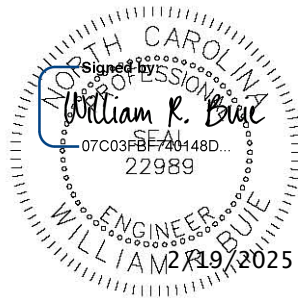


BID DOCUMENTS & TECHNICAL SPECIFICATIONS

FOR

Henderson County Facilities Paving 2025



**HENDERSON COUNTY
NORTH CAROLINA**

PREPARED BY:

**WGLA ENGINEERING, PLLC
CONSULTING ENGINEERS
NC LICENSE: P1342
724 5TH AVENUE WEST
HENDERSONVILLE
NORTH CAROLINA 28792**

February 2025

Henderson County Facilities Paving 2025

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INVITATION FOR BIDS
Henderson County Facilities Paving 2025
Henderson County
Henderson County, North Carolina

Separate, Sealed Bids will be received by WGLA Engineering, PLLC at 724 5th Avenue West Hendersonville, NC 28739 until **Thursday, March 20, 2025 at 2:00pm**. Submitted bids will then be opened and read publicly at the aforementioned date and time for the furnishing of materials, labor, and equipment for the construction of:

Paving Project Base Bid

720 SY +/- of Asphalt Overlay (1.5")

5755 SY +/- of New Asphalt (2")

2745 SY +/- of Seal Coat

2150 SY +/- of Double Seal

720 SY +/- of Single Seal

5070 SY +/- of Asphalt Removal

Paint Striping to match the existing conditions

Adjustment of utilities, traffic control, and related work

A **mandatory prebid meeting** will be held on **Monday, March 3, 2025 at 3:00pm** at the office of WGLA Engineering at 724 5th Avenue West Hendersonville, NC 28739. Any contractor wishing to submit a bid must have a representative present at this meeting.

The CONTRACT DOCUMENTS may be examined at the following location:

ELECTRONIC copies of the PLANS and CONTRACT DOCUMENTS may be obtained by sending an email to Casey Brewer (cbrewer@wgl.com) or by calling WGLA Engineering at (828) 687-7177 ext. 308. A link to the plans and bid documents will be emailed to those requesting documents.

Contractors offering a bid on this project must be licensed to do contracting in the State of North Carolina in accordance with North Carolina General Statutes.

NOTE: If bids are to be mailed, they should be directed to WGLA Engineering, PLLC c/o William R. Buie 724 5th Avenue West Hendersonville, NC 28739. Bids may also be hand delivered to the office of WGLA Engineering at 724 5th Avenue West Hendersonville, NC 28739 until just prior to the bid opening.

Henderson County reserves the right to reject any or all bids for all proposals.

Henderson County encourages small, female, minority, and local Contractors to bid on this project.

Henderson County also promotes Fair Housing, is an Equal Opportunity Employer, and encourages others to provide equal employment opportunities.

Henderson County does not discriminate on the basis of handicap status.

PUBLICATION DIRECTIONS

Publish in *legal notices*.

Please publish *once in the Hendersonville Times News as soon as possible*:

AFFIDAVIT REQUIRED

Please **mail invoice and affidavit** of the publication to:

Henderson County
1 Historic Courthouse Square
Hendersonville, NC, 28792
RE: Henderson County Facilities Paving 2025
ATTN: Marcus Jones
Phone: 828-694-6526
e-mail address: mjones@hendersoncountync.gov

Henderson County Facilities Paving 2025

Part 2 - BID FORMS & INSTRUCTIONS

Advertisement for Bids

Instructions to Bidders

Bid Form (SUBMIT WITH BID)

Guidelines for Recruitment and Selection of Minority Business

Minority Business Forms and Affidavits (SUBMIT WITH BID)

INSTRUCTIONS TO BIDDERS

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.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, 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 Bidder's qualifications to perform the Work, within five days of OWNER's request Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for.

ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 *Subsurface and Physical Conditions*

- A. The Supplementary Conditions identify: NONE
 - 1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Bidding Documents.
 - 2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Bidding Documents.

B. Copies of reports and drawings referenced in paragraph 4.01.A will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions or information contained in such reports or shown or indicated in such drawings.

4.02 *Underground Facilities*

A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities, including OWNER, or others.

4.03 *Hazardous Environmental Condition*

A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that ENGINEER has used in preparing the Bidding Documents.

B. Copies of reports and drawings referenced in paragraph 4.03.A will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in paragraph 4.06 of the General Conditions has been identified and established in paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.04 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.

4.05 On request, OWNER will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.06 Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by OWNER or others (such as utilities and other prime contractors) that relates to the Work for which a Bid is to be submitted. On request, OWNER will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

4.07 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, and carefully study all reports and drawings of a Hazardous Environmental Condition, if any, at the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions;

E. obtain and carefully study (or assume responsibility for doing so) all 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.

