awarding contracts and for contractors bidding on contracts.

To assure effective application of the affirmative action law while allowing the business operations of government to proceed efficiently, these regulations (see N.J.A.C. 17:27) are designed to minimize administrative paperwork and delays.

16.2 Mandatory Language

During the performance of this contract, the contractor agrees as follows:

- a. The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, sex, or affectional or sexual orientation. The contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment without regard to their age, race, creed, color, national origin, ancestry, marital status, sex, or affectional or sexual orientation. Such action shall include but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.
- b. The contractor or subcontractor, where applicable, will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, sex or affectional or sexual orientation.
- c. The contractor or subcontractor, where applicable, will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Public Agency Compliance Officer, advising the labor union or workers' representative of the contractor's commitments under this act, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- d. The contractor or subcontractor, where applicable, agrees to comply with any and all regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time.
- e. When hiring workers in each construction trade, the contractor or subcontractor agrees to attempt in good faith to employ minority and female workers in each construction trade consistent with the applicable employment goal prescribed by N.J.A.C. 17:27-7.3; provided, however, that the Affirmative Action Office may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions (1), (2) and (3), as long as the Affirmative Action Office is satisfied that the contractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Affirmative Action Office, that its percentage of active "card carrying" members who are minority and female workers is

equal to or greater than the applicable employment goal prescribed by N.J.A.C. 17:27-7.3 promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq. as amended and supplemented from time to time. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

- (1) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three working days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under the contract and in accordance with the regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as supplemented and amended from time to time. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five working days prior to the commencement of construction work, the contractor or subcontractor agrees directly to attempt to hire minority and female workers consistent with the applicable employment goal. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and female workers consistent with the applicable employment goal, the contractor or subcontractor agrees to be prepared directly to hire minority and female workers consistent with the applicable employment goal by complying with the following hiring procedures prescribed under (2) below; and the contractor or subcontractor further agrees immediately to take said action if it determines or is so notified by the Affirmative Action Office that the union is not referring minority and female workers consistent with the applicable employment goal.
- (2) If the hiring of a work force consistent with the employment goal has not or cannot be achieved for each construction trade by adhering to the procedures of 1. above, or if the contractor or subcontractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions consistent with the applicable county employment goals:
 - (a) To notify the Public Agency Compliance Officer, Affirmative Action Office and at least one approved minority referral organization of its manpower needs, and request referral of minority and female workers;
 - (b) To notify any minority and female workers who have been listed with it as awaiting available vacancies;
 - (c) Prior to commencement of work, to request the local construction trade union, if the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, to refer minority and female workers to fill job openings.
 - (d) To leave standing requests for additional referral of minority and female workers with the local construction trade union, if the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area, until such time as the work force is consistent with the employment goal.
 - (e) If it is necessary to lay off some of the workers in a given trade on the construction site, to assure, consistent with the applicable State and Federal statutes and court decisions, that sufficient minority and female employees remain on the site consistent with the employment goal; and to employ any minority and female workers so laid off by the contractor on any other construction site in the area on which its work force

composition is not consistent with an employment goal established pursuant to N.J.A.C. 17:27.

- (f) To adhere to the following procedure when minority and female workers apply or are referred to the contractor or subcontractor:
 - (i) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required, the contractor or subcontractor shall determine the qualifications of such individuals, and if the contractor's or subcontractor's work force in each construction trade is not consistent with the applicable employment goal, it shall employ such persons which satisfy appropriate qualification standards; provided however, that a contractor or subcontractor shall determine that the individual at least possesses the skills and experience recognized by any worker's skills and experience classification determination which may have been made by a Public Agency Compliance Officer, union, apprentice program or a referral agency, provided the referral agency is acceptable to the Affirmative Action Office and provided further that, if necessary, the contractor or subcontractor shall hire minority and female workers who qualify as trainees pursuant to these regulations. All of the requirements of this paragraph, however, are limited by the provisions of paragraph 3. below.
 - (ii) If the contractor's or subcontractor's work force is consistent with the applicable employment goal, the name of said female or minority group individual shall be maintained on a waiting list for the first consideration, in the event the contractor's or subcontractor's work force is no longer consistent with the applicable employment goal.
 - (iii) If, for any reason, said contractor or subcontractor determines that a minority individual or a female is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing with the reasons for the determination, maintain a copy in its files, and send a copy to the Public Agency Compliance Officer and to the Affirmative Action Office.
 - (g) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract and on forms made available by the Affirmative Action Office and shall be submitted promptly to that office upon request.
- (3) The contractor or subcontractor agrees that nothing contained in the preceding provision (2) shall preclude the contractor or subcontractor from complying with the hiring hall or apprenticeship provisions in any applicable bargaining agreement or hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement; provided, however, that where the practices of a union or apprenticeship program will result in the exclusion of minorities and females or the failure to refer minorities and females consistent with the county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to said provisions (2) without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ minority and female advanced trainees and trainees in numbers which result in the employment of advanced trainees and

trainees as a percentage of the total work force for the construction trade, which percentage significantly exceeds the apprentice-to-journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of the proceeding provision (2), it shall, where applicable, employ minority and female workers residing within the geographical jurisdiction of the union.

- (4) The contractor agrees to complete an Initial Project Manning Report on forms provided by the Affirmative Action Office or in the form prescribed by the Affirmative Action Office and submit a copy of said form no later than three working days after signing a construction contract; and to submit a completed copy of a Monthly Project Manning Report to the Affirmative Action Office and to the public agency compliance officer once a month (by the seventh work day of each month) thereafter for the duration of this contract. The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary for on-the-job and off-the-job programs for outreach and training of minority and female trainees employed on the construction project.
- (5) The contractor and its subcontractors shall furnish such reports or other documents to the Affirmative Action Office as may be requested by the office from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Affirmative Action Office for conducting a compliance investigation pursuant to NJAC 17:27-10.1 et seq.

Provisions (e) and (f) are not required for subcontractors with four or fewer employees in the company or a contractor which has presented evidence of a federally approved or sanctioned affirmative action program.

END OF GENERAL CONDITIONS

SUPPLEMENTARY
INSTRUCTIONS TO BIDDERS
AND
GENERAL CONDITIONS

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**SUPPLEMENTARY
INSTRUCTIONS TO BIDDERS
AND
GENERAL CONDITIONS**

The following Supplementary to Instructions to Bidders and General Conditions reinstate, delete, modify or change the Instructions to Bidders and General Conditions of the State of New Jersey, Department of Treasury, Division of Building and Construction, amended January 1995. If no mention is made of an Article, Paragraph or Subparagraph, these clauses remain in force in their entirety.

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

GENERAL

All references in the specifications and drawings to the Division of Building & Construction (DBC) shall be changed to Division of Property Management and Construction (DPMC)

IB1 Bid Proposals

IB1.1 [Replace the first sentence ONLY with the following:]

Sealed proposals for the work described herein must be received and time-stamped in the Plan Room, Division of Property Management and Construction (DPMC), 9th floor, 33 West State Street, P O Box 034, Trenton, NJ 08625-0034. ...

IB1.2 [Delete this paragraph in its entirety and replace with the following:]

Bids may be accepted on the following branches of work, as applicable:

- 1 – Lump Sum All Trades
- 2 – General Construction
- 3 – Structural Steel
- 4 – Plumbing
- 5 – Heating, Ventilating and Air Conditioning
- 6 – Electrical
- 7 – Special Categories as may be required

IB1.8 [Delete this paragraph in its entirety and replace with the following:]

The Prime bidder must include in the bid envelope: (1) the proposal signed by the bidder, (2) the executed affidavit of non-collusion, (3) the executed Source Disclosure Certification Form as further described in section IB1.11, and (4) bid security as further described in section IB6.

IB1.11 [New] PROCUREMENT REFORM

- a. RESTRICTIONS ON POLITICAL CONTRIBUTIONS – In accordance with Public Law 2005, Chapter 51 (formerly Executive Order 134) the apparent low bidder submitting a bid on or after October 15, 2004, shall be required, prior to contract award, to submit a completed and signed Two Year Certification and Disclosure Form together with a completed Ownership Disclosure Form for all Business Entities.

Public Law 2005, Chapter 51 prohibits State departments, agencies and authorities from entering into a contract that exceeds \$17,500 with an individual or entity that has made a contribution to a political party committee. Public Law 2005, Chapter 51 further requires the disclosure of all contributions to any political organization organized under section 527 of the Internal Revenue Code that also meets the definition of a “continuing political committee” within the meaning of N.J.S.A. 19:44A-3(n) and N.J.A.C. 19:25-1.7. The successful bidder shall also be required to adhere to all continuing obligations contained in Public Law 2005, Chapter 51 regarding contributions and disclosures as required in Public Law 2005, Chapter 51.

- b. Pursuant to Public Law 2005, Chapter 92, (N.J.S.A. 52:34-13.2 et seq., superseding Executive Order 129(2004)) all bidders submitting a proposal shall be required to complete a Source Disclosure Certification that all services will be performed in the United States. The bidder shall disclose the location by country where services under the contract will be performed and any subcontracting of services under the contract and the location by country where any subcontracted services will be performed. The Source Disclosure Certification will be attached to the bid proposal.

IB4 Awards

IB4.5 [New] The successful bidder and all of its subcontractors are required to comply with the requirements of N.J.S.A. 10:5-31 et seq., regarding Equal Employment Opportunity in Public Works Contracts.

IB5 Qualification of Bidders

IB5.5 [New] At the time of the bid due date, the bidder and the subcontractors must be registered in accordance with “The Public Works Contractor Registration Act” (N.J.S.A. 34:11-56.48 et seq.) All questions regarding registration shall be addressed to:

Contractor Registration Unit
New Jersey Department of Labor
Division of Wage and Hour Compliance
P O Box 389
Trenton NJ 08625-0389
Telephone: 609-292-9464
FAX: 609-633-8591

IB5.6 [New] In accordance with Public Law 2001, Chapter 134, all contractors and Subcontractors providing goods/services to State agencies and authorities are required to provide the contracting agency or authority with proof of registration with the

Department of Treasury, Division of Revenue. The basic registration process involves the filing of Form NJ-Reg., which can be filed online at www.state.nj.us/njbgs/services.html or by calling (609)292-7077 or (609)292-1730.

IB6 Deposit and Bid Bond

[Delete this section in its entirety and replace with the following:]

IB6.1 The Proposal, when submitted shall be accompanied by a Bid Bond satisfactory to the Director, for a sum of not less than fifty percent (50%) of the TOTAL Bid, including alternates if applicable

IB6.2 The Bid Bond shall be properly filled out, signed, and witnessed.

IB6.3 The Bid Bond shall be accompanied by a copy of the power of attorney executed by the surety company or companies. The power of attorney shall set forth the authority of the attorney-in-fact who has signed the bond on behalf of the surety company to bind the company and shall further certify that such power is in full force and effect as of the date of the bond.

IB6.4 If the bidder whose proposal is accepted is unable to provide the performance and payment bonds or fails to execute a contract, then such bidder and the bid bond surety, where applicable, shall be obligated to pay to the State the difference between the amount of the bid and the amount which the State contracts to pay another party to perform the work. The bidder and the surety shall pay, upon demand, the entire amount of the State's difference in cost. Should there be a deficiency in excess of the bid deposit, the bidder shall make immediate payment to the State for any such deficiency. Nothing contained herein shall be construed as a waiver of any other legal remedies that the State may have against the contractor.

SUPPLEMENTARY GENERAL CONDITIONS

ARTICLE 2 - DIRECTOR

2.5 [New] TERMINATION BY THE DIRECTOR FOR CONVENIENCE

2.5.1 The Director may, at any time, terminate the Contract in whole or in any part for the State's convenience and without cause when the Director in his sole discretion views termination is in the public interest.

2.5.2 Upon receipt of an order of Termination for Convenience, the Contractor shall not proceed with any item of work, which is not specified in the Order of Termination. The Contractor shall complete all items of work specified in the termination order. Such work shall include punch list items and all work necessary to ensure the safety of the public, to properly secure existing work already constructed or partially constructed and to secure the Project site.

This work so ordered shall be performed in accordance with the Contract Documents, and may include items of work not in the original contract. The Contract shall be considered substantially complete upon completion and acceptance of all items of work specified in

the Order, except punch list items. After completion of the punch list items and all documents required by the Contract, the Contract shall terminate upon issuance of a Final Certificate and payment. The Director reserves the right to declare in default a contractor whom fails to carry out the conditions set forth in an Order of Termination for Convenience.

When the State orders termination of the Contract for Convenience, all completed items of work as of that date will be paid for at the Contract price. Payment for partially completed work will be paid for at agreed prices. Items which are eliminated in their entirety by such termination will be paid for only to the extent provided in Paragraph 2.5.3. Payment for new items, if any, will be made either at agreed prices or in accordance with Article 14.

Materials obtained by the Contractor for the Work but which have not been incorporated therein may, at the option of the State, be purchased from the Contractor at actual cost delivered to a prescribed location, or otherwise disposed of as mutually agreed.

Within sixty (60) days of the effective termination date, the Contractor shall submit claims for additional costs actually incurred, not covered above or elsewhere in the Contract. Such claims may include such cost items as reasonable mobilization efforts, overhead expenses attributable to the Work performed, subcontractor costs not otherwise paid for, actual idle labor cost if Work is stopped in advance of the termination date. Costs, which are prohibited under provisions of the Contract and anticipated profits on work not performed, are not allowed.

2.5.3 If acceptable material is ordered by the Contractor for the eliminated item prior to the date of notification of such elimination and if orders for such material cannot be canceled, it will be paid for at the actual cost to the Contractor. In such case, the material paid for becomes the property of the State and the actual cost of any further handling will be paid for. If the material is returnable to the vendor, and if the State so directs, the material shall be returned and the Contractor will be paid for the actual cost or charges made by the vendor for returning the material. The actual costs of handling returned material will be paid for.

The actual costs or charges will be computed in the same manner as if the work were to be paid for as provided in the Contract. However, no profit will be allowed.

ARTICLE 4 THE CONTRACTOR

4.5.12 [New] Immediately upon receipt of the contract award documents from the Division of Property Management and Construction, the contractor shall notify all utility companies involved regarding utility services required for completion of the Work.

4.5.13 [New] The Contractor will establish an approved Silica Health and Safety Program when tasks generating crystalline silica dust are being performed. This program shall include engineering, work practice, and respiratory protection controls to reduce worker exposure to airborne respirable crystalline dust to levels that are as low as reasonably achievable. When tasks are performed that generate airborne crystalline dust, the Contractor will minimize worker exposure to dust by

one, or a combination of the following methods: 1) dust suppression with water, 2) local exhaust ventilation to a high-efficiency dust collector, and/or 3) appropriate respiratory protection devices. The Contractor shall provide a trained, competent person, as defined by OSHA 29 CFR 1926, on site at all times to implement the Silica Health and Safety Program when tasks generating crystalline silica dust are being performed.

ARTICLE 10 PAYMENTS

10.1 Contractor Payment Process

10.1.3 [Delete Paragraph 2 under this section in its entirety. Replace with:]

The contractor may, after fifty percent (50%) of the contract work is in place and if such work is proceeding on schedule, apply for a reduction in the amount to be retained by the State for the duration of the contract. Such application must be in writing and accompanied by documentation denoting formal consent of surety to the reduction in retainage. If the Director determines that the contractor's performance has been satisfactory and that the reduction is warranted and appropriate, the State may, with the next progress payment, release any portion of the accumulated retainage in excess of five percent (5%) of the work in place and retain an amount equal to five percent (5%) of the work in place for the duration of the contract. If progress of the work is not maintained in accordance with the approved schedule, the Director may elect to re-institute retainage of ten percent (10%) of the work in place for the duration of the contract.

10.1.6 [Strike last sentence only.]

10.2.2 [Strike everything after the first sentence and replace with the following:]

No invoice shall be deemed to be formally submitted and received for payment until all dollar amounts and completion percentages for all line items to be included in the invoice have been determined and agreed upon by the State and the contractor.

10.2.4 [Strike and replace with the following:]

For purposes of the State's Prompt Payment of Contractors and Subcontractors Act (N.J.S.A. 2A:30A-1, et seq.:

a. An invoice will be deemed to have been received by the owner when it is received by the person or entity designated by the State to review and sign the invoice on the State's behalf at the address designated in the pre-construction conference for receipt of invoices. Receipt of an invoice by such person or entity shall commence the running of the 20-day period for formal approval and certification as provided under N.J.S.A. 2A:30A-2(a).

b. The "billing date" as that term is used in N.J.S.A. 2A:30A-2 shall be the earlier of the date upon which an invoice for payment is approved for payment or 20 days after the invoice is received, per subparagraph "a" above, unless within such 20-day period the invoice is found to be incomplete or otherwise unacceptable and returned to the contractor, with a written explanation of deficiencies

c. In the event that an invoice is found to be deficient and returned to the contractor, the “billing date” shall be calculated from the date that a corrected invoice is received.

d. Payment shall be considered to have been made on the date on which a check for such payment is dated

e. Payment terms (e.g., “net 20”) offered by the contractor shall not govern the State’s obligation to make payment

f. The following periods of time will not be included in the calculation of the due date of any contractor invoice:

(1) Any time elapsed between receipt of an improper invoice and its return to the contractor, not to exceed 20 calendar days; or

(2) Any time elapsed between the State’s return of an improper invoice to the contractor and the State’s receipt of a corrected invoice.

10.2.5 [New] The Provisions of this Article 10 shall not govern the State’s payment obligations nor shall they supersede or modify any other contractual provision allowing the withholding of monies from the contractor to the extent that the contractor has not performed in accordance with the provisions of the contract. Nor shall this Article 10 govern the State’s payment obligations nor supersede or modify any other contractual provision governing contractor claims for additional compensation beyond the base contract price and approved change orders.

10.3 Interest [Strike and replace with the following:]

10.3.1 Interest shall be payable on amounts due the contractor if not paid within thirty (30) calendar days after the billing date specified in the above subparagraph 10.2.4 (f), as provided under the State’s Prompt Payment of Contractors and Subcontractors Act (N.J.S.A. 2A:30A-1, et seq.) Interest on amounts due shall be payable to the contractor for the period beginning on the day after the required payment date and ending on the date on which the check for payment is drawn.

10.3.2 [New] Interest may be paid by separate payment to the contractor, but shall be paid within 30 calendar days of payment of the principal amount of the approved invoice.

10.3.3 [New] Nothing in this Article 10 shall be construed as entitling the contractor to payment of interest on any sum withheld by the State for any reason permitted under the contract or applicable law, or on any claim for additional compensation, over and above sums due under the base contract or approved change orders.

10.3.4 [Replace with old paragraph 10.3.9]

10.3.5 [Replace with old paragraph 10.3.10]

10.4 Miscellaneous [New]

10.4.1 Disputes regarding nonpayment of a contractor’s invoice under this Article 10 may be submitted to non-biding Alternative Dispute Resolution (ADR) upon mutual agreement of the State and the contractor. In such event, the State and the contractor shall share equally the fees and expenses of the selected mediator, arbitrator, umpire or

other ADR neutral. Provided, however, that nothing herein shall be construed, in whole or in part, as a waiver, release or modification of the provisions of the New Jersey Contractual Act, N.J.S.A. 59:13-1, et seq., as it governs claims against the State.

10.4.2 A contractor not paid sums due under an approved invoice within thirty (30) days of the billing date may suspend performance without penalty for breach of contract, but only after providing the State with seven (7) days written notice of non-payment, and only in the event that the State fails to furnish the contractor, within that seven-day period, with a written statement of the amount withheld and the reasons for the withholding. Nothing herein shall be construed to excuse the contractor's nonperformance, or to limit the State's rights and remedies relating to such non-performance, with regard to any monies withheld from the contractor upon the proper notice provided under this Article 10, or with regard to any contractor claim disputed by the State.

ARTICLE 13 INSURANCE AND INDEMNITY

13.2.4 Loss Reporting and Loss Adjustment [Replace the first sentence ONLY with:]

The Contractor will receive a Loss Reporting Form whenever Builders' Risk Insurance is written. This form includes appropriate loss reporting instructions.

In the event of loss, the Contractor shall immediately notify the State of New Jersey, Division of Property Management and Construction, through the Architect/Engineer, in writing, and take any other appropriate steps as may be required under the standard builders' risk insurance policy in effect. ...

ARTICLE 16 AFFIRMATIVE ACTION REQUIREMENTS

[Strike entire article and replace with the following:]

16.1 Policy Statement

The laws of the State of New Jersey (N.J.S.A. 10:5-31 et seq.) provide that no public agency shall award a contract or pay money to any contractor or subcontractor which has not agreed and guaranteed to afford equal employment opportunity in performance of the contract in accordance with an affirmative action program approved by the State Treasurer. The law applies to each political subdivision and agency of the State and includes procurement and service contracts as well as construction contracts.

