

PROJECT MANUAL

MEMORIAL PARK BEACH ACCESS RECONSTRUCTION PINE KNOLL SHORES, NORTH CAROLINA

August 18, 2026

Prepared For:



**Town of Pine Knoll Shores
100 Municipal Circle
Pine Knoll Shores, NC 28512**

Prepared by:



**1004 Arendell Street
Morehead City, North Carolina 28557
(252) 622-4338
N. C. Certification No. C-1509**

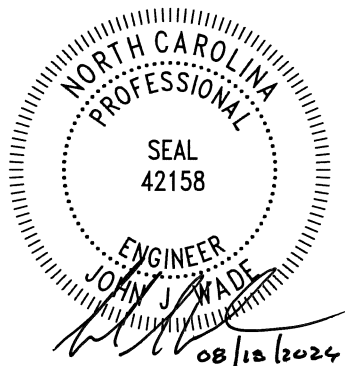
PROJECT MANUAL

MEMORIAL PARK BEACH ACCESS RECONSTRUCTION PINE KNOLL SHORES, NORTH CAROLINA

August 18, 2026

Prepared For:

TOWN OF PINE KNOLL SHORES
100 Municipal Circle
Pine Knoll Shores, NC 28512



Prepared by:

ARENDELL ENGINEERS
1004 Arendell Street
Morehead City, North Carolina 28557
Phone: (252) 622-4338
N.C. Certification No. C-1509

Engineer's Project No. 26181

PROJECT MANUAL**TABLE OF CONTENTS****PAGES THRU****ADMINISTRATION**

00020	Notice to Bidders	00020-2
00100	Instructions to Bidders	00100-8
00300	Bid Form	00300-5
00410	Bid Bond	00410-2
00500	Standard Form of Agreement Between Owner and Contractor	00500-8
00610	Performance Bond	00610-4
00620	Payment Bond	00620-3
00700	Standard General Conditions of the Construction Contract	00700-41
00800	Supplementary General Conditions	00800-10
	Work Change Directive	2
	Change Order Form	2
	Certification of Substantial Completion	2
	Application for Payment Form	3

TECHNICAL SPECIFICATIONS

01000	Table of Contents	01000-1
-------	-------------------------	---------

Division 1 – Administrative

01060	Regulatory Requirements	01060-2
01100	Summary of Work	01100-1
01300	Submittals	01300-1

Division 2 – Site Work

02200	Earthwork	02200-6
02300	Pile Driving	02300-2
02365	Timber Piles	02365-1
02576	Concrete Sidewalks	02576-5
02900	Seeding and Mulching	02900-5

Division 3 – Concrete

03300	Cast in Place Concrete	03300-8
-------	------------------------------	---------

Divisions 4 through 5 – not used**Division 6 – Wood, Plastics, and Composite Products**

06310	Timber Construction	06310-4
	Sure-Step Plus Series Decking Installation Guide	N/A
	ThruFlow Decking Installation Guide	N/A

Divisions 7 through 16 – not used

MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

NOTICE TO BIDDERS

PROJECT: **Memorial Park Beach Access Reconstruction
Pine Knoll Shores, North Carolina**

OWNER: **Town of Pine Knoll Shores**

ENGINEER: **Arendell Engineers, Morehead City, North Carolina**

DATE: August 18, 2026

Sealed proposals are invited and will be received by the Town of Pine Knoll Shores up to 2:00 PM local time on September 9, 2026, at the Town of Pine Knoll Shores Town Hall, 100 Municipal Circle, Pine Knoll Shores, NC 28512. Bids will be opened publicly in the presence of the OWNER and all interested parties.

BIDS ARE INVITED UPON: **Total work described is a Lump Sum Contract in the Contract Documents that include Drawings and Specifications prepared by Arendell Engineers and described in general as follows:**

- Demolition of approximately 237 linear feet of timber walkway, timber stairway, and supporting pilings.
- Construction of approximately 236 linear feet of 6 foot wide timber decking walkway with ADA compliant timber handrail on both sides of walkway. Pilings for walkway to be driven to minimum 5 foot depth.
- Replacement of approximately 25 square feet of 4" thick, 6 foot wide concrete sidewalk.
- Installation of approximately 20 linear feet of new timber stairway w/ handrailing and timber stair treads.

Performance and Payment Bonds will be required in the amount of 100 percent of the Contract Price. Bonds shall be in accordance with State of North Carolina Statutes.

From the date of this notice until the date of opening of the Bidding Documents, Contract Documents, including Plans and Specifications can be obtained from Arendell Engineers, 1004 Arendell Street, Morehead City, North Carolina, 28557 for PDF copies. Contact Graham Strother or John Wade at Arendell Engineers at (252) 622-4338 to obtain plans.

Bidding Documents may also be examined at OWNER's offices at:

- Town of Pine Knoll Shores, Town Hall, 100 Municipal Circle, Pine Knoll Shores, North Carolina.

With request for Bidding Documents please supply the following information: Company Name, Contact Person, Street Address, and Phone and Fax Numbers for Bidding office; North Carolina Contractor's license with limitation and classification.

Bid Security in the amount of five (5) percent of the Bid must accompany each Bid and shall be subject to the conditions provided in the Instructions to Bidders.

Bidders are encouraged to examine the project site prior to bidding. ENGINEER will transmit to Bidding Document holders of record such Addenda and explanations as ENGINEER considers necessary in response to written questions. Oral statements may not be relied upon and will not be binding or legally effective.

MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

A mandatory Pre-Bid Conference will be held at the Memorial Park Beach Access, 203 Salter Path Road, on August 26, 2026 at 2:00 PM local time. Representatives of OWNER and ENGINEER will transmit to Bidding Document holders of record such Addenda as ENGINEER considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective until provided in writing.

The Preliminary Project Schedule* is as follows:

August 18, 2026	Advertise for Bids
August 26, 2026	Pre-Bid Conference
September 9, 2026	Bid Opening
September 14, 2026	Arendell Engineers Issues Recommendation for Award
September 23, 2026	Town Council Awards Contract
September 28, 2026	Town issues Notice of Award, Contract Documents delivered to Contractor for Execution
September 30, 2026	Contractor returns executed Contract Documents with required documents
October 2, 2026	Town Executes Contract Documents
October 2, 2026	Town issues Notice to Proceed – Contract Time starts
October 5, 2026	Pre-Construction Conference
December 4, 2026	Substantial Completion
December 18, 2026	Final Completion/Payment

*The Preliminary Project Schedule may be modified by mutual agreement of the Owner and Contractor. Contract times as specified in the Agreement shall be modified in accordance with Article 12 of the General Conditions.

Payment will be made on the basis of ninety percent (90%) of monthly estimates and final payment made upon completion and acceptance of work.

The OWNER reserves the right to reject any or all proposals and to award contract to bidder they deem to be in the best interest of the OWNER.

Bids may be held by the OWNER for a period not to exceed forty-five (45) days from the date of the bid opening.

Signed:

Town of Pine Knoll Shores

Engineer: Arendell Engineers
 1004 Arendell Street
 Morehead City, NC 28557

INSTRUCTIONS TO BIDDERS

All bids shall be prepared and submitted in accordance with the following requirements. Failure to comply with any requirement shall cause the bid to be considered irregular and shall be grounds for rejection of the bid.

ARTICLE 1 - DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:

- A. Bidder – The individual or entity who submits a Bid directly to OWNER.
- B. Issuing Office – The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
- C. Successful Bidder – The lowest responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.
- D. Bidding Documents – Includes the Invitation to Bid, Instructions to Bidders, the Proposal Form, and the proposed Contract Documents including all Drawings and Addenda issued prior to receipt of Bids.
- E. Contract Documents – As defined by Article 1.01 of the Standard General Conditions.
- F. Agreement – as defined by EJCDC STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR ON THE BASIS OF A STIPULATED PRICE, pages 00500-1 through 00500-8, included in these Contract Documents.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents in the number and for the purchase sum stated in the Advertisement or Invitation to Bid may be obtained from the Issuing Office.

2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

3.01 To demonstrate qualifications to perform the Work, each BIDDER must be prepared to submit within forty-eight hours of ENGINEER's request written evidence, such as financial data, previous experience, present commitments and other such data as may be required. Each Bid must contain evidence of Bidder's qualifications to do business in the State of North Carolina or covenant to obtain such qualifications prior to award of the contract.

3.02 CONTRACTORS and SUBCONTRACTORS performing work or providing services under this contract shall comply with all current applicable standards of the North Carolina Department of Labor, Division of Occupational Safety and Health. BIDDER must be prepared to submit within forty-eight hours of ENGINEER's request, documentation related to the Bidders compliance with the all current standards

promulgated by the North Carolina Department of labor, Division of Occupational Safety and Health that are applicable the Work. At the request of the ENGINEER, Bidder shall submit the following:

- a. OSHA 200 Log results for past five years;
- b. OSHA Citations, if any, for past five years;
- c. Experience Modifications Factors (Worker's Compensation) for past three years;
- d. Written Safety Program including documentation of the following types of training:
 - Personal Protective Equipment
 - Subpart P, Excavations and Trenching (Competent Person Training)
- e. CONTRACTOR'S written drug use and alcohol misuse prevention program.

ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS AND SITE

4.01 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders, with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in paragraph 4.06 of the General Conditions.

4.02 Before submitting a Bid, each BIDDER will, at the Bidder's expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions, surface and subsurface, at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work and which the BIDDER deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

4.03 On request in advance, OWNER will provide each BIDDER access to the site to conduct such explorations and tests as each BIDDER deems necessary for submission of a Bid. BIDDER shall fill all holes, repair or replace broken or damaged pavements and utilities, clean up and restore the site to its former conditions upon completion of such explorations.

4.04 The lands upon which the Work is to be performed, rights-of-way and easement for access thereto and other lands designated for use by CONTRACTOR in performing the Work are to be provided by the OWNER. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by the OWNER at the Site. Easement for permanent structures or permanent changes in existing structures are to be obtained and paid for by OWNER unless otherwise provided in the Contract Documents.

4.05 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;
- B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;

- D. carefully study all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions;
- E. obtain and carefully study (or assume responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
- F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
- I. promptly give ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to Bidder; and
- J. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.06 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by ENGINEER are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 - PRE-BID CONFERENCE

5.01 A mandatory Pre-Bid Conference will be held on August 26, 2026 at the Memorial Park Beach Access, 203 Salter Path Road, Pine Knoll Shores, North Carolina at 2:00 local time. Representatives of OWNER and ENGINEER will be present to discuss the Project. Bidders that do not attend the Pre-Bid meeting will not be eligible to Bid on the project. ENGINEER will transmit to Bidding Document holders of record such Addenda as ENGINEER consider necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective until provided in writing.

ARTICLE 6 - INTERPRETATIONS AND ADDENDA

6.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to ENGINEER in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than five days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect. Engineer will respond to questions in the form of addenda up to seventy-two (72) hours before bid opening. After that, no questions will be received or answered.

6.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

ARTICLE 7 - BID SECURITY

7.01 A Bid must be accompanied by Bid security made payable to OWNER in an amount of five percent (5%) of Bidder's *Total Base Bid Lump Sum Price* and in the form of a bank check or a Bid Bond (on the form attached) issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions.

7.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 17 calendar days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of 7 days after the Effective Date of the Agreement or 45 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.

7.03 Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 8 - CONTRACT TIMES

8.01 The number of days within which, or the dates by which, the Work is to be (a) Substantially Completed and (b) also completed and ready for final payment are set forth in the Agreement.

ARTICLE 9 - LIQUIDATED DAMAGES

9.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

ARTICLE 10 - SUBSTITUTE AND OR-EQUAL ITEMS

10.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or or-equal items. Whenever it is specified or described in the Bidding Documents that a substitute or-equal item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement. The

procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in the Article 6.7 of the General Conditions.

ARTICLE 11 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

11.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to OWNER in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to OWNER a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by OWNER. If OWNER or ENGINEER, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, OWNER may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, in which case apparent Successful Bidder shall submit an acceptable substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and OWNER may consider such price adjustment in evaluating Bids and making the contract award.

11.02 If apparent Successful Bidder declines to make any such substitution, OWNER may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which OWNER or ENGINEER makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in paragraph 6.06 of the General Conditions.

11.03 CONTRACTOR shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom CONTRACTOR has reasonable objection.

11.04 CONTRACTOR shall not change the list of suppliers and subcontractors without the approval of the OWNER and ENGINEER.

ARTICLE 12 – PREPARATION OF THE BID

12.01 All blanks on the Bid Form must be completed in ink or typewritten. A Bid submitted shall include the Base Bid Lump Sum Price and any Unit Prices as required on the form.

12.02 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

12.03 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.

12.04 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.

12.05 A Bid by an individual shall show the Bidder's name and official address.

MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

- 12.06 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The official address of the joint venture must be shown below the signature.
- 12.07 All names shall be typed or printed in ink below the signatures.
- 12.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid form.
- 12.09 The address and telephone number for communications regarding the Bid shall be shown.
- 12.10 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number for the state of the Project, if any, shall also be shown on the Bid form.
- 12.11 The bid shall not contain any unauthorized additions, deletions, or conditional bids.
- 12.12 The bidder shall not add any provision reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
- 12.13 The proposal with the Bid Form still attached shall be placed in a sealed envelope and shall have been delivered to and received by the Town of Pine Knoll Shores, Attn: Town Manager, 100 Municipal Circle, Pine Knoll Shores, NC 28512, BY 2:00 on September 9, 2026.
- 12.14 The sealed bid must display the following statement on the front of the sealed envelope:
**"QUOTATION FOR TOWN OF PINE KNOLL SHORES – MEMORIAL PARK BEACH
ACCESS RECONSTRUCTION, PINE KNOLL SHORES, CARTERET COUNTY TO BE
OPENED AT 2:00 ON SEPTEMBER 9, 2026."**

If delivered by mail, the sealed envelope shall be placed in another sealed envelope and the outer envelope shall be addressed as follows:

**TOWN OF PINE KNOLL SHORES
Attn: TOWN MANAGER
100 MUNICIPAL CIRCLE
PINE KNOLL SHORES, NC 28512**

- 12.15 Bid shall include executed DEBARMENT CERTIFICATION.

ARTICLE 13 - BASIS OF BID; EVALUATION OF BIDS

- 13.01 Bids shall be based on the quantities as determined by the Contractor. Contractors shall base their quantities off the design as shown on the Construction drawings.
- 13.02 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in paragraph 11.02 of the General Conditions.
- 13.03 Bidders shall provide bids for Alternate Bid items on the Bid Form. The OWNER reserves the right to accept or reject any or all Alternate Bids items.

ARTICLE 14 - SUBMITTAL OF BID

14.01 Each prospective Bidder is furnished one copy of the Bidding Documents. A copy of the Bid Form is to be completed and submitted with the following:

14.02 Required Bid security in the form of a Bid Bond [on the form attached] or a Bank Check in the amount equal to 5 percent of the Bid Amount.

14.03 A Bid Bond for a corporation shall be executed on the Bid Bond for a CORPORATION.

14.04 Bid Bond for a partnership shall be executed on the Bid Bond for a PARTNERSHIP.

14.05 A Bid Bond for a limited liability company shall be executed on the Bid Bond for a LIMITED LIABILITY COMPANY.

14.06 A Bid by a Joint Venture shall be executed on the Execution of Bid form for a JOINT VENTURE.

14.07

A Bid Bond for an individual doing business under a firm name shall be executed on the Bid Form for an INDIVIDUAL DOING BUSINESS UNDER A FIRM NAME.

14.08

A Bid Bond for an individual doing business under his own name shall be executed on the Bid Bond for an INDIVIDUAL DOING BUSINESS UNDER HIS OWN NAME.

ARTICLE 15- MODIFICATION AND WITHDRAWAL OF BID

15.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

15.02 If within 72 hours after Bids are opened any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is Bid a second time, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 16 - OPENING OF BIDS

16.01 Bids will be opened at the time and place indicated in the advertisement or invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the Base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 17- BIDS TO REMAIN SUBJECT TO ACCEPTANCE

17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 18- AWARD OF CONTRACT

18.01 OWNER reserves the right to reject any or all Bids, including without limitation, nonconforming, non-responsive, unbalanced, or conditional Bids. OWNER further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsive. OWNER may also reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project

to make an award to that Bidder. OWNER also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.

18.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Other than this exception, reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

18.03 In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, proposed schedule, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

18.04 In evaluating Bidders, OWNER will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

18.05 OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

18.06 If the Contract is to be awarded, OWNER will award the Contract to the Bidder whose Bid is in the best interests of the Project.

ARTICLE 19 - CONTRACT SECURITY AND INSURANCE

19.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth OWNER's requirements as to Performance and Payment Bonds and insurance. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by such Bonds.

ARTICLE 20 – SIGNING OF AGREEMENT

20.01 When OWNER gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 working days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER. Within 5 working days thereafter, OWNER shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

END OF SECTION

BID FORM

REVISED

PROJECT IDENTIFICATION:

Town of Pine Knoll Shores
Pine Knoll Shores Boardwalk Replacement
Pine Knoll Shores, North Carolina

THIS BID IS SUBMITTED TO:

Town of Pine Knoll Shores
Missy Shine, Assistant Town Manager
100 Municipal Circle
Pine Knoll Shores, NC 28512

1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

2.01 Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 45 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER.

3.01 In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

- A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged.

Addendum No. _____

Addendum Date _____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Condition, if any, which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.
- E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies and data

concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

4.01 Collusion and Debarment:

Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

Bidder either represents the following or attaches to his Bid the details of any violations of the following debarments or suspensions. Bidder and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;
2. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state, or local) with commission of any of the offenses enumerated in paragraph (4.01.B.2) of this certification; and,

MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

4. Have not within a 3-year period preceding this application/proposal had one or more public transactions (federal, state, or local) terminated for cause or default.