4.08 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 **Monday, March 3, 2025 at 3:00 PM**. Representatives of OWNER and ENGINEER will be present to discuss the Project. Bidders are required to have a representative in attendance at this meeting and participate in the conference. ENGINEER will transmit to all prospective Bidders 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.

ARTICLE 6 - SITE AND OTHER AREAS

6.01 The Site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Bidding Documents.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

7.01 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 ten 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.

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

ARTICLE 9 - CONTRACT TIMES

9.01 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 10 - LIQUIDATED DAMAGES

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

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or those substitute or "or-equal" materials and equipment approved by ENGINEER and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or "or-equal" item. No item of material or equipment will be considered by ENGINEER as a substitute or "or-equal" unless written request for approval has been submitted by Bidder and has been received by ENGINEER at least 15 days prior to the date for receipt of Bids. Each such request shall conform to requirements of paragraph 6.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. ENGINEER's decision of approval or disapproval of a proposed item will be final. If ENGINEER approves any proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 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, without an increase in the Bid.

12.02 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.

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

ARTICLE 13 - PREPARATION OF BID

13.01 The Bid form is included with the Bidding Documents. Additional copies may be obtained from ENGINEER.

13.02 All blanks on the Bid form shall be completed by printing in ink or by typewriter and the Bid signed. A Bid price shall be indicated for each unit price item listed therein, or the words "No Bid," "No Change," or "Not Applicable" entered.

13.03 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. Any corporation organized outside of the State of North Carolina must have filed a Certificate of Authority to conduct business in the State of North Carolina with the North Carolina Secretary of State's office in order to be eligible for award of this Bid.

13.04 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. Any Limited Partnership organized outside of the State of North Carolina must have filed a Certificate of Authority to conduct business in the State of North Carolina with the North Carolina Secretary of State's office in order to be eligible for award of this Bid.

13.05 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. Any Limited Liability Company organized outside of the State of North Carolina must have filed a Certificate of Authority to conduct business in the State of North Carolina with the North Carolina Secretary of State's office in order to be eligible for award of this Bid.

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

13.07 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.

13.08 All names shall be typed or printed in ink below the signatures.

13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid form.

13.10 The address and telephone number for communications regarding the Bid shall be shown.

13.11 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.

ARTICLE 14 - BASIS OF BID; EVALUATION OF BIDS

14.01 *Unit Price*

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.

B. The total of all estimated prices will be determined as the sum of the products of the estimated quantity of each item and the unit price Bid for the item. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

14.02 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.

14.03 Bid prices will be compared after adjusting for differences in the time designated by Bidders for Substantial Completion. The adjusting amount will be determined at the rate set forth in the Contract Documents for liquidated damages for failing to achieve Substantial Completion for each day before or after the desired date appearing in Article 9.

ARTICLE 15 - SUBMITTAL OF BID

15.01 Each prospective Bidder is furnished one copy of the Bidding Documents with one separate unbound copy each of the Bid form, and, if required, the Bid Bond. The unbound copy of the Bid form is to be completed and submitted with the Bid security (if applicable).

15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to Bid and shall be enclosed in an opaque sealed envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to OWNER.

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

16.01 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.

16.02 Bids may be withdrawn after the date and time of the Bid opening without forfeiture of the Bid Security only as allowed by N.C.G.S. §143-129.1.

ARTICLE 17 - OPENING OF BIDS

17.01 Bids will be opened publicly. A tabulation of the Bids may be available to Bidders after the opening of Bids.

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 All Bids will remain subject to acceptance for a period of **60 days** after the Bid opening.

ARTICLE 19 - AWARD OF CONTRACT

19.01 OWNER reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, 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-responsible. 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.

19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. 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.

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

19.04 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.

19.05 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.

19.06 If the Contract is to be awarded, OWNER will award the Contract to the Bidder whose who is deemed to be the lowest responsive, responsible Bidder.

ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

20.01 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 21 - SIGNING OF AGREEMENT

21.01 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 10 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER. Within ten days thereafter, OWNER shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

Henderson County Paving 2025

PROJECT IDENTIFICATION:

Henderson County Facilities Paving 2025

THIS BID IS SUBMITTED TO:

Henderson County
C/O WGLA Engineering
724 5th Avenue West
Hendersonville, NC 28739

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 60 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 (previous addenda 1 – 3 are incorporated into this bid package and do not need to be acknowledged)

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

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 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.

5.01 Unit Prices have been computed in accordance with paragraph 11.03.B of the General Conditions.
SEE ATTACHED BID SCHEDULE

Bidder will complete the Work in accordance with the Contract Documents for the unit prices shown on the Bid Schedule.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents.

6.01 Bidder agrees that the Work will be substantially completed and completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions on or before the dates or within three hundred (300) consecutive calendar days after the date of the notice to proceed.

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.