16.2 Mandatory Language

During the performance of this contract, the contractor agrees as follows:

- a The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will take affirmative action to ensure that

such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such action shall include, but not be limited to the following: employment, up-grading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

- b The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.
- c The contractor or subcontractor, where applicable, will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- d The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.
- e When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the applicable employment goal prescribed by N.J.A.C. 17:27-7.3; provided, however, that the Division may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B and C, as long as the Division is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Division, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the applicable employment goal established in accordance with N.J.A.C. 17:27-7.3. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:
 - (1) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or

subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to attempt to hire or schedule minority and women workers directly, consistent with the applicable employment goal. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with the applicable employment goal, the contractor or subcontractor agrees to be prepared to hire or schedule minority and women workers directly, consistent with the applicable employment goal, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines or is so notified by the Division that the union is not referring minority and women workers consistent with the applicable employment goal.

- (2) If the hiring or scheduling of a workforce consistent with the employment goal has not or cannot be achieved for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions consistent with the applicable county employment goals:
 - (a) To notify the public agency compliance officer, the Division, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;
 - (b) To notify any minority and women workers who have been listed with it as awaiting available vacancies;
 - (c) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;
 - (d) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or

arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area until such time as the workforce is consistent with the employment goal;

- (e) If it is necessary to lay off some of the workers in a given trade on the construction site, to assure, consistent with the applicable State and Federal statutes and court decisions, that sufficient minority and women employees remain on the site consistent with the employment goal; and to employ any minority and women workers laid off by the contractor on any other construction site on which its workforce composition is not consistent with an employment goal established pursuant to rules implementing N.J.S.A. 10:5-31 et. seq.;
- (f) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:
 - (i) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall determine the qualifications of such individuals and if the contractor's or subcontractor's workforce in each construction trade is not consistent with the applicable employment goal, it shall hire or schedule those individuals who satisfy appropriate qualification standards. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Division. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.
 - (ii) If the contractor's or subcontractor's workforce is consistent with the applicable employment goal, the name of any interested women or minority individual shall be maintained on a waiting list for the first consideration, in the event the contractor's or subcontractor's workforce is no longer consistent with the applicable employment goal.
 - (iii) If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of

the determination in its files, and send a copy to the public agency compliance officer and to the Division.

- (g) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Division and submitted promptly to the Division upon request.
- (3) The contractor or subcontractor agrees that nothing contained in e(2) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to e(2) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of e(2) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.
- (4) After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Division an initial project workforce report (Form AA 201) provided to the public agency by the Division for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Division and to the public agency compliance officer.
- f The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.
 - g The contractor and its subcontractors shall furnish such reports or other documents to the Division of Contract Compliance & EEO as may be requested by the Division from time to time in order to carry out the

purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Contract Compliance & EEO for conducting a compliance investigation pursuant to Subchapter 10 of the Administrative Code (NJAC 17:27).

END OF
SUPPLEMENTARY INSTRUCTIONS TO BIDDERS
AND GENERAL CONDITIONS

SECTION 01 11 00

SUMMARY OF WORK

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Definitions
- B. Work Covered by Contract Documents

1.2 RELATED SECTIONS

- A. Instruction to Bidders and General Conditions
- B. Supplementary Instruction to Bidders and General Conditions
- C. Division 01, Section 01 31 00, Project Management and Coordination
- D. Division 01, Section 01 32 00, Construction Progress Documentation
- E. Division 01, Section 01 33 00, Submittal Procedures
- F. Division 01, Section 01 60 00, Product Requirements
- G. Division 01, Section 01 70 00, Execution Requirements
- H. Division 01, Section 01 78 00, Closeout Submittals

1.3 DEFINITIONS

- A. Refer to Article 1, Paragraph 1.1 of the Instructions to Bidders and General Conditions
- B. Refer to individual Specification Sections for additional definitions.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. General: Provide all work depicted on the Contract Drawings and identified in the Project Specifications for the North Ferry Dock Repairs, located at Liberty State Park. All work must comply with all applicable conditions and requirements of the permits listed below, as well as any others required for the completion of the work. Maintain a copy of all required permits, certifications and approvals at the project site at all times.
 - 1. Uniform Construction Code approval from the State of New Jersey, Division of Property Management and Construction.
- B. Division 01 – General Requirements: Provide all work described in these Sections, and on the Contract Drawings, including, but not limited to all environmental protection and temporary erosion and sediment control.
- C. Division 02 – Existing Conditions: Provide all work described in these Sections, and on the Contract Drawings, for demolition of portions of the existing Ferry Dock and Terminal Walkway.
- D. Division 03 – Concrete: Provide all work described in these Sections, and on the Contract Drawings, related to the repair of the Terminal Walkway. Work related to the substructure repairs at the Ferry Dock are depicted and described on those specific drawings.
- E. Division 05 – Metals: Provide all work depicted and described on the Contract Drawings, related to the supply and installation of railing and metal covers.
- F. Division 31 – Earthwork: Provide all work described in these Sections, and on the Contract Drawings, related to excavation and subsidence repair.

- G. Division 32 – Exterior Improvements: Provide all work described in these on the Contract Drawings, related to interlocking concrete pavers, and other items depicted on the Contract Drawings. Included the requirements of this Division is final site restoration and cleanup. The site is to be restored to the satisfaction of the Owner at the completion of the work.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 11 00

SECTION 01 14 00

WORK RESTRICTIONS

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Site Access
- B. Contractor Use of Premises

1.2 RELATED SECTIONS

- A. Instruction to Bidders and General Conditions
- B. Supplementary Instruction to Bidders and General Conditions
- C. Division 01, Section 01 11 00, Summary of Work

1.3 SITE ACCESS

- A. Contractor's access to the site shall be within Liberty State Park via Audrey Zapp Drive.

1.4 CONTRACTOR'S USE OF PREMISES

- A. Contractor's use of the premises is limited to those activities directly related to the North Ferry Dock Repair project.
- B. Contractor's use of the premises, including type and location of temporary office and toilet facilities, equipment and material storage, and all other items is subject to the approval of the Owner.
- C. Temporary facilities or equipment storage areas is subject to approval of the Owner.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 14 00

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 – GENERAL

- 1.1 SECTION INCLUDES
 - A. Administrative and Supervisory Personnel
 - B. Project Coordination
 - C. Project Meetings
- 1.2 RELATED SECTIONS
 - A. Division 01, Section 01 11 00, Summary of Work
 - B. Division 01, Section 01 33 00, Submittal Procedures
 - C. Division 01, Section 01 70 00, Execution Requirements
- 1.3 SUBMITTALS
 - A. Submit name and resume of relevant experience for all key personnel listed in this section, as well as any other key personnel such as Quality Control Representative, Administrative Assistant, etc.
 - B. Submit a Project Team Organizational Chart, specific to this project, including the following contact information:
 - 1. Name
 - 2. Position (title, as well as a brief indication of duties/responsibilities)
 - 3. Business Address
 - 4. Business Phone Number (office)
 - 5. Business Phone Number (mobile)
 - 6. Emergency Phone Number (Administrative and Supervisory Personnel only) The Contractor shall at all times after regular working hours, including weekends and holidays, maintain a telephone where he or its representatives shall be reached on an emergency basis.
 - 7. Business Fax Number
 - 8. Business E-mail address
 - C. Submit shop drawings, product data, certifications, and all other submittals required by the individual Specification Sections, in accordance with the requirements of Section 01 33 00.
- 1.4 ADMINISTRATIVE AND SUPERVISORY PERSONNEL
 - A. At a minimum, the Contractor shall provide the following positions.
 - 1. Project Manager: Experienced in administration, scheduling, supervision and quality control of construction projects similar to this project.
 - 2. Field Superintendent: Experienced in field supervision of construction projects similar this project, including all aspects of site work and concrete work described in the Contract Documents.

1.5 PROJECT COORDINATION

- A. Coordinate scheduling, submittals and work described in the various sections of the Contract Documents to assure efficient and orderly sequence of all elements of the construction, including the installation of interdependent items.
- B. Coordinate utility requirements for all aspects of the work described in the various sections of the Contract Documents.
- C. Coordinate space requirements for all aspects of the work described in the various sections of the Contract Documents.
- D. Coordinate all requests for additional information, interpretation and/or clarification in a timely manner, providing adequate time for the development of a response, while not adversely affecting the construction schedule.
- E. Coordinate completion and clean-up of the work described in various sections in preparation for subsequent work by others in same area.
- F. Coordinate project close-out operations for all aspects of the work described in the various sections of the Contract Documents.

1.6 PROJECT MEETINGS

- A. Preconstruction Meeting: DPMC will schedule a preconstruction meeting after the Contract has been awarded.
 - 1. Location: To be determined by the DPMC.
 - 2. Required Attendance: DPMC, Using Agency's representative, Engineer and the Contractor (Project Manager and the Field Superintendent)
 - 3. Agenda:
 - a. Execution of Owner-Contractor Agreement
 - b. Submission of executed bonds and insurance certificates
 - c. Distribution of Contract Documents
 - d. Designation of personnel representing the parties during construction
 - e. Establish relationships among parties, including lines of communication and lines of authority.
 - f. Establish procedures for processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract Close-out procedures.
 - g. Scheduling
 - h. Project photograph requirements.
 - 4. Minutes: The Engineer will record and distribute minutes to all attendees within 5 business days of the meeting. The minutes will include a list of attendees, items discussed, actions agreed upon, and responsible parties.
- B. Site Mobilization Meeting: DPMC will schedule and administer a site mobilization meeting immediately prior to the Contractor's occupancy of the site. At the discretion of DPMC, the items listed below for the site mobilization meeting may be incorporated into the preconstruction meeting described above.
 - 1. Location: Project Site

2. Required Attendance: DPMC, Using Agency's representative, Engineer and the Contractor (Project Manager and the Field Superintendent)
 3. Agenda:
 - a. Safety
 - b. Contractor's use of premises
 - c. Facilities and utilities provided by the Owner
 - d. Facilities and utilities provided by the Contractor
 - e. Regulatory requirements
 - f. Security and housekeeping procedures and requirements
 - g. Schedules
 - h. Application for payment procedures
 - i. Testing procedures
 - j. Record Document requirements and procedures
 - k. Inspection procedures
- C. Progress Meetings: DPMC will schedule and administer all construction progress meetings as necessary. In general, these meetings will be bi-weekly.
1. Location: Project Site, unless otherwise determined by the DPMC.
 2. Required Attendance: DPMC, Using Agency's representative, Engineer and the Contractor (Project Manager and the Field Superintendent), as well as other sub-contractors, special consultants, etc., as might be required for specific issues at specific progress meetings, as determined by the DPMC.
 3. Agenda:
 - a. Safety
 - b. Review of minutes of previous meetings
 - c. Review of work progress
 - d. Planned progress during the succeeding work period
 - e. Field observations, problems and decisions
 - f. Review of submittals schedule and status of submittals
 - g. Quality Control
 - h. Review of off-site fabrication and delivery schedules
 - i. Maintenance of progress schedule and corrective measures to regain projected schedules
 - j. Other business related to the work
 4. Minutes: The Engineer will record and distribute minutes to all attendees within 5 business days of the meeting. The minutes will include a list of attendees, items discussed, actions agreed upon, and responsible parties.

1.7 EMERGENCY CONDITIONS

- A. The Contractor or its representative shall be prepared to act to correct conditions on the site deemed to constitute an emergency by either the DPMC, or the Owner, but shall not wait for instruction before proceeding to properly protect both life and property. If a condition on the site requires attention after working hours, either the DPMC, the Using Agency's representative, or the Engineer shall call the Contractor or its representative at the emergency telephone number, identify himself and describe the emergency condition. The Contractor is expected to adequately institute corrective measures within two (2) hours. If for some reason the Contractor or its agent cannot be reached at the emergency number after a reasonable time (1/2 hour), the State shall have the right to immediately initiate corrective measures in accordance with Section 01 70 00, Paragraph 1.9A, Emergency Services to Correct Hazardous Conditions, and the Contractor shall have been considered to waive any right to perform emergency service.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 31 00

SECTION 01 32 00

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Construction Progress Schedule
- B. Construction Progress Photographs

1.2 RELATED SECTIONS

- A. Division 01, Section 01 11 00, Summary of Work
- B. Division 01, Section 01 31 00, Project Management and Coordination
- C. Division 01, Section 01 33 00, Submittal Procedures
- D. Division 01, Section 01 70 00, Execution Requirements
- E. Division 01, Section 01 78 00, Closeout Submittals

1.3 CONSTRUCTION PROGRESS SCHEDULE

- A. Within 15 calendar days after the Notice to Proceed submit a complete construction schedule for review by the DPMC, the Using Agency and the Engineer.
- B. Revise and/or update the schedule as required, in response to the review.
- C. Distribute revised/updated copies of the reviewed schedule to Subcontractors and all other concerned parties.
- D. Maintain an updated construction progress schedule at the project site throughout the duration of the project.
- E. Distribute updated copies of the construction progress schedule to the DPMC, the Using Agency and the Engineer 48 hours prior to Progress Meetings.
- F. Submit an updated copy of the construction progress schedule with each application for payment.
- G. Submit 7 opaque reproductions of each issue of the construction progress schedule.

1.4 CONSTRUCTION PROGRESS PHOTOGRAPHS

- A. Submit professional quality photographs (digital format and printed), to the satisfaction of DPMC, according to the following schedule:
 - 1. Minimum of 20 pre-construction photographs covering all areas of the project. Submit these photographs within 10 calendar days of the start of construction operations.
 - 2. Minimum of 20 construction progress photographs per month covering areas of construction activity during that time frame. Submit the photographs for each month within 10 days of the end of that month.
 - 3. Minimum of 20 post-construction photographs covering all areas of the project. These photos should, at a minimum, correspond to the pre-construction photographs. Submittal of these photographs is part of the construction close-out requirements.
 - 4. Provide photographs of critical areas of construction, construction sequences and problem areas, as directed by the DPMC.
 - 5. Provide three (3) sets of photographs in binders for DPMC.

- B. Criteria for types of photos, including size, reproduction type and submittal format will be established by the DPMC at the pre-construction meeting.
- C. Log and photograph identification requirements will be established by the DPMC at the pre-construction meeting.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 32 00

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 – GENERAL

- 1.1 SECTION INCLUDES
 - A. Requirements for submittal procedures to be followed by the Contractor.
- 1.2 RELATED SECTIONS
 - A. Division 01, Section 01 11 00, Summary of Work
 - B. Division 01, Section 01 31 00, Project Management and Coordination
 - C. Division 01, Section 01 32 00, Construction Progress Documentation
- 1.3 SUBMITTALS CHECKLIST
 - A. Within 15 calendar days after the Notice to Proceed, submit a completed checklist of all submittals required by the Contract Documents, for review by the Engineer and DPMC.
 - B. Revise and/or update the submittals checklist as required, in response to the review.
 - C. This checklist, in conjunction with the Submittals Log, will be used as the basis for the review of the status of submittals during the course of the project.
- 1.4 SUBMITTALS LOG
 - A. Maintain an up-to-date log of all submittals and their status throughout the duration of the project.
 - B. Distribute updated copies of this log to the DPMC and the Engineer 48 hours prior to Project Progress Meetings.
 - C. This checklist, in conjunction with the Submittals Checklist, will be used as the basis for the review of the status of submittals during the course of the project.
- 1.5 SUBMITTAL PROCEDURES
 - A. Transmit 7 copies of each individual submittal with its own sequentially numbered transmittal form using the DPMC 12/13 forms.
 - B. Do not combine submittals for more than one product or section under one transmittal.
 - C. Sequentially number revised submittals using the original submittal number and a sequential alphabetic suffix.
 - D. Identify the Project, Contractor, Subcontractor or supplier, reference drawing, detail, and Specification Section, as appropriate, on the transmittal.
 - E. Affix a Contractor's stamp to each submittal, signed or initialed, certifying that the submittal has been reviewed by the Contractor, to determine its conformance with the requirements of the Contract Drawings and/or Specification Section, as applicable.
 - F. Provide space for the Engineer's review stamp.
 - G. Clearly identify the particular product, type, model number, color, or other designation whenever a submittal sheet contains multiple designations for similar items by the same manufacturer or supplier.

- H. Clearly identify any and all variations from the requirements of the Contract Drawings and/or Specification Section, as applicable. Substantiate the reason for all such variations.
 - I. For re-submittals, clearly identify any and all changes made since the previous submission.
 - J. Schedule submittals to expedite the project schedule.
 - K. Deliver submittals to the DPMC, in accordance with the requirements for various types of submittals described below.
 - L. Allow 10 working days for each submittal review, excluding delivery time to and from the Contractor.
 - M. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with the requirements.
 - N. All submittals shall be forwarded to the Engineer with 30 calendar days of the Notice To Proceed (NTP).
- 1.6 CONTRACTOR'S PLANS AND PROCEDURES
- A. Submit 7 copies of each plan/procedure, prepared in accordance with the specific requirements of the applicable Specification Section.
 - B. Unless otherwise specified in the applicable section, Contractor's plans and procedures are to be submitted to the DPMC a minimum of 15 calendar days prior to the scheduled commencement of the particular activity for which the plan has been developed.
- 1.7 PRODUCT DATA
- A. Product Data includes printed information such as catalog cuts, manufacturer's instructions, performance curves, and other similar items.
 - B. Identify applicable products, models, options and other data whenever the product data sheets include multiple models or options.
 - C. Submit 7 originals of each product data sheet. If the data sheets do not contain color, shaded graphics or photographs, opaque copies may be submitted, rather than original data sheets.
- 1.8 SHOP DRAWINGS
- A. Shop drawings include reinforcing steel placing drawings, structural steel or aluminum shop detail drawings and other similar items.
 - B. If the shop drawings are larger than 11x17-inches, submit one reproducible transparency and one opaque reproduction of each sheet. Otherwise, the submittal of 7 opaque copies of each sheet is acceptable.
- 1.9 SAMPLES
- A. Submit samples to illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices, as required by individual Specification Sections.
 - B. Submit samples of finishes, textures and patterns for selection, as required by individual specification sections.
 - C. Each submittal must include 3 samples, one of which will be retained by the DPMC.
 - D. Include all project and Specification Section identification information on each sample.