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

GENERAL CONSTRUCTION CONTRACT WORK

BIDDER will complete the GENERAL CONSTRUCTION CONTRACT WORK in accordance with the Contract Documents for the following prices:

BASE BID:

Item 1: Demolition of Existing Boardwalk & Stairs: Sta. 0+00 to 2+37:

Lump Sum Price _____ \$ _____
(use words) (figures)

Item 2: Construct New Walkway & Stairs: Sta. 0+00 to 2+36:

Lump Sum Price _____ \$ _____
(use words) (figures)

Item 3: Remove and Replace Existing Concrete Sidewalk:

Lump Sum Price _____ \$ _____
(use words) (figures)

BASE BID Lump Sum Total (Items 1, 2, & 3):

Lump Sum Price _____ \$ _____
(use words) (figures)

BID ALTERNATE #1: Sure-Step Composite Decking in lieu of Timber Decking:

Lump Sum Price _____ \$ _____
(use words) (figures)

BID ALTERNATE #2: Sure-Step Composite Stair Treads in lieu of Timber:

Lump Sum Price _____ \$ _____
(use words) (figures)

APPARENT LOW BIDDER: Bids will be received for the project as described in the Contract Documents. The low bid will be based solely on the BASE BID LUMP SUM TOTAL.

6.01 Bidder agrees that the Base Bid Work reach Substantial Completion on or before December 4, 2026. Date of Final Completion is December 18, 2026.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Agreement.

MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

Substantial Completion: December 4, 2026

Final Inspection: December 18, 2026

7.01 The following documents are attached to and made a condition of this Bid:

- A. Required Bid security in the form of _____,
- B. List of Suppliers and Subcontractors.

8.01 The terms used in this Bid with initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

SUBMITTED on _____, 20_____.

State Contractor License No. _____.

MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

If Bidder is:

An Individual

Name (typed or printed): _____
By: _____ (SEAL)

(Individual's signature)
Doing business as: _____
Business address: _____
Phone No.: _____ Fax No.: _____

A Partnership

Partnership Name: _____ (SEAL)
By: _____

(Signature of general partner -- attach evidence of authority to sign)
Name (typed or printed): _____
Business address: _____
Phone No.: _____ Fax No.: _____

A Corporation

Corporation Name: _____ (SEAL)
State of Incorporation: _____
Type (General Business, Professional, Service, Limited Liability): _____
By: _____

(Signature -- attach evidence of authority to sign)
Name (typed or printed): _____
Title: _____ (CORPORATE SEAL)
Attest _____

(Signature of Corporate Secretary)
Business address: _____
Phone No.: _____ Fax No.: _____
Date of Qualification to do business is _____.

A Joint Venture

Joint Venturer Name: _____ (SEAL)
By: _____

(Signature of joint venture partner -- attach evidence of authority to sign)
Name (typed or printed): _____
Title: _____
Business address: _____
Phone No.: _____ Fax No.: _____
Joint Venturer Name: _____ (SEAL)
By: _____

(Signature -- attach evidence of authority to sign)
Name (typed or printed): _____
Title: _____
Business address: _____
Phone No.: _____ Fax No.: _____

Phone and Fax Number, and Address for receipt of official communications:

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

BID BOND

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

BID

BID DUE DATE: _____

PROJECT (Brief Description Including Location):

BOND

BOND NUMBER: _____

DATE (Not later than Bid due date): _____

PENAL SUM: _____ (Words) _____ (Figures)

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

_____ (Seal)

Bidder's Name and Corporate Seal

By: _____

Signature and Title

Attest: _____

Signature and Title

SURETY

_____ (Seal)

Surety's Name and Corporate Seal

By: _____

 Signature and Title
(Attach Power of Attorney)

Attest: _____

Signature and Title

Note: (1) Above addresses are to be used for giving required notice.
 (2) Any singular reference to Bidder, Surety, OWNER or other party shall be considered plural where applicable.

PENAL SUM FORM

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to OWNER upon default of Bidder the penal sum set forth on the face of this Bond.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1. OWNER accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by OWNER, or
 - 3.3. OWNER fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from OWNER, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of and any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by OWNER and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power or Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer or proposal as applicable.

**EJCDC
STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
ON THE BASIS OF A STIPULATED PRICE**

THIS AGREEMENT is by and between The Town of Pine Knoll Shores a North Carolina Municipality (hereinafter called OWNER) and _____, hereinafter called (CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 - WORK

1.01 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The work is to be completed in the times specified.

ARTICLE 2 - THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Work is generally described as follows:

- Demolition of approximately 237 linear feet of timber walkway, timber stairway, and supporting pilings.
- Construction of approximately 236 linear feet of 6 foot wide timber decking walkway with ADA compliant timber handrail on both sides of walkway. Pilings for walkway to be driven to minimum 5 foot depth.
- Replacement of approximately 25 square feet of 4" thick, 6 foot wide concrete sidewalk.
- Installation of approximately 20 linear feet of new timber stairway w/ handrailing and timber stair treads.

ARTICLE 3 - ENGINEER

3.01 The Project has been designed by

Arendell Engineers
1004 Arendell Street
Morehead City, NC 28557

Who is hereinafter called ENGINEER and who is to act as OWNER's representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the General Conditions in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 *Time of the Essence*

- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Dates for Substantial Completion and Final Payment*

- A. All construction shall be substantially completed on or before December 4, 2026 and completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions on or before December 18, 2026.

4.03 *Liquidated Damages*

- A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER two hundred fifty dollars (\$250.00) for each day that expires after the time specified in paragraph 4.02 for substantial completion and readiness for final payment.

ARTICLE 5 - CONTRACT PRICE

5.01 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to paragraphs 5.01.A, 5.01.B, and 5.01.C below:

A.

BASE BID:

Item 1: Demolition of Existing Boardwalk & Stairs: Sta. 0+00 to 2+37:

Lump Sum Price _____ \$ _____
(use words) (figures)

Item 2: Construct New Walkway & Stairs: Sta. 0+00 to 2+36:

Lump Sum Price _____ \$ _____
(use words) (figures)

Item 3: Remove and Replace Existing Concrete Sidewalk:

Lump Sum Price _____ \$ _____
(use words) (figures)

BASE BID Lump Sum Total (Items 1, 2, & 3):

Lump Sum Price _____ \$ _____
(use words) (figures)

BID ALTERNATE #1: Sure-Step Composite Decking in lieu of Timber Decking:

Lump Sum Price _____ \$ _____
(use words) (figures)

BID ALTERNATE #2: Sure-Step Composite Stair Treads in lieu of Timber:

Lump Sum Price _____ \$ _____
(use words) (figures)

All cash allowances are included in the above price and have been computed in accordance with paragraph 11.02 of the General Conditions.

- B. This is a lump-sum contract.
- C. For all Work, at the prices stated in CONTRACTOR'S Bid, attached hereto as an exhibit.

ARTICLE 6 - PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

- A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

6.02 Progress Payments:

- A. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but in each case, less the aggregate of payments previously made and less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions:

For total work:

90% of Work completed (with balance being retainage).

1. 90 % of cost of materials not incorporated in the Work (with balance being retainage).

2. Upon Substantial Completion, OWNER shall pay an amount sufficient to increase total payments to CONTRACTOR to 95% of the Work completed, less such amounts as ENGINEER shall determine in accordance with paragraph 14.02.B.5 of the General Conditions, and less 100% of ENGINEER'S estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the Certificate of Final Completion.

6.03 Final Payment

- A. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.07.

ARTICLE 7 - INTEREST

7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of 8% per annum.

ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. CONTRACTOR has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.
- E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto.
- F. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.
- J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 - CONTRACT DOCUMENTS

9.01 Contents

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to 8, inclusive);
2. Performance Bond (pages 1 to 3, inclusive);
3. Payment Bond (pages 1 to 2, inclusive);
4. Other Bonds (pages _____ to _____, inclusive);
5. General Conditions (pages 1 to 41, inclusive);
6. Supplementary Conditions (pages 1 to 8, inclusive);
7. Technical Specifications as listed in the table of contents of the Project Manual;
8. Drawings consisting of a cover sheet and sheets numbered C1 through C6 inclusive, dated August 7, 2026 with each sheet bearing the following general title: Memorial Park Beach Access Reconstruction.
9. Addenda number (numbers to , inclusive);
10. Exhibits to this Agreement (enumerated as follows):
 - a. a. Notice to Proceed (pages _____ to _____, inclusive);
 - b. CONTRACTORS's Bid & Bid Bond (pages, inclusive);
 - c. Notice of Award (pages inclusive);
 - d. Certificates of Insurance.
 - e. Schedule of Values
11. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Written Amendments;
 - b. Work Change Directives;
 - c. Change Order(s).

B. The documents listed in paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.05 of the General Conditions.

ARTICLE 10 - MISCELLANEOUS

10.01 *Terms*

A. Terms used in this Agreement will have the meanings indicated in the General Conditions.

10.02 *Assignment of Contract*

A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

A. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in triplicate. One counterpart each has been delivered to OWNER, CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed, initialed or identified by the OWNER and CONTRACTOR or identified by ENGINEER on their behalf.

This Agreement will be effective on _____, which is the Effective Date of the Agreement).

OWNER:

CONTRACTOR:

Town of Pine Knoll Shores

By: _____

By: _____

Name: Ryan Thompson

Name: _____

Title: Town Planner

Title: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest: _____

Attest: _____

Title: _____

Address for giving notices:

Address for giving notices:

100 Municipal Circle

Pine Knoll Shores, NC 28512

(If OWNER is a corporation, attach evidence of authority to sign. If OWNER is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of OWNER CONTRACTOR Agreement.)

License No. _____
(Where Applicable)

(If CONTRACTOR is a corporation or a partnership, attach evidence of authority to sign.)

MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

Designated Representative:

Name Ryan Thompson

Title: Town Planner

Address: 100 Municipal Circle

Pine Knoll Shores, NC

Phone: (252) 247-3344

Facsimile: _____

Email: planner@townofpks.com

Designated Representative:

Name: _____

Title: _____

Address: _____

Phone: _____

Facsimile: _____

Email: _____

PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):
Principal Place

SURETY (Name and Address of Business):

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Company: (Corp. Seal)
Seal)

Company: (Corp.

Signature: _____
Name and Title:

Signature: _____
Name and Title:
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

SURETY

Company: (Corp. Seal)
Seal)

Company: (Corp.

Signature: _____
Name and Title:

Signature: _____
Name and Title:

EJCDC No. 1910-28-A (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Contract, which is incorporated herein by reference.
2. If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.
3. If there is no OWNER Default, the Surety's obligation under this Bond shall arise after:
 - 3.1. The OWNER has notified the CONTRACTOR and the Surety at the addresses described in paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the OWNER's right, if any, subsequently to declare a CONTRACTOR Default; and
 - 3.2. The OWNER has declared a CONTRACTOR Default and formally terminated the CONTRACTOR's right to complete the Contract. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and the Surety have received notice as provided in paragraph 3.1; and
 - 3.3. The OWNER has agreed to pay the Balance of the Contract Price to:
 - 3.3.1. The Surety in accordance with the terms of the Contract;
 - 3.3.2. Another contractor selected pursuant to paragraph 4.3 to perform the Contract.
4. When the OWNER has satisfied the conditions of paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 4.1. Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or
 - 4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
 - 4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the OWNER resulting from the CONTRACTOR Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances;

4.4.1 After investigation, determine the amount for which it may be liable to the OWNER and, as soon as practicable after the amount is determined, tender payment therefor to the OWNER; or

4.4.2 Deny liability in whole or in part and notify the OWNER citing reasons therefor.

5. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the OWNER shall be entitled to enforce any remedy available to the OWNER.

6. After the OWNER has terminated the CONTRACTOR's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Contract, and the responsibilities of the OWNER to the Surety shall not be greater than those of the OWNER under the Contract. To a limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:

6.1. The responsibilities of the CONTRACTOR for correction of defective Work and completion of the Contract;

6.2. Additional legal, design professional and delay costs resulting from the CONTRACTOR's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the CONTRACTOR.

7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after CONTRACTOR Default or within two years after the CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal

requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1 Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR under the Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other Claims for damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.

12.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

12.3. CONTRACTOR Default: Failure of the CONTRACTOR, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY--Name, Address and Telephone)
AGENT or BROKER: OWNER'S REPRESENTATIVE (Engineer or other party):

Payment Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):
Principal Place of Business):

SURETY (Name and Address of

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Description (Name and Location):

BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Company:
(Corp. Seal)

(Corp. Seal)

Company:

Signature: _____

Signature: _____

Name and Title:

Name and Title:

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

SURETY

Company:
(Corp. Seal)

(Corp. Seal)

Company:

Signature: _____

Name and Title:

Signature: _____

Name and Title:

EJCDC No. 1910-28-B (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General

Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER to pay for labor, materials and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:
 - 2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and
 - 2.2. Defends, indemnifies and holds harmless the OWNER from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the addresses described in paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default.
3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.
4. The Surety shall have no obligation to Claimants under this Bond until:
 - 4.1. Claimants who are employed by or have a direct contract with the CONTRACTOR have given notice to the Surety (at the addresses described in paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
- 4.2. Claimants who do not have a direct contract with the CONTRACTOR:
 1. Have furnished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and
 2. Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the above notice any communication from the CONTRACTOR by which the CONTRACTOR had indicated the claim will be paid directly or indirectly; and
 3. Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.
5. If a notice required by paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.
6. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:
 - 6.1. Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

- 6.2. Pay or arrange for payment of any undisputed amounts.
7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
8. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the CONTRACTOR furnishing and the OWNER accepting this Bond, they agree that all funds earned by the CONTRACTOR in the performance of the Contract are dedicated to satisfy obligations of the CONTRACTOR and the Surety under this Bond, subject to the OWNER's priority to use the funds for the completion of the Work.
9. The Surety shall not be liable to the OWNER, Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
10. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.
11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory Bond and not as a common law bond.
14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.
15. DEFINITIONS

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



AMERICAN CONSULTING
ENGINEERS COUNCIL

ASCE American Society
of Civil Engineers

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN CONSULTING ENGINEERS COUNCIL

AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by

The Associated General



Contractors of America

Construction Specifications Institute



These General Conditions have been prepared for use with the Owner–Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2) (1996 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC User’s Guide (No. 1910-50). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. 1910-17) (1996 Edition).

EJCDC No. 1910-8 (1996 Edition)

Copyright ©1996

National Society of Professional Engineers
1420 King Street, Alexandria, VA 22314

American Consulting Engineers Council
1015 15th Street N.W., Washington, DC 20005

American Society of Civil Engineers
345 East 47th Street, New York, NY 10017

TABLE OF CONTENTS

Page

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY	6
1.01 <i>Defined Terms</i>	6
1.02 <i>Terminology</i>	8
ARTICLE 2 – PRELIMINARY MATTERS	9
2.01 <i>Delivery of Bonds</i>	9
2.02 <i>Copies of Documents</i>	9
2.03 <i>Commencement of Contract Times; Notice to Proceed</i>	9
2.04 <i>Starting the Work</i>	9
2.05 <i>Before Starting Construction</i>	9
2.06 <i>Preconstruction Conference</i>	10
2.07 <i>Initial Acceptance of Schedules</i>	10
ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE	10
3.01 <i>Intent</i>	10
3.02 <i>Reference Standards</i>	10
3.03 <i>Reporting and Resolving Discrepancies</i>	11
3.04 <i>Amending and Supplementing Contract Documents</i>	11
3.05 <i>Reuse of Documents</i>	11
ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS	11
4.01 <i>Availability of Lands</i>	11
4.02 <i>Subsurface and Physical Conditions</i>	12
4.03 <i>Differing Subsurface or Physical Conditions</i>	12
4.04 <i>Underground Facilities</i>	13
4.05 <i>Reference Points</i>	13
4.06 <i>Hazardous Environmental Condition at Site</i>	14
ARTICLE 5 – BONDS AND INSURANCE	15
5.01 <i>Performance, Payment, and Other Bonds</i>	15
5.02 <i>Licensed Sureties and Insurers</i>	15
5.03 <i>Certificates of Insurance</i>	15
5.04 <i>CONTRACTOR’s Liability Insurance</i>	15
5.05 <i>OWNER’s Liability Insurance</i>	16
5.06 <i>Property Insurance</i>	16
5.07 <i>Waiver of Rights</i>	17
5.08 <i>Receipt and Application of Insurance Proceeds</i>	18
5.09 <i>Acceptance of Bonds and Insurance; Option to Replace</i>	18
5.10 <i>Partial Utilization, Acknowledgment of Property Insurer</i>	18
ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES	18
6.01 <i>Supervision and Superintendence</i>	18
6.02 <i>Labor; Working Hours</i>	18
6.03 <i>Services, Materials, and Equipment</i>	19
6.04 <i>Progress Schedule</i>	19
6.05 <i>Substitutes and “Or-Equals”</i>	19
6.06 <i>Concerning Subcontractors, Suppliers, and Others</i>	20
6.07 <i>Patent Fees and Royalties</i>	21
6.08 <i>Permits</i>	21
6.09 <i>Laws and Regulations</i>	21
6.10 <i>Taxes</i>	22
6.11 <i>Use of Site and Other Areas</i>	22
6.12 <i>Record Documents</i>	22