- 1.10 DESIGN CALCULATIONS
 - A. Submit design calculations and/or design data as required by individual Specification Sections to demonstrate compliance with specification and/or drawing requirements.
 - B. Submit 7 sets of design calculations and/or design data.
 - C. The review of design calculations and/or design data by the Engineer does not constitute formal checking of these items, nor does it imply that the State assumes any responsibility for their accuracy, completeness or compliance with code requirements.
- 1.11 TEST REPORTS
 - A. Submit test reports as required by individual Specification Sections to demonstrate compliance with specification and/or drawing requirements.
 - B. Submit 4 sets of test results for each item specified.
 - C. Testing Agency shall be engaged by the Contractor pre-qualified by DPMC for required testing.
- 1.12 CERTIFICATES
 - A. Submit certificates as required by individual Specification Sections to demonstrate product source and compliance with specification and/or drawing requirements.
 - B. Submit 7 copies of each certificate.
- 1.13 OPERATION AND MAINTENANCE MANUALS
 - A. Submit operation and maintenance manuals for all equipment and other items, as required by individual Specification Sections.
 - B. Submit 6 copies of each manual.
- 1.14 ENGINEER'S REVIEW PROCEDURES
 - A. Submittals not specifically requested will not be recognized or reviewed.
 - B. Submittals for information or project close-out will be retained, but not reviewed.
 - C. Submittals that have not been reviewed by the Contractor prior to submission to the Owner will not be reviewed.
 - D. Submittals will generally be reviewed within 10 business days, not including delivery time to and from the Contractor, and returned to the Contractor for appropriate action.
 - E. The Review Stamp of the Engineer will indicate one of the following actions:
 - 1. Approved: Proceed with work in compliance with Contract Documents.
 - 2. Approved as Noted: Revise as noted and resubmit for record purposes; work may proceed in compliance with the Contract Documents and the comments indicated on the returned submittal.
 - 3. Disapproved: Submittal is rejected; revise and resubmit. Do not proceed with work until the item has been resubmitted and has been Approved, or Approved as Noted, as described above.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 33 00

SECTION 01 52 00

TEMPORARY CONSTRUCTION FACILITIES

PART 1 – GENERAL

- 1.1 SECTION INCLUDES
 - A. Field Office / Trailer
 - B. Parking
 - C. Staging and Storage Area
 - D. Utilities
- 1.2 RELATED SECTIONS
 - A. Division 01, Section 01 11 00, Summary of Work
 - B. Division 01, Section 01 31 00, Project Management and Coordination
- 1.3 FIELD OFFICE / TRAILER
 - A. Provide and maintain a suitable weather-tight, insulated, heated field office trailer.
 - 1. Obtain and pay for Construction Trailer Permit(s).
 - 2. Trailer location is to be coordinated with, and approved by the DPMC.
 - 3. Trailer is to be sized and equipped to comfortably accommodate on-site meetings, and secure storage of contract documents and permits.
 - 4. Requirements for communication and data transfer (telephone, fax, etc.) will be addressed at the pre-bid meeting.
 - B. Provide and maintain additional trailers as required for storage of materials and/or equipment, with the approval of the DPMC.
- 1.4 PARKING
 - A. Provide, maintain and restore a parking area suitable to accommodate off-street parking for Contractor's employees, as well as DPMC, Using Agency and Engineer's representatives.
 - B. Location of, and access to this parking area is to be coordinated with, and approved by the DPMC.
- 1.5 STAGING AND STORAGE
 - A. Provide and maintain staging and storage areas suitable to accommodate anticipated construction materials.
 - B. Location of and access to the staging and storage area is to be coordinated with and approved by the DPMC.
- 1.6 UTILITIES
 - A. Provide and maintain suitable temporary electric power.
 - B. Provide and maintain suitable temporary toilet facilities.
 - C. Provide and maintain temporary potable water service.
- 1.7 SECURITY
 - A. Provide and maintain suitable, lockable perimeter fencing to secure the construction area from unauthorized entry.
 - B. Security measures are the sole responsibility of the Contractor, and are to be coordinated with, and approved by the DPMC, prior to the start of work.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 52 00

SECTION 01 57 13

SOIL EROSION AND SEDIMENT CONTROL

PART 1 – GENERAL

- 1.1 SECTION INCLUDES
 - A. Supply all labor, materials and equipment necessary to implement and maintain the soil erosion and sediment control measures depicted and described on the Contract Drawings, and as specified in the section.
 - B. Prohibit sediment transport off site and minimize soil erosion during construction, to the satisfaction of the Engineer.
- 1.2 RELATED SECTIONS
 - A. Division 01, Section 01 57 19, Environmental Protection
 - B. Division 02, Section 02 40 00, Demolition
 - C. Division 31, Section 31 23 16, Excavation
- 1.3 QUALITY ASSURANCE
 - A. Perform all work in strict accordance with the Contract Drawings, Project Specifications, and Standards for Soil Erosion and Sediment Control of the State of New Jersey.
 - B. Conform to all applicable requirements of Section 02 01 00, Environmental Protection, related to the protection of the natural environment during the installation, maintenance and removal operations.
- 1.4 SUBMITTALS
 - A. Silt Fence: Sample and certification of compliance with specifications and requirements of the Standards for Soil Erosion and Sediment Control.
 - B. Installation Schedule: Submit a schedule for the installation of all temporary soil erosion and sediment control measures a minimum of 7 days prior to the delivery of those materials to the site.
- 1.5 SCHEDULE OF REFERENCES
 - A. State of New Jersey, “Standards for Soil Erosion and Sediment Control in New Jersey”
 - B. Notes for Soil Conservation and Sediment Control for the County Soil Conservation District.

PART 2 – PRODUCTS

- 2.1 Hay Bales: Hay or straw bales, wire or nylon bound into tight bundles, generally rectangular in shape. Minimum size approximately 2 feet by 2 feet by 4 feet.
- 2.2 Silt Fence: Geotextile fabric recommended by the manufacturer for use a silt fence. The height of the material shall be sufficient to provide a minimum of 2 feet above grade, and a minimum embedded depth of 6 inches. The fence shall have a drawstring running through the fabric along the top of fence.

PART 3 – EXECUTION

- 3.1 GENERAL
 - A. Notify the Owner, in writing, at least 72 hours prior to any land disturbance.
 - B. Install and maintain all erosion and sediment control measures in strict accordance with the approved Soil Erosion and Sediment Control Plan, and to the satisfaction of the Engineer.
 - C. Install and maintain any and all additional soil erosion and sediment control measures which might be required by the Engineer.
- 3.2 INSTALLATION
 - A. Hay Bales: Install bales along contours, embedded a minimum of 4 inches into the soil. Secure with two stakes at each bale, driven a minimum of 1½ feet into the soil. The first stake shall be driven at an angle toward the last hay bale installed. Stakes may be either rebar, steel pickets, or 2 inch by 2 inch wood. Hay bale sediment barriers are also to be installed and maintained around storm sewer inlets.
 - B. Hay Bale and Gravel Sediment Barrier: In areas of concentrated flows (refer to Contract Drawings for specific locations), install hay bales in accordance with 3.2.A. above, then cover completely with a 4 inch thick (minimum) layer of 2½ inch clean stone.
 - C. Silt Fence: Install silt fence along contours, embedded a minimum of 6 inches into the soil. Secure the fabric to suitable stakes/posts using fasteners appropriate for the material, and install over high strength reinforcement material between the fastener and the fabric, as required. Stakes/posts shall be driven a minimum of 2 feet into the soil, at a maximum of 8 feet center to center; and may be either steel pickets or 2 inch by 2 inch wood, suitable for the silt fence material. Stakes must be of sufficient height to allow for the required height of silt fence material above grade, plus suitable extension for fastening requirements.
 - D. All materials and installation procedures shall be in strict accordance with the Standards for Soil Erosion and Sediment Control in New Jersey, as well as any specific manufacturer's requirements for the approved materials.
- 3.3 MAINTENANCE
 - A. Maintain all soil erosion and sediment control measures throughout the construction operations, and/or until the area are stabilized, as directed by, and to the satisfaction of, the Engineer.
 - B. Inspect all barriers daily for any possible damage, signs of deterioration or need for removal of accumulated silt.
 - C. Remove silt accumulation at all sediment barriers before it reaches a depth of approximately ½ the height of the barrier.
 - D. Repair/replace barriers when damaged.
- 3.4 REMOVAL
 - A. Do not remove any soil erosion and sediment control measures until the area has been stabilized to the satisfaction of the Engineer.
 - B. Restore all disturbed areas to the satisfaction of the Engineer.

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: The General Contractor is responsible for all aspects of soil erosion and sediment control, as required by this Specification and the Contract Drawings.
- 4.2 MEASUREMENT: N/A
- 4.3 PAYMENT: Total payment for soil erosion and sediment control will be made under the total lump sum contract price for this project. This total payment will constitute compensation for all equipment, labor, materials, and all other items necessary and incidental to the implementation of the Soil Erosion and Sediment Control Plan, regardless of the actual cost to the Contractor.

END OF SECTION 01 57 13

SECTION 01 57 19

ENVIRONMENTAL PROTECTION

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Provide and maintain a suitable protection for the natural environment, as described herein.
- B. Control all forms of pollution, which develop during any and all phases of construction.

1.2 RELATED SECTIONS

- A. Division 01, Section 01 57 13, Soil Erosion and Sediment Control
- B. Division 02, Section 02 40 00, Demolition
- C. Division 31, Section 31 23 16, Excavation

1.3 QUALITY ASSURANCE

- A. Restrict construction and construction related activities (i.e. storage of equipment and materials) to those areas specifically designated on the Construction Drawings, or to other areas specifically approved by the Engineer.
- B. Comply with all Federal, State and local environmental regulations.
- C. Coordinate all environmental protection measures with the Engineer.

1.4 SUBMITTALS

- A. Proposed equipment and procedures for providing and maintaining suitable protection for the natural environment, as described herein.

PART 2 – PRODUCTS

- 2.1 **EQUIPMENT AND MATERIALS:** All equipment and materials for the protection of the natural environment must meet with the approval of the Engineer.

PART 3 – EXECUTION

- 3.1 Preserve and protect all aspects of the natural environment within the project boundaries, and outside the limits of work under this contract, from any deleterious impact during the course of the construction operations.
- 3.2 Preserve and protect all aspects of the natural environment, as described herein, in their existing condition, or restore the same to an equivalent or improved condition upon completion of the work.
- 3.3 Historic and Archeological Resources: Any, and all, items having historic or archeological significance which are discovered during the course of the construction must be carefully preserved, and reported immediately to the Engineer. In such cases, work in the area shall be stopped and shall not be restarted until written authorization to proceed is provided by the Engineer.

- 3.4 Trees and Vegetation:
- A. Do not remove, cut, deface, injure, or destroy trees or shrubs without prior written permission from the Using Agency, or as specifically designated on the Contract Drawings (i.e. areas designated to be cleared on the Contract Drawings).
 - B. Do not fasten or attach ropes, cables or guys for anchorage to existing trees and/or vegetation, without prior written permission from the Engineer.
 - C. Burn-off of ground cover is not permitted.
 - D. Limit the maximum thickness of fill around existing trees to remain to 2 inches.
- 3.5 Fish and Wildlife Resources: At all times, perform all work and take such steps as are required to prevent an interference or disturbance to fish and wildlife. Do not disturb the native fish and wildlife habitat adjacent to the project area. Do not alter water flows and water surface levels in lakes or ponds without prior written permission from the Engineer.
- 3.6 Water Resources: Perform all work in such a manner that any adverse environmental impacts are reduced to a level that is acceptable to the Engineer. Comply with all applicable Federal, State and local regulations concerning the discharge (directly or indirectly) of pollutants to underground and surface waters.
- 3.7 Stream Crossings: Limit stream crossings by fording with equipment to control turbidity in the water. Temporary culverts or bridge structures (used only with prior written approval of the Engineer) must be removed upon completion of the project, and the area must be repaired in conformance with its original condition, and/or to the satisfaction of the Engineer and the Using Agency.
- 3.8 Oily Substances: Prevent oily substances or chemical wastes from entering the ground, drainage areas, or local bodies of water.
- 3.9 Erosion and Sediment Control: All soil erosion and sediment control measures are to be in accordance with Specification Section 01 57 13, Soil Erosion and Sediment Control.
- 3.10 Noise Control: Comply with all Federal, State, and local regulations pertaining to the control of noise emanating from a construction site.
- 3.11 Control and Disposal of Wastes:
- A. The Contractor must remove all waste and pollutants from the project site and dispose of them in an environmentally safe manner, conforming to Federal, State and local regulations.
 - B. The Contractor must prepare and submit any and all manifests for waste collection and disposal, and/or other reports, in accordance with the requirements of the New Jersey Department of Environmental Protection, or the Environmental Protection Agency.
 - C. Conduct all handling and disposal of wastes and pollutants in such a manner as to prevent contamination of the site or other areas.
 - D. Do not store or place waste materials on the ground or paved areas. Maintain suitable containers for waste materials, and empty those containers on a regular basis so that there is always a suitable place to deposit waste materials as they might be generated during the course of the construction.
 - E. Transport all garbage to a suitable, approved pick-up point or disposal area.

- F. Provide and maintain chemical toilets or comparable effective units for sewage disposal. These toilets (or units) must be periodically serviced, as required, and waste removed in an approved manner from the project site. Provide for the elimination or masking of odors and for pest control. Sanitary facilities must comply with all applicable Federal, State and local regulations.
- G. Store chemical waste in suitable corrosion resistant containers.
- H. Remove and properly dispose of all chemical waste in compliance with all applicable Federal, State and local regulations at least once per month.
- I. Conduct all fueling and lubrication of equipment and motor vehicles in a manner that affords the maximum protection against spills and evaporation.
- J. Remove all lubricants to be discarded, as well as all used oil, from the project site.

3.12 Temporary Construction:

- A. Obliterate all signs of temporary facilities, such as haul roads, work areas, storage areas, temporary structures, stockpiles of excess or waste materials, and/or any other vestiges of the construction operations, upon completion of the project.
- B. Temporary roads, parking areas, storage areas and other areas that become compacted or shaped by the construction operations must be plowed, spread with a minimum of 6 inches of topsoil, and seeded, or restored as directed by the Engineer.

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: The General Contractor is responsible for all aspects of environmental protection as required by this specification, the Contract Drawings and all appropriate agencies.
- 4.2 MEASUREMENT: N/A
- 4.3 PAYMENT: Total payment for environmental protection will be made under the total lump sum contract price for this project. This total payment will constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the completion of the work, regardless of the actual cost to the Contractor.

END OF SECTION 01 57 19

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 – GENERAL

- 1.1 SECTION INCLUDES
 - A. Requirements for products to be provided for this project.
- 1.2 RELATED SECTIONS
 - A. Division 01, Section 01 11 00, Summary of Work
 - B. Division 01, Section 01 33 00, Submittal Procedures
- 1.3 DEFINITIONS
 - A. Products: Items purchased for incorporation in the work, whether purchased for the Project or taken from previously purchased stock. The term includes the terms material, equipment, system, and terms of similar intent.
 - B. Named Products: Items identified by manufacturer's name, including make or model number or other designation, shown or listed in manufacturer's published product literature.
 - C. Materials: Products substantially shaped, cut, worked, mixed, finished, refined, or otherwise fabricated, processed, or installed to form part of the work.
 - D. Equipment: Product with operational parts, whether motorized or manually operated.
- 1.4 PRODUCTS
 - A. Provide products that comply with the requirements of the Contract Documents, are new at the time of installation, and are undamaged.
 - B. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for complete installation and intended use and effect.
 - C. Provide products of the same kind from a single source. When specified products are available only from sources that do not, or cannot, produce a quantity adequate to complete Project requirements in compliance with the project schedule, contact DPMC, in writing, to determine the most important product qualities before proceeding. Qualities may include attributes, such as visual appearance, strength, durability, or compatibility. When the DPMC makes a determination, select products from sources producing products that possess those qualities to the fullest extent possible.
- 1.5 PRODUCT OPTIONS
 - A. Throughout the Contract Documents, type of products may be specified by manufacturer's name and catalog number to establish standards of quality and performance, not for the purpose of limiting competition. Substitute methods and products may be submitted to the Engineer for consideration, in conformance with the Product Substitution Procedures paragraph contained in this section. Substitutions may not be permitted where the Documents requires a particular product for a specific purpose.

- B. Products Specified by Reference Standards or by Description Only: Any product meeting the standards or description.
- C. Products Specified by Naming One or More Manufacturers: Products of the manufacturers named meeting specifications. Substitution may, or may not be permitted, as identified in the particular paragraph specifying the product.
- D. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named, in accordance with the Product Substitution Procedures paragraph contained in this section.

1.6 PRODUCT SUBSTITUTION PROCEDURES

- A. Document each Request for Substitution with complete data indicating compliance of the proposed Substitution with the requirements of the Contract Documents, on forms supplied by the DPMC.
- B. All Requests for Substitution must be submitted to the DPMC within 15 calendar days from the Notice To Proceed (NTP).
- C. A Request for Substitution constitutes a representation that the Contractor:
 1. Has investigated the proposed product and determined that it meets or exceeds the quality level of the specified product.
 2. Will provide the same warranty for the Substitution as for the specified product.
 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to the Owner.
 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 5. Will reimburse the Owner for review or redesign services associated with re-approval by authorities as determined by DPMC.
- D. Substitutions will be considered when a product becomes unavailable through no fault of the Contractor.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitutions will not be considered if they are being requested because the Contractor failed to order the specified product within a proper time frame.

1.7 PRODUCT DELIVERY REQUIREMENTS

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Schedule product deliveries to minimize long-term storage at the Project site and to prevent overcrowding of the construction spaces.
- C. Coordinate product deliveries with installation schedules to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
- D. Contractor shall deliver equipment and materials to the site and store in original containers suitably sheltered from the elements, but readily accessible for inspection until installed.
- E. Deliver products to the Project site in undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protection and installing.

- F. Promptly inspect deliveries to ensure that products comply with Project requirements, quantities are correct, and that products are undamaged, and properly protected.
 - G. All items shall be identified and tagged as to section of the specifications and payment item.
 - H. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- 1.8 PRODUCT STORAGE AND HANDLING REQUIREMENTS
- A. Store and protect products in accordance with manufacturer's instructions.
 - B. Store products with seals and labels in tact and legible.
 - C. Contractor shall tightly cover and protect equipment against dirt, water, and chemical or mechanical injury or theft.
 - D. Store sensitive products in weather tight, climate-controlled environment favorable to that product.
 - E. For exterior storage of fabricated products, place on sloped supports above ground.
 - F. Provide off-site storage when site does not permit on-site storage or adequate protection.
 - G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
 - H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
 - I. Arrange the storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.
 - J. Cover products subject to deterioration with appropriate covering to prevent damage. Pipe and valve openings shall be protected with plastic covers.
 - K. Equipment and material not properly stored and protected, as approved by the Engineer and manufacturer will not be paid for as material included in progress estimates, and equipment and material not present on the job site shall not be included for payment in progress estimates under any circumstances.
 - L. Damage or defects developing before acceptance of the work shall be made good at the Contractor's expense.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 60 00

SECTION 01 70 00

EXECUTION REQUIREMENTS

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Examination
- B. Construction Equipment
- C. Public Convenience
- D. Preparation
- E. Execution
- F. Cleaning
- G. Starting and Adjusting
- H. Closeout Procedures

1.2 RELATED SECTIONS

- A. Division 01, Section 01 11 00, Summary of Work
- B. Division 01, Section 01 57 19, Environmental Protection

1.3 EXAMINATION

- A. Visit Project site to determine existing conditions.
 - 1. Take field measurements and verify field conditions, compare field measurements, conditions, locations of survey benchmarks, and other information known to the Contractor, with Contract Documents prior to the start of work.
 - 2. Be responsible for determining conditions of the Project site, including all existing improvements, above and below ground utilities, and existing construction.
 - 3. Contact local utility companies and make arrangements to obtain utility company location and marking service prior to the start of work.
- B. Review Bidding and Contract Documents
 - 1. Carefully study and compare the Contract Documents with each other.
 - 2. Be responsible for thorough knowledge of the Contract Documents and their relationship to each other, and the Project site conditions.
 - 3. Report any and all errors, inconsistencies, or omissions discovered to the DPMC prior to the bid due date as per the Instruction to Bidders in the General Conditions. The DPMC will investigate and advise the Contractor of any measures to be taken relating to reported errors, inconsistencies, or omissions.
- C. Examine and verify specific conditions described in individual Specification Sections.
- D. Verify that utility services are available, of correct characteristics, and in the correct location for the performance of the work. Prior to the start of any work in the vicinity of existing utilities or other subsurface facilities, the Contractor shall notify the DPMC at least three working days in advance of the start of his work.
- E. The Contractor is solely responsible for satisfactorily maintaining flows in the existing streams and channels affected by the work at all times during the

course of construction, unless otherwise indicated in the Specifications. All costs for such maintenance shall be deemed included under the base bid and no additional costs shall be paid by the DPMC or the Using Agency for any of the work involved in this maintenance.

1.4 CONSTRUCTION EQUIPMENT

- A. The Contractor shall familiarize himself thoroughly with the type and nature of the equipment required in the proper execution of the work, and shall use and employ only first-class equipment. Previously used equipment must be in safe and first-class working order and condition. Sufficient equipment must and shall be furnished and used by the Contractor to permit the completion of the work within the time specified. The equipment used on any portion of the work shall be such that no injury or damage to the roadway, adjacent property, or other thoroughfare or highway will result from its use.

1.5 PUBLIC CONVENIENCE

- A. The Contractor shall at all times so conduct its work as to insure the least possible obstruction to the traffic and inconvenience to the general public and the residents in the vicinity of the work, and to insure the protection of persons and property.
- B. No road or street shall be closed to the public except with the permission of the proper authorities. Contractor shall pay for any associated fees.
- C. Fire hydrants on or adjacent to the work shall be kept accessible to fire-fighting equipment at all times.

1.6 PREPARATION

- A. Prepare areas and/or surfaces for installation of materials and/or products in accordance with individual Specification Sections and/or manufacturer's installation instructions.
- B. Notify the Engineer when areas and/or surfaces have been prepared for inspection, in accordance with individual Specification Sections.

1.7 EXECUTION

- A. Refer to specific execution and installation requirements in individual Specification Sections and manufacturer's instructions.
- B. Open Excavation, Safety Barricades and Watchman: The attention of the Contractor is specifically directed to the exacting requirements in connection with the protection of all excavations and the safety of all persons. Due to the character of the work, the Contractor shall be expected to keep all excavations protected at all times. He shall use suitable and adequate barricades around all openings and shall provide lights at night; warning signs shall be located where required. Contractor shall provide personnel to serve as flagman and watchmen as it becomes necessary.
- C. Do not begin installation of materials and/or products until areas and/or surfaces have been properly prepared, inspected and approved, as required by individual specification sections.
- D. Verify and check all dimensions and measurements prior to installation or erection.
- E. By starting installation, the Contractor assumes responsibility for correcting unsuitable or unsatisfactory conditions encountered at no additional cost to the Owner.