6.13	<i>Safety and Protection</i>	22
6.14	<i>Safety Representative</i>	23
6.15	<i>Hazard Communication Programs</i>	23
6.16	<i>Emergencies</i>	23
6.17	<i>Shop Drawings and Samples</i>	23
6.18	<i>Continuing the Work</i>	24
6.19	<i>CONTRACTOR's General Warranty and Guarantee</i>	24
6.20	<i>Indemnification</i>	25
ARTICLE 7 – OTHER WORK		25
7.01	<i>Related Work at Site</i>	25
7.02	<i>Coordination</i>	26
ARTICLE 8 – OWNER'S RESPONSIBILITIES		26
8.01	<i>Communications to Contractor</i>	26
8.02	<i>Replacement of ENGINEER</i>	26
8.03	<i>Furnish Data</i>	26
8.04	<i>Pay Promptly When Due</i>	26
8.05	<i>Lands and Easements; Reports and Tests</i>	26
8.06	<i>Insurance</i>	26
8.07	<i>Change Orders</i>	26
8.08	<i>Inspections, Tests, and Approvals</i>	26
8.09	<i>Limitations on OWNER's Responsibilities</i>	26
8.10	<i>Undisclosed Hazardous Environmental Condition</i>	27
8.11	<i>Evidence of Financial Arrangements</i>	27
ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION		27
9.01	<i>OWNER'S Representative</i>	27
9.02	<i>Visits to Site</i>	27
9.03	<i>Project Representative</i>	27
9.04	<i>Clarifications and Interpretations</i>	27
9.05	<i>Authorized Variations in Work</i>	27
9.06	<i>Rejecting Defective Work</i>	27
9.07	<i>Shop Drawings, Change Orders and Payments</i>	28
9.08	<i>Determinations for Unit Price Work</i>	28
9.09	<i>Decisions on Requirements of Contract Documents and Acceptability of Work</i>	28
9.10	<i>Limitations on ENGINEER's Authority and Responsibilities</i>	28
ARTICLE 10 – CHANGES IN THE WORK; CLAIMS		28
10.01	<i>Authorized Changes in the Work</i>	28
10.02	<i>Unauthorized Changes in the Work</i>	29
10.03	<i>Execution of Change Orders</i>	29
10.04	<i>Notification to Surety</i>	29
10.05	<i>Claims and Disputes</i>	29
ARTICLE 11 – COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK		30
11.01	<i>Cost of the Work</i>	30
11.02	<i>Cash Allowances</i>	31
11.03	<i>Unit Price Work</i>	32
ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES		32
12.01	<i>Change of Contract Price</i>	32
12.02	<i>Change of Contract Times</i>	33
12.03	<i>Delays Beyond CONTRACTOR's Control</i>	33
12.04	<i>Delays Within CONTRACTOR's Control</i>	33
12.05	<i>Delays Beyond OWNER's and CONTRACTOR's Control</i>	33
12.06	<i>Delay Damages</i>	33

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK	33
13.01 <i>Notice of Defects</i>	33
13.02 <i>Access to Work</i>	34
13.03 <i>Tests and Inspections</i>	34
13.04 <i>Uncovering Work</i>	34
13.05 <i>OWNER May Stop the Work</i>	34
13.06 <i>Correction or Removal of Defective Work</i>	35
13.07 <i>Correction Period</i>	35
13.08 <i>Acceptance of Defective Work</i>	35
13.09 <i>OWNER May Correct Defective Work</i>	35
ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION	36
14.01 <i>Schedule of Values</i>	36
14.02 <i>Progress Payments</i>	36
14.03 <i>CONTRACTOR's Warranty of Title</i>	37
14.04 <i>Substantial Completion</i>	38
14.05 <i>Partial Utilization</i>	38
14.06 <i>Final Inspection</i>	38
14.07 <i>Final Payment</i>	39
14.08 <i>Final Completion Delayed</i>	39
14.09 <i>Waiver of Claims</i>	39
ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION	40
15.01 <i>OWNER May Suspend Work</i>	40
15.02 <i>OWNER May Terminate for Cause</i>	40
15.03 <i>OWNER May Terminate For Convenience</i>	40
15.04 <i>CONTRACTOR May Stop Work or Terminate</i>	40
ARTICLE 16 – DISPUTE RESOLUTION	41
16.01 <i>Methods and Procedures</i>	41
ARTICLE 17 – MISCELLANEOUS	41
17.01 <i>Giving Notice</i>	41
17.02 <i>Computation of Times</i>	41
17.03 <i>Cumulative Remedies</i>	41
17.04 <i>Survival of Obligations</i>	41
17.05 <i>Controlling Law</i>	41

GENERAL CONDITIONS

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. *Addenda* – Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

2. *Agreement* – The written instrument which is evidence of the agreement between OWNER and CONTRACTOR covering the Work.

3. *Application for Payment* – The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos* – Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid* – The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidding Documents* – The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. *Bidding Requirements* – The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. *Bonds* – Performance and payment bonds and other instruments of security.

9. *Change Order* – A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim* – A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract* – The entire and integrated written agreement between the OWNER and CONTRACTOR concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents* – The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

13. *Contract Price* – The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times* – The number of days or the dates stated in the Agreement to: (i) achieve Substantial Completion; and (ii) complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment.

15. *CONTRACTOR* – The individual or entity with whom OWNER has entered into the Agreement.

16. *Cost of the Work* – See paragraph 11.01.A for definition.

17. *Drawings* – That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.

18. *Effective Date of the Agreement* – The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *ENGINEER* – The individual or entity named as such in the Agreement.

20. *ENGINEER's Consultant* – An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

21. *Field Order* – A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

22. *General Requirements* – Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

23. *Hazardous Environmental Condition* – The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

24. *Hazardous Waste* – The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

25. *Laws and Regulations; Laws or Regulations* – Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens* – Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

27. *Milestone* – A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

28. *Notice of Award* – The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

29. *Notice to Proceed* – A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.

30. *OWNER* – The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

31. *Partial Utilization* – Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

32. *PCBs* – Polychlorinated biphenyls.

33. *Petroleum* – Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

34. *Project* – The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

35. *Project Manual* – The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

36. *Radioactive Material* – Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

37. *Resident Project Representative* – The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.

38. *Samples* – Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Shop Drawings* – All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

40. *Site* – Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of CONTRACTOR.

41. *Specifications* – That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

42. *Subcontractor* – An individual or entity having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.

43. *Substantial Completion* – The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

44. *Supplementary Conditions* – That part of the Contract Documents which amends or supplements these General Conditions.

45. *Supplier* – A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

46. *Underground Facilities* – All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone

or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

47. *Unit Price Work* – Work to be paid for on the basis of unit prices.

48. *Work* – The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

49. *Work Change Directive* – A written statement to CONTRACTOR issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

50. *Written Amendment* – A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

1.02 Terminology

A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms “as allowed,” “as approved,” or terms of like effect or import are used, or the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as

shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.

B. Day

1. The word “day” shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

C. Defective

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

D. Furnish, Install, Perform, Provide

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, “provide” is implied.

E. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 Delivery of Bonds

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

2.02 Copies of Documents

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 Starting the Work

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 Before Starting Construction

A. *CONTRACTOR’s Review of Contract Documents:* Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any con-

flict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. *Preliminary Schedules:* Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and
3. a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

C. *Evidence of Insurance:* Before any Work at the Site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.

2.06 *Preconstruction Conference*

A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an

additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.
2. CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.
3. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.

C. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.

3.02 *Reference Standards*

A. *Standards, Specifications, Codes, Laws, and Regulations*

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall

mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of

the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification.

3.05 *Reuse of Documents*

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaption by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER's furnishing the Site, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

B. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and OWNER's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and
2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *ENGINEER's Review:* After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. such condition must meet any one or more of the categories described in paragraph 4.03.A; and
- b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in paragraph 10.05. However, OWNER, ENGINEER, and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including OWNER, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price of Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

4.05 *Reference Points*

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations

without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such

condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and delivered to CONTRACTOR written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefor as provided in paragraph 10.05.

F. If after receipt of such written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 10.05. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.E shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.F shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Contract Documents.

B. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.01.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain.

5.04 *CONTRACTOR's Liability Insurance*

A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;
4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

1. with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.07, 6.11, and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the CONTRACTOR pursuant to paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish

OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

5.05 *OWNER's Liability Insurance*

A. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;

5. allow for partial utilization of the Work by OWNER;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.07.

D. OWNER shall not be responsible for purchasing and maintaining any property insurance specified in this paragraph 5.06 to protect the interests of CONTRACTOR, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by CONTRACTOR, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraph 5.06, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the Site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.07 *Waiver of Rights*

A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGI-

NEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of, or resulting from fire or other peril whether or not insured by OWNER; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.05, after Substantial Completion pursuant to paragraph 14.04, or after final payment pursuant to paragraph 14.07.

C. Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against CONTRACTOR, Subcontractors, ENGINEER, or ENGINEER's Consultants and the officers,

directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by paragraph 5.06 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.08.B. OWNER shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

B. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

6.02 *Labor; Working Hours*

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR

will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER's written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to

establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

1. *"Or-Equal" Items:* If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment ENGINEER determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items*

a. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefore. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

C. *Engineer's Evaluation:* ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal."

ENGINEER will advise CONTRACTOR in writing of any negative determination.

D. *Special Guarantee:* OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

E. *ENGINEER's Cost Reimbursement:* ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute.

F. *CONTRACTOR's Expense:* CONTRACTOR shall provide all data in support of any proposed substitute or "or-equal" at CONTRACTOR's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of

any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any

Subcontractor or Supplier, CONTRACTOR will obtain the same.

6.07 *Patent Fees and Royalties*

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

6.09 *Laws and Regulations*

A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in paragraph 10.05.

6.10 Taxes

A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and

damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 Record Documents

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

6.13 Safety and Protection

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

D. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

E. *ENGINEER's Review*

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRAC-

TOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

F. *Resubmittal Procedures*

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.18 *Continuing the Work*

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.19 *CONTRACTOR's General Warranty and Guarantee*

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or
2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;
2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;

4. use or occupancy of the Work or any part thereof by OWNER;

5. any acceptance by OWNER or any failure to do so;

6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;

7. any inspection, test, or approval by others; or

8. any correction of defective Work by OWNER.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and

2. is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

B. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall

not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the liability of ENGINEER and ENGINEER's Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

ARTICLE 7 – OTHER WORK

7.01 Related Work at Site

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, or let other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other work; and

2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in paragraph 10.05.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work.

CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If OWNER intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized; and
3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility for such coordination.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 *Replacement of ENGINEER*

A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer to whom CONTRACTOR makes no reasonable objection, whose

status under the Contract Documents shall be that of the former ENGINEER.

8.03 *Furnish Data*

A. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

8.04 *Pay Promptly When Due*

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

8.06 *Insurance*

A. OWNER's responsibilities, if any, in respect of purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. OWNER's responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

8.09 *Limitations on OWNER's Responsibilities*

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *OWNER'S Representative*

A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and will not be changed without written consent of OWNER and ENGINEER.

9.02 *Visits to Site*

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER's visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs

incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Clarifications and Interpretations*

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

9.05 *Authorized Variations in Work*

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

9.06 *Rejecting Defective Work*

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the

completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.07 *Shop Drawings, Change Orders and Payments*

A. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

9.08 *Determinations for Unit Price Work*

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

9.09 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws

or Regulations in respect of any such Claim, dispute, or other matter.

9.10 *Limitations on ENGINEER's Authority and Responsibilities*

A. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a

Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.01.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER's correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract

Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

10.05 *Claims and Disputes*

A. *Notice:* Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

B. *ENGINEER's Decision:* ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or

2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash

discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

- a. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

- b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

- c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of

job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.

3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

C. *CONTRACTOR's Fee:* When all the Work is performed on the basis of cost-plus, CONTRACTOR's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.02 Cash Allowances

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the

allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

B. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

C. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 Change of Contract Price

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in paragraph 11.01) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 12.01.C).

C. *CONTRACTOR's Fee*: The CONTRACTOR's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

- a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR's fee shall be 15 percent;

- b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR's fee shall be five percent;

- c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier,

will be paid a fee of 15 percent of the costs incurred by such Subcontractor under paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

12.03 *Delays Beyond CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

12.04 *Delays Within CONTRACTOR's Control*

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.05 *Delays Beyond OWNER's and CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

12.06 *Delay Damages*

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or

2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

B. Nothing in this paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B; and
3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection or approval.

D. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

F. Uncovering Work as provided in paragraph 13.03.E shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

13.05 *OWNER May Stop the Work*

A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.A is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

C. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 13.07, the correction period hereunder with respect to such Work will be extended for

an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

D. CONTRACTOR's obligations under this paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment, ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and OWNER shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

13.09 *OWNER May Correct Defective Work*

A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are

stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors, and ENGINEER and ENGINEER's Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.09 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The schedule of values established as provided in paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments*

1. At least 20 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in

writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect OWNER's interest therein, all of which must be satisfactory to OWNER.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied on account to discharge CONTRACTOR's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

2. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's observations on the Site of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

3. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

5. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.02.B.2. ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Written Amendment or Change Orders;
- c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or
- d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A.

C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.

D. *Reduction in Payment*

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

- a. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work;
- b. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;
- c. there are other items entitling OWNER to a set-off against the amount recommended; or
- d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

2. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

3. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.02.C.1.

14.03 *CONTRACTOR's Warranty of Title*

A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Use by OWNER at OWNER's option of any substantially completed part of the Work which has

specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment*

1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in paragraph 14.07.A.2 and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

B. *Review of Application and Acceptance*

1. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.09. Otherwise, ENGI-

NEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due*

1. Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

14.08 *Final Completion Delayed*

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *OWNER May Suspend Work*

A. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefor as provided in paragraph 10.05.

15.02 *OWNER May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. CONTRACTOR's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.07 as adjusted from time to time pursuant to paragraph 6.04);
2. CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;
3. CONTRACTOR's disregard of the authority of ENGINEER; or
4. CONTRACTOR's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to

completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

C. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.03 *OWNER May Terminate For Convenience*

A. Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
4. for reasonable expenses directly attributable to termination.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *CONTRACTOR May Stop Work or Terminate*

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public

authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the

applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Agreement.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

SUPPLEMENTARY GENERAL CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

TABLE OF CONTENTS

	Page
SC-1.01 Definitions.....	2
SC-1.01.A.43 Substantial Completion.....	2
SC-2.02 Copies of Documents	2
SC-2.03 A Commencement of Contract Times; Notice to Proceed	2
SC-2.04 A Starting of the Work.....	2
SC-3.04 B Amending and Supplementing Contract Documents	2
SC-4.05 Reference Points.....	3
SC-5.04 CONTRACTOR's Liability Insurance.....	3
SC-5.06A Property Insurance	4
SC-5.06B Property Insurance	4
SC-6.03 A Services, Materials and Equipment	4
SC-6.03 B Services, Materials and Equipment	4
SC-6.06 Concerning Subcontractors, Suppliers and Others.....	5
SC-6.08 Permits	5
SC-6.12 Record Documents	5
SC-7.01 Related Work at the Site.....	5
SC-10.03.1 Execution of Change Orders	5
SC-13.02 Access to Work	6
SC-13.03 F Tests and Inspections	6
SC-13.04 B Uncovering Work	6
SC-14.07 Final Payment	6
SC-16 Dispute Resolution	7
SC-16.02 Mediation	7

SC-1.01 Definitions

The terms used in the Supplementary Conditions, which are defined in the General Conditions, have the meanings assigned to them in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated below, which are applicable to both the singular and plural thereof.

SC-1.01.A.43 Substantial Completion

Substantial Completion will be deemed to have been achieved at which time the concrete sidewalk, driveways, and sidewalk shoulders are permanently stabilized and ready for use, and made useable as intended by the Contract Documents. Cleanup, repairs and equipment removal may be completed after Substantial Completion, but before Final Payment.

SC-2.02 Copies of Documents

Paragraph 2.02 A is revised as follows:

- A. OWNER shall furnish to CONTRACTOR up to five (5) copies of Contract Documents. Additional copies will be furnished upon request at the cost of reproduction and mailing.

SC-2.03 A Commencement of Contract Times; Notice to Proceed

Paragraph 2.03 A is replaced in its entirety by the following:

- A. The Contract Time will commence to run on the day indicated in the Notice to Proceed. The OWNER will provide a Notice to Proceed at a reasonable time after the effective date of the Agreement. In no event will the OWNER have any obligations or duties to the CONTRACTOR under the Agreement until the Notice to Proceed is given to the CONTRACTOR.

SC-2.04 A Starting of the Work

Paragraph 2.04 A is replaced in its entirety with the following:

- A. CONTRACTOR shall start to perform the work on the date when the Contract Times commence as set forth in the Notice to Proceed. No work shall be done at the site prior to the date which the Contract times commence to run.

SC-3.04 A Amending and Supplementing Contract Documents

Paragraph 3.04 B is replaced in its entirety by the following:

- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification. Any variations and deviations of the work arising from any of the methods set forth in Paragraph 3.04 B will not authorize any Amendment to the Contract Price or Contract Times. The sole method to amend the Contract Price or Contract Times is pursuant to Paragraph 3.04 A

SC-4.05 Reference Points

Paragraph 4.05 A is amended to include the following:

Vertical Reference Point (Hubs) are shown on the drawings. Elevations are referenced relative to the NAVD 88 Vertical datum.