- F. Comply with manufacturer's published installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than the requirements of the Contract Documents.
 - G. Maintain a complete and up-to-date set of Contract Drawings and Specifications at the Project Site, including any supplemental information, drawings, field sketches, or other documents issued by the Engineer for clarification during the course of the work.
 - H. Record as-built data on a record set of Contract Documents, depicting variations from the original Contract Documents, including, but not limited to the following items:
 - 1. Footing sizes and/or depths
 - 2. Finished grade elevations
 - 3. Pipe inverts
 - 4. Plan layout dimensions
 - 5. Product and/or material substitutions
 - I. Maintain a complete set of approved submittals at the Project Site.
- 1.8 CLEANING
- A. Maintain ongoing clean-up and waste removal procedures during the course of the work, in accordance with the requirements of Section 01 57 19, and to the satisfaction of DPMC.
 - B. Perform clean-up in areas where work has been completed, or will be temporarily discontinued.
 - C. During the course of construction, all efforts shall be made to maintain a neat and orderly project. Cleanup shall be pursued on a regular basis and in conjunction with the construction. The Contractor shall be responsible for cleanup during the life of its contract.
 - D. Use materials suitable for the particular clean-up operations.
 - E. Prior to requesting final inspection by the Engineer, DPMC and the Using Agency for a particular area, or the Project Site as a whole, perform the following clean-up operations:
 - 1. Clean the entire area, including all areas disturbed by construction activities, of all rubbish, waste materials, litter and foreign substances. Sweep paved areas broom clean. Properly clean-up all spills, stains and other foreign deposits from all surfaces.
 - 2. Upon completion of all construction, final cleanup shall include removal of all excess material, equipment, backfill, etc., and the site shall be restored to a condition equal to or better than that existing prior to construction. Should the Contractor fail to remove such material, equipment and supplies, DPMC shall have the right to remove them at the expense of the Contractor.
 - 3. At the completion of construction, the Contractor shall tear down and remove all temporary structures unless expressly directed otherwise, and shall remove remaining rubbish of all kinds from all Contract structures and from the site occupied during the progress of the work.
 - 4. The Contractor shall remove all concrete and ballast droppings and shall leave the site and the adjacent property which may have been affected by its operation in a neat and satisfactory condition. All

structures and parts thereof constructed by the Contractor shall be thoroughly cleaned and left in first-class condition.

1.9 EMERGENCY SERVICES TO CORRECT HAZARDOUS CONDITIONS

- A. In the event that the Contractor fails to maintain safe job conditions and traffic conditions, including, but not limited to, trench settlement and hazardous piling or storage of backfill or construction materials, DPMC, after failure of the Contractor to commence substantial steps at the job site to rectify the situation within two (2 hours) of the time the Contractor has been notified pursuant to the preceding paragraph of the unsafe conditions, may hire guards, take such precautions, make such repairs and take any other steps which the DPMC or the Using Agency's representative in its discretion, considers necessary to protect the property, persons or the Owner. The cost of any of these precautions, guards or steps shall be deducted from the payments due the Contractor, and the Contractor will be billed for these services, work and material at prevailing rates.

1.10 STARTING AND ADJUSTING

- A. Notify the Engineer and DPMC prior to start-up and/or adjustment operations for all products and equipment.
- B. Perform all start-up and adjustment operations for products and equipment in strict accordance with manufacturer's instructions, and the requirements of the individual Specification Sections.
- C. Where required by manufacturer's instructions and/or Specification Sections, or if requested by DPMC, make provision for a manufacturer's representative to be present on-site.
- D. Perform all work required to ensure the proper operation of products and equipment.
- E. Where required by manufacturer's instructions and/or Specification Sections, or if requested by DPMC, provide documentation of satisfactory operation or calibration of products and/or equipment.

1.11 CLOSEOUT PROCEDURES

- A. During the course of the project:
 - 1. When work in a particular area, or the work of a particular sub-contract or division of work has been completed, conduct an initial inspection to verify the proper completion of the work. Prepare a list of work yet to be completed or corrected, and conduct follow-up inspections to confirm that corrections have been made. Verify that all work is in compliance with the requirements of the Contract Documents.
 - 2. Submit a copy of the list of work to be completed and/or corrected to the Engineer and DPMC, and include dates for both the preliminary inspection and confirmation that corrections have been made.
 - 3. Notify the Engineer and DPMC when work in a particular area, or the work of a particular sub-contract or division of work has been completed and is ready for final inspection and acceptance.
 - 4. Accompany during inspection, and compile a list of items which the Engineer and DPMC consider to be incomplete, in need of correction, and/or not in complete compliance with the requirements of the Contract Documents.

5. Complete and/or correct all items on the list.
 6. Inform the Engineer and DPMC that the items on the list have been completed and/or corrected; and that the work is ready for inspection and acceptance.
 7. When the work is deemed to be complete and correct, DPMC will notify the Contractor and document the date of final acceptance.
- B. Project Closeout:
1. Submit written certification that the Contract Documents have been reviewed, work has been inspected, and that the work is complete in accordance with the Contract Documents and is ready for the Engineer's and DPMC's inspection.
 2. Provide submittals that are required by governing or other authorities.
 3. Submit final Application for Payment.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 70 00

SECTION 01 71 23

FIELD ENGINEERING

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Survey and field engineering requirements for the purpose of establishing the locations and limits of the proposed construction based on the Contract Drawings and survey control points established by the Engineer.

1.2 RELATED SECTIONS

- A. Division 01, Section 01 33 00, Submittal Procedures
- B. Division 01, Section 01 70 00, Execution Requirements
- C. Division 01, Section 01 78 00, Closeout Submittals

1.3 QUALITY ASSURANCE

- A. Employ a Land Surveyor licensed in the State of New Jersey to perform survey work of this Section.

1.4 SUBMITTALS

- A. Submit name, address and telephone number as well as qualifications of the licensed Land Surveyor for review and acceptance by the Engineer before starting survey work.
- B. Project Record Documents as described in this Section, and in accordance with the requirements of Section 01 78 00.

1.5 EXAMINATION

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify the Engineer of any discrepancies discovered.

1.6 SURVEY REFERENCE POINTS

- A. Locate and protect survey control and reference points.
- B. Horizontal control datum is local and shown on the Drawings.
- C. Vertical control datum is a local datum shown on the Drawings.
- D. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- E. Promptly report to the Engineer the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- F. Replace dislocated survey control points based on the original survey control. Make no changes without prior notice to Engineer.

1.7 SURVEY REQUIREMENTS

- A. Provide field engineering services. Utilize recognized engineering survey practices.
- B. Establish elevations, lines and levels for the work to be performed.
- C. Locate and lay out work limits by instrumentation and similar appropriate means.
- D. Periodically verify layouts by same means.

- E. Provide Project Record Documents:
 - a. Maintain a complete and accurate log of control and survey work as it progresses, and provide and record any and all such survey information as might be requested by the Engineer during the course of the work to confirm conformance with the requirements of the Contract Documents.
 - b. On completion of the Work, prepare a certified survey depicting dimensions, locations and elevations of construction and site work. This survey need not extend any more than about 10 feet in any direction beyond the limits of the new construction.
 - c. Included with the survey, provide a complete point file of the survey work in ASCII format, and including Point Number, Northing, Easting, Elevation and Description.
 - d. Submit Record Documents in accordance with Section 01 78 00.

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

(Not Used)

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: The General Contractor is responsible for all aspects of field engineering as required by this specification and the Contract Drawings.
- 4.2 MEASUREMENT: N/A
- 4.3 PAYMENT: Total payment for field engineering will be made under the total lump sum contract price for this project. This total payment will constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the completion of the work, regardless of the actual cost to the Contractor.

END OF SECTION 01 71 23

SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Project Record Documents
- B. Operation and Maintenance Data
- C. Warranties
- D. Spare Parts

1.2 RELATED SECTIONS

- A. Division 01, Section 01 11 00, Summary of Work
- B. Division 01, Section 01 33 00, Submittal Procedures
- C. Division 01, Section 01 70 00, Execution Requirements

1.3 PROJECT RECORD DOCUMENTS

- A. Contractor shall submit 2 complete sets the following documents.
 - 1. Contract Drawings: As-built record drawings in accordance with the requirements of Section 01 70 00.
 - 2. Contract Specifications: As-built specifications, including all addenda.
 - 3. Shop Drawings: As-built mark-ups of approved shop drawings.
 - 4. Product Data: As-built mark-ups of approved submittals indicating any variations from manufacture's installation instructions, reasons for variations, and/or other changes or modifications.
 - 5. Certifications and Test Records: Final documents as required by individual Specification Sections.
 - 6. Record data for any other work performed at the direction of the Owner, which is only noted schematically elsewhere.

1.4 OPERATION AND MAINTENANCE DATA

- A. Provide 6 clean copies of Operation and Maintenance Data/Manuals for all equipment. Submit a preliminary copy to the Consultant for review at 60% completion of the Project.

1.5 WARRANTIES

- A. Submit warranties for products and equipment in accordance with the requirements of the individual Specification Sections.
- B. Submit warranties within 10 days of the item being put into service (for items put into service during construction), or within 10 days of final acceptance.

1.6 SPARE PARTS

- A. Provide spare parts as recommended by the manufacturer and as required by individual Specification Sections.
- B. Deliver spare parts to the Using Agency's representative and secure for proper storage, as directed.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01 78 00

SECTION 02 40 00

DEMOLITION

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Demolition of all items identified on the Contract Drawings, to the limits depicted on the Contract Drawings, and as directed by the Owner.
- B. Specific requirements for demolition related to the Ferry Dock Substructure Repairs, as well as Lighting and Electrical work are provided on the Contract Drawings depicting and describing those repairs.

1.2 RELATED SECTIONS

- A. Division 01, Section 01 57 13, Soil Erosion and Sediment Control
- B. Division 01, Section 01 57 19, Environmental Protection
- C. Division 31, Section 31 23 16, Excavation

1.3 QUALITY ASSURANCE

- A. Conform to all applicable Federal, State and local code requirements for the demolition of structures, safety of adjacent structures, and control of dust and debris.
- B. Conform to all applicable requirements of Section 01 57 19, Environmental Protection related to the protection of the natural environment, as well as all requirements related to historic preservation, during both the actual demolition operations and the subsequent removal and disposal of various forms of materials and debris.
- C. Carefully examine the site and all available documentation to determine potential hazards to existing structures and natural features.
- D. Notify the Owner at least 48-hours in advance of any demolition operations.
- E. Do not begin any demolition operations without the prior approval of the Engineer.

1.4 SUBMITTALS

- A. Proposed equipment and procedures for demolition work.
- B. Detailed daily schedule for all aspects of demolition work.
- C. Record photographs and field observation notes documenting the demolition process and all items of historical significance, as directed by the Engineer.
- D. Provide a survey of all utilities in the area, including, but not limited to, underground water, sewer, telecom/data lines, and electrical duct banks.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

- 3.1 Carefully survey and investigate all existing structures, as well as the possibility of structures and/or utilities which may be buried, or otherwise hidden from view, in order to mitigate damage to items which are not to be demolished.
- 3.2 Provide all necessary shoring, supports and bracing excavation required for the safe removal of designated items, in strict accordance with all applicable codes and regulations.
- 3.3 Dispose of all demolition materials off-site in compliance with all Federal, State, and local regulations in a manner consistent with the requirements of Section 01 57 19, Environmental Protection.
- 3.4 Protect all trees and shrubs from any and all damage due to the demolition operations.
- 3.5 Do not use burning at the project site for the disposal of refuse and debris.
- 3.6 Do not use explosives for any aspect of the work.

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: The General Contractor is responsible for all aspects of demolition as required by this specification and the Contract Drawings.
- 4.2 MEASUREMENT: N/A
- 4.3 PAYMENT: Total payment for demolition will be made under the total lump sum contract price for this project. This total payment will constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the completion of the work, regardless of the actual cost to the Contractor.

END OF SECTION 02 40 00

SECTION 03 01 30

CONCRETE REPAIR AND REHABILITATION

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Furnishing of all labor, materials and equipment necessary for the repair and rehabilitation of the existing concrete as directed by the Engineer during the construction operations
- B. Requirements of this Section do not apply to the work on the Ferry Dock Substructure Repair drawings, which include specifications and references specific to that work.
- C. Work in this Section includes the surface preparation and repair of all cracks, spalls, and other defects identified by the Engineer, as well as cleaning, repair and sealing of existing joints, within the limits depicted and described on the Contract Drawings, and as directed by the Engineer. Once all defects have been repaired, coat those areas remaining exposed to view using the specified surface restoration coating system.
- D. The limits of concrete rehabilitation shall be as depicted on the Contract Drawings, and as directed by the Engineer during the construction operations.

1.2 RELATED SECTIONS

- A. Division 03, Section 03 10 00, Concrete Formwork
- B. Division 03, Section 03 15 00, Drilled Anchor Dowels
- C. Division 03, Section 03 20 00, Concrete Reinforcement
- D. Division 03, Section 03 30 00, Cast-In-Place Concrete

1.3 QUALITY ASSURANCE

- A. Provide qualified personnel, proper oversight and supervision to ensure that the concrete rehabilitation is performed in accordance with the Contract Drawings, the requirements of this specification, and to the satisfaction of the Engineer.
- B. Perform all work in strict accordance with the manufacturer's recommendations for surface preparation, material preparation and installation, finishing and clean-up.
- C. Use only clean potable water for mixing of material components, in accordance with manufacturer's instructions.
- D. Arrange for manufacturer's technical representative(s) to be available for on-site meetings to confirm materials and methods during surface preparation and subsequent rehabilitation work, and as requested by the Engineer.

1.4 SUBMITTALS

- A. Product data for all repair and surface coating materials.
- B. Color charts for surface coating systems.
- C. Mock-up sample of finished surface coating on an area of existing concrete to be determined by the Engineer.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. General: Materials for various aspects of the proposed concrete rehabilitation are listed below. All products listed are manufactured by Sika Corporation, Lyndhurst, New Jersey. The Contractor may submit equals by other manufacturers, such as W. R. Meadows or Euclid, for review and approval by the Engineer, provided that the submittal substantiates that all elements of the complete system of concrete rehabilitation products are compatible, as well as being equal, or superior in quality and performance to the system of products listed in this section.
- B. Bonding Agent: Sika Armatec 110 Epo-Cem
- C. Spalls:
 - 1. Repair spalls with a depth of less than 1 inch using SikaRepair 224, trowel application. The minimum applied thickness for this material is 3/8 inch.
 - 2. Repair spalls with a depth greater than 1 inch, using Sikacrete 211, form and pour application.
- D. General Crack Repair: Repair cracks using Sikaflex 2c.
- E. Severe Crack Repair and Leaks: Repair using Sikafix HH.
- F. Joint Sealant: Seal repaired joints using Sikaflex 2c.
- G. Surface Restoration Coating: Coat all concrete surfaces exposed to view using Sikatop 107 (grey). As directed by the Engineer.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Remove all spalled, loose and flaking concrete by scaling, chipping or saw cutting.
- B. Thoroughly clean all exposed concrete surfaces by scaling, chipping, water jetting or sand blasting. Remove all calcification, efflorescence, slime and other build-up.
- C. Clean out all joints.
- D. Clean out all soft, loose material, spalls, laminations, cracks and other defects.
- E. Prepare all surfaces in strict accordance with the requirements of the manufacturer of the specific repair and surface restoration system materials to be used in each area. This work includes chipping, cutting and cleaning each repair area to achieve the minimum depth and surface profile required, per manufacturer's specifications.
- F. Prepare a sample mock-up area using the surface restoration and finished surface coating materials, for inspection and acceptance by the Owner.

3.2 INSTALLATION

- A. Notify the Engineer once surface preparation operations are complete, and prior to beginning installation of repair and surface restoration materials.
- B. Install all materials for repair of spalls, laminations, cracks and other defects in strict accordance with the manufacturer's requirements, and to the satisfaction of the Engineer.
- C. Finished surface texture of repaired areas must match the finish of the surrounding existing material.
- D. Seal all joints in the existing spillway structure and training walls, following manufacturer's specifications and instructions, and as directed by the Engineer.
- E. Finish all exposed concrete surfaces with the approved surface restoration and finished surface coating system. The finished surface must be consistent in color throughout.

3.3 INSPECTION

- A. All areas of rehabilitation of existing concrete surfaces are subject to inspection and acceptance by the Engineer.
- B. All areas that are inspected and found to be unacceptable to the Engineer are to be cleaned and repaired by the Contractor, to the satisfaction of, and at no additional cost to the Owner.

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: Concrete repair and rehabilitation is the responsibility of the General Contractor.
- 4.2 MEASUREMENT: N/A
- 4.3 PAYMENT: Payment for concrete repair and rehabilitation will be made under the total lump sum contract price for this project, and will constitute full compensation for all material, labor, equipment, transportation and all other items and submittals necessary and incidental to the completion of the work in accordance with the requirements of the Contract Drawings.

END OF SECTION 03 01 30

SECTION 03 10 00

CONCRETE FORMWORK

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Furnish all labor, materials and equipment necessary for placing of concrete formwork for cast-in-place reinforced concrete structures in accordance with the Contract Drawings and the requirements of this specification.
- B. Requirements of this Section do not apply to the work on the Ferry Dock Substructure Repair drawings, which include specifications and references specific to that work.

1.2 RELATED SECTIONS

- A. Division 03, Section 03 20 00, Concrete Reinforcement
- B. Division 03, Section 03 30 00, Cast-in-Place Concrete

1.3 QUALITY ASSURANCE

- A. Provide qualified personnel, proper oversight and supervision to ensure that the furnishing and placing of concrete formwork is performed in accordance with the Contract Drawings, the requirements of this specification and to the satisfaction of the Engineer.
- B. All materials and workmanship related to the placing of concrete formwork shall be in strict accordance with ACI 301.

1.4 SUBMITTALS

- A. Proposed formwork material and accessory items.
- B. Shop drawings for concrete formwork, as requested by the Engineer for particular structures, or portions of structures.

1.5 SCHEDULE OF REFERENCES

- A. ACI 301 (American Concrete Institute)
- B. ACI 315 (American Concrete Institute)
- C. ACI 318 (American Concrete Institute)

PART 2 – PRODUCTS

2.1 MATERIALS:

- A. A variety of different form materials are acceptable, depending on the particular type of structure and finish required. Examples of possible formwork material options are as follows:
 - 1. Lumber
 - 2. Plywood
 - 3. Steel
 - 4. Plastic
- B. Metal ties or anchorages within the forms shall be equipped with cones, she-bolts or other devices that permit their removal to a depth of at least 1 inch without injury to the concrete.
- C. Form Release Agent: non-staining

PART 3 – EXECUTION

3.1 PREPARATION

- A. Prepare subgrade to proper lines, grades and levels.
- B. Verify that the subgrade is free of all chips, sawdust, debris, water ice, snow, extraneous oil, mortar, or other harmful substances or coatings.

3.2 INSTALLATION

- A. Construct formwork of approved materials and according to approved shop drawings.
- B. Coat form surfaces with an approved non-staining form release agent prior to being set in place.
- C. Construct formwork to required lines, grades and levels.
- D. Construct formwork and associated falsework in such a manner that it is mortar tight, substantial and unyielding, so that the finished concrete pour will accurately conform to the specified dimensions and contours.
- E. Confirm that all form surfaces are smooth and free from holes, dents, sags or other irregularities.
- F. Accurately position and firmly anchor all embedded items.
- G. Do not install formwork, or tie steel, in areas immediately adjacent to a prior concrete pour, which has not cured at least 12 hours.

3.3 INSPECTION

- A. All formwork for concrete must be inspected and approved by the Engineer prior to the placing of any concrete.
- B. When requested, provide confirmation that forms are set to required lines, grades and levels, to the satisfaction of the Engineer.

3.4 REMOVAL OF FORMWORK

- A. Remove formwork only when the Engineer is present, and has given approval.
- B. Remove formwork in such a manner as to prevent damage to the concrete.
- C. Remove formwork supports in such a manner as to permit the concrete to take the stresses due to its own weight uniformly and gradually.
- D. Do not remove the formwork sooner than the time following time periods after the concrete has been placed. These time periods represent the number of days, and fractions of days, during which the temperature of the air adjacent to the concrete is above 50⁰ F. These time periods are not necessarily consecutive.
 - 1. Small Structures 24 hours
 - 2. Walls, Slabs 3 days

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: Concrete formwork supply and placement is the responsibility of the General Contractor.
- 4.2 MEASUREMENT: N/A

- 4.3 PAYMENT: Payment for the supply and placement of formwork will be made as part of the total lump sum contract price for this project, and will constitute full compensation for all material, labor, equipment, transportation and all other items and submittals necessary and incidental to the completion of the work in accordance with the requirements of the Contract Drawings and Specifications.

END OF SECTION 03 10 00

SECTION 03 15 00

DRILLED ANCHOR DOWELS

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Furnishing of all materials and equipment necessary for the drilling and grouting of dowels in accordance with the Contract Drawings and the requirements of this Section.
- B. Requirements of this Section do not apply to the work on the Ferry Dock Substructure Repair drawings, which include specifications and references specific to that work.
- C. Layout of holes for dowels in accordance with the Contract Drawings.
- D. Drilling and preparation of holes in existing concrete to the depths described herein, in accordance with the requirements of the grout manufacturer's specifications and installation instructions.
- E. Setting and grouting of dowels (size, spacing and length as described on the Contract Drawings).
- F. Clean-up of all areas disturbed by the drilling and grouting operations.

1.2 RELATED SECTIONS

- A. Division 03, Section 03 01 30, Concrete Repair and Rehabilitation
- B. Division 03, Section 03 10 00, Concrete Formwork
- C. Division 03, Section 03 20 00, Concrete Reinforcement
- D. Division 03, Section 03 30 00, Cast-in-Place Concrete

1.3 QUALITY ASSURANCE

- A. Provide qualified personnel, proper oversight and supervision to ensure that the drilling and grouting of dowels is performed in accordance with the Contract Drawings, the requirements of this specification, the grout manufacturer's specifications, and to the satisfaction of the Owner.

1.4 SUBMITTALS

- A. Product data for all materials.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Grout: Sikadur AnchorFix-2 epoxy acrylate anchoring adhesive, as manufactured by the Sika Corporation, Lyndhurst, NJ, or an equal by W.R. Meadows or Euclid, approved by the Engineer.
- B. Dowels: In accordance with the requirements of Section 03 20 00, with sizes as depicted and described on the Contract Drawings.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Clean surfaces to be drilled.

- B. Field mark the layout of the hole pattern in accordance with the requirements of the Contract Drawing, for inspection and approval by the Engineer, prior to setting of dowels.
 - C. Verify that steel reinforcing dowels are of the proper diameter and length.
- 3.2 INSTALLATION
- A. Drill holes with a diameter and a depth consistent with the diameter of the dowel to be placed, as indicated in the manufacturer's literature, unless otherwise noted on the Contract Drawings, or directed by the Engineer. Wash and clean the hole of all drill cuttings, grease or other debris.
 - B. Clean reinforcing steel dowel of all dirt, loose rust, grease or any other deleterious substance.
 - C. Mix and place grout material in strict accordance with the manufacturer's specifications and installation instructions.
 - D. Support dowels in position, and protect from any movement once they have been set.
 - E. Do not proceed with additional work in the area of the dowels until the grout material has cured, in accordance with the manufacturer's specifications and installation instructions.
- 3.3 INSPECTION
- A. Layout, diameter, depth and surface preparation of holes must be inspected and approved by the Engineer prior to the setting and grouting of dowels.
 - B. In areas where the Engineer determines that a dowel, or dowels, has not been properly set, the Contractor shall, at the discretion of the Engineer, drill and set an additional dowel, or dowels, at now additional cost to the Owner.

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: Supply and installation of drilled anchor dowels is the responsibility of the General Contractor.
- 4.2 MEASUREMENT: N/A
- 4.3 PAYMENT: Payment for the supply and installation of drilled anchor dowels will be made under the total lump sum contract price for this project, and will constitute full compensation for all material, labor, equipment, transportation and all other items and submittals necessary and incidental to the completion of the work in accordance with the requirements of the Contract Drawings.

END OF SECTION 03 15 00

SECTION 03 20 00

CONCRETE REINFORCEMENT

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Furnish all labor, materials and equipment necessary for placing of reinforcement for reinforced concrete structures in accordance with the Contract Drawings and the requirements of this specification.
- B. Requirements of this Section do not apply to the work on the Ferry Dock Substructure Repair drawings, which include specifications and references specific to that work.

1.2 RELATED SECTIONS

- A. Division 03, Section 03 10 00, Concrete Formwork
- B. Division 03, Section 03 30 00, Cast-in-Place Concrete

1.3 QUALITY ASSURANCE

- A. Provide qualified personnel, proper oversight and supervision to ensure that the furnishing and placing of concrete reinforcement is performed in accordance with the Contract Drawings and the requirements of this specification, to the satisfaction of the Engineer.
- B. All materials and workmanship related to the placing of concrete reinforcement shall be in strict accordance with ACI 315 and 318.

1.4 SUBMITTALS

- A. Certification that materials conform to specification requirements.

1.5 SCHEDULE OF REFERENCES

- A. ACI 315 (American Concrete Institute)
- B. ACI 318 (American Concrete Institute)
- C. ASTM A36
- D. ASTM A185
- E. ASTM A615
- F. ASTM A404
- G. ASTM A775

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Reinforcing Steel: ASTM A615, Grade 60 ($F_y = 60,000$ psi), epoxy coated.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Detail reinforcing steel as depicted on the Contract Drawings and in compliance with the requirements of ACI 315. All Splices and lap lengths and locations must conform to the requirements of ACI 315.

- B. Cut and bend reinforcing steel bars as depicted on the Contract Drawings and in compliance with the requirements of ACI 315. Do not bend or straighten reinforcing steel bars in a manner that will injure the material. Bars with kinks, cracks or improper bends will be rejected.
- C. Clean reinforcing steel (bars and/or welded wire fabric) of all loose, flaky rust, mills scale, oil, grease or other coatings or foreign substances. Maintain reinforcing steel in this cleaned condition until it is completely embedded in concrete.
- D. Prepare the area for inspection by the Engineer prior to placing reinforcing steel.

3.2 INSTALLATION

- A. Accurately place and secure the reinforcement in strict accordance with the arrangement depicted on the Contract Drawings and in a manner that will prevent its displacement during the concrete pouring operations. Do not tack-weld reinforcement.
- B. Metal chairs, hangers and spacers may be used to support reinforcement.
- C. Concrete chairs may be used to support reinforcement.
- D. Locate supports and ties so that they will not be exposed in the finished concrete surface. Legs of metal chairs or side form spacers that may be exposed on any face of slabs, walls, beams or other concrete surfaces shall have a protective coating or finish by means of hot dip galvanizing, epoxy coating, plastic coating, or shall be stainless steel.
- E. Precast concrete chairs shall be manufactured of the same class of concrete as that specified for the structure, and shall have tie wires securely anchored in the chair to a V-shaped groove at least ¼” in depth, molded into the upper surface to receive the steel bar at the point of support. Precast concrete chairs shall be moist at the time concrete is placed.
- F. High density or structural plastic rebar accessories, designed to insure maximum concrete bond, may be substituted for metal or concrete accessories in spacer applications as approved by the Engineer. Exposure of plastic rebar accessories at the finished concrete surface shall be kept to a minimum. Plastic rebar accessories, if used, shall be staggered along adjacent parallel bars and shall be placed at intervals no closer than 12 inches. Plastic rebar accessories shall not be used in concrete sections 6 inches or less in thickness.

3.3 INSPECTION

- A. The areas prepared for the placement of reinforcement must be inspected and approved by the Engineer prior to the placing.
- B. The completed reinforcement arrangement must be inspected and approved by the Engineer prior to pouring concrete.

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: Concrete reinforcement supply and placement is the responsibility of the General Contractor.
- 4.2 MEASUREMENT: N/A

- 4.3 PAYMENT: Payment for the supply and placement of reinforcement will be made under the total lump sum contract price for this project, and will constitute full compensation for all material, labor, equipment, transportation and all other items and submittals necessary and incidental to the completion of the work in accordance with the requirements of the Contract Drawings, Specifications, and approved shop drawings and placement drawings.

END OF SECTION 03 20 00

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Furnish all labor, materials and equipment necessary for placing of cast-in-place concrete in accordance with the Contract Drawings and this specification.
- B. Included with the requirements for cast-in-place concrete are the requirements for testing, formwork, reinforcement, embedded items, placing, finishing and curing.
- C. Requirements of this Section do not apply to the work on the Ferry Dock Substructure Repair drawings, which include specifications and references specific to that work.

1.2 RELATED SECTIONS

- A. Division 03, Section 03 10 00, Concrete Formwork
- B. Division 03, Section 03 20 00, Concrete Reinforcement

1.3 QUALITY ASSURANCE

- A. Provide qualified personnel, proper oversight and supervision to ensure that the furnishing and placing of cast-in-place concrete is performed in accordance with the Contract Drawings, the requirements of this specification, and to the satisfaction of the Engineer.
- B. All materials and workmanship related to the placing of cast-in-place concrete shall be in strict accordance with ACI 301, ACI 315 and ACI 318.
- C. Employ a testing laboratory, approved by the Engineer, and pre-qualified by the DPMC to perform the following required testing of concrete and associated materials.

1. Sampling: ASTM C172
2. Slump: ASTM C143
3. Air Content: ASTM C173 or ASTM C231
4. Compressive Strength: ASTM C39, ASTM C42 or ASTM C684

For each strength test of specimens made according to the ASTM designations listed, three (3) specimens shall be made. The test result shall be the average of the strength of the three (3) specimens, with the following exception. If one (1) specimen in the test shows manifest evidence of improper sampling, molding or testing, it shall be discarded, and the strengths of the remaining two (2) specimens shall be averaged. Should more than one (1) specimen representing a test show such defects, the entire test shall be discarded.

5. Unit Weight: ASTM C138

1.4 SUBMITTALS

- A. Qualifications of Testing Laboratory
- B. Results of required tests for concrete and associated materials
- C. Laboratory Reports for concrete materials and mix designs
- D. Product data sheets for all additives.

- E. Product data sheets for all embedded items.
- F. Notice of Intent to Pour Concrete
- G. Statement-of-Delivery Tickets for every delivery of Ready-Mixed Concrete, indicating the design mix, time the truck left the plant, and quantity of concrete.

1.5 SCHEDULE OF REFERENCES

- A. ACI 301 (American Concrete Institute)
- B. ACI 315 (American Concrete Institute)
- C. ACI 318 (American Concrete Institute)

PART 2 – PRODUCTS

2.1 MATERIALS:

- A. Portland Cement: Type IA, conforming to the requirements of ACI and ASTM C150
- B. Aggregates: Conforming to the requirements of ASTM C33; grading of coarse aggregates as specified in ASTM C33, Size 467
- C. Water: Clean and free from injurious amounts of oil, salt, acid, alkali, organic matter or other deleterious substances.
- D. Air Entraining Admixtures: Conforming to the requirements of ASTM C260. If air entraining cement is used, any additional air entraining admixture must be of the same type as that in the cement.
- E. Super-plasticizer Concrete Admixtures: Conforming to the requirements of ASTM C494, as a Type A or as a Type F admixture. The admixture must have a high range water-reducer, low viscosity and contain no added chloride.
- F. Pozzolan: Conforming to ASTM C618, Class F, except that the loss of ignition shall not exceed 3.0 percent.
- G. Water-reducing, set-retarding admixture: Conforming to the requirements of ASTM C494.
- H. Curing Compound: Conforming to the requirements of ASTM C309.
- I. Joint Filler: ASTM D1751
- J. Joint Sealant: Sikaflex 2C, as manufactured by Sika Corporation, Lyndhurst, NJ, or an equal by W.R. Meadows or Greenstreak, approved by the Engineer.
- K. Swellable Waterstop: SikaSwell S-2, as manufactured by Sika Corporation, Lyndhurst, NJ, or an equal by W.R. Meadows or Greenstreak, approved by the Engineer.

2.2 CONCRETE STRENGTH

- A. Class 2500: 2500 psi compressive strength at 28 days – only as specifically directed by the Engineer.
- B. Class 4000: 4000 psi compressive strength at 28 days – for all concrete construction, unless otherwise directed by the Engineer.

2.3 AIR CONTENT: Unless otherwise specified, the air content of the concrete (by volume) at the time of placement shall be as follows:

- | | | |
|----|--|----------------------|
| A. | $\frac{3}{8}$ " to $\frac{1}{2}$ " max. aggregate size | 6% to 9% air content |
| B. | over $\frac{1}{2}$ " to 1" max. aggregate size | 5% to 8% air content |
| C. | over 1" to $2\frac{1}{2}$ " max. aggregate size | 4% to 7% air content |

- 2.4 CONSISTENCY: The consistency of the concrete shall be such as to allow it to be worked into place without segregation or excessive latency. Unless otherwise specified, the slump at the forms shall be as follows:
- A. Massive sections; pavements; footings 2" +/- 1/2" slump
 - B. Thick slabs (over 12") 3" +/- 1/2" slump
 - C. Thin slabs (12" or less) 4" +/- 1/2" slump
- 2.5 MIX DESIGN
- A. The Contractor is responsible for the concrete mix design(s).
 - B. Proportions and Design are to be in conformance with mix design procedures specified in ACI 301.
 - C. The Contractor will submit a written report to the Engineer, at least 10 days prior to any placement of concrete, indicating the materials, proportions and admixtures (if any) which he intends to use for each class of concrete. The mix design approved by the Engineer will constitute the "Job Mix." Once a "Job Mix" has been established for a particular class of concrete, neither the source, character, grading of aggregates, type or brand of cement or admixture(s) are to be changed without prior notice to the Engineer, and establishment of a new approved "Job Mix" consisting of the new materials and proportions.
 - D. When specified, use a water-reducing, set-retarding admixture. When conditions are such that the temperature of the concrete at the time of placement is consistently above 75⁰ F, a water-reducing, set-retarding admixture may be used, at the option of the Contractor, with prior notification of the Engineer. The cement content must be the same as that required in the mix without the admixture.
 - E. The use of calcium chloride or other accelerators or antifreeze compounds will not be allowed.
 - F. When specified, mixes that include fly ash as a partial substitution for portland cement shall be based on absolute volume with a maximum substitution of 20%, subject to approval by the Engineer.
- 2.6 READY-MIXED CONCRETE: Mix Ready-Mixed concrete and deliver to site by one of the following means:
- A. TRUCK-MIXED CONCRETE: Mix completely in the truck mixer.
 - 1. Truck mixers and agitators must be equipped with revolution counters by which the number of revolutions of the drum or blades may be readily available.
 - 2. The Contractor will furnish the Engineer with a statement-of-delivery ticket indicating the design mix, time of loading, revolution counter reading at the time of loading and the quantities of materials used for each load of concrete.
 - 3. When the concrete is mixed in a truck mixer that is loaded to its maximum capacity, the number of revolutions of the drum or blades at mixing speed must not be less than 70, nor more than 100.
 - 4. When the concrete is mixed in a truck mixer that is loaded to at least 1/2 cubic yard less than its maximum capacity, the number of revolutions at mixing speed may be reduced to not less than 50.
 - 5. Mixing in excess of 100 revolutions must be at the speed designated by the manufacturer of the equipment as agitating speed.

6. Mixing operations must begin within 30 minutes after the cement has been added to the aggregates and the water must be added during mixing.
 7. When mixing is started during or immediately after charging, a portion of the mixing water must be added ahead of, or with the other ingredients.
- B. SHRINK-MIXED CONCRETE: Mix Shrink-Mixed concrete partially in a stationary mixer, and complete the mixing in a truck mixer.
1. Mixing time in the central plant mixer must be the minimum required to intermingle the ingredients and must not be less than 30 seconds.
 2. Complete the mixing in a truck mixer.
 3. The number of revolutions of the drum or blades at mixing speed must not be less than 50, nor more than 100.
 4. Mixing in excess of 100 revolutions must be at the speed designated by the manufacturer of the equipment as agitating speed.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Forms and subgrade must be free of chips, sawdust, debris, water, ice, snow, extraneous oil, mortar, or other harmful substances and/or coatings prior to placement of concrete.
- B. Any and all form release agent on the reinforcing steel or other surfaces required to be bonded to the concrete must be removed prior to placement of concrete.
- C. When concrete is to be placed against rock, such surface must be cleaned by air-water cutting, wet sandblasting or wire brush scrubbing, as necessary. Such surfaces must be wetted prior to placing bonding mortar and, subsequently, concrete. The bonding mortar must be spread uniformly in an approximately three eighths inch thick layer, worked thoroughly into all irregularities. Use the same proportions of water, air entraining agent, cement, and sand for the bonding mortar as are used for the regular concrete mixture being placed. The concrete must be placed immediately upon the fresh mortar, provided all other provisions of preparation and Engineer's approval have been satisfied.
- D. When concrete is to be placed directly against earth, such surfaces must be firm and damp. Placement of concrete against mud, dried earth, un-compacted fill or frozen subgrade will not be permitted. All ice, snow and frost must be removed and the temperature of all surfaces to be in contact with the new concrete must be no colder than 40⁰ F.
- E. Accurately position and firmly anchor all items to be embedded in the concrete.
- F. Prepare construction joints at locations indicated on the Contract Drawings and/or at locations approved by the Engineer, as required.
- G. Provide inserts at construction joints where a feathered edge would otherwise be produced, as in the top surface of a sloping wall. Such joints should result in a minimum concrete depth of 6 inches.
- H. Exposed concrete edges at all construction and/or expansion joints must be tooled or chamfered, and the joints must be free of mortar and concrete. Joint

filler, where applicable, must be held firmly in its correct position and left exposed for its full length, with clean and true edges.

- I. Waterstops must be held firmly in the correct position as the concrete is placed. Joints in waterstops must be configured as recommended by the manufacturer.
- J. Open Joints or weakened plane “dummy” joints, where specified, must be constructed by the insertion and subsequent removal of a wood strip, metal plate or other suitable template in such a manner that the corners of the concrete will not be chipped or broken. The edges of the concrete at the joints must be finished with an edging tool prior to the removal of the joint strips.
- K. Clean the surfaces of all construction joints to remove all unsatisfactory concrete, latency, coatings, stains or debris by either sandblasting after the initial pour has gained sufficient strength to resist excessive cutting; or by air-water cutting as soon as the concrete has hardened sufficiently to prevent the jet from displacing the coarse aggregates, or both. Cut the surface of the initial pour to expose clean, sound aggregate, but not so deep as to undercut the edges of larger particles of the aggregate. After cutting, wash the surface to remove all loose material. If the surface is congested with reinforcing, is relatively inaccessible, or it is considered undesirable to disturb the concrete before it is hardened, cleaning of the joint by air-water jets will not be permitted and the wet sandblasting method will be required after the concrete has hardened.
- L. Keep joint surfaces moist for at least one hour prior to placement of new concrete.
- M. The concrete must be placed directly on the cleaned and washed surface, provided all other provisions of preparation and Engineer’s approval have been satisfied.
- N. All equipment and materials required for placing and curing concrete must be at the site and ready for use prior to the placement of concrete.
- O. Confirm that reasonable notice has been given to the Engineer as to the intent to place concrete. This notice must allow sufficient time for the Engineer to inspect the subgrade, forms, reinforcement and embedded items, as well as other preparations, for compliance with the Contract Drawings and Specifications.
 - 1. Other considerations include, but are not limited to, the concrete batching plant, mixing and delivery equipment and system, placing and finishing equipment and system, schedule, work force and heating or cooling facilities, as applicable.
 - 2. The Contractor prior to delivering and placing concrete must correct any and all deficiencies.

3.2 INSTALLATION

- A. Conveying:
 - 1. Convey concrete to the forms as rapidly as practicable, by methods that will prevent segregation of the aggregates or loss of mortar.
 - 2. Deliver concrete to the site and discharge it into the forms within 1½ hours after the introduction of the cement to the aggregates.
 - 3. In hot weather, or under conditions contributing to quick stiffening of the concrete, or when the temperature of the concrete is 85⁰F or above,

the time between the introduction of the cement to the aggregates and discharge must not exceed 45 minutes.

4. The Engineer may allow a longer time, provided the setting time of the concrete is increased a corresponding amount by the addition of an approved set-retarding admixture.

B. Placing:

1. Do not place concrete until the subgrade, forms, formwork aids, reinforcement and embedded items have been inspected and approved by the Engineer.
2. Do not place concrete unless the Engineer is present, or has given prior written consent to placing concrete in his absence.
3. Deposit concrete as closely as possible to its final position in the forms.
4. Work concrete into corners and angles of the forms, and around all reinforcement and embedded items, in a manner that prevents segregation of aggregates or excessive latency.
5. Regulate the depositing of concrete so that it can be consolidated with a minimum of lateral movement.
6. Do not drop concrete more than 5 feet vertically, unless suitable equipment is used to prevent segregation.
7. Unless otherwise specified, place slab concrete to the design thickness in one continuous layer.
8. Place formed concrete in horizontal layers not more than 20 inches thick.
9. Use Hoppers and chutes, pipes or "elephant trunks" to prevent splashing of mortar on the forms and reinforcement above the layer being placed.
10. Place successive layers at a fast enough rate to prevent the formation of "cold joints." If the concrete in place has set to the degree that it will not flow and merge with the succeeding layer when vibrated, discontinue placing concrete and make a construction joint, in accordance with the requirements and references included in this specification.