SC-5.04 *CONTRACTOR's Liability Insurance*

Add the following new Paragraph immediately after Paragraph 5.04.B:

C. The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverage under Paragraphs 5.04.A.1 and A.2 of the General Conditions:

- a. Workman's Compensation - Statutory
- b. Applicable Federal (e.g., Jones Act, Longshoreman's and Harbor Workers): \$1,000,000
- c. Employer's Liability: \$1,000,000

2. CONTRACTOR's General Liability under Paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverage and eliminate the exclusion with respect to property under the care, custody and control of CONTRACTOR:

- a. General Aggregate \$1,000,000
- b. Products – Completed Operations Aggregate \$1,000,000
- c. Personal and Advertising Injury – Annual Aggregate \$1,000,000
- d. Each Occurrence (Bodily Injury and Property Damage) \$1,000,000
- e. Property Damage liability insurance will provide Explosion, Collapse, and Underground coverages where applicable.
- f. Excess or Umbrella Liability (This coverage is not in addition to the limits in other coverages. Any combination that provides \$2,000,000 coverage per individual and \$5,000,000 in aggregate will fulfill this condition.)
 - 1) General Aggregate \$1,000,000
 - 2) Each Occurrence \$1,000,000

3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:

- a. Bodily Injury: Each person \$1,000,000
Each Accident \$2,000,000
- b. Property Damage: Each Accident \$ 500,000

Watercraft Liability under Paragraph 5.04.A.6 of the General Conditions:

- a. Bodily Injury: Each person \$1,000,000
Each Accident \$2,000,000
- b. Property Damage: Each Accident \$2,000,000

4. The Contractual Liability coverage required by Paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:

Each Accident	<u>\$2,000,000</u>
Annual Aggregate	<u>\$2,000,000</u>

SC-5.06 Property Insurance

Paragraph 5.06 A is amended as follows:

- A. Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof. This insurance shall include paragraphs A1 – A7.

Paragraph 5.06B is amended as follows:

- B. *CONTRACTOR* shall purchase and maintain boiler and machinery insurance or additional property insurance as may be required by the Supplementary General Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER'S Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

SC-6.03 Services, Materials and Equipment

Paragraph 6.03 A the following is added to the end of Paragraph 6.03 A:

Public toilets at the site are not available for use by CONTRACTOR. Contractor shall provide toilet facilities for his employees meeting appropriate regulations.

Paragraph 6.03 B is amended as follows:

- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. The CONTRACTOR agrees to assign to the OWNER at the time of final completion of the work any and all manufacturer's warranties relating to materials and labor used in the work, and the Contractor further agrees to perform the work in such a manner to preserve any and all manufacturers warranties. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

SC-6.06 Concerning Subcontractors, Suppliers and Others

Paragraph 6.06 A is amended as follows: CONTRACTOR shall not change the List of Subcontractors and Suppliers without the written approval of the OWNER.

SC-6.08 Permits

Paragraph 6.08 A is amended as follows:

Additional Special Conditions resulting from other regulatory requirements are listed in the Project Manual's Section 01060 Regulatory Requirements.

SC-6.12 Record Documents:

Paragraph 6.12 B is added as follows:

- B. Record Documents shall include one set of drawings marked up by CONTRACTOR showing any changes to the work from that shown on the drawings. As-built mark-up drawings shall be provided to and approved by the ENGINEER and OWNER prior to approval of Final Payment.

SC-7.01 Related Work at Site

Paragraph 7.01 A is amended as follows:

No other work is anticipated to occur at the site by other contractors. OWNER reserves the right to schedule and conduct work at or near the site which might conflict with the work in the Contract Documents. If OWNER conducts work at or near the site, all the provisions of Article 7 of the General Conditions shall apply.

SC-10.03 Execution of Change Orders

Add the following to the end of Paragraph 10.03.1

Execution of any Change Order by Owner and Contractor shall constitute a final settlement of all matters relating to the change in the Work that is the subject of the Change Order including, but not limited to, all direct and indirect costs associated with such change and any and all adjustment to the Contract Price or Contract Times. In the event that the Change Order increases the Contract Price, the CONTRACTOR shall include the work covered by such Change Order in applications for payment as if such work were originally part of the Contract Documents.

SC-13.02 Access to Work

Paragraph 13.02 A is amended to include the following:

OWNER shall provide, at his expense, all construction easements, temporary and permanent, as well as sites along the project designated to provide access for equipment to deliver and handle fill materials. Cost of any improvements required to adapt the access sites for the specific use of the CONTRACTOR shall be included in the Contract Lump Sum Price. CONTRACTOR shall restore each access site pavements, vegetation and structures to the conditions existing before construction and to the satisfaction of the Owner.

SC-13.03 Tests and Inspections

Paragraph 13.03 F is amended as follows:

- F. Uncovering Work as provided in Paragraph 13.03.E shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted within the time set in the CONTRACTOR's notice.

SC-13.04 Uncovering Work

Paragraph 13.04 B is amended as follows:

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in Paragraph 10.05. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction unless CONTRACTOR fails to provide written notice as required by Paragraph 13.03 F. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in Paragraph 10.05.

SC-14.07 *Final Payment:*

Paragraph 14.07 A. 3 is replaced by the following:

3. With the final Application for Payment, the CONTRACTOR shall provide an affidavit that there are no known mechanics or material liens outstanding at the date of the request, that all due and payable bills with respect to the work have been paid to date or are included in the amount requested in the current application, and that, except for such bills not paid but so included, there is no known basis for the filing of any mechanics or material liens on the work, and that waivers for all subcontractors, material, and other lienors have been obtained in such form as to constitute an effective waiver of lien under the laws of the State of North Carolina. The final payment will not be made until the CONTRACTOR delivers to OWNER a complete release of all liens arising out of this agreement, or furnishes a bond satisfactory to OWNER to indemnify OWNER against any lien. If the CONTRACTOR has recited any outstanding bills for labor, services or materials, or there are lienors giving notice who are listed, the OWNER may elect to pay these lienors directly.

SC-16 *Dispute Resolution*

Add the following new Paragraphs immediately after Paragraph 16.01:

SC-16.02 *Mediation*

OWNER and CONTRACTOR agree that they shall first make a good faith effort to resolve any issues which may arise between the parties during regarding this Agreement and the business relationship created thereby and to submit any and all unsettled claims, counterclaims, disputes and other matters in question between them arising out of or relating to this Agreement or the breach thereof ("disputes"), to mediation prior to either of them seeking recourse by legal process. The above notwithstanding, nothing shall limit the right of any party to this Agreement: (1) to seek judicial equitable relief, or other equitable relief available to it under applicable statutory and/or case law including, but not limited to, injunctive relief and the appointment of a receiver; or (2) to exercise any self-help rights or any other rights or remedies available to it by contract or applicable statutory or case law (including but not limited to the filing of an involuntary petition in bankruptcy, the right of set off, attachment, recoupment, foreclosure, or repossession) with respect to its extension of credit, the

protection and preservation of collateral, the liquidation and realization of collateral, the protection, continuation and preservation of lien rights and priorities, the collection of indebtedness, and the processing and payment or return of checks, whether such occurs before, during or after the pendency of any negotiation or mediation proceeding. The institution and maintenance of an action for judicial relief or pursuit of provisional or ancillary rights or remedies or exercise of self-help remedies, all as provided herein, and the pursuit of any such rights or remedies, shall not constitute a waiver of the right or obligation of any Party, including the plaintiff seeking judicial relief or remedies, to submit a dispute to negotiation and mediation, including disputes that may arise from the exercise of such rights. The costs of the mediation, including the fees and expenses of the mediator, shall be borne by the parties to the mediation in equal shares, each party to this agreement bearing the expense of its own counsel, experts, witnesses, and preparation and presentations at the mediation.

A. Request for Mediation

When a dispute between the parties is not resolved by informal negotiations, any party may serve upon the other(s) a request for mediation which shall contain a brief statement of the nature of the dispute and the names, addresses, and telephone numbers of all parties to the dispute and those who will represent them, if any, in the mediation. Upon service of the request for mediation, the parties shall have ten (10) days to select a mediator.

B. The Mediator

The parties shall select a mediator from a list of eastern North Carolina Certified Mediators.

The mediator must remain neutral and impartial in all aspects of the mediation. The mediator will control the procedural aspects of the mediation. The parties agree to cooperate fully with the mediator throughout the proceeding. During the mediation, the mediator is free to meet and communicate separately with each party or groupings of parties. The mediator will not transmit information which has been disclosed to him or her in confidence by any party to another party without the former party's express authorization. The mediator may freely express his or her views to the parties on the legal issues of the dispute, however, each party shall rely exclusively on its own counsel for legal representation and advice. The mediator shall be compensated by payment of a one-time administrative fee and an hourly rate which represents the mediator's standard rates for such services and as agreed upon by the parties with the mediator. Each party shall bear an equal share of the mediator's compensation.

C. Pre Mediation Submissions

Prior to the date that mediation is scheduled to begin, each party shall cooperate with each other in exchanging all documents that are relevant to the dispute and in permitting reasonable review of each other's contract files. Not later than ten (10) days prior to mediation, each party will send to the mediator with copies to each other, the following documents: a) all documents that are relevant to the dispute (parties will cooperate in selecting documents to avoid duplication between the submissions of each party); b) a list of the issues to be determined (the parties will make every effort to submit a joint list of issues in the order that is most logical for presentation); c) a list of witnesses and participants in the mediation proceeding. Within the same time frame, any party may submit to the mediator a written brief of not more than 15 typewritten pages (Arial, 10 pt), outlining the nature of and basis for its claims and its principal defenses to the claims of others. Each brief will include an analysis by each party of the cause or causes of the damages or other harm based on evidence presently available to it, including the opinions of its own personnel and any independent experts. Each party must send copies of its brief to all other participants in the mediation simultaneously with its submission to the mediator. The mediator may request any party to provide clarification and additional information prior to and during the mediation and may request any party's attorney to brief legal issues.

D. Mediation Conference

Once the mediator has familiarized himself or herself with the case, the mediator will mediate settlement discussions between and among the representatives of the parties. In addition to party counsel (if any), each party must be represented at the mediation by a person authorized to conclude a settlement of the dispute on behalf of that party, or in the case of a governmental entity, by a person who has authority to negotiate for and make recommendations to the governing board subject to such board's approval. Each representative must participate in the mediation process in good faith toward the settlement of all issues. Each party will notify the mediator of its designated representatives prior to the mediation. The mediation will be conducted at any location selected by the mediator which will facilitate the joint and individual meetings involved in the mediation and otherwise accommodate the needs of the representatives of the parties and the mediator. The mediation process will be conducted expeditiously and privately. Each representative (and counsel, if any) will be available for meetings throughout the entire time period set aside for the mediation. Other persons may attend only with the permission of the parties and with the consent of the mediator. The mediator will decide when to meet or confer separately with each party or parties and when to hold joint meetings.

There shall be no stenographic record of the mediation process. The mediator will fix the time and place of each session and the agenda in consultation with the parties. The mediator may assist the parties in arriving at a settlement in such ways as he or she deems advisable and proper under the circumstances. Efforts to reach a settlement will continue until a settlement is reached or when the mediator concludes and informs the parties that further effort would not be useful. Continuation will be on terms and conditions to which the parties agree.

The mediation proceeding will begin with each party making an opening statement of no longer than fifteen minutes. The first statement will be made by the proponent of the major elements of the dispute. Following opening statements, each issue will be discussed using a round table discussion technique. Each party will make its relevant key employees and consultants available to participate in this discussion. In the discussion, the proponent of the issue will make a brief presentation of its position on the issue. The other party will then make a brief presentation of its defense. The neutral advisor will then moderate a discussion--calling on participants from each side as they request to address the issues in question. There will be no side discussions and no participant will speak until called on by the neutral advisor. The goal of this discussion is to fully develop all information relevant to the determination of the facts of the dispute and the precise position of each party. All participants will refrain from statements that are unduly argumentative or contentious.

The proceedings will not be recorded and witnesses will not be sworn. However, all participants will be expected to be forthright in their statements and to be fully open and honest in their dealings with each other. Attorneys may participate in the discussion and may call on other personnel when necessary to ensure that they contribute their knowledge to the discussion. Attorneys will not cross-examine witnesses of the other party.

Following the round table discussions, each party may summarize its position in a statement no longer than one-half hour. The parties may, by mutual agreement, waive these statements. Following the summarizations, if any, the parties and mediator will meet to negotiate a settlement that is fair to both parties. The parties may conduct these discussions with or without the mediator. The mediator may present his views on any issues or propose resolution of one or more of the issues in dispute. Either party or the mediator may request a private, confidential meeting with the mediator to discuss possible settlement positions, and the mediator will not reveal any confidential information to the other party, unless authorized to do so. Either party may request a recess in the meeting at any time to caucus with his team, but all parties will endeavor to keep the negotiations active until a settlement has been reached.

The entire mediation process is confidential. No record of the proceedings, electronic or otherwise, will be made. The parties and the mediator will not disclose information regarding the process, including settlement terms, to third parties, unless otherwise agreed. The process will be treated as a compromise and settlement negotiation purposes of federal and state Rules of Evidence, and in no case may any conversation or communication originating during the mediation process, whether written or oral, be used as evidence in a court of law. The mediator is disqualified as a witness, consultant, or expert in any pending or future action relating to the subject matter of the mediation, including those between persons not parties to the mediation.

E. Settlement

If a settlement is reached, the mediator, or counsel for one of the parties at the mediator's request, will draft a written settlement document incorporating all settlement terms. This draft will be circulated among the parties, edited as necessary, and, if acceptable, formally executed. A consent judgment or one or more voluntary dismissals shall be filed with the Court in which any proceedings have been brought before or during mediation as stipulated in the settlement agreement reached by the parties.

END OF SECTION

WORK CHANGE DIRECTIVE

No. _____

DATE OF ISSUANCE _____

EFFECTIVE DATE _____

OWNER _____

CONTRACTOR _____

Contract: _____

Project: _____

OWNER's Contract No. _____ ENGINEER's Project No. _____

You are directed to proceed promptly with the following change(s):
Description:

Purpose of Work Change Directive:

Attachments: (List documents supporting change)

If OWNER or CONTRACTOR believe that the above change has affected Contract Price any Claim for a Change Order based thereon will involve one or more of the following methods as defined in the Contract Documents.

Method of determining change in
Contract Price:

☐ Unit Prices

☐ Lump Sum

☐ Cost of the Work _____

Estimated increase (decrease) in Contract Price:
\$ _____.

If the change involves an increase, the
estimated amount is not to be exceeded without
further authorization.

Estimated increase (decrease) in Contract
Times:

Substantial Completion: _____ days;

Ready for final payment: _____ days.

RECOMMENDED:

AUTHORIZED:

ENGINEER

By: _____

OWNER

By: _____

EJCDC No. 1910-8-F (1996 Edition)

Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated
General Contractors of America and the Construction Specifications Institute.

WORK CHANGE DIRECTIVE

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work which, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Price or the Contract Times. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order.

For supplemental instructions and minor changes not involving a change in the Contract Price or the Contract Times a Field Order should be used.

B. COMPLETING THE WORK CHANGE DIRECTIVE FORM

Engineer initiates the form, including a description of the items involved and attachments.

Based on conversations between Engineer and Contractor, Engineer completes the following:

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT PRICE: Mark the method to be used in determining the final cost of Work involved and the estimated net effect on the Contract Price. If the change involves an increase in the Contract Price and the estimated amount is approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the estimated price or Contractor may stop the changed Work when the estimated time is reached. If the Work Change Directive is not likely to change the Contract Price, the space for estimated increase (decrease) should be marked "Not Applicable".

Once Engineer has completed and signed the form, all copies should be sent to Owner for authorization because Engineer alone does not have authority to authorize changes in Price or Times. Once authorized by Owner, a copy should be sent by Engineer to Contractor. Price and Times may only be changed by Change Order signed by Owner and Contractor with Engineer's recommendation.

Paragraph 10.03.A.2 of the General Conditions requires that a Change Order be initiated and processed to cover any undisputed sum or amount of time for Work actually performed pursuant to this Work Change Directive.

Once the Work covered by this directive is completed or final cost and times are determined, Contractor should submit documentation for inclusion in a Change Order.

THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR CONTRACT TIMES. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.

CHANGE ORDER

No. _____

DATE OF ISSUANCE _____

EFFECTIVE DATE _____

OWNER _____

CONTRACTOR _____

Contract: _____

Project: _____

OWNER's Contract No. _____

ENGINEER's Contract No. _____

ENGINEER _____

You are directed to make the following changes in the Contract Documents:

Description:

Reason for Change Order:

Attachments: (List documents supporting change):

CHANGE IN CONTRACT PRICE:
Original Contract Price \$ _____
Net Increase (Decrease) from previous Change Orders No. ____ to ____: \$ _____
Contract Price prior to this Change Order: \$ _____
Net increase (decrease) of this Change Order: \$ _____
Contract Price with all approved Change Orders: \$ _____

CHANGE IN CONTRACT TIMES:
Original Contract Times: Substantial Completion: ____ Ready for final payment: ____ (days or dates)
Net change from previous Change Orders No. ____ to No. ____: Substantial Completion: ____ Ready for final payment: ____ (days)
Contract Times prior to this Change Order: Substantial Completion: ____ Ready for final payment: ____ (days or dates)
Net increase (decrease) this Change Order: Substantial Completion: ____ Ready for final payment: ____ (days)
Contract Times with all approved Change Orders: Substantial Completion: ____ Ready for final payment: ____ (days or dates)

RECOMMENDED:

APPROVED:

ACCEPTED:

By: _____ By: _____ By: _____
ENGINEER (Authorized Signature) OWNER (Authorized Signature) CONTRACTOR(Authorized
Signature)

Date: _____ Date: _____ Date: _____

EJCDC 1910-8-B (1996 Edition) Prepared by the Engineers Joint Contract Documents Committee and
endorsed by The Associated General Contractors of ^{America} and the Construction Specifications Institute.

CHANGE ORDER

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

CERTIFICATE OF SUBSTANTIAL COMPLETION

DATE OF ISSUANCE _____

OWNER _____

CONTRACTOR _____

Contract: _____

Project: _____

OWNER's Contract No. _____ ENGINEER's Project No. _____

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To _____

OWNER

And To _____

CONTRACTOR

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within _____ days of the above date of Substantial Completion.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees shall be as follows:

OWNER: _____

CONTRACTOR: _____

The following documents are attached to and made a part of this Certificate:

[For items to be attached see definition of Substantial Completion as supplemented and other specifically noted conditions precedent to achieving Substantial Completion as required by Contract Documents.]

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents.

Executed by ENGINEER on _____
Date

ENGINEER

By: _____
(Authorized Signature)

CONTRACTOR accepts this Certificate of Substantial Completion on _____
Date

CONTRACTOR

By: _____
(Authorized Signature)

OWNER accepts this Certificate of Substantial Completion on _____
Date

OWNER

By: _____
(Authorized Signature)

APPLICATION FOR PAYMENT NO. _____

To: _____ (OWNER)
From: _____ (CONTRACTOR)
Contract: _____
Project: _____
OWNER's Contract No. _____ ENGINEER's Project No. _____

For Work accomplished through the date of: _____.

1. Original Contract Price: \$ _____
2. Net change by Change Orders and Written Amendments (+ or -): \$ _____
3. Current Contract Price (1 plus 2): \$ _____
4. Total completed and stored to date: \$ _____
5. Retainage (per Agreement):
_____% of completed Work: \$ _____
_____% of stored material: \$ _____
Total Retainage: \$ _____
6. Total completed and stored to date less retainage (4 minus 5): \$ _____
7. Less previous Application for Payments: \$ _____
8. DUE THIS APPLICATION (6 MINUS 7): \$ _____

Accompanying Documentation:

CONTRACTOR'S Certification:

The undersigned CONTRACTOR certifies that (1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied on account to discharge CONTRACTOR's legitimate obligations incurred in connection with Work covered by prior Applications for Payment numbered 1 through _____ inclusive; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to OWNER indemnifying OWNER against any such Lien, security interest or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective.

Dated _____
CONTRACTOR

By: _____
State of _____
County of _____
Subscribed and sworn to before me this _____
day of _____, _____

Notary Public
My Commission expires: _____

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

Dated _____
ENGINEER

By:

EJCDC No. 1910-8-E (1996 Edition) Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America and the Construction Specification Institute.

APPLICATION FOR PAYMENT

INSTRUCTIONS

A. GENERAL INFORMATION

The sample form of Schedule of Values is intended as a guide only. Many projects require a more extensive form with space for numerous items, descriptions of Change Orders, identification of variable quantity adjustments, summary of materials and equipment stored at the site and other information. It is expected that a separate form will be developed by Engineer and Contractor at the time Contractor's Schedule of Values is finalized. Note also that the format for retainage must be changed if the Contract permits (or the law provides), and Contractor elects to deposit securities in lieu of retainage. Refer to Article 14 of the General Conditions for provisions concerning payments to Contractor.

B. COMPLETING THE FORM

The Schedule of Values, submitted and approved as provided in paragraphs 2.05.B.3 and 2.07 of the General Conditions, should be reproduced as appropriate in the space indicated on the Application for Payment form. Note that the cost of materials and equipment is often listed separately from the cost of installation. Also, note that each Unit Price is deemed to include Contractor's overhead and profit.

All Change Orders affecting the Contract Price should be identified and included in the Schedule of Values as required for progress payments.

The form is suitable for use in the Final Application for Payment as well as for Progress Payments; however, the required accompanying documentation is usually more extensive for final payment. All accompanying documentation should be identified in the space provided on the form.

C. LEGAL REVIEW

All accompanying documentation of a legal nature, such as Lien waivers, should be reviewed by an attorney, and Engineer should so advise Owner.

SCHEDULE OF VALUES

Application No. _____ Date: _____

ITEM	UNIT PRICE	ESTIMATED QUANTITY	SCHEDULE OF VALUES AMOUNT	QUANTITY COMPLETED	AMOUNT	%	MATERIAL STORED	AMOUNT COMPLETED AND STORED
1.	\$		\$		\$		\$	\$
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								
21.								
22.								
23.								
24.								
25.								
26.								
27.								
28.								
TOTAL			\$		\$		\$	\$

Note: Total Schedule of Values Amount should equal the current Contract Price.

**TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA**

PROJECT MANUAL

TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

	<u>PAGES THRU</u>
01000 Table of Contents	01000-1
Division 1 – Administrative	
01060 Regulatory Requirements	01060-2
01100 Summary of Work.....	01100-1
01300 Submittals.....	01300-1
Division 2 – Site Work	
02200 Earthwork	02200-6
02300 Pile Driving	02300-2
02365 Timber Piles	02365-1
02576 Concrete Sidewalks.....	02576-5
02900 Seeding and Mulching.....	02900-5
Division 3 – Concrete	
03300 Cast in Place Concrete.....	03300-8
Divisions 4 through 5 – not used	
Division 6 – Wood, Plastics, and Composite Products	
06310 Timber Construction	06310-4
Sure-Step Plus Series Decking Installation Guide	N/A
ThruFlow Decking Installation Guide	N/A
Divisions 7 through 16 – not used	

SECTION 01060

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY: This section contains the provisions for compliance with local, state and federal jurisdictional regulations and permit conditions affecting the work. Contractor is not relieved from requirements to comply with regulations, applicable permits, laws, codes, ordinances and regulations not identified in this section. It is the responsibility of the Contractor to comply with applicable state, federal and local regulations affecting the work.

1.2 REFERENCES:

- A. Owner Procured (attached to this specification):
 - 1. None (General CAMA Permit where applicable).
- B. Contractor Procured (at his expense):
 - 1. Current business license
 - 2. Building Permits: Town of Pine Knoll Shores, Carteret County
 - 3. Current contractor's license for operations in the State of North Carolina
 - 4. Permit for hauling and disposal of debris and waste
 - 5. Permit to exceed load limits on certain bridges if they are on haul routes and have low load limits
 - 6. Any permits required by the North Carolina Division of Coastal Management (CAMA)

1.3 SUBMITTALS: Contractor shall provide reports, documents, plans and fees as required for obtaining all contractor procured permits at no additional cost to the Owner.

1.4 QUALITY ASSURANCE: Contractor shall conduct inspections of construction operations to insure compliance and report all violations to the Engineer.

1.5 SITE CONDITIONS:

- A. Contractor shall practice and be fully responsible for good housekeeping activities and procedures to prevent oil spills, hazardous waste contamination and spills, unauthorized environmental pollution and safety violations.
- B. There are no restroom facilities available to the Contractor on the site. Contractor shall make arrangements for restroom facilities for employees at no additional costs to the Owner. Disposal of waste from portable restroom facilities shall be in accordance with applicable local, state and federal regulations.
- C. Contractor shall assure reasonable access to the site for Owner's Site Representative, Engineer, and regulatory agency personnel.

1.6 SEQUENCING AND SCHEDULING:

- A. Contractor shall provide ample notification to regulatory agencies for scheduled construction activities and inspections, if a regulatory inspector is required for observation.

**TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA**

- B. Contractor shall conduct operations in accordance with the sequence of operations indicated in the Contract Documents and as required by the permit conditions. Deviations from the sequence of construction shall be reported to the Engineer.
- 1.7 COMPLIANCE WITH APPLICABLE PERMITS: Terms and conditions of the applicable permits and regulations listed in 1.2 A of the Section are incorporated into these Contract Documents by reference. Contractor is responsible for adherence to terms and conditions of permits.

END OF SECTION

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

SECTION 01100

SUMMARY OF WORK

PART 1 - GENERAL

1.1 Work Covered by Contract Documents

Work described in this Project Manual includes the provision of labor, materials, equipment, and services required to complete reconstruction of the six (6) foot wide composite decking walkway at 203 Salter Path Road, for the Town of Pine Knoll Shores, Carteret County, North Carolina. The Town of Pine Knoll Shores has an access easement for this property with the nearby Pine Knoll Shores Community Association.

1.2 Construction Contract

- A. The project construction will be under a single Lump Sum Contract negotiated with the Town of Pine Knoll Shores.

1.3 Type of Work

Work consists of the following:

- Demolition of approximately 237 linear feet of timber walkway, timber stairway, and supporting pilings.
- Construction of approximately 236 linear feet of 6 foot wide timber decking walkway with ADA compliant timber handrail on both sides of walkway. Pilings for walkway to be driven to minimum 5 foot depth.
- Replacement of approximately 25 square feet of 4" thick, 6 foot wide concrete sidewalk.
- Installation of approximately 20 linear feet of new timber stairway w/ handrailing and timber stair treads.

1.4 Owner's Site Representative

- A. The ENGINEER is the Owner's site representative. The Engineer is responsible to certify to the Town of Pine Knoll Shores that the project is constructed in accordance with the Contract Documents. Contractor shall cooperate with Engineer and Engineer's representative to minimize conflict, and to facilitate the final acceptance by the Owner.
- B. Contractor will provide all safety fencing, signage, barricades and other measures required to ensure protection to public.

PART 2 PRODUCTS - Not Used
PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.1 SUBMITTALS

1.1.1 Furnish for approval three (3) copies of submittals as called for in the specifications. The Contractor shall check shop drawings prior to submittal, and where items must conform to existing work, he will verify dimensions on the job site. He shall indicate on each copy that he has checked the submittal and has found it to be in proper form and attach his signature. Shop drawings not previously checked by the Contractor will be returned unprocessed.

1.1.2 Work-Related Submittals.

1.1.2.1 Substitution or "Or Equal" Items: Includes material or equipment CONTRACTOR requests ENGINEER to accept, as substitute for items specified or described in Specifications by using name of a proprietary item or name of particular supplier.

1.1.2.2 Shop Drawings. Includes technical data and drawings specially prepared for this Project, including fabrication and installation drawings, diagrams, data sheets, schedules, templates, patterns, reports, instructions, design mix formulas, measurements, and similar information not in standard printed form. Standard information prepared without specific reference to the Project is not considered a Shop Drawing.

1.1.2.3 Product Data. Includes standard printed information on manufactured products, and systems that has not been specially prepared for this Project, including manufacturer's product specifications and installation instructions, catalog cuts, mill reports, and standard color charts.

1.1.2.4 Samples. Includes both fabricated and manufactured physical examples of materials, products, and units of work, partial cuts of manufactured or fabricated work, swatches showing color, texture, and pattern, and units of work to be used for independent inspection and testing

1.1.2.5 Miscellaneous Submittals. Includes work-related submittals that do not fit in the previous categories, such as guarantees, warranties, certifications, experience records, workmanship bonds, survey data and reports, physical work records, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, and similar information, devices, and materials applicable to the Work.

1.1.2.6 Permits and Applications. Furnish one copy of Contractor obtained permits. Contractor shall supply one (1) copy of application documents to the Engineer at the time the permits are applied for.

END OF SECTION

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

SECTION 02200

EARTHWORK

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK: Work to be performed under this section consists of furnishing all, tools, labor, materials, equipment and supplies necessary to complete grading of roads and other site improvements as indicated on the plans.

1.2 RELATED SECTIONS: THE SPECIFICATION SECTIONS LISTED BELOW ARE REFERENCED BY THIS SPECIFICATION OR REFERENCE THIS SPECIFICATION IN THE CONTRACT DOCUMENTS.

Section 02576, Concrete Sidewalks and Driveways

1.3 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specifications to the extent referenced. The publications are referred to in the text by the basic designation only. References are made to the “Latest Edition” of the cited publications.

1.3.1 American Association of State Highway and Transportation Officials (AASHTO) specifications and tests.

T-99	The Moisture Density Relations of Soils Using a 5.5 lb. [2.5 kg] Rammer and a 12 in. [305 mm] Drop
------	--

1.3.2 American Society for Testing and Materials (ASTM) Publications:

D 422	Particle Size Analysis of Soils
-------	---------------------------------

D 698	Laboratory Compaction Characteristics of Soil Using Standard Effort (24,000 ft. lb.-f / ft.)
-------	--

D 1140	Amount of Material in Soils Finer than the No. 200 (75-mm) Sieve
--------	--

D 2487	Classification of Soils for Engineering Purposes
--------	--

D 4318	1984 Liquid Limit, Plastic Limit and Plasticity Index of Soils
--------	--

1.3.3 North Carolina Department of Transportation, “Standard Specification for Roads and Structures”, January 2012. A copy of the NCDOT Specifications shall be at the project site in the possession of the Contractor. The specifications referenced are incorporated and become a part of this specification.

Section 520	Aggregate Base Course
-------------	-----------------------

Section 1016	Select Backfill Material
--------------	--------------------------

1.4 SUBMITTALS: None.

**TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA**

1.5 DELIVERY, STORAGE, AND HAULING: Perform in a manner to prevent contamination or segregation of materials.

1.6 CRITERIA FOR BIDDING: Base bids on the following criteria:

- a. Surface elevations are as indicated.
- b. Pipes or other artificial obstructions, except those indicated, will not be encountered.

1.7 PROTECTION:

1.7.1 Site Drainage: Provide for the collection and disposal of surface and subsurface water encountered during construction.

1.7.1.1 Surface Drainage: Completely drain construction site during periods of construction to keep soil materials sufficiently dry to permit construction operations to successfully progress. Provide temporary ditches, swales, and other drainage features and equipment as required to maintain dry soils. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction features develop, remove the unsuitable material and provide new soil material as specified herein.

1.7.2 Protection of Underground Utilities: The contractor shall verify locations of existing utilities prior to excavation. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations.

1.7.3 Movement of construction machinery and equipment over any pipes during any stage of construction shall be at the Contractor's risk. Repair or remove and provide new pipe for existing or newly-installed pipe that has been displaced or damaged.

1.7.4 Protection of Existing Facilities: Protect structures, utilities, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

1.7.5 Protection of Trees and Root Systems: Perform excavation within drip-line of large trees to remain by hand, and protect the root system from damage or dry out to the greatest extent possible. Maintain moist condition for root system and cover exposed roots with burlap. Paint root cuts of 1" diameter and larger with emulsified asphalt tree paint.

1.7.6 Sedimentation and Erosion Control: Contractor shall install erosion control measures as indicated on the drawings. Graded areas shall be seeded and mulched within 15 days of when final grades are established. No additional payment will be made for placement erosion control measures required in addition to those indicated in the Contract Documents. Contractor shall include these costs in the base bid.

1.7.7 Use of explosives is not permitted.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS: Shall be free of debris, roots, wood, scrap material, vegetation, refuse, soft unsound particles, frozen, deleterious, or objectionable materials. Unless specified otherwise, the maximum particle diameter shall be one-half the lift thickness at the location of intended use.

2.1.1 Select Backfill:

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

2.1.1.1. General Fill: Soil materials meeting requirements of NCDOT Specifications for Class III Select Backfill Material.

2.1.1.2 Subbase Fill Material: Shall be clean material meeting the requirements of NCDOT Specifications for Class II Select Backfill Material.

2.1.1.3 Granular Fill: Shall be clean sand material meeting the requirements NCDOT Specifications for Class I Select Backfill Material.

2.2 Topsoil: Provide in accordance with Section 02900, "Seeding and Mulching."

PART 3 - EXECUTION

3.1 UNCLASSIFIED EXCAVATION:

3.1.1 All excavation under this section shall be classified as unclassified excavation.

3.1.2 Unauthorized Excavation: Consists of removal of materials beyond indicated subgrade elevations or dimensions without specific indication in the Contract Documents. Unauthorized excavation, as well as remedial work directed by Owner or Engineer, shall be at Contractor's expense.

3.1.4 Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degree F (1 degree C).

3.2 GRADING:

3.2.1 General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades. Grade areas as shown on the Drawings to prevent ponding.

3.2.2 Lawn or Unpaved Areas: Finish areas to receive topsoil to within not more than 0.10' above or below required subgrade elevations.

3.2.3 Pavements, Sidewalks, and Shoulders: Shape surface of areas under pavement and shoulders to line, grade and cross-section, with finish surface not more than 1/2" above or below required subgrade elevation.

3.3 FILLING AND BACKFILLING: Fill and backfill to the contours, elevations, and dimensions indicated as described herein. Compact each lift before the overlaying lift is placed.

3.3.1 Ground Surface Preparation: Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break-up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.

**TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA**

3.3.2 Placement of Fill and Backfill: Place backfill and fill materials in layers not more than 8" in loose depth for material compacted by heavy compaction equipment, and not more than 4" in loose depth for material compacted by hand-operated tampers. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

3.3.3 Adjacent to Structures: Place backfill and fill materials evenly adjacent to structures, piping or conduit to required elevations. Take care to prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping or conduit to approximately same elevation in each lift.

3.3.4 Under Grassed and Landscaped Areas: Use general fill material.

3.3.5 Under Pavements and Shoulders: Use Select Fill Material.

3.4 COMPACTION:

3.4.1 General: Control soil compaction during construction providing minimum percentage of density specified for each area classification as indicated below. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by disking, harrowing or pulverizing until moisture content is reduced to a satisfactory value.

3.4.2 Existing Ground Beneath Pavements and Sidewalks: When existing ground surface has a density less than that specified under "Compaction" for particular area classification, break up ground surface, pulverize, moisture-condition to optimum moisture content, and compact to required depth and percentage of maximum density.

3.4.3 Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density.

3.4.3.1 Pavements & Sidewalks: Compact top 12" of subgrade at 100% density in accordance with ASTM D 698. Each layer of backfill or fill material below top 12" shall be compacted to 98% maximum density.