C. Consolidating:

1. Unless otherwise specified, consolidate concrete with internal type mechanical vibrators capable of transmitting vibration to the concrete at frequencies not less than 6000 impulses per minute.
2. The location, manner and duration of the application of the vibrators must be such as to secure the maximum consolidation of the concrete without causing segregation of the mortar and coarse aggregate, and without causing water or cement paste to flush to the surface.
3. Provide a sufficient number of vibrators to properly consolidate the concrete immediately after it is placed in the formwork.
4. Apply vibration to the freshly deposited concrete by slowly inserting and removing the vibrator at points uniformly spaced, and not farther apart than twice the radius over which the vibration is visibly effective. Extend the vibrator into the previously placed layer of fresh concrete, at all points, to ensure effective bond between the layers.

5. Do not apply vibration directly to the reinforcement or the forms, nor to the concrete that has hardened to the degree that it does not become plastic when vibrated.
6. Do not use vibrators to transport concrete in the forms or conveying equipment.
7. Supplement vibration with spading and hand tamping as necessary to ensure smooth and dense concrete along form surfaces, in corners and around embedded items.

D. Finishing and Curing:

1. After placing and consolidating the concrete, accurately strike-off to proper grade.
2. Smooth off the struck-off surfaces by darbying or bull floating before any free water has bled to the surface.
3. Allow the concrete to rest until bleed water and water sheen has left the surface, and the concrete has stiffened to the degree that it will sustain foot pressure with only about 1/4" indentation.
4. At this time, finish all exposed joints (which are not chamfered) with edging or molding tools.
5. After edging and tooling is complete, float all exposed surfaces with wood or magnesium floats. This floating should work the concrete no more than necessary to remove screed, edger and jointer marks, and produce a compact surface, uniform in texture.
6. Joints and edges on unformed surfaces must be chamfered or finished with molding tools.
7. Finishes (unless otherwise noted or directed by the Engineer):
 - a. Surfaces Exposed to View: Finish with a smooth rubbed finish.
 - b. Surfaces Not Exposed to View: Finish with a rough form finish.
8. Cure concrete in accordance with the recommended practice of ACI 308. Some specific interpretations are set forth as follows:
 - a. Prevent concrete from drying for a period of at least 7 days after it is placed.
 - b. Exposed surfaces and concrete formed in absorptive wood forms must be kept continually wet during the entire curing period, or until the forms have been removed.
 - c. All bulges, form marks or other irregularities, which, in the judgement of the Engineer will adversely affect the function and/or appearance of the structure, must be removed.
 - d. All form bolts and ties must be removed to a depth of at least 1 inch below the surface of the concrete.
 - e. Cavities produced by form ties and all other holes of similar size and depth must be thoroughly cleaned and, after the interior surfaces have been kept continually wet for at least 3 hours, must be carefully packed with a dry patching mortar mixed not richer than 1 part cement to 3 parts sand. Such patching mortar must be mixed in advance and allowed to stand without addition of water until it has reached the stiffest consistency that will permit placing. Manipulation of the

- mortar with a trowel during this period must be performed as required to ensure the proper consistency.
- f. Holes left by form bolts or straps which pass through the wall must be filled solid with mortar. Thoroughly compact this mortar into place to form a dense, well-bonded unit, and the in-place mortar must be sound and free from shrinkage cracks.
 - g. Keep the exposed surface continually wet, after forms have been removed, until patching and repair are complete, and until the curing period is completed, or until a curing compound is applied.
 - h. Maintain moisture by sprinkling, flooding or fog spraying, or by covering with continuously moistened canvas, cloth mats, straw, sand and/or other approved materials. Apply water and/or covering in such a manner that the concrete surface is not eroded or otherwise damaged.
 - i. Exposed surfaces or formed surfaces may be coated with a curing compound, after patching and repairs have been completed, only with prior approval by the Engineer. Unless otherwise specified, such a curing compound must be white pigmented, and must conform to ASTM C309, Type 2, Class A or B. If surface coatings are to be applied to concrete on which a curing compound has been used, Type 2, Class B must be used and allowed to age a minimum of 30 days prior to the application of the coating.
 - j. Curing compounds must be thoroughly mixed before being applied, and must be agitated during the application process. Application should be made using a continuously agitating pressure sprayer, at a uniform rate of not less than one gallon per 150 square feet of concrete surface. Application must be uniform, yielding a continuous, adherent film that will not crack or peel, and will be free from pinholes or other imperfections.
 - k. Protect all surfaces that are treated with a curing compound from damage to the protective film during the required curing period. Surfaces subjected to heavy rainfall or running water within 3 hours after the application of the curing compound, or surfaces damaged by subsequent construction operations during the curing period, must be re-sprayed in the same manner as specified for the original application.
 - l. Do not apply curing compound to the surface of construction joints, or other areas that are to receive additional concrete, paint or other materials that require a positive bond with the concrete surface.
 - m. Water used in the curing must be clean and free from any deleterious substances, or elements that might cause discoloration to the concrete.

3.3 INSPECTION

- A. The Engineer will inspect the subgrade, forms, formwork aids, reinforcement and embedded items prior to any concrete being placed.
- B. The Engineer will inspect finished concrete for conformance to the requirements of the Contract Drawings and/or approved Manufacturer's shop drawings, as well as to the standards for required quality and appearance.

3.4 REMOVAL, REPLACEMENT OR REPAIR

- A. Concrete that is honeycombed, damaged or otherwise defective must be removed and replaced. The Engineer will determine the required extent of removal, replacement or repair of defective areas, and will advise the Contractor in writing of these determinations.
- B. The Contractor must provide the Engineer with a plan of the proposed removal, replacement or repair, for review and approval, prior to undertaking such work.
- C. Appropriate methods are described in Chapter VII of the Concrete Manual, Bureau of Reclamation, U.S. Department of the Interior, which will be used as the primary reference for repairs.
- D. Proprietary compounds for adhesion and/or patching are not to be used without prior approval of the Engineer. The Contractor must submit manufacturer's product literature for such compounds to the Engineer for review and approval, prior to undertaking such work.
- E. Approval of the Contractor's repair plan is not to be considered to be a waiver of the Engineer's right to require complete removal of defective work if the completed repair does not produce concrete of the required quality and appearance.
- F. Do not perform any removal, replacement or repair unless the Engineer is present, or has given written approval to proceed with such operations in his absence.

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: Cast-in-place concrete supply and placement is the responsibility of the General Contractor.
- 4.2 MEASUREMENT: N/A
- 4.3 PAYMENT: Payment for the supply and placement of cast-in-place concrete will be made under the total lump sum contract price for this project, and will constitute full compensation for all material, labor, equipment, transportation and all other items and submittals necessary and incidental to the completion of the work in accordance with the requirements of the Contract Drawings.

END OF SECTION 03 30 00

SECTION 03 41 16

PRECAST CONCRETE SLAB BEAMS

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Furnish all labor, materials and equipment necessary for the furnishing and placing of precast concrete slab beams in accordance with the Contract Drawings and this Section.
- B. Included with the requirements for precast concrete slab beams are the requirements for field measurement, testing, formwork, reinforcement, embedded items, placing, finishing and curing, as well as erection.

1.2 QUALITY ASSURANCE

- A. Provide qualified personnel, proper oversight and supervision to ensure that the furnishing and placing of the precast concrete slab beams is performed in accordance with the Contract Drawings, the requirements of this Section, and to the satisfaction of the Owner's Engineer.
- B. All materials and workmanship related to the supply and placing of precast concrete slab beams shall be in strict accordance with 2007 NJDOT Standard Specifications for Road and Bridge Construction.

1.3 SUBMITTALS

- A. Qualifications of Testing Laboratory
- B. Results of required tests for concrete and associated materials
- C. Laboratory Reports for concrete materials and mix designs
- D. Product data sheets for all additives.
- E. Product data sheets for all embedded items.
- F. Product data sheets for all other materials listed herein and on the Contract Drawings.
- G. Shop drawings for custom-made precast concrete units based on field measurement of existing conditions.
- H. Bar schedules, bar lists, bar bending diagrams and detail placement drawings.
- I. Erection Plan including but not limited to:
 - 1. Number and type of manpower and equipment.
 - 2. Shipping procedures.
 - 3. Lifting procedures.
 - 4. Erecting sequence.
 - 5. Temporary bracing.
 - 6. Manufacturer's recommendations.
 - 7. Procedures for employee safety.
 - 8. Traffic control and protection.

1.4 SCHEDULE OF REFERENCES

- A. 2012 AASHTO LRFD Bridge Design Specifications, with current interims, as modified by Section 3 of the NJDOT Design Manual for Bridges and Structures.
- B. 2007 NJDOT Standard Specifications for Road and Bridge Construction with Supplemental Specifications, as modified by Special Provisions.

PART 2 – PRODUCTS

2.1 SLAB BEAM CONCRETE

- A. Class P: 5,500 psi compressive strength at 28 days.
 - B. Air content of the concrete (by volume) at the time of placement shall be 5% ± 1.5%
 - C. Course aggregate size shall be No. 67.
- 2.2 OTHER MATERIALS: Refer to the “Material Specifications” list on the Slab Beam Details Sheet of the Contract Drawings.

PART 3 – EXECUTION

3.1 FABRICATION

- A. Do not begin fabrication until all submittals, including, but not limited to, shop drawings based on field measurements, have been reviewed and approved by the Owner’s Engineer.

3.2 ERECTION

- A. An Erection Plan shall be submitted for review and approval prior to erection of the precast concrete slab beams.
- B. Notify the Owner’s Engineer to schedule a pre-erection meeting at least 20 days before the start of erection.
- C. Notify the Owner’s Engineer at least 5 days before shipping. Transport and store precast concrete slab beams in an upright position, and ensure that the points of support and directions of the reactions with respect to the member are approximately the same during transportation and storage as when the member is in its final position. Obtain Owner’s Engineer approval to transport or store precast units in a position other than upright.
- D. Place the elastomeric bearing pad on the bridge seat; align the holes in the pad with the proposed anchor rod locations.
- E. Erect the precast concrete slab beams. Adjacent beams must be in contact to engage the shear keys.
- F. Drill through the holes in the slab beams into the bridge seat to create a 1 ¼” diameter by 12” deep hole for the anchor rods.
- G. Install the anchor rods into the bridge seat using epoxy non-shrink grout.
- H. Fill the anchor rod holes in the precast concrete slab beams at the west abutment with epoxy non-shrink grout. Fill the anchor rod holes in the precast concrete slab beam at the east abutment with cold-poured joint sealer.
- I. Place preformed joint filler in the gap between the abutment wall and the ends of the precast concrete slab beams.
- J. Seal the joint between the abutment and precast concrete slab beams with cold-poured joint sealer.

3.3 INSPECTION

- A. The Owner’s Engineer will inspect finished concrete beams for conformance to the requirements of the Contract Drawings and/or approved Manufacturer’s shop drawings, as well as to the standards for required quality and appearance.

3.4 REMOVAL, REPLACEMENT OR REPAIR

- A. If the Owner's Engineer determines the precast concrete beam(s) to be unacceptable during the inspection process, the precast concrete beam(s) will be repaired and/or replaced at no additional cost to the Owner.

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: Precast concrete supply and placement is the responsibility of the General Contractor.
- 4.2 MEASUREMENT: N/A
- 4.3 PAYMENT: Payment for the supply and placement of precast concrete slab beams will be made under the total lump sum contract price for this project, and will constitute full compensation for all material, labor, equipment, transportation and all other items and submittals necessary and incidental to the completion of the work in accordance with the requirements of the Contract Drawings.

END OF SECTION 03 41 16

SECTION 05 52 13

ALUMINUM RAILING

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. All materials, labor, and equipment necessary for the complete supply and installation of all prefabricated, site-assembled, aluminum railing and gates, 42 inches high, as depicted on the Contract Drawings, including:
 - 1. Posts
 - 2. Rails
 - 3. Picket Insert Panels
 - 4. Gates (with closure hardware)
 - 5. Base Plates (including fasteners/expansion bolts)

1.2 QUALITY ASSURANCE

- A. Perform all work in accordance with the requirements of the Aluminum Design Manual, Specifications and Guidelines for Aluminum Structures (The Aluminum Association, 2000), and this specification.
- B. Design and detail all railing to comply with applicable Federal, State and local code requirements. Specifically, all railing and base plate connections must be designed to resist a load of 50 pounds per linear foot applied in any direction at the top, or, a concentrated load of 200 pounds applied in any direction at any point along the top, and to transfer that load through the supports, to the structure, in accordance with IBC 1607.7.1 and 1607.7.1.1. Further, all railing components must be designed to conform to the requirements of IBC 1607.7.1.2.
- C. Employ only qualified, skilled, experienced fabricators and erectors for this work.

1.3 SUBMITTALS

- A. Drawings, including plan layouts, post spacing, accessories, and gate closure hardware, for review and approval by the Engineer.
- B. Certification for materials for all components.
- C. Design calculations substantiating compliance of railing and base plate (fastener) connection(s) with the specified code requirements. Calculations must be signed and sealed by a Professional Engineer, licensed in the State of New Jersey.

1.4 SCHEDULE OF REFERENCES

- A. Aluminum Design Manual, Specifications and Guidelines for Aluminum Structures – The Aluminum Association, 2000
- B. AWS A5.10 – Specification for Aluminum and Aluminum Alloy Welding Rods and Bare Electrodes – American Welding Society

PART 2 – PRODUCTS

2.1 RAILING MATERIALS

- A. Aluminum Alloy 6063-T6

2.2 FASTENERS

- A. Bolts for Base Plate Connections to Concrete: Hot-dipped galvanized steel expansion anchors, size and length as required to suit existing base materials and geometry, designed to provide the required anchor capacity to meet the specified design loading requirements. The approximate projection above the base concrete structure is 5 inches, which will include a brick border set in bedding.
- B. Bolts for Base Plate Connections to Timber Framing: Hot-dipped galvanized steel lag bolts, approximately 6 inches long to anchor the base plate through the timber plank surface and into the timber structure framing below. The size must be as required to suit existing base materials and geometry, designed to provide the required anchor capacity to meet the specified design loading requirements. The minimum threaded length is 4 inches.

2.2 ACCEPTABLE MANUFACTURERS

- A. Wagner: Series 950 (www.wagnercompanies.com).
- B. Hoover Fence: Colonial Twin Railing (www.hooverfence.com).
- C. Hollaender: Interna-Rail with picket panel insert (www.hollaender.com).

2.3 FINISH

- A. Black enamel, baked-on finish.

PART 3 – EXECUTION

3.1 LAYOUT

- A. Lay out the complete length of railing around the dock, locating posts and gates, for inspection by the Owner's Engineer, prior to the start of installation.
- B. Do not begin installation of railing and gates without prior written approval by the Owner accepting the materials and layout.

3.2 INSTALLATION

- A. Mark layout of post locations for review by the Engineer prior to installation.
- B. Ensure that all base plates bear properly on the finished dock surface, with full contact, prior to completion of installation procedures.

3.3 INSPECTION

- A. All construction is subject to the inspection by, and approval of the Owner's Engineer.
- B. Any and all damaged and/or unacceptable sections and/or elements of the aluminum railing must be repaired by the Contractor, at no additional cost to the Owner.

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: The General Contractor is responsible for all aspects of aluminum railing supply, fabrication and installation as required by this specification and as depicted and described on the Contract Drawings.
- 4.2 MEASUREMENT: N/A
- 4.3 PAYMENT: Total payment for aluminum railing will be made under the total lump sum contract price for this project. This total payment will constitute full compensation for all labor, materials, equipment, testing, and all other items necessary and incidental to the completion of the work, regardless of the actual cost to the Contractor.

END OF SECTION 05 52 13

SECTION 06 15 19

TIMBER DECK SYSTEM

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. All materials, labor, and equipment necessary for the complete supply and installation of all timber decking and associated accessories, as described in this Section and as depicted and described on the Contract Drawings, including:
 - 1. Timber Deck and Sleepers.
 - 2. Fasteners.

1.2 QUALITY ASSURANCE

- A. Provide material of the specified grade and strength, or better.
- B. Employ only qualified, skilled, installers for this work.

1.3 SUBMITTALS

- A. Samples of timber material representative of the quality to be supplied, for acceptance by the Owner.
- B. Certification for all materials and accessories confirming that they meet or exceed the specified requirements.

1.4 SCHEDULE OF REFERENCES

- A. Southern Forest Products Association
- B. American Wood Protection Association
- C. National Institute of Standards and Technology

PART 2 – PRODUCTS

2.1 TIMBER

- A. Treated Southern Yellow Pine
 - 1. Grade: No. 1 ($f_b = 1350$ psi, $E = 1,600,000$ psi)
 - 2. Copper Azole Treated: 0.23 pounds per cubic foot preservative retention (use category UC4B).

2.2 FASTENERS

- A. Fasteners for Sleepers to Concrete Slab Beams: Hot-dipped galvanized anchors as depicted and described on the Contract Drawings.
- B. Fasteners for Deck to Sleepers: Stainless Steel (Type 316) wood screws as depicted and described on the Contract Drawings.

PART 3 – EXECUTION

3.1 LAYOUT

- A. Lay out the sleepers and deck to provide a smooth transition to meet adjacent finished dock surfaces (brick border/concrete and remaining timber plank deck).
- B. Do not begin installation of sleepers and timber deck without prior written approval by the Owner accepting the materials and layout.

3.2 INSTALLATION

- A. Install sleepers and deck as depicted and described on the Contract Drawings.
- B. Provide shims for sleepers as required to construct a true finished deck surface, meeting adjacent finished surfaces with a smooth and consistent transition.

3.3 INSPECTION

- A. All construction is subject to the inspection by, and approval of the Owner's Engineer.
- B. Any and all damaged and/or unacceptable sections and/or elements of the timber deck must be repaired by the Contractor, at no additional cost to the Owner.

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: The General Contractor is responsible for all aspects of timber deck system supply and installation as required by this specification and as depicted and described on the Contract Drawings.
- 4.2 MEASUREMENT: N/A
- 4.3 PAYMENT: Total payment for timber deck system will be made under the total lump sum contract price for this project. This total payment will constitute full compensation for all labor, materials, equipment, testing, and all other items necessary and incidental to the completion of the work, regardless of the actual cost to the Contractor.

END OF SECTION 06 15 19

DIVISION 26 – ELECTRICAL

**SECTION 26 00 10
BASIC ELECTRICAL REQUIREMENTS**

PART ONE – GENERAL

1.1 RELATED DOCUMENTS

Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division One Specification Sections, apply to this Section.

1.2 SUMMARY

This Division includes providing the following work:

1. Provide for the removal of the existing site light fixtures and poles from the North Ferry Dock and furnish and install new site lighting fixtures and poles on the North Ferry Dock.
2. The installation shall include new lighting fixtures, poles, mounting of poles on existing foundations and supports, and new underground and surface conduit and wiring to the new poles and light fixtures as shown on the Drawings and herein specified.
3. Removal of all existing wiring, conduit and junction boxes made obsolete by the new work. Where existing conduits are to be reused, contractor shall remove existing wires and pull in new pull wire, and then install new wires in the existing conduits.
4. New electrical wiring distribution from a new underground junction box to all new lighting poles and fixtures including, wires, raceways, boxes and fittings required for new exterior lighting circuits.
5. Provide excavation, backfill and surface restoration for the new junction box and conduits.
6. Provide concrete work for the underground junction box.
7. Contractor shall remove electrical fixtures, poles, equipment and materials made obsolete by the work and dispose of offsite in an approved construction material recycling center.
8. Contractor shall connect to existing power supply conductors and ground wire in the new underground junction box and connect to existing underground conduit supplying power to the dock.

1.3 ELECTRICAL SECTIONS

Section 26 00 10	Basic Electrical Requirements
Section 26 05 19	Building Wire and Cables
Section 26 05 26	Grounding and Bonding
Section 26 05 29	Hangers and Supports
Section 26 05 33	Raceway and Boxes
Section 26 05 53	Electrical System Identification
Section 26 56 10	Exterior Site Lighting

1.4 EXAMINATION OF BUILDING SITE

- A. The Contractor shall visit the building site before submitting a proposal to fully acquaint themselves with all existing and limiting conditions.
- B. The Contractor shall assume full responsibility for the cost of additional work arising out of their failure to examine the building site.

1.5 DRAWINGS

DIVISION 26 – ELECTRICAL

- A. Drawings are diagrammatic and define the intent of the work. Locations of equipment, fixtures, devices, panelboards, ducts, pipes, diffusers, partitions, and openings are approximately correct but are subject to modifications caused by structural conditions and equipment furnished by other Contractors or by the Using Agency. Coordinate all work with other trades. Minor modifications of location required to effect such coordination will be made at no cost to the Using Agency. Determine roughing locations from approved shop drawings only.
- B. Electrical work is shown on the drawings.

1.6 DEFINITIONS

- A. "Wiring": Conduit, fittings, wire, junction and outlet boxes, switches, cutouts, and receptacles and items necessary or required in connection with or relating to such wiring.
- B. "NEC": National Electrical Code, NFPA No. 70, 2011 edition accepted by New Jersey Uniform Construction Code.
- C. "Provide" shall mean "furnish and install".

1.7 PERMITS, CODES AND FEES

- A. All shall be done in accordance with the NFPA 70, 2011 National Electrical Code and in compliance with additional Codes as listed in Division 01 of the Specification.
- B. Refer to Division 01 of these specifications for permits, codes, fees and inspection requirements.
- C. All electrical equipment furnished shall bear the Underwriters Laboratory label.
- D. Contractor shall submit copies of all test reports and inspections to the Architect and Using Agency for temporary rough-in and final electrical inspections.

1.8 SHOP DRAWINGS

- A. Shop drawings, catalog information, manufacturer's certification, etc., on materials or equipment, shall be submitted as directed in the number of copies required and as directed in the General Conditions and Division 01 of the Specifications.
- B. Approval will not release the Contractor from responsibility to provide all materials and labor necessary for the complete installation nor release the Contractor from responsibility for errors or omissions originating with them.
- C. Furnish shop drawings with full information as to dimensions, materials, finish, gauge, installation detail, etc. Catalog sheets will not be accepted as shop drawings unless the item is specified by catalog number. Incomplete submission, such as shop drawings without contract number and contract specification reference or without detailed operational description, will not be examined. No shop drawing will be accepted for approval unless it bears a signed note that it has been fully checked by the Contractor for suitability including coordination with other trades.
- D. Submit drawings of auxiliary steel used for hanging or supporting equipment, piping, conduit or ductwork. Indicate method of fastening to building structure, size of steel members and load to be supported by the member.

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- E. Submit shop drawings of the following material and equipment. In addition, submit any other materials or equipment requiring fitting or coordination with other trades as well as any operating equipment specified elsewhere.

ELECTRICAL:

Exterior Light Fixtures	Lighting Poles	Wire, cable and connectors
Conduit and fittings	Boxes and covers	Exterior Underground Junction Boxes

1.9 COORDINATION OF WORK

- A. The work shall be installed in cooperation with the Using Agency other Contractors installing inter-related work. Before installation, make proper provision to avoid interferences with other trades.
- B. Location of pipes, ducts, electrical raceways, switches, panels, equipment, fixtures, etc., shall be adjusted to accommodate the work for interferences anticipated and encountered. Determine the exact route and location of each pipe, duct and electrical raceway prior to fabrication.
 - 1. Right-of-Way: Lines which pitch shall have the right-of-way over those which do not pitch. For example, steam, condensate, and plumbing drains shall normally have right-of-way. Lines whose elevations cannot be changed shall have the right-of-way over lines whose elevations can be changed. Lines containing liquid or gas have right-of-way over electrical lines.
 - 2. Offsets, transitions and changes in direction in pipes, ducts and electrical raceways shall be made as required to maintain proper headroom and pitch of sloping lines whether or not indicated on the drawings. Furnish and install all offsets, pull boxes, etc., as required to effect these transitions and changes in direction.

1.10 AS-BUILT DRAWINGS

- A. Keep on the jobsite one set of drawings upon which any changes in the work which may arise due to field conditions or other causes shall be recorded. These drawings shall be kept in good condition and shall be turned over for approval and for the Using Agency's record upon completion of the work.
- B. If the above drawings are not in good condition, or approved, obtain and pay for an additional set of drawings and neatly transfer such changes.
- C. Contractor shall keep and submit "As-Built" Plans as directed in the General Conditions of the Specification and Division 01.

1.11 OPERATION AND MAINTENANCE MANUALS

Refer to Division 01 for operational and maintenance requirement.

1.12 WARRANTY

Refer to Division 01 for warranty requirements.

PART TWO - PRODUCTS

2.1 EQUIPMENT

DIVISION 26 – ELECTRICAL

- A. General: All equipment shall be the capacity and types specified and shown on the equipment schedules and shall be the listed manufacturer and model number or shall be an approved equal approved the Architect/Engineer.
- B. Single Source: For ease of maintenance and parts replacement, to maximum extent possible, use equipment of a single manufacturer's.
- C. Material: All material required for a complete and proper installation shall be as specified and as selected by the Architect.

PART THREE - EXECUTION

3.1 INSTALLATION

- A. Tagging of wires and cables, labeling and designation plates.
- B. Cutting and patching required for all work installed.
- C. Contractor shall provide core drilling of all masonry walls or concrete floors for conduits to be installed under this Division of work. Contractor shall coordinate with other Divisions of work to avoid conflicts with other Trades.
- D. Contractor shall provide excavation and fill and concrete work for all work provided such as conduits and underground junction box.
- E. Testing and final adjustment of all electrical work.

3.2 FINAL TESTS

- A. Before an application for final acceptance of the work will be considered, all tests deemed necessary to show proper execution of the work will be performed, witnessed, approved, and completed. Scheduling of all testing procedures shall be submitted for approval.
- B. Testing to show the proper functioning of all lighting fixtures and lamps, including those supplied by others, shall be included in the electrical work.
- C. Perform all tests and inspections of equipment, material and wiring to determine whether all provisions of these specifications and drawings have been fulfilled. Wiring shall be tested for proper connections, short circuit and grounds, using suitable testing instruments. All equipment shall be tested for proper performance.

3.3 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Refer to Division 01 and General Conditions for the Operational and Maintenance Manual requirements.
- B. Instructions: The Contractor shall instruct the Using Agency's representatives as to the operation of the system. The instructions shall include the operation of the new Dock Lighting System. This Contractor shall go over the entire work with the representatives showing them the locations of all control devices and poles, lighting fixtures, etc.; and instructing them how to operate all such equipment.

END OF SECTION

DIVISION 26 – ELECTRICAL

SECTION 26 05 19 BUILDING WIRE AND CABLE

PART ONE - GENERAL

1.1 SUMMARY

- A. This section includes the following:
 - 1. Building wire and cable.
 - 2. Underground feeder and branch circuit cable.
 - 3. Wiring connectors and connections.

1.2 RELATED SECTIONS

- A. Section 260533 - Conduit.
- B. Section 260534 - Boxes.
- C. Section 260553 - Electrical Identification.

1.3 REFERENCES

ANSI/NFPA 70 - National Electrical Code.

1.4 SUBMITTALS

- A. Submit under provisions of Division 01 and Section 260100.
- B. Product Data: Provide for each cable assembly type.
- C. Test Reports: Indicate procedures and values obtained.
- D. Design Data: Indicate voltage drop and ampacity calculations for aluminum conductors substituted for copper conductors.
- E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.

1.5 QUALIFICATIONS

Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years documented experience.

1.6 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.7 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Conductor sizes are based on copper.
- C. Wire and cable routing shown on Drawings is approximate unless dimensioned. Contractor shall route wire, cables and conduits to meet Project Conditions. Include wire and cable lengths within 10 feet of length shown.
- D. Where wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required.

1.8 COORDINATION

- A. Determine required separation between cable and other work.

DIVISION 26 – ELECTRICAL

- B. Determine cable routing to avoid interference with other work.

PART TWO - PRODUCTS

2.1 BUILDING WIRE AND CABLE

- A. Description: Single conductor insulated wire.
- B. Conductor: Copper
- C. Insulation Voltage Rating: 600 volts.
- D. Insulation: ANSI/NFPA 70, Type THHN/THWN

2.2 WIRING CONNECTORS

- A. Provide UL-listed factory-fabricated, thermoplastic polyester housing with steel insert zinc plated rated at 105 degrees C or 221 degrees F. Sized for the number of conductors, conductor sizes, ampacity ratings, materials, types and classes for applications and for services indicated. Use connectors with temperature ratings equal to or greater than those of the wires upon which used.
- B. Wire nuts shall be designed for underground and water-proofing of connections. Provide prefilled twist-on wire connectors prefilled with silicone-based sealant specifically designed for various wet location electrical applications.
- C. Wire connectors shall meet 'UL' Standards 486C, 486D for direct burial, 94V-2 Flame Rating; 'CSA' Standards C22.2 No. 188, C22.2 No. 198.2 for direct burial; and shall be 'Rosh' Compliant.

2.3 UNDERGROUND FEEDER AND BRANCH CIRCUIT CABLE, TYPE UF

Provide UL-listed Type UF CABLES with number and size of copper conductor and ground wires as shown on the drawings

PART THREE - EXECUTION

3.1 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that mechanical work likely to damage wire and cable has been completed.

3.2 PREPARATION

Completely and thoroughly swab raceway before installing wire.

3.3 WIRING METHODS

- A. For all locations: Use only building wire, Type THHN/THWN insulation, in raceway or armored cable.
- B. Use wiring methods indicated on Drawings.

3.4 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Use solid conductor for feeders and branch circuits 10 AWG and smaller.
- C. Use stranded conductors for control circuits.
- D. Use conductor not smaller than 12 AWG for power and lighting circuits.
- F. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.
- G. Pull all conductors into raceway at same time.
- H. Use suitable wire pulling lubricant for building wire 4 AWG and larger.
- I. Use water-proof wire nut connectors for all copper conductor splices and taps, 6 AWG and smaller.

DIVISION 26 – ELECTRICAL

- K. Contractor shall provide type UF Cables with 2-#12 conductor and 1 #12 Ground from light fixture in each pole and splice to branch circuit conductors at hand holes or Junction boxes for all light poles.

3.5 INTERFACE WITH OTHER PRODUCTS

- A. Identify wire and cable under provisions of Section 260553.
- B. Identify each conductor with its circuit number or other designation indicated on Drawings.

3.6 FIELD QUALITY CONTROL

- A. Perform field inspection and testing under provisions of Division 01.
- B. Inspect wire for physical damage and proper connection.
- C. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values.
- D. Verify continuity of each branch circuit conductor.
- E. Verify continuity of neutrals and ground.

END OF SECTION

DIVISION 26 - ELECTRICAL

SECTION 26 05 26 GROUNDING AND BONDING

PART ONE – GENERAL

1.1 RELATED DOCUMENTS

Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division One Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Equipment grounding conductors.
 - 2. Bonding.

1.3 REFERENCES

ANSI/NFPA 70 - National Electrical Code, 2011.

1.4 SUBMITTALS

Submit under provisions of Section 26 00 10 and Division 01.

1.5 PROJECT RECORD DOCUMENTS

Submit under provisions of Division 01.

1.6 QUALIFICATIONS

Manufacturer: Company specializing in manufacturing Products specified in this Section with minimum three years' documented experience.

1.7 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70-2008.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART TWO - PRODUCTS

2.1 WIRE

- A. Material: Insulated stranded copper.
- B. Equipment Grounding Conductor: Size to meet NFPA 70 requirements.

PART THREE - EXECUTION

3.1 EXAMINATION

DIVISION 26 - ELECTRICAL

Verify that mechanical work likely to damage wire and cable has been completed prior to installing wire.

3.2 INSTALLATION

- A. Install Products in accordance with manufacturer's instructions.
- B. Provide bonding to meet Regulatory Requirements.
- C. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.
- D. Ensure that pole mounting bolts are torqued tight per Manufacturer's specifications and to ensure electrical bond connection from pole to foundation bolts and steel structure.

3.3 FIELD QUALITY CONTROL

- A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.
- B. Use suitable test instrument to measure resistance to ground of system. Perform testing in accordance with test instrument manufacturer's recommendations.

END OF SECTION

DIVISION 26 - ELECTRICAL

SECTION 26 05 29 HANGERS AND SUPPORTS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division One Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Conduit and equipment supports.
 - 2. Anchors and fasteners.

1.3 REFERENCES

- A. NECA - National Electrical Contractors Association.
- B. ANSI/NFPA 70, 2011 - National Electrical Code.

1.4 SUBMITTALS

- A. Submit under provisions of Section 26 00 10 and Division 01.
- B. Product Data: Provide manufacturer's catalog data for fastening systems.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.

1.5 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70, 2011.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART 2 – PRODUCTS

2.1 PRODUCT REQUIREMENTS

- A. Materials and Finishes: Provide adequate corrosion resistance using all 316 Stainless Steel supports and anchors.
- B. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products.
- C. Anchors and Fasteners:
 - 1. Concrete Structural Elements: Use expansion anchors, powder actuated anchors and preset inserts.
 - 2. Steel Structural Elements: Use stainless steel beam clamps, steel ramset fasteners and welded fasteners.
 - 3. Concrete Surfaces: Use stainless steel self-drilling anchors and expansion anchors.
 - 4. Wood Elements: Use stainless steel wood screws.

2.2 POWDER ACTUATED ANCHORS

DIVISION 26 - ELECTRICAL

Manufacturer: Meeting NECA Standards, commercially produced.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".
- C. Do not fasten supports to pipes and conduit.
- D. Provide stainless steel conduit supports using single anchored c-clamps.
- E. Do not drill or cut structural members.
- F. Provide stainless steel anchor bolts into concrete using drilled lead anchors.
- G. Provide stainless steel screws where supports are anchored to wood material.
- H. Provide PVC conduit supports every 3 lineal feet of run, at all changes in direction, and near junction boxes.

END OF SECTION

DIVISION 26 - ELECTRICAL

SECTION 26 05 33 RACEWAYS AND BOXES

PART ONE – GENERAL

1.1 RELATED DOCUMENTS

Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division One Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Non-Metallic conduit.
 - 2. Fittings and conduit bodies.
 - 3. Pull and junction boxes.
 - 4. Exterior underground pull boxes.

1.3 RELATED SECTIONS

- A. Division 26 - Electrical

1.4 REFERENCES

- A. ANSI/NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
- B. ANSI/NFPA 70 - National Electrical Code 2011.
- C. ANSI/NEMA FB 1 - Fittings and Supports for Conduit and Cable Assemblies.
- D. ANSI/NEMA OS 1 - Sheet-steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
- E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- F. NECA "Standard of Installation."

1.5 DESIGN REQUIREMENTS

Conduit Size: Contractor shall provide conduits sized in accordance with ANSI/NFPA 70, 2011.

1.6 SUBMITTALS

- A. Submit under provisions of Division 01.
- B. Product Data: Provide for metallic conduit, flexible metal conduit, liquidtight flexible metal conduit, metallic tubing fittings and conduit bodies.

1.7 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 01.
- B. Accurately record actual routing of conduits larger than 2 inches.

1.8 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70, 2011.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.9 DELIVERY, STORAGE, AND HANDLING

DIVISION 26 - ELECTRICAL

- A. Deliver, store, protect, and handle Products to site under provisions of Division 1.
- B. Accept conduit on site. Inspect for damage.
- C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

1.10 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Verify routing and termination locations of conduit prior to rough-in.
- C. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system.
- D. Verify locations of outlets prior to rough-in.
- E. Electrical boxes are shown on Drawings in approximate locations unless dimensioned. Install at location required for box to serve intended purpose. Include installation within 10 feet.

PART TWO - PRODUCTS

2.1 CONDUIT REQUIREMENTS

- A. Minimum Size: 3/4 inch unless otherwise specified.
- B. Below Slab, through exterior building walls:
 - 1. Use rigid non-metallic schedule 40 PVC UL Listed conduit and fittings. .
 - 2. Minimum Size Conduits: 3/4"

2.2 RIGID NON-METALLIC CONDUIT (RNC)

- A. Rigid Non-Metallic Conduit (RNC): Polyvinyl Chloride UL Listed schedule 40 conduits and fittings.
- B. Provide approved RNC fittings and adaptors as required.
- C. RNC conduits below ground shall be schedule 40 PVC
- D. RNC shall be used for distribution to site lighting poles.
- E. Where used the contractor shall provide continuous ground wire for feeders and branch circuits and as required by code.
- F. Where used underground conduit shall extend up to outlet box or enclosure or pole.

2.3 PULL AND JUNCTION BOXES

- A. Molded Non-Metallic Junction Boxes: Boxes shall be UL Listed with NEMA Class 6 rating per Section 314.29 Exception on the NEC. Boxes shall be manufactured from PVC or PPO thermoplastic molding compound and feature foam in place gasketed lids. Sizes minimum 4" x 4" x 4" and larger to accommodate number of conductors and conduits into the box.
- B. Connection of conduits to box requires a hole drilled into box with a hole saw for conduit, insertion of male terminal adaptor, flat sealing washer, and PVC locking nut on inside of the box.
- C. Rigid Non-Metallic PVC Access Pull Elbows shall be used where conduit runs need additional pull box, use only where accessible.
- D. Rigid Non-Metallic Type X Conduit Bodies with gasketed top shall be used if required.

DIVISION 26 - ELECTRICAL

2.4 UNDERGROUND JUNCTION BOXES

- A. Provide polymer concrete boxes and covers where shown on the Drawings.
- B. Provide box extensions as required for bottom of box to be 6" (min) below deepest existing conduit.
- C. Provide with tool to remove cover.
- D. Boxes shall meet ASTM D-543 chemical resistance, D-2444 impact resistance, C1028 for coefficient of friction; Code of Federal Regulations CFR 1755.910 for fire resistance, and ANSI/SCTE-77 2002 Specification for Underground Enclosure Integrity.
- E. Boxes must be U.L. listed and have label on both box and cover.
- F. The box shall be buried in the ground with top flush with grade. Provide concrete composite junction boxes with integral covers suitable for ANSI/SCTE77 Tier 8 loading.
- G. Provide exterior junction boxes in sizes as shown on the Drawing. Boxes to have solid bottom. Provide mouse holes on two sides near bottom.
- H. Provide top with "ELECTRICAL" logo engraved in the top of Cover.

PART THREE - EXECUTION

3.1 INSTALLATION RACEWAYS

- A. Install conduit in accordance with NECA "Standard of Installation."
- B. Install nonmetallic conduit in accordance with manufacturer's instructions.
- C. Arrange supports to prevent misalignment during wiring installation.
- D. Support conduit using stainless steel c-clamps on flat surfaces every 3 feet and at all turns and junction boxes.
- E. Fasten conduit supports to building structure and surfaces provisions of Section 26 05 29.
- F. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
- G. Arrange conduit to present neat appearance.
- H. Route conduit parallel and perpendicular to walls.
- I. Route conduit on and under slab from point-to-point.
- J. Cut conduit square using saw or pipe cutter; de-burr cut ends.
- K. Bring conduit to shoulder of fittings; fasten securely.
- L. Use conduit hubs or sealing locknuts to fasten conduit together and to non-metallic junction boxes in wet locations.
- M. Install no more than equivalent of three 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams.
- N. Provide suitable pull string in each empty conduit except sleeves and nipples.
- O. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
- P. Ground and bond in accordance with NFPA 70-2011.
- Q. Identify conduit as specified herein.

3.2 INSTALLATION OF BOXES

- A. Install electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.
- B. Install electrical boxes to maintain headroom and to present neat mechanical appearance.
- C. Secure flush mounting boxes to exterior walls.
- D. Support boxes independently of conduit.
- E. Use non-metallic water-proof junction box in exterior locations exposed to the weather and wet locations.
- F. Provide excavation and backfill for all electrical work.

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- G. Install underground pull box tops at finished grade. Provide excavation and backfill and gravel under the exterior ground mounted junction boxes. Form and pour concrete around box and make level with final finale grade as shown on detail on drawing.

3.3 INTERFACE WITH OTHER PRODUCTS

- A. Identify wire and cable under provisions of Section 26 05 53.
- B. Identify each conductor with its circuit number or other designation indicated on Drawings.

3.4 FIELD QUALITY CONTROL

- A. Perform field inspection and testing under provisions of Division I.
- B. Inspect wires for physical damage and proper connection.
- C. Verify continuity of each branch circuit conductor.
- D. Verify continuity of neutrals and ground.

END OF SECTION

DIVISION 26 – ELECTRICAL

SECTION 26 05 53 ELECTRICAL IDENTIFICATION

PART ONE – GENERAL

1.1 RELATED DOCUMENTS

Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division One Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

- A. Wire and cable markers.
- B. Conduit markers.

1.3 REFERENCES

NFPA 70 - National Electrical Code, 2011.

1.4 SUBMITTALS

- A. Submit under provisions of Division 01.
- B. Product Data: Provide catalog data for nameplates, labels, and markers.

1.5 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70, 2011.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART TWO - PRODUCTS

2.1 WIRE MARKERS

- A. Manufacturers: Seton, Brady, Wire markers Plus, or approved equal.
- B. Description: Tape, split sleeve, or tubing type wire markers.
- C. Locations: Each conductor at panelboard gutters, pull boxes, outlet and junction boxes, and each load connection.
- D. Legend:
 - 1. Power and Lighting Circuits: Branch circuit or feeder number indicated on drawings.
 - 2. Label all existing and new exterior lighting circuits.