3.4.3.2 Lawn or Unpaved Areas: Compact top 6" of subgrade and each layer of backfill or fill material at 95% density in accordance with ASTM D 698.

3.4.5 Grade Control: During construction, maintain lines and grades including crown and cross-slope of subbase material.

3.4.6 Shoulders: Place shoulders along edges of subbase course to prevent lateral movement. Construct shoulders of acceptable soil materials, placed in such quantity to compact to thickness of each subbase course layer. Compact and roll at least a 12" width of shoulder simultaneously with compacting and rolling of each layer of subbase course.

3.5 STABILITY OF EXCAVATIONS: Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

3.6 SHORING AND BRACING: Provide materials for shoring and bracing, such as sheet piling, uprights, stringers and cross-braces, in good serviceable condition. Establish requirements for trench shoring and bracing to comply with local codes and authorities having jurisdiction. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.

3.7 DEWATERING: Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations to collecting or run-off areas. Do not use trench excavations as temporary drainage ditches. All diverted drainage shall flow through an erosion control device.

3.8 FIELD QUALITY CONTROL:

3.8.1 Quality Control Testing During Construction: When excavation has reached required subgrade elevations before installing concrete sidewalk, contact Engineer for observation. Engineer will determine if compaction testing is necessary for the subgrade. The first compaction test will be conducted at the Owner's expense. If additional compaction tests are required, these tests will be the financial responsibility of the Contractor.

3.9 MAINTENANCE:

3.9.1 Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

3.9.2 Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

3.9.3 Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.10 DISPOSAL OF EXCESS AND WASTE MATERIALS:

3.10.1 Excess Material: Remove acceptable material to be reused to area on project site designated by the Owner or Engineer. Stockpile soil or spread as directed by Engineer. Unused material shall become the property of the Contractor and shall be disposed of as waste material.

3.10.2 Waste Material: Waste materials shall become the property of the Contractor and disposed of off of project property. Disposal shall be at an approved site meeting applicable local, state and federal regulations. Contractor is responsible for meeting all applicable local, state and federal regulations for transport and disposal of waste materials. Fees for disposal are to be paid by the Contractor.

**TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA**

3.11 FIELD SAMPLING AND TESTING:

3.11.1 Sampling: Take the number and size of samples required to perform the following tests.

3.11.2 Tests: Perform one of each of the required tests for each material used. Provide additional tests for each source change.

3.11.2.1 Existing Subgrade and Select Backfill: ASTM D 422 for conformance to ASTM D 2487 gradation limits; ASTM D 1140 for material finer than the No. 200 sieve; ASTM D 4318 for liquid limit and for plastic limits; ASTM D 698 for moisture density relations.

3.11.2.2 Density and Compaction Test: ASTM D 698 for all fill and backfill areas. Test existing soils in cut and each lift of backfill at randomly selected locations every 2000 square feet for backfill and for subgrade in cut. Test subgrade and backfill in small irregular areas at a minimum of one location for areas smaller than 2000 square feet.

--END OF SECTION--

SECTION 02300

PILE DRIVING

PART 1 - GENERAL

1.1 WORK INCLUDED: Install all square timber piles (softwood), steel pipe piles, and pre-stressed concrete piles as indicated on the drawings by driving and/or jetting. All piles shall be driven for the last four feet to the indicated tip elevations. Cut off piles and treat field cuts as specified in Section 02365.

1.2 RELATED WORK: Section 02365 Timber Piles; Section 06310 Timber Construction

1.3 QUALITY CONTROL: Qualifications of Workmen: Provide at least one person who shall be present at all times during pile driving operations who shall be thoroughly familiar with the methods involved and the design requirements.

1.4 PILE DRIVING RECORDS: Keep a detailed record for installation of each pile. Record time, blow count, and history of special events for each foot over the entire length of the pile penetration. Submit three copies of these records to the Engineer at the end of each phase of construction.

PART 2 - MATERIALS

2.1 ROUND TIMBER PILES (SOFTWOOD): Softwood timber piles for the fixed timber docks and shall be as specified in Section 02365. Lengths and sizes, or capacity shall be as shown on the drawings.

3.1 PILE INSTALLATION:

3.1.1 Bearing Piles: Fixed timber pier piles shall be driven to the capacity indicated on the drawings. If a pile fails to reach the indicated tip elevation, or if the pile reaches the indicated tip elevation without reaching the required pile capacity determined by the driving resistance, the Contractor shall notify the Engineer and perform corrective measures as directed. Design capacity shall be defined as a pile receiving the required blow count for a penetration of 6 inches based on the Engineering News Record Formula:

$$P = \frac{2.5E}{S + 0.1} \times \frac{W_r + n2 W_p}{W_r + W_p}$$

Where:

- P = pile bearing capacity (tons)
- E = delivered energy per blow of the hammer (ft-tons)
- Mr = weight of the striking parts (tons)
- Wp = weight of the pile (tons)
- n = coefficient of restitution between pile hammer and pile
(value to be established or approved by the Engineer) s
- s = The average penetration per blow, in inches, for the last
5 to 10 hammer blows.

3.1.2 Protection of Piles: Take care to avoid damage to the piles during handling, placing the pile in the leads, and during the pile driving operations. Laterally support piles during driving, but do not unduly restrain from rotation in the leads. Where pile orientation is essential, take special care to maintain the orientation during driving. Square the top of the pile to the longitudinal axis of the pile.

3.1.3 Pile Hammers: The minimum hammer energy for driving steel piles shall have a rated energy of 19500 to 32500 foot pounds. The minimum rated hammer energy for driving concrete piles shall be 15,000 foot pounds. The minimum rated hammer energy for driving round timber piles (softwood)

**TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA**

shall be 8000 foot pounds.

3.1.4 Driving Helmets and Pile Cushions: Use a steel driving helmet or cap including a pile cushion between the top of the pile and the driving helmet or cap to prevent impact damage to the pile. The driving helmet or cap and pile cushion combination shall be capable of protecting the head of the pile, minimizing energy absorption, providing heat dissipation, and transmitting the hammer energy uniformly over the top of the pile. The driving helmet or cap shall fit sufficiently loose around the top of the pile so that the pile may be free to rotate without binding within the driving helmet. The pile cushion may be of solid wood or of laminated construction of plywood, softwood or hardwood boards with the grain parallel to the end of the pile. The pile cushion shall be thick enough to protect the end of the pile but shall not be so thick as to prevent rapid driving of the pile. Replace the pile cushion if it has become highly compressed, charred or burned, or has become spongy or deteriorated in any manner.

3.1.5 Jetting or Preaugering of Timber Piles: Preaugering or jetting of timber piles will be allowed but shall be discontinued when the pile is at a depth of 4 feet above the required penetration. Use preaugering above mean low water. Last 4 feet of pile penetration shall be obtained by driving.

3.1.6 Tolerances in Piles: Piles shall be driven with a variation of not more than 2 percent from the vertical. Check axial alignment of pile and leaders at start of pile driving and when the pile top is approximately 5 feet above cutoff elevation. Make intermediate checks of pile alignment if there is evidence of pile drifting. If subsurface conditions cause pile drifting beyond the allowable axial alignment tolerance, notify the Engineer and perform corrective measures as directed. Place butts within 4 inches of the location indicated. Manipulation of piles within specified tolerances is permitted, but do not manipulate piles more than 1-1/2 percent of their exposed length above the ground surface or mudline. Check all piles for heave. Piles found to be heaved shall be removed and redriven to the indicated tip elevation.

3.1.7 Splices: Splicing of piles is not permitted for timber or concrete piling.

3.1.8 Pile Cut Offs:

3.1.8.1 Timber Piles: Cut off piles with a smooth level cut using pneumatic tools, sawing, or other suitable methods approved by the Engineer. The use of explosives for cutting is not permitted.

3.1.9 Special Pile Driving Condition: Alternate pile driving techniques such as spudding or steel shoes on piles may be required due to the soil conditions at the site.

** END OF SECTION **

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION PINE
KNOLL SHORES, NORTH CAROLINA

SECTION 02365
TIMBER PILES FOR WALKWAY CONSTRUCTION

PART 1 - GENERAL

1.1 WORK INCLUDED: Furnish timber piles for fixed walkway and stairway construction as indicated on the Drawings. All piles shall be driven to the minimum penetration depth and tip elevations shown on the Drawings.

1.2 RELATED WORK: Section 02300 Pile Driving; Section 06310 Timber Construction.

1.3 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced:

ASTM D25 Standard Specification for Round Timber Piles

AWPA U1 Use Category System: User Specification for Treated Wood (UC4B / UC4C)

AWPA M4 Standard for Care of Preservative Treated Wood Products

1.4 SUBMITTALS: Submit certificates of compliance and certified test reports for timber piles and preservative treatment in accordance with Section 01300.

1.5 CRITERIA FOR BIDDING: Base bids on the number, size, and lengths of piles as indicated on the Drawings. Minimum pile penetration shall be 5.0 feet.

PART 2 - MATERIALS

2.1 PILES: Provide new Southern Pine friction cleaned peeled piles conforming to ASTM D25. Minimum butt and tip circumferences shall be as shown on the Drawings. Piles must be one piece without splicing.

PART 3 - EXECUTION

3.1 PRESERVATIVE TREATMENT: Pressure-treat all piles in accordance with AWPA U1 (UC4B/UC4C) with CCA to a minimum retention of 0.80 pcf (ground contact) or 2.50 pcf (marine exposure). Treat field cuts per AWPA M4 with 3 coats.

3.2 PILE DRIVING: Piles shall be driven in accordance with Section 02300, Pile Driving.

**** END OF SECTION ****

SECTION 02576

CONCRETE SIDEWALKS AND DRIVEWAYS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK - Work done under this specification shall consist of the construction, reconstruction, or alteration of a one-course Portland cement concrete sidewalk, or a one-course Portland cement concrete driveway in accordance with these specifications, or a one-course Portland cement combination curb and gutter, and in conformity to the line and grades shown on the Drawings. It shall also consist of the removal of existing sidewalks or driveways or curb and gutter and other obstructions for excavating and filling, for fine grading and compaction of subgrade, and all backfilling necessary to complete the work, including the disposal of surplus material and cleaning up of the work.

1.2 RELATED SECTIONS. The specification sections listed below are referenced by this specification or reference this specification in the Construction Documents.

Section 02200 Earthwork

1.3 REFERENCES. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.3.1 American Society for Testing and Materials (ASTM):

ASTM A615

1.3.2 American Concrete Institute (ACI)

ACI 304 Guide to Measuring, Mixing, Transporting and Placing Concrete

ACI 305 Guide to Hot Weather Concreting

ACI 306 Guide to Cold Weather Concreting

1.3.3 North Carolina Department of Transportation (NCDOT Specs)

Standard Specifications for Road and Bridge Construction; 2018 Edition

1.4 UNDERGROUND UTILITIES AND STRUCTURES. Utilities and other existing underground structures shown on the drawings are shown for the purpose of indicating the existence of such utility or structure and no guarantee is given as to the exact location or the completeness of the information shown. It shall be the responsibility of the Contractor to locate all underground utilities and structures and to maintain service or promptly restore service, at his own expense, in the event interruption is caused by his operations.

All utilities and structures that are uncovered by the excavation process and left in the trench shall be carefully supported and protected from injury by the Contractor's operation.

At least 48 hours prior to beginning construction the Contractor shall notify North Carolina 811 utilities locating services - Tel: 811 in order that existing utilities in the area may be flagged and staked.

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

Location of buried waterlines owned by the Town of Pine Knoll Shores Water Department can be confirmed by contacting the Town of Pine Knoll Shores Public Services Department at (252) 247-4353.

1.5 NOTIFICATION. Notify the Engineer (Tel: 252-622-4338) at least 48 hours prior to beginning work.

1.7 SUBMITTALS: Submit the following to the ENGINEER in accordance with Section entitled "Submittals"

1.7.1 Certificates of Compliance:

- a. Concrete Mix
- b. Course and Fine Aggregates

PART 2 - MATERIALS

2.1 PORTLAND CEMENT CONCRETE: Concrete for sidewalks, driveways and curb & gutters and other incidental concrete construction shall conform to the requirements for Class B vibrated concrete in accordance with NCDOT Specifications, Section 1000-4, Portland Cement Concrete for Structures and Incidental Construction.

2.2 WATER: Water shall be clean and free from salt, oil, or organic substances. Water from local rivers, creeks, or ditches shall not be used.

2.3 FORM MATERIALS:

2.3.1 Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or other acceptable material. Provide lumber dressed on 4 edges. Structural design of formwork is Contractor's responsibility.

2.3.2 Form Coatings: Provide commercial formulation form-coating compounds with a maximum VOC of 350 mg/l that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

PART 3 - EXECUTION

3.1 SUBGRADE PREPARATION: The subgrade for sidewalks and driveways shall be formed by grading to the lines and grades shown on the drawings and shaped to the proper cross section, and shall be thoroughly compacted by rolling or tamping before placing any concrete in accordance with the requirements of Section 02200, "Earthwork," of these specifications. Where tree roots are encountered, they shall be removed to a depth of one foot for the full width of the walk.

3.1.1 Removal of Existing Sidewalks: Where existing sidewalks or driveways are to be removed, they shall be removed for their entire depth and disposed of in a satisfactory manner. Entire sections of a sidewalk slab between joints shall be removed.

3.2 PROTECTION OF SUBGRADE: Ditches and drains shall be provided and maintained to satisfactorily drain the subgrade. In no case shall sidewalk and driveway be placed on frozen or muddy subgrade. Frost crystals or mud caused by freezing and thawing shall be removed and replaced with suitable material at the Contractor's expense, or allowed to dry before placing sidewalk and driveway. If ruts are formed in the prepared subgrade, the subgrade shall be scarified and thoroughly compacted. If borrow material is required because of improper handling or drainage, the cost of such will be borne by the Contractor.

3.3 ALIGNMENT AND GRADES: Sidewalks shall be constructed in conformance to the lines and grades on the Plans. Sidewalks shall have a uniform longitudinal and cross slopes as indicated on the drawings.

3.4 FORMS: Forms used in construction sidewalks shall be of wood or metal for full depth of the concrete, straight, free from warp, and sufficient strength. They shall be staked securely enough to resist the pressure of the concrete without springing. All work forms shall be thoroughly cleaned before being reused.

3.7 CONCRETE PLACEMENT: Comply with ACI 304, "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete," and as herein specified.

3.7.1 Placing Concrete: The subgrade shall be thoroughly wetted and the concrete shall be placed thereon in one course to the required depth. The concrete shall be thoroughly spaded and rammed and struck off with a template to the required grade and cross section. Successive batches of concrete shall be deposited in a continuous operation until individual sections are completed.

3.7.2 Cold-Weather Placing: Comply with provisions of ACI 306 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures. When air temperature has fallen to or is expected to fall below 40 deg F (4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials. Do not use calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators.

3.7.3 Hot-Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg F (32 deg C). Mixing

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor's option.

3.8 Joints: Contraction joints shall be provided uniformly to separate the slab, and shall be cut in a straight line to a depth equal to at least one-third (1/3) of the total slab thickness. The joint shall be not less than one-eighth inch (1/8"), nor more than one-fourth inch (1/4") in width. A one-half inch (1/2") expansion joint filled with joint filler shall be placed between all sidewalks and adjoining backs of curbs and between the intersection of two (2) sidewalks and between all sidewalks and driveways. Sidewalks constructed adjacent to other structures shall be separated from the building with a similar joint. The maximum distance between transverse expansion joints shall be fifty (50) feet. The joint filler shall extend the full depth of the concrete and shall be one-fourth (1/4) of an inch below the finished surface of the sidewalk.

3.9 FINISHING: After the freshly-poured concrete has been brought to the establishing grade, it shall be floated with a wooden float to produce a surface free from irregularities. The final surface shall be obtained by troweling with a steel trowel or hand float and brushing lightly with a light weight brush in a transverse direction so as to produce a uniform gritty surface of the proper texture. All edges and joints shall be rounded to one-fourth inch (1/4"). No more concrete shall be laid than can be properly finished and covered during daylight hours.

3.10. CURING AND PROTECTION: Immediately after finishing operations have been completed, the entire surface of the concrete shall be covered and cured under burlap or other material approved by the Engineer. The burlap shall be free from holes, dirt, clay, or other foreign matter. Reclaim burlap shall not be permitted. The burlap shall weigh not less than twelve (12) ounces per ten (10) square feet when dry. Additional layers may be used to obtain the equivalent weight. Curing operations shall be carried on at all times when the air surrounding the concrete is 50°F or greater. After finishing the concrete, and the surface is hardened sufficiently or prevent marring, the entire surface shall be covered with one layer of thoroughly saturated burlap overlapping at least six inches (6") at joints to prevent gaps. Additional layers of burlap to result in a total of not less than twenty-four (24) ounces of burlap per ten (10) square feet of surface shall be spread, thoroughly saturated, upon the first layer. The covering shall be maintained fully wetted for seventy-two (72) hours after the concrete has been placed. Water shall be applied by a spray fine enough to avoid damage to the fresh concrete.

Liquid membrane forming curing compound may be used in lieu of keeping the concrete wet. When used, it shall be applied at a rate of one (1) gallon per one hundred fifty (150) square feet of area immediately after the concrete has been finished and the surface water sheen has disappeared. After the curing compound has been applied, the concrete shall be kept covered with a tarpaulin or heavy building paper for at least three (3) days to protect the surface from traffic and rain. Sufficient barricades, signs, and warning devices shall be provided by the Contractor to protect the finished concrete.