2.2 Underground conduit marker tape:

- A. Manufacturers: Seton, Brady, Wire markers Plus, or approved equal.
- B. Description: 3” wide yellow polyethylene tape printed with legend “Caution buried electric line below”.
- C. Locations: Each conduit or direct burial wire installed below grade outside.

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PART THREE - EXECUTION

3.1 PREPARATION

Degrease and clean surfaces to receive nameplates and labels.

3.2 APPLICATION

- A. Install wire label in all junction boxes within 3 inches of termination point.
- B. Install underground conduit marker tape above all runs of underground conduits, 12” below final grade.

END OF SECTION

DIVISION 26 – ELECTRICAL

SECTION 26 56 10 EXTERIOR LIGHTING

PART ONE – GENERAL

1.1 RELATED DOCUMENTS

Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. New lighting fixtures mounted on existing buildings.
 - 2. New Lighting fixtures installed on existing lighting poles.
 - 3. New campus lighting poles and light fixtures.
 - 4. The construction of concrete foundations for the above poles; assembly of the pole bases, poles, lighting fixtures and accessory items for each pole.
 - 5. Excavation, backfilling; installation of wiring and conduit, etc. in the lighting pole assemblies and wiring and conduits in the concrete base as shown on the Drawings; and all work necessitated thereby or incidental thereto as shown on the Drawings.
- B. All work performed under this section shall comply with the drawings and general provisions of the contract, including general and supplementary general conditions and Division 01 of specification sections.
- C. Provide new surface mounted junction boxes on all existing lighting poles for Fixtures “A” and “B” to replace damaged junction boxes on poles and/or to furnish and install larger boxes in event a new conduit is being installed in addition to the existing conduit to the pole. This new conduit shall be installed from the new box on the existing pole to a new lighting pole as shown on the Drawings.

1.3 RELATED SECTIONS

Division 26 - Electrical.

1.4 REFERENCES

- A. ANSI C82.1 - Ballasts for HID Lamps - Specifications.
- B. ANSI/NFPA 70 - National Electrical Code, 2011.
- C. NEMA WD 6 - Wiring Devices-Dimensional Requirements.

1.5 SUBMITTALS

- A. Submit under provisions of Division 01.
- B. Shop Drawings: Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
- C. Product Data: Provide dimensions, ratings, and performance data.
- D. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.
- E. Manufacturer's Instructions: Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.6 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 01.

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- B. Accurately record actual locations of each luminaire.

1.7 OPERATION AND MAINTENANCE DATA

- A. Submit under provisions of Division 01.
- B. Maintenance Data: Include replacement parts list.

1.8 QUALIFICATIONS

Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years documented experience.

1.9 REGULATORY REQUIREMENTS

- A. Conform to requirements of ANSI/NFPA 70, 2011.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART TWO - PRODUCTS

2.1 EXTERIOR LIGHT FIXTURES

- A. Furnish lighting fixtures as specified in schedule on Drawings.
- B. Install ballasts, lamps, and specified accessories at factory.
- C. Manufacturers:
 - 1. Lighting Fixtures, Arms, Poles and Bases: Basis of Design is U.S. Architectural Lighting Fixtures and Poles as specified herein.
 - 2. Acceptable Manufacturers: U.S. Architectural Lighting Co.; Lumec Candela Fixture; Phillips Lighting; or approved equal.
- D. Mounting: Pole mounted or metal wall surface or on concrete base as specified herein and shown on the drawings.
- E. Lamp: LED in wattage as specified.
- F. Accessories: Poles, bases, and mounting arms.

2.2 LIGHTING FIXTURE (STANDARD FIXTURE TO BE MOUNTED ON ALL POLE Types A and B)

- A. Lighting Fixtures: Provide U. S. Architectural Lighting Model OVI-APA-CSA-II-60LED-NW-350MA-MULTITAP-1-TEXTURED FINISH.
- B. Fixture shall have housing and decorative cage constructed of durable corrosion resistant cast aluminum construction, the assembly sealed with neoprene gasket.
- C. Reflector shall be heavy wall spun aluminum construction with bottom side finished with high gloss white enamel for maximum reflectivity.
- D. A one piece clear polycarbonate lens encases the clear prismatic glass refractor to provide Type II light distribution.
- E. Lamp: 60LED 350MA.
- F. Finish with textured polyester powder coat baked finish, color Black.

2.3 POLE "A" WITH ONE LIGHT FIXTURE

- A. Pole Fixture 'A': Provide a 14'-0" high 5" round aluminum Anchor Base pole. Pole provided with a hand hole at pole base and with mounting base and four (4) mounting bolts for mounting on concrete foundation with four (4) ¾" mounting lugs on an approximate 12" diameter bolt circle. Contractor to measure and verify bolt circle dimensions and have new

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pole provided with custom bottom mounting base flange that will fit over the existing mounting lugs, and bolt onto existing 3/4" threaded rods with new galvanized washers and Bolts. Pole, arm and fixture assembly rated for 100 MPH with 1.3 gust factor (V3s = 130 MPH). Pole to be U. S. Architectural Lighting Model RNTA 145-125.

- B. Provide one XPK-WM 1-3/8" diameter cast and extruded crook mounting bracket to mount one fixture to the side of the pole.
- C. Pole Base: Provide a Model No. 1900 decorative corrosion resistant durable cast aluminum base to cover the bottom base of the pole.
- D. Finish with textured polyester powder coat baked finish to match light fixture for all pole, arm and base.
- E. Contractor shall assemble and wire all components in field.
- F. Grounding: Provide a #8 copper grounding conductor from pole grounding lug to pole grounding lug along with power conductors back to electrical ground at panel.

2.4 POLE "B" WITH ONE LIGHT FIXTURE

- A. Pole: Provide 14'-0" high 4" Round Aluminum Anchor Base pole. Pole provided with a hand hole with open bottom. Pole, arm and fixture assembly rated for 100 MPH with 1.3 gust factor (V3s = 130 MPH). Pole to be U. S. Architectural Lighting Model RNTA 144-125.
- B. Provide one XPK-WM 1-3/8" diameter cast and extruded crook mounting bracket to mount one fixture to the side of the pole.
- C. Mount new pole on existing steel and mount pole to existing steel base using three existing pole clamps bolted to the steel Beam.
- D. Finish with textured polyester powder coat baked finish to match light fixture for all pole, arm and base.
- E. There is no base on the bottom of this pole, it sets on existing steel plate and will be wired through opening in plate to Junction box below. Provide Grommet in hole in existing steel mounting plate.
- F. Contractor shall assemble and wire all components in field.
- G. Grounding: Provide a #8 copper grounding conductor from pole grounding lug to pole grounding lug along with power conductors back to electrical ground at panel.

2.5 ISOLATION TAPE & NEOPRENE GASKET

- A. Provide 'Venture Clad' Type 1577CW-BN Black 8-mil thick self-stick insulated vapor barrier tape rated for use from -94 to +248 degrees F.
- B. Manufacturers: 'Venture Clad', 'Polyguard', '3M', or approved equals.
- C. Provide Neoprene Gasket wrapped the pole minimum of 1/2" thickness to provide protection between the aluminum pole and the steel I-beam and clamps that mount it to the I-beam. Wrap the neoprene with the tape specified to hold in in place and provide protection of the neoprene.

PART THREE - EXECUTION

3.1 EXAMINATION

- A. Examine existing condition for removing existing poles and installing new poles.
- B. Examine each luminaire to determine suitability for lamps specified.

3.2 INSTALLATION

- A. Install fixtures in accordance with manufacturer's instructions.
- B. Install and level all new poles and fixtures.
- C. Provide grounding of new poles.
- D. Connect luminaires to branch circuits as shown on the drawings.

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- E. Utilize waterproof connectors for all wiring connections.
- F. Bond products and metal accessories to branch circuit equipment grounding conductor.
- G. Contractor shall wire brush existing mounting base and c-clamps used to support the existing and new poles, and then paint them with two coats of black gloss paint designed to bond with the iron oxide and prevent future rusting of the surfaces.
- H. Install Black tape around pole 'B' where mounting clamps are used to mount the aluminum pole to the steel column so that the pole is protected and isolated from the steel column and clamps. Provide Neoprene Gasket wrapped the pole minimum of ½" thick to provide protection between the aluminum pole and the steel I-beam and clamps that mount it to the I-beam. Wrap the neoprene with the tape specified to hold in in place and provide protection of the neoprene.

3.3 FIELD QUALITY CONTROL

Operate each luminaire after installation and connection. Inspect for proper connection and operation.

3.4 ADJUSTING

- A. Adjust Work under provisions of Division 01.
- B. Aim and adjust luminaires as directed.
- C. Relamp fixtures that have failed lamps at Substantial Completion.

3.5 CLEANING

- A. Clean Work under provisions of Division 01
- B. Clean electrical parts to remove conductive and deleterious materials.
- C. Remove dirt and debris from enclosure.
- D. Clean photometric control surfaces as recommended by manufacturer.
- E. Clean finishes and touch up damage.

END OF SECTION

SECTION 31 23 16

EXCAVATION

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. All equipment, labor and materials required for the execution of all excavation, as depicted on the Contract Drawings, and in accordance with the requirements of this specification.
- B. Excavation includes, but is not limited to, all rock, boulders and structures encountered within the limits of work depicted and described on the Contract Drawings.
- C. Coordination of all excavation with the Owner and the Engineer.

1.2 RELATED SECTIONS

- A. Division 01, Section 01 57 13, Soil Erosion and Sediment Control
- B. Division 01, Section 01 57 19, Environmental Protection
- C. Division 02, Section 02 40 00, Demolition

1.3 QUALITY ASSURANCE

- A. Conform to all applicable requirements of Section 01 57 19, Environmental Protection, related to the protection of the natural environment, as well as all requirements related to historic preservation, during the excavation operations.
- B. Carefully examine the site and all available documentation to determine potential hazards to existing structures and natural features.
- C. Notify the Engineer at least 48-hours in advance of any excavation operations.
- D. Do not begin any excavation operations without the prior approval of the Engineer.

1.4 SUBMITTALS

- A. Proposed equipment and procedures for all aspects of the excavation.
- B. Provide a survey of all utilities in the area of proposed excavation, including, but not limited to, underground water, sewer, telecom/data lines, and electrical duct banks.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

3.1 PREPARATION

- A. Identify required lines, levels, and datum, as depicted on the Contract Drawings.
- B. Do not begin any excavation operations without prior investigation to determine the location of any and all underground utilities in the vicinity of the proposed earthwork. Repair any utilities damaged by construction, at no additional cost to the Owner.

C. Do not begin any excavation operations without the prior approval of the Engineer.

3.2 EXCAVATION

A. Excavate to the lines and grades, as depicted on the Contract Drawings.

B. Do not excavate in frozen material, unless approved by the Engineer.

C. EXCAVATION FOR STRUCTURES AND/OR TRENCHES: Complete excavation to the specified elevations and to sufficient length and width to include an allowance for forms, bracing and supports, as required.

D. Excavated material which might be suitable for re-use may be stockpiled, with the approval of the Engineer, subject to soil analysis, at the Contractor's expense, stipulating to its suitability. Suitable excavated material may be used to fill and regrade in areas designated by the Engineer.

E. All remaining excavated material shall be properly disposed of off-site.

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

4.1 RESPONSIBLE TRADE: The General Contractor is responsible for all aspects of excavation as required by this specification and as depicted and described on the Contract Drawings.

4.2 MEASUREMENT: N/A

4.3 PAYMENT: Total payment for excavation will be made under the total lump sum contract price for this project. This total payment will constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to the completion of the work, regardless of the actual cost to the Contractor.

END OF SECTION 31 23 16

SECTION 32 14 13

INTERLOCKING CONCRETE PAVERS

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Furnish all labor, materials and equipment necessary for the installation of the interlocking concrete paver system, complete, in accordance with the Contract Drawings and this specification.

1.2 RELATED SECTIONS

- A. Division 01, Section 01 57 13, Soil Erosion and Sediment Control
- B. Division 02, Section 02 40 00, Demolition

1.3 QUALITY ASSURANCE

- A. Provide qualified personnel, experienced in the installation of this type and extent of interlocking concrete paver system, and provide proper oversight and supervision to ensure that the work is performed in accordance with the Contract Drawings, the requirements of this specification, and to the satisfaction of the Owner.
- B. Schedule the installation of the interlocking concrete paver system such that the system and finished surface is not exposed to heavy construction equipment traffic required for other aspects of the project.
- C. Protect pavers and accessories from damage during delivery, unloading, storage and installation.
- D. Provide 5% additional material for use by the Owner for maintenance and possible future repairs.
- E. Install a mock-up section of pavers, approximately 8 feet by 8 feet in area to be inspected by, and meet with the acceptance of, the Owner. This mock-up section will serve as the basis for the Owner's evaluation and acceptance of the remainder of the installation.

1.4 SUBMITTALS

- A. Provide at least four (4) samples of each paver size and color.
- B. Manufacturer's certification that pavers, and all other products and materials listed in Part 2, meet the specified standards and requirements.
- C. Manufacturer's catalog data sheets, specifications and installation instructions.
- D. Provide a detailed plan for site preparation and sequence of installation for review and acceptance by the Owner.

1.5 SCHEDULE OF REFERENCES

- A. ASTM C 33, Standard Specification for Concrete Aggregates
- B. ASTM C 136, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
- C. ASTM C 140, Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
- D. ASTM C 144, Standard Specification for Aggregate of Masonry Mortar
- E. ASTM C 936, Standard Specification for Solid Concrete Interlocking Paver Units

- F. ASTM C 979, Standard Specification for Pigments for Integrally Colored Concrete
- G. ASTM D 698, Standard Test Method for laboratory Compaction Characteristics of Soil Using Standard Effort
- H. Interlocking Concrete Paver Institute.

PART 2 – PRODUCTS

2.1 INTERLOCKING CONCRETE PAVERS:

- A. Grinnell “Spartan Series,” three-piece Pattern III using Spartan I (5.5”x8.25”), Super Spartan (8.25”x11”), and Mega Spartan (11”x11”), as manufactured by Grinnell Concrete Pavingstones, 482 houses Corner Road, Sparta, NJ 07871, or a similar paver system as listed below. Color, or color mix, to be selected by the Owner.
- B. Capitol Hardscapes “Bedford” three-piece system, as manufactured by Capitol Pavers and Retaining Walls, Inc., South Amboy, NJ.
- C. Belgard “Mega-Lafitt” three-piece system, as manufactured by Belgard Hardscapes, Brick, NJ.

2.2 BEDDING SAND: Washed, clean, non-plastic, sand meeting the requirements of ASTM C 33 (with modifications noted below), free from deleterious or foreign matter.

<u>Sieve Size</u>	<u>Percent Passing</u>
3/8 in.	100
No. 4	95 to 100
No. 8	85 to 100
No. 16	50 to 85
No. 30	25 to 60
No. 50	10 to 30
No. 100	2 to 10
No. 200	0 to 1

2.3 JOINT SAND: Washed, clean, non-plastic, sand meeting the requirements of ASTM C 144 (with modifications noted below), free from deleterious or foreign matter.

<u>Sieve Size</u>	<u>Percent Passing (Natural Sand)</u>	<u>Percent Passing (Manufactured Sand)</u>
No. 4	100	100
No. 8	95 to 100	95 to 100
No. 16	70 to 100	70 to 100
No. 30	40 to 75	40 to 100
No. 50	10 to 35	20 to 40
No. 100	2 to 15	10 to 25
No. 200	0 to 1	0 to 10

- 2.4 FILTER FABRIC: Mirafi 160N non-woven geotextile filter fabric, as manufactured by TenCate Mirafi, Pendergrass, GA, 30567, or an equal manufactured by either Proprex Geotextile Systems or US Fabrics, Inc.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Do not begin the interlocking concrete paver system installation until general demolition and site preparation has been completed, in accordance with the Specifications, Drawings and requirements of this Section, including, but not limited to the following items.
1. Clear the entire walkway surface area of all remaining wood block pavers, sand and debris, to expose the areas of concrete and timber substructure noted on the Drawings.
 2. Proof-roll areas identified as light-weight concrete fill or other subgrade materials identified after the initial demolition and site clearing has been completed, and repair all areas identified as deficient as directed by the Owner's Engineer.
 3. Notify the Owner that the substructure surfaces have been cleared and are ready for inspection and evaluation to determine areas which might require localized repairs prior to the installation of the interlocking concrete paver system.
 4. Repair all areas identified as deficient, as directed by the Owner's Engineer.
 5. Complete all work on perimeter edges, including concrete, brick and timber edging, as well as trench frame re-setting.
 6. Prepare the substructure and subgrade for the installation of the interlocking concrete paver system.
- B. Coordinate the start of the installation with other elements of the work to ensure that the system and finished surface will not be subjected to heavy construction equipment traffic required for other aspects of the project.
- C. Do not use frozen materials and do not place pavers on frozen bedding.
- D. Employ all weather related measures for the protection and installation of the interlocking concrete paver system as required by the manufacturer and as directed by the Owner's Engineer.
- E. Do not use pavers that are cracked, chipped, discolored, or otherwise defective.

3.2 INSTALLATION

- A. The installation process is to follow the submitted and accepted installation plan.
- B. Install filter fabric on prepared substructure or subgrade, allowing for required laps and up-turned edges at interfaces with other structures and perimeter edges.
- C. Spread sand bedding layer and screed to achieve required thickness to allow for the installation of the pavers with a finished surface sloped to follow the original pattern depicted on the Contract Drawings, meeting perimeter structures, grates and frames. The finished paver elevation at inlet grates shall be 1/8-inch to 1/4-inch above the adjacent grate or frame.

- D. Set pavers according to the pattern depicted and described on the Contract Drawings, and as accepted in the mock-up section.
- E. Joints between pavers are to be between $\frac{1}{16}$ -inch and $\frac{3}{16}$ -inch, with not more than 5% of the joints exceeding $\frac{1}{4}$ -inch in width to achieve straight bond lines.
- F. Joint bond lines shall not deviate more than $\pm\frac{1}{2}$ -inch over 50 feet.
- G. Cut pavers along edges using a motor driven masonry saw, or a double blade paver splitter, in accordance with the accepted paver installation plan.
- H. Minimize the cutting of edge pavers by adjusting the bond pattern, in a manner acceptable to the Owner's Engineer.
- I. Use a low-amplitude plate compactor, capable of at least a minimum of 4,000 lbf at a frequency of 75 to 100 Hz, to vibrate the pavers into the sand. Any pavers cracked or chipped are to be removed and replaced with new units.
- J. Simultaneously spread, sweep and compact dry joint sand into the joints continuously, until full. This will require at least 4 to 6 passes with a plate compactor. Do not compact within 6 feet of unrestrained edges of paving units.
- K. All work within 6 feet of the laying face must be left fully compacted with sand-filled joints at the end of each day, or, compacted upon acceptance of the work. The laying face and/or any incomplete areas, shall be covered with plastic sheets overnight, if not closed with cut and compacted pavers, with joint sand, to prevent bedding sand from becoming saturated from rainfall.
- L. Excess sand is to be removed from the surface once the installation is completed, to the satisfaction of the Owner's Engineer.
- M. The finished surface shall be broom clean after removal of the excess sand.
- N. Protect the work from damage due to other construction activities, until final acceptance by the Owner.

3.3 INSPECTION

- A. The Owner's Engineer will inspect the installation as the work proceeds.
- B. The inspection by the Owner's Engineer does not mitigate the Contractor's responsibility to plan and perform the paver installation in a manner consistent with the accepted plan, the balance of the Contract Documents, and accepted practice, as recognized by the manufacturer and the Interlocking Concrete Paver Institute.
- C. The final surface shall not deviate more than $\pm\frac{3}{8}$ -inch under a 10-foot long straightedge.

3.4 REMOVAL, REPLACEMENT OR REPAIR

- A. Any, and all areas identified by the Owner's Engineer as damaged or otherwise defective must be removed and replaced. The Engineer will determine the required extent of removal, replacement or repair of defective areas, and will advise the Contractor in writing of these determinations.
- B. The Contractor must provide the Engineer with a plan of the proposed removal, replacement or repair, for review and approval, prior to undertaking the work.

PART 4 – RESPONSIBLE TRADE, MEASUREMENT AND PAYMENT

- 4.1 RESPONSIBLE TRADE: The Interlocking concrete paver system, complete, is the responsibility of the General Contractor.
- 4.2 MEASUREMENT: N/A
- 4.3 PAYMENT: Payment for the supply and installation of interlocking concrete pavers will be made under the total lump sum contract price for this project, and will constitute full compensation for all material, labor, equipment, transportation and all other items and submittals necessary and incidental to the completion of the work in accordance with the requirements of the Contract Drawings.

END OF SECTION 32 14 13

TECHNICAL DRAWINGS FOR THIS PROJECT ARE NOT REPRINTED HERE
DUE TO SIZE