3.11 REMOVAL OF FORMS AND BACKFILLING: After the concrete has set sufficiently, the forms shall be removed and the spaces on both sides shall be backfilled with suitable earth, uniformly spread and compacted. The areas between the curb and sidewalk, and immediately back of the sidewalk, shall be left in a smooth, neat, and workmanlike condition.

3.12 PROTECTION OF CONCRETE: Immediately after the forms have been removed, traffic shall be excluded from crossing the concrete for a period of approximately fourteen days (14) days by erection and maintenance of suitable barricades. The Contractor shall be responsible for any damage resulting from traffic within the fourteen (14) day period and he shall remove and replace any concrete damage as directed by the Engineer.

3.13 REMOVAL OF DEFECTIVE WORK: The Engineer shall have the authority to and shall require the removal of any sidewalk or portion thereof laid under these specifications which does not

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

conform to the requirements as set forth herein. Upon notification in writing by the Engineer, the Contractor shall take immediate action to correct the faulty work at his own expense.

3.14 SITE CLEANUP: Prior to the acceptance of the work, all surplus and rejected material and unsightly objects such as stones, stumps, limbs, roots, concrete, etc., shall be removed from the site and not be considered complete until all cleaning up has been done and the site is of a neat appearance, with appropriate seeding, fertilizer, etc., completed.

--END OF SECTION--

SECTION 02900

SEEDING AND MULCHING

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specifications to the extent referenced. The publications are referred to in the text by the basic designation only.

1.2 DESCRIPTION OF WORK: The work includes seedbed preparation, seeding, mulching and irrigation for temporary stabilization, permanent stabilization and temporary grassed swale lining and stabilization where indicated on the plans of all newly graded finished earth surfaces, and all areas inside or outside the limits of construction that are disturbed by the Contractor

1.3 RELATED SECTIONS: The specification sections listed below are referenced by this specification or reference this specification in the Construction Documents.

Section 02200, Earthwork

1.4 REFERENCES: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only

1.4.1 North Carolina Department of Transportation, "Standard Specifications for Roads and Structures", January 2018, (NCDOT Specifications):

Section 1060-3	Seed
Section 1060-1	Fertilizer
Section 1060-2	Limestone
Section 1060-4	Mulch for Erosion Control

1.5 SUBMITTALS:

1.5.1 Certificates of Compliance:

- a. Seed
- b. Fertilizer
- c. Topsoil
- d. Lime
- e. Mulch

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

1.6 DELIVERY:

1.6.1 Fertilizer and Lime: Deliver materials to the site in original unopened containers bearing the manufacturers chemical analysis, name, trade name, trademark and indication of conformance to state and federal laws. In lieu of containers, furnish fertilizer and lime in bulk with a certificate indicating the above information accompanying each delivery.

1.6.2 Seed: Deliver seed to the site in original sealed packages bearing the products guaranteed analysis for percentages of mixtures, purity, germination, weedseed content, and inert material. Label in accordance with USDA Federal Seed Act and applicable state seed laws. Weeds, moldy, or otherwise damaged seed will be rejected.

1.7 STORAGE AND HANDLING: Store lime, fertilizer and seed in dry locations away from contaminants. Protect seed from drying out. Do not drop or dump materials from vehicles.

PART 2 - PRODUCTS

2.1 SEED: State certified seed of the latest season's crop in conformance with NCDOT specifications, Section 1060-3. Variety of seed shall be as indicated.

2.2 TOPSOIL: Natural friable soil representative of productive well-drained soils in the project area; free of subsoil, stumps, rocks larger than 1 inch diameter, brush, weeds, toxic substances and other material detrimental to plant growth.

2.3 LIME: Commercial agricultural limestone in accordance with NCDOT Specifications, Section 1060-2.

2.4 FERTILIZER: Granular fertilizer conforming to NCDOT Specifications, Section 1060-1. Granular fertilizer shall contain a minimum percentage by weight of 10 percent nitrogen, 10 percent available phosphoric acid, and 10 percent potash (10-10-10).

2.5 MULCH: Meeting NCDOT Specifications, Section 1060-4. Provide wood cellulose fiber mulch when hydroseeding.

2.6 EMULSIFIED ASPHALT: Meeting NCDOT Specifications, Section 1020-4, Grade RS-1. Use with straw mulch

2.7 WATER: Fresh water suitable for irrigation free of salts, acids, oil and other substances otherwise harmful to vegetation.

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

PART 3 - EXECUTION

3.1 PREPARATION

3.1.1 Final Grade: Immediately prior to placing topsoil, scarify the subgrade to 2 inch depth for bonding of topsoil to subsoil. Spread topsoil evenly to a minimum depth of 3 inches. Do not spread topsoil when excessively wet or frozen.

3.1.1.1 Correct irregularities in finished surfaces to eliminate depressions. Protect finished topsoil areas from damage from vehicular and pedestrian traffic.

3.1.2 Apply fertilizer, lime and asphalt tack at rates as follows:

Lime – 2 tons/ acre
10-10-10 – 1000 pounds per acre
0-20-0 – 500 pounds per acre (after seeding)
Asphalt tack – 200 gallons per ton of mulch

Soils with pH of 6 or greater should not be limed.

3.1.2.1 Drill Seeding, Broadcast Seeding, and Drop Seeding: Incorporate fertilizer and lime into the soil to a minimum of 6 inches. Application may be performed as a part of the subgrade tillage operations.

3.1.2.2 Hydroseeding: Apply liquid fertilizer in amounts sufficient to promote the specified stand of turf. Apply lime manually during subgrade preparation.

3.2 SEEDING:

3.2.1 Seeding Conditions: Immediately before seeding, restore soil to proper grade. Do not sow seed when ground is muddy, frozen or in an unsatisfactory condition for seeding.

3.2.2 Seeding Mixture: The following mixtures of seed are permitted for the uses and seasons indicated.

February 1 to April 30

Tall Fescue	50 lbs. / ac.
Pensacola Bahiagrass	10 lbs. / ac.
Korean or Kobe lespedeza (scarified)	50 lbs. / ac.

May 1 to August 31

Tall Fescue	50 lbs. / ac.
Weeping Lovegrass	5 lbs. / ac.
Korean or Kobe lespedeza (scarified)	50 lbs. / ac.
Browntop Millet	25 lbs. / ac.

September 1 to January 31

Tall Fescue	60 lbs. / ac.
Korean or Kobe lespedeza (unscarified)	60 lbs. / ac.
Rye (Grain)	25 lbs. / ac.
For slopes 2:2 or steeper, add 30 lbs./ ac. Sericea Lespedeza	
And 15 lbs. of weeping lovegrass.	

LANDSCAPE MIXTURE

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

January 1 to March 31

Common Bermudagrass (unhulled) 20 lbs. / ac.

April 1 to July 31

Common Bermudagrass (hulled) 12 lbs. / ac.

Hybrid bermudagrass sprigs or centipede sod may be used for landscaped areas.

3.2.3 Seeding Method: Apply seed within 24 hours of seedbed preparation. Sow seed with approved sowing equipment sowing at the rates indicated above. Sow half the seed in one direction, the remainder in a direction at right angles to the first sowing.

3.2.3.1 Drill Seeding: Use cultipacker seeders or grass seed drills. Drill seed uniformly to a maximum depth of 1/4 inch in clayey soils, 1/2 inch in sandy soils. Cover seed by spike-tooth harrow, cultipacker or other approved devices.

3.2.3.2 Hydroseeding: Mix seed, fertilizer, and wood cellulose fiber in required amount of water to produce a homogeneous slurry. After seed, water, and fertilizer have been thoroughly mixed, add 200 pounds of wood cellulose fiber per acre (dry weight) and apply the slurry. Seed shall not remain in water containing fertilizer more than one hour prior to application. Keep liquid fertilizer agitated during application.

3.2.3.3 Broadcast Seeding and Drop Seeding: Use broadcast or drop seeders. Cover seed uniformly to a maximum depth of 1/4 inch in clayey soils, 1/2 inch in sandy soils. Cover seed by spike-tooth harrow, cultipacker or other approved devices.

3.2.4 Rolling: immediately after seeding, firm entire area, except for slopes in excess of 3 to 1, with a roller not exceeding 90 pounds for each foot of roller width. If seeding is performed with cultipacker-type seeder or by hydroseeding, rolling may be omitted.

3.2.5 Mulch: Except with hydroseeding, spread straw mulch evenly at the rates indicated above.. Anchor by crimping mulch with serrated disk or by spraying asphalt emulsion at the rate indicated above. Take precautions to prevent asphalt materials from marking or defacing structures, pavements, utilities or plantings.

3.2.6 Erosion Control Material: Install in accordance with manufacturer's instructions.

3.3 PROTECTION OF SEEDED AREAS: Immediately after seeding, protect seeded areas against traffic or by otherwise erecting barricades and posting signs until final acceptance.

3.4 RESTORATION: restore to original condition existing turf areas which were damaged during turfing operations.

**TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA**

3.5 TURF ESTABLISHMENT PERIOD:

3.5.1 Turf Establishment: Turf shall be established immediately following grading activities. Maintenance of turf areas shall continue until established turf is accepted by the Owner.

3.5.2 Maintenance: During turf establishment period, mow the seeded area to an average height of 2.5 to 3.5 inches whenever the grass reaches a height of 5 inches. Remove excess clippings, eradicate weeds, fertilize overseed and perform other operations necessary to promote turf growth. Reseed, fertilize and mulch damaged areas immediately.

3.5.3 Duration: The turf establishment period will be in effect until the seeded areas are mowed three times.

3.6 FINAL ACCEPTANCE:

3.6.1 Final Inspection and Acceptance: Final Acceptance will be based on a satisfactory stand of turf defined as 95 percent ground cover for the established species.

- END OF SECTION -

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies cast-in place concrete, including formwork, reinforcing, mix design, placement procedures, and finishes.

1.3 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections:
 - 1. Shop drawings for reinforcement, showing bending, and placement of concrete reinforcement. Comply with ACI SP-66 (88), "ACI Detailing Manual," showing bar schedules, bar spacing, diagrams of bent bars, and arrangement of concrete reinforcement. Copies of the contract drawings shall not be marked and submitted as shop drawings.
 - 2. Concrete Mix Design for each type and strength of concrete shown on the plans complying with the mix design procedures specified in Section 3.9 of ACI 301. Proportioning based on empirical data, Section 3.10, is not permitted.
 - 3. Laboratory test reports for the following:
 - a. Aggregate gradation tests
 - b. Concrete mix design tests - Submit test records in accordance with the requirements of ACI 301 and the provisions of this specification.
 - 4. Materials certificates or manufacturer's literature signed by manufacturer and Contractor, certifying that each material item complies with the provisions of this specification for the following:
 - a. Aggregates
 - b. Admixtures
 - c. Reinforcement
 - d. Cement
 - e. Joint Materials

1.4 QUALITY ASSURANCE

- A. Codes and Standards: Comply with the applicable provisions of the following standards except as modified by the supplemental requirements specified in this section:
 - 1. ACI 318, "Building Code Requirements for Reinforced Concrete."
 - 2. ACI 301, "Specification for Structural Concrete for Buildings."
 - 3. Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice."
- B. Concrete Testing Service: The independent testing agency, including branch office used, referred to in this section and Chapter 16 of ACI 301 shall meet the requirements of ASTM E 329 and shall have been inspected within the past 3 years by the Cement and Concrete Reference Laboratory of the NBS and shall have corrected any deficiencies noted.
- C. Materials and installed work may require testing and retesting at any time during progress of work. All retesting of rejected materials for installed work shall be done at Contractor's expense.

PART 2 - PRODUCTS

2.1 FORM MATERIALS: To be in accordance with North Carolina Department of Transportation 2018 Standard Specifications Division 7.

2.2 CONCRETE MATERIALS: To be in accordance with North Carolina Department of Transportation 2018 Standard Specifications Division 10.

2.3 OTHER MATERIALS

- A. Liquid Membrane-Forming Curing Compound: To be in accordance with North Carolina Department of Transportation 2018 Standard Specifications Division 10.
- B. Bonding Agent: To be in accordance with North Carolina Department of Transportation 2018 Standard Specifications Division 10.
- C. Expansion Joint Material: To be in accordance with North Carolina Department of Transportation 2018 Standard Specifications Division 10.
- D. Isolation Joint Material: To be in accordance with North Carolina Department of Transportation 2018 Standard Specifications Division 10.
- E. Joint Sealant: To be in accordance with North Carolina Department of Transportation 2018 Standard Specifications Division 10.

2.5 PROPORTIONING AND DESIGN OF MIXES

- A. Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. If trial batch method used, use an independent testing facility acceptable to Engineer for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing.

- B. Submit written reports to Engineer of each proposed mix for each type and strength of concrete at least 15 days prior to start of work. Do not begin concrete production until proposed mix designs have been reviewed by the Engineer.
- C. Design mixes to provide normal weight concrete with the following properties, as indicated on drawings and schedules:
 - 1. 4000-psi, 28-day compressive strength; W/C ratio, 0.44 maximum (non-air-entrained), 0.35 maximum (air-entrained).
 - 2. 3000-psi, 28-day compressive strength; W/C ratio, 0.50 maximum (non-air-entrained), 0.46 maximum (air-entrained).

2.6 ADMIXTURES

- A. Use water-reducing admixture or high-range water-reducing admixture (Superplasticizer) in concrete as required for placement and workability.
- B. Use high-range water-reducing admixture (HRWR) in pumped concrete, and concrete with water/cement ratios below 0.50.
- C. Use air-entraining admixture in all concrete exposed to freezing and thawing unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content of 5 percent with a tolerance of plus or minus 1-1/2 percent. Other concrete not exposed to freezing, thawing, or hydraulic pressure or to receive a surface hardener shall have 2 percent to 4 percent air content.
- D. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
 - 1. Concrete containing HRWR admixture (Superplasticizer): Not more than 6 inches after addition of HRWR to site-verified 2-inch slump concrete.
 - 2. Other concrete: Not more than 4 inches.

2.7 CONCRETE MIXING

- A. Job-Site Mixing: Mix materials for concrete in appropriate drum-type batch machine mixer. For mixers of one cubic yard or smaller capacity, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released. For mixers of capacity larger than one cubic yard, increase minimum 1-1/2 minutes of mixing time by 15 seconds for each additional cubic yard or fraction thereof.
- B. Provide batch ticket for each batch discharged and used in work, indicating project identification name and number, date, mix type, mix time, quantity.
- C. Ready-Mix Concrete:
 - 1. Comply with requirements of ASTM C 94, and as specified.
 - 2. When air temperature is between 85 deg F (30 deg C) and 90 deg F (32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 GENERAL

- A. Coordinate the installation of joint materials with placement of forms and reinforcing steel.

3.2 FORMS

- A. General: Design, erect, support, brace, and maintain formwork to support vertical and lateral, static and dynamic loads that might be applied until concrete structure can support such loads. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances complying with ACI 347.
- B. Construct forms to sizes, shapes, lines, and dimensions shown and to obtain accurate alignment, location, grades, level, and plumb work in finished structures. Provide for openings, sinkages, keyways, recesses, screeds, bulkheads, anchorages and inserts, and other features required in work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent leakage of cement paste.
- C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces.
- D. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete. Securely brace temporary openings and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- E. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before concrete is placed. Retighten forms and bracing before concrete placement as required to prevent mortar leaks and maintain proper alignment.

3.4 PLACING REINFORCEMENT

- A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars," for details and methods of reinforcement placement and supports and as herein specified.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as approved by Engineer. Avoiding cutting or puncturing vapor barrier during reinforcement placement and concreting operations.
- D. Place reinforcement to obtain at least minimum coverage for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- E. Welding of bar reinforcement will not be permitted unless otherwise indicated on the drawings.

3.5 PLACING TIE-RODS

- A. Accurately position, support, and secure tie-rods against displacement.

- B. All portions of tie-rods and associated hardware (ie plate washers, nuts, turnbuckles, beveled washers etc) which are not embedded in concrete shall be fully covered with coal tar coating.
- C. Tie-rods shall be fully tightened prior to placement of final backfill against sheetpile wall.

3.6 JOINTS

- A. Construction Joints: Locate and install construction joints as indicated or, if not indicated, locate so as not to impair strength and appearance of the structure, as acceptable to the Engineer.
- B. Provide keyways at least 1-1/2 inches deep in construction joints. Accepted bulkheads designed for this purpose may be used.
- C. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints except as otherwise indicated.
- D. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.

3.7 CONCRETE PLACEMENT

- A. Changes in the mix design including the addition of mix water at the job site is prohibited.
- B. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work.
- C. General: Comply with ACI 304, "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete," and as herein specified.
- D. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.
 - 1. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - 2. Bring top surfaces to correct level with straightedge and strike off. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
 - 3. Maintain reinforcing in proper position during concrete placement.
- E. Cold-Weather Placing: Comply with provisions of ACI 306 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
- F. When air temperature has fallen to or is expected to fall below 40 deg F (4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
 - 1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

2. Do not use calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators.
- G. Hot-Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.
1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg F (32 deg C). Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor's option.
 2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
 3. Fog spray forms, reinforcing steel, and subgrade just before concrete is placed.

3.8 CONCRETE CURING AND PROTECTION

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply in accordance with manufacturer's instructions after screeding and bull floating, but before power floating and troweling.
- B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.
- C. Curing Methods: Perform curing of concrete by moisture retaining cover. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.9 SHORES AND SUPPORTS

- A. General: The structural design, fabrication, and placement of shoring shall be the responsibility of the contractor.

3.10 QUALITY CONTROL TESTING DURING CONSTRUCTION

- A. Concrete testing services will be performed and paid for by the owner. Testing services shall be performed by an independent testing agency approved by the Engineer and paid for by the contractor. The testing agency shall be responsible for making, handling and curing the specimens in addition to testing the concrete.
- B. Sampling and testing for quality control during placement of concrete may include the following, as directed by Engineer, for Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.
 1. Slump: ASTM C 143; one test at point of discharge for each truck delivered to the job site.
 2. Air Content: ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231 pressure method for normal weight concrete; one for each day's pour of each type of air-entrained concrete.

3. Concrete Temperature: Test hourly when air temperature is 40 deg F (4 deg C) and below, when 80 deg F (27 deg C) and above, and each time a set of compression test specimens is made.
 4. Compression Test Specimen: ASTM C 31; one set of 6 standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory-cured test specimens except when field-cure test specimens are required.
 5. Compressive Strength Tests: ASTM C 39; one set for each 50 cubic yards (or each day's pour if less than 50 cubic yards placed during a day) of each type and strength of concrete; two specimens tested at 7 days, two specimens tested at 28 days, and two specimens retained in reserve for later testing if required.
- C. Test results will be reported in writing to Architect, Structural Engineer, Ready-Mix Producer, and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day tests and 28-day tests.
- D. If additional testing, curing, or other measures are required to confirm or verify the strength of any concrete in question, cost shall be paid by the contractor.

END OF SECTION

SECTION 06310

TIMBER CONSTRUCTION

PART 1 - GENERAL

1.1 WORK INCLUDED: **Supply treatment, fabrication and installation of fixed timber walkways including treatment of handrails, decking, stringers, bent caps, piles, and cross-bracing.**

1.2 RELATED WORK: **Section 02200 - Earthwork**

1.3 APPLICABLE PUBLICATIONS: **The publications listed below for a part of this specification to the extent referenced. The publications are referenced by the basic designation only. The latest edition of each specification shall be referenced.**

1.3.1 American Society for testing and Materials (ASTM) Specifications:

A36	Standard Specification for Structural Steel
A123	Zinc (Hot Galvanized) Coatings on Products Fabricated from Rolled, Pressed and Forged Steel Shapes, plates, Bars and Strip.
A153	Zinc Coating (Hot Dip) on Iron and Steel Hardware
A307	Carbon Steel Externally and Internally Threaded Standard Fasteners

1.3.2 American Wood Preservers' Association (AWPA) Publications:

UI-17	Use category system user specifications for treated wood.
M4	Standard for the Care of Preservative treated Wood Products
M6	Brands Used on Forest Products

1.3.4 American Institute of Steel Construction

Manual of Steel Construction, 8th Edition "Specifications for the Design, Fabrication and Erection of Steel Buildings"

1.3.5 American Welding Society (AWS) Publication:

D1.1	Structural Welding Code
------	-------------------------

1.3.6 American National Standards Institute (ANSI) Publication:

B18.2.1	Square and Hex Bolts and Screws
B18.22.1	Plain Washers

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

1.3.7 Society of Automobile Engineers

SAE 1010

Carbon Steel

1.4 SUBMITTALS:

1.4.1 Certified Test Reports: Submit and Obtain approval of certified test reports for the following:

- a. Timber and treatment
- b. Hardware and galvanizing

1.4.2 Plant Inspection: Timbers bearing the AWP Brand in accordance with AWP M6 will be acceptable for the preservative treatment of timbers; however, the Owner reserves the right to perform plant inspection of the treatment process, at its discretion.

1.4.3 Shop Drawings: Contractor shall submit shop drawings for approval. Shop drawings shall cover metal fabrications for timber connections. Shop drawings shall be approved before fabrication is begun. Shop drawings shall show materials, construction details, and other pertinent data.

1.5 DELIVERY AND STORAGE:

Store timber on the site in piles. Open stack untreated material on suitable skids at least 12 inches above the ground, and pile to shed water and prevent warping. Close stack treated material in a manner that will prevent long timbers or preframed materials from sagging or becoming crooked. Clear ground beneath and in the vicinity of all such piles of weeds, rubbish and combustible materials. Where required, all materials shall be protected from the weather by suitable covering. Handle treated timber carefully without sudden dropping, breaking of outer fibers, bruising or penetrating the surface with tools. Handle timbers with rope or chain slings. No cant dogs, peaveys, hooks or pike poles shall be used. Hardware received at the site shall be protected from corrosion by storing and covering.

PART 2 - PRODUCTS

2.1 WOOD:

2.1.1 Timbers: All timber in the fixed pier shall be stress rated Southern Pine No. 1 stress rated. Timber shall be identified by the grade mark of a recognized association or independent inspection agency using the specific grading requirements of the association recognized as covering the species used. Such association or independent inspection agency shall be certified by the Board of Review, American Lumber Standards Committee, to grade the species used. Fabrication of timbers shall be complete as possible before preservative treatment. All walkway timbers shall be treated with ACQ in accordance with AWP UI-17 for use category 4A. Preservative retention for all members shall be 0.40 pounds per cubic foot. All walkway timbers shall be S4S lumber with the nominal dimensions indicated. No wane in timbers will be allowed. Timbers delivered to site with wane shall be removed from the site.

2.2 METAL PRODUCTS

2.2.1 Hardware: Hardware shall include bolts with the necessary nuts and washers, timber bolts conforming to ASTM A307. Washers shall be circular or square flat smooth and shall conform to ANSI

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

B18.22.1. Bolts shall be provided with washers, between board and nut for all bolted connections. Heads of timber bolts shall be installed in direct contact with wood surface.

2.2.2 Steel and Iron: Use standard mill finished structural steel shapes and plates in accordance with AISC specifications. All hardware shall conform to ASTM A307.

2.2.3 Zinc Coating: All steel and hardware shall be zinc coated or galvanized by the hot-dip process in accordance with requirements of ASTM A123 and/or A153, as applicable after fabrication.

2.3 FABRICATION:

2.3.1 Unless otherwise indicated on the Drawings or the approved shop drawings, use materials of size, thickness, and type required to produce reasonable strength and durability in the work of each section.

2.3.2 Fabricate with accurate angles and surfaces which are true to the required lines and levels, grinding exposed welds smooth and flush. Holes shall be drilled and not burned.

2.3.3 After fabrication is complete and prior to coating, properly clean metal surfaces.

2.3.4 All welding shall conform to AWS D1.1.

PART 3 - EXECUTION

3.1 FRAMING: Accurately cut and frame all timber in such a manner that the joints will have a close fit of the entire contact surfaces. Secure timbers and piles in their proper alignment. No shimming will be permitted in making joints, nor will open joints be accepted. Bore holes for bolts with a bit 1/16 inch larger than the bolt diameter. Counter boring or countersinking shall not be done.

3.2 FASTENING: Washers of the size and type specified shall be used under all bolt heads and nuts which would otherwise come in contact with wood. Check all bolts by burring the threads after the nuts have been finally tightened. Vertical bolts shall have the nuts on the lower end. In all cases where bolts are used to fasten timber to timber, timber to concrete or timber to steel, bolt members tightly together when they are installed and retighten immediately prior to final acceptance of the work. All bolts shall have sufficient additional threading to provide at least 3/8 inch per foot thickness of timber for future tightening.

3.3 FIELD TREATMENT:

3.3.1 Timber Work: Field treat all cuts in treated timbers or piles and all abrasions in accordance with AWP M4. Trim all cuts and abrasions before field treatment. Paint all depressions or openings including bolt holes, joints or daps, including recesses with preservative treatment solution. Exposed ends of timber piles shall be field treated two times after cutoff and milling is completed.

3.3.2 Galvanized Surfaces: Zinc coating which has been damaged to the extent that base metal is exposed, shall be repaired and recoated. Thoroughly clean the damaged area by wire brushing and remove all traces of welding flux and loose or cracked zinc coating prior to painting. Paint cleaned surfaces with two coats of Zinc-oxide Zinc dust paint, ZRC cold galvanizing compounds or approved equal. In addition to damaged areas, all exposed threaded surfaces shall be painted with two coats of zinc oxide zinc dust paint after installation of the nut.

TOWN OF PINE KNOLL SHORES
MEMORIAL PARK BEACH ACCESS RECONSTRUCTION
PINE KNOLL SHORES, NORTH CAROLINA

END OF SECTION



SURE-STEP™
DOCK & DECKING

INSTALLATION GUIDE
PLUS SERIES

TABLE OF CONTENTS

Introduction.....	1
Installation Instructions.....	2
Care and Maintenance.....	3

GENERAL INTRODUCTION

Sure-Step™ is an innovative interlocking decking system for docks, marinas, gangways, and walkways. Made from virgin polypropylene this decking system contains no wood fibers that could compromise performance.

Sure-Step™ with its Chevron™ pattern is designed for sunlight and water penetration. This keeps vegetation alive and minimizes wave force to keep platform stable. The slip resistant surface is ideal for the marine environment.

Excellent UV properties will keep the dock looking new longer. Easy clean up with mild soap and water.

Sure-Step™ is available in four colors.

- White
- Gray
- Tan
- Khaki

Sure-Step is available in 3ft, 4ft, and 5ft lengths.

The following instructions have been provided to help you understand and take advantage of the Sure-Step™ ease of installation.

Failure to follow these instructions could risk voiding the Sure-Step™ warranty.

LOCAL BUILDING CODES

Follow all local codes and good construction practices when designing and installing the substructure. Failure to follow local building codes, including filing plans and inspections may result in costly post-construction modifications. Perspective Products will not be held responsible in any way for failure to follow local building codes and structural requirements.

TOOLS REQUIRED

- SAFETY GLASSES
- CORDED/ CORDLESS DRILL DRIVER
- DRIVER BIT FOR FASTENERS
- TAPE MEASURE
- LEVEL

PARTS

SURE-STEP PLUS

Part Number: PLUS1236
Dimensions: 1.20" x 12.00" x 36"

Part Number: PLUS1248
Dimensions: 1.20" x 12.00" x 48"

Part Number: PLUS1260
Dimensions: 1.20" x 12.00" x 60"

All Sure-Step™ boards are available in gray, white, tan, or khaki.

ADDITIONAL RESOURCES

Please visit perspectiveproducts.com for helpful visuals showing you various steps in the installation of Sure-Step™ decking materials.

INSTALLATION INSTRUCTIONS

INSTALLATION

1. The 3' panel has 6 mounting holes and the distance between holes measures 18", 18".

The 4' panel has 8 mounting holes and the distance between holes measures 16", 16", 16".

The 5' panel has 10 mounting holes and the distance between holes measures 15", 15", 15", 15".

2. The recommended fastener is a #10 pan head stainless steel screw. Fasten the first Sure-Step™ panel to the substructure. Do not over tighten screws. The slotted mounting hole is designed to allow for thermal expansion and contraction. Repeat this process for the remaining panels.

SPACING GUIDELINE

1. To compensate for the slight effect of thermal expansion and contraction, allow for clearance on each end of the panel in the length direction. The amount of clearance can be determined by measuring the panel length and recording the temperature at the time of installation. Estimate the regional climate change.
2. The Sure-Step™ panel will grow or shrink 1/16" for every 25° F of temperature change from the installation temperature.

CLEANING

Periodic cleaning with mild soap and water will generally take care of common everyday stains. A plastic bristled scrub brush with a bucket of water and dish soap works well for small isolated stains.

The sooner a stain is removed the better. It is easier to remove a fresh stain than one that has had time to set.

On tougher stains and decking that has not been cleaned routinely, use of a pressure washer is acceptable. Most stains will be removed, returning the appearance of your deck to like new.

WARRANTY

Please refer to separate warranty document, which contains the details of the lifetime limited warranty.

DISCLAIMER

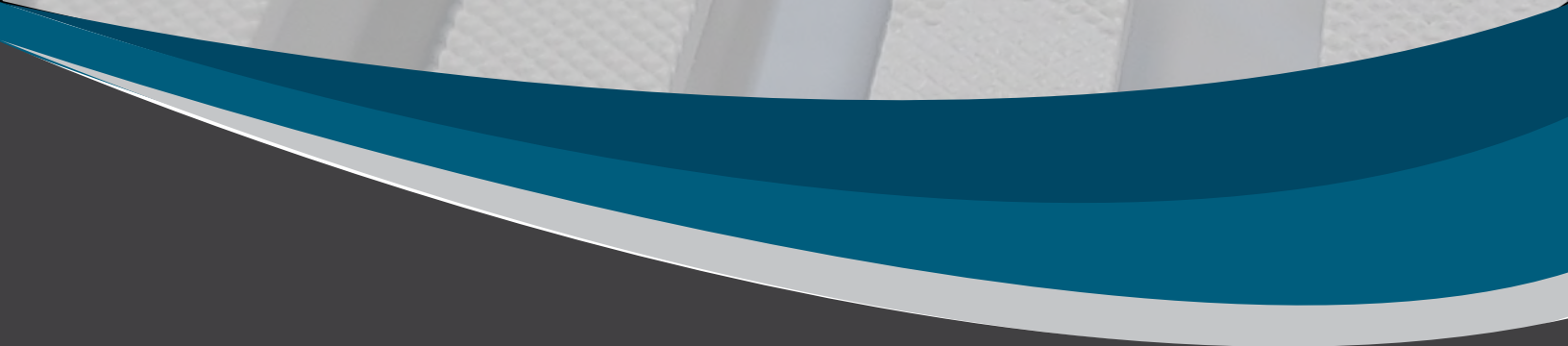
The information contained herein is believed to be reliable but is not a warranty or representation for which we assume legal responsibility. It is the user's responsibility to undertake sufficient confirmation and testing to determine the appropriateness for their own particular purpose of any information or products referred to herein. Therefore, no warranty for any particular purpose is made or implied.

All information relating to applications, code and standards compliance is provided for your convenient reference without any representation as to accuracy or suitability. Perspective Products disclaims any responsibility. It is the user's responsibility to assess the suitability of any information or products for his specific application.



THRU-FLOW

PREMIUM **DECKING** SOLUTIONS



INSTALLATION GUIDE

INSTALLATION

Before installing your ThruFlow™ panels, make sure your support structure is independently secure and properly configured.

CODES and STANDARDS: Be sure to follow your local building codes and any guidelines set by your local authorities.

SAFETY: For a safe installation, be sure to wear protective gear such as safety glasses and work boots.

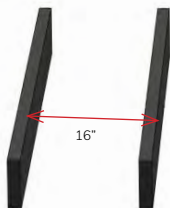
FASTENERS: For best results, use high-quality #10/12-305/316 2.5" stainless steel pan head screws for wood (for applications other than wood, use self-tapping screws). No need to pre-drill – our panels come pre-molded and countersunk for easy installation. Just screw through the panel into your frame, but don't overtighten – this helps allow for natural expansion and contraction.

GAPPING GUIDELINES: ThruFlow panels are built to handle the elements, however, they may expand and contract slightly with temperature changes. Leave a small gap between panels and at the ends to allow for natural movement.

For detailed specs, visit the series panel pages at www.thruflow.com.



CORRECT INSTALLATION



Build your substructure with evenly spaced cross-members based on your panel size:

- 3' panels – 18" OC
 - 4' panels – 16" or 24" OC
 - 5' panels – 15" OC
 - 6' panels – 18" or 24" OC
- OC = on centre

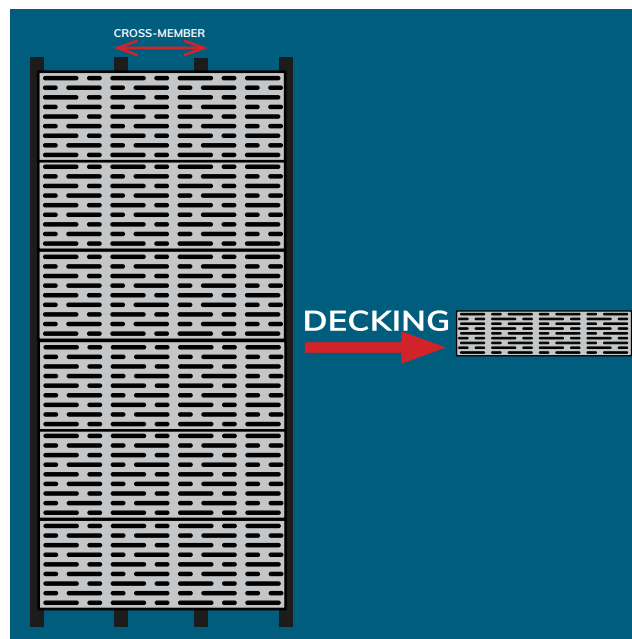
Place your first ThruFlow panel onto the frame and secure it with a pan head screw. Tighten until secure – avoid overtightening.

Laying out the panels first is a great way to check for spacing.

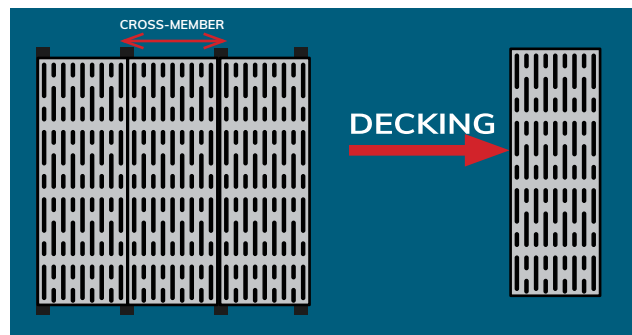
Using the built-in interlocking system, snap the next ThruFlow panel into place and fasten it just like the first.

Finishing up: Most panels include tabs that can be easily removed with a hand or power saw if desired. Legacy XP 3' and 4' panels are also available in a convenient no-tab option.

CORRECT INSTALLATION



INCORRECT INSTALLATION



Installing panels vertically over cross-members leaves them unsupported and prone to damage. Proper alignment ensures lasting performance.