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

- A. A tabulation of Subcontractors, Suppliers [and other] individuals and entities required to be identified in this Bid;
- B. Required bidder qualifications statement with supporting data; and
- C. (List other documents as pertinent).

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.

HENDERSON COUNTY 2025 PAVING Paving Improvements Bid Schedule

Bidder _____

Plans: Henderson County Facilities Paving

Bids Due:

Receipt of the following **addenda** is hereby acknowledged:

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____

Section 1 - County Facilities

No.	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL PRICE
Central Services (C-106)					
1	Double Seal	SY	2,150	_____	_____
2	Remove Existing Asphalt/Impervious	SY	1,305	_____	_____
3	2" Asphalt Surface Course (S9.5C)	SY	1,410	_____	_____
4	Paint Striping (Match Existing)	LS	1	_____	_____
				SUBTOTAL	_____

No.	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL PRICE
Henderson County Garage (C-107)					
5	Remove Existing Asphalt/Impervious	SY	1,625	_____	_____
6	Recondition Stone Subgrade	SY	1,625	_____	_____
7	Remove Existing 4" Stone Subgrade	SY	580	_____	_____
8	8" Compacted Stone Subgrade	TN	180	_____	_____
9	Adjust Existing Drop Inlet	LS	1	_____	_____
10	2" Asphalt Surface Course (S9.5C)	SY	2,205	_____	_____
11	Bollard	EA	4	_____	_____
12	Paint Striping (Match Existing)	LS	1	_____	_____
				SUBTOTAL	_____

Edneyville Library - Upper Parking Lot (C-108)					
13	Single-Seal	SY	720		
14	1.5" S9.5C Asphalt Overlay	SY	720		
15	Full Depth Asphalt Patch	SY	5		
16	Concrete Curb (No Gutter)	LF	85		
17	Mill Adjacent to Sidewalk (3' Width)	LF	135		
18	Paint Striping (Match Existing)	LS	1		
				SUBTOTAL	

Probation & Parole Department (C-109)					
Larger Lot					
19	Seal Coat	SY	2,745		
20	Paint Striping (Match Existing)	LS	1		
Smaller Lot					
21	Remove Existing Asphalt/Impervious	SY	530		
22	Recondition Stone Subgrade	SY	530		
23	2" Asphalt Surface Course (S9.5C)	SY	530		
24	Paint Striping (Match Existing)	LS	1		
25	Asphalt Swale	LF	60		
				SUBTOTAL	

Henderson County Animal Shelter (C-110)					
26	Remove Existing Asphalt/Impervious	SY	1,610		
27	Recondition Stone Subgrade	SY	1,610		
28	2" Asphalt Surface Course (S9.5C)	SY	1,610		
29	Full Depth Asphalt Patch	SY	10		
30	Paint Striping (Match Existing)	LS	1		
				SUBTOTAL	

Section 1 Total: _____

Section 1: County Facilities (1-30) _____

Performance & Payment Bonds _____

TOTAL _____

Unit Price Work

No.	DESCRIPTION	UNIT	UNIT PRICE
1	Additional Stone for Subgrade	TN	
2	Tensar BX 1200 Geogrid (or approved equal)	LS	
3	Petromat 4599 Paving Fabric (or approved equal) (4th Ave Bridge only)	SY	
4	Shoulder Backfill (CABC Stone Along Pavement Edge) (18inch width)	LF	
5	New Wheel Stop	EA	

NOTES:

- 1 Price for patching including asphalt removal should include disposal of waste material off site at an approved location.
- 2 Price shall include the adjustment of all utilities to final grade.
- 3 **All items quantities are approximate & shall be verified by contractor prior to bidding.**
- 4 The Owner will be responsible for all testing.
- 5 NCDOT standards shall apply to all work.
- 6 All improved asphalt areas with existing asphalt paint shall be reapplied with paint striping to match existing layout with two coats of asphalt paint.

Submitted by:

Date:

Address

License Number

Seal (if applicable)

**GUIDELINES FOR RECRUITMENT AND SELECTION OF
MINORITY BUSINESS FOR STATE FUNDED PROJECTS ADMINISTERED
THROUGH THE CONSTRUCTION GRANTS AND LOANS SECTION**

In accordance with G.S. 143-128.2, (effective January 1, 2002), these guidelines establish goals for minority participation in single-prime bidding, separate-prime bidding, construction manager-at-risk, and alternative contracting methods on construction projects in the amount of \$300,000 or more. The legislation provides that the Public Entity shall have a verifiable ten percent goal for participation by minority businesses in the total value of work for each project for which a contract or contracts are awarded. These requirements are published to accomplish that end.

SECTION A: INTENT

It is the intent of these guidelines that the Public Entity, as awarding authority for construction projects, and the contractors and subcontractors performing the construction contracts awarded, shall cooperate and, in good faith, do all things legal, proper, and reasonable to achieve the statutory goal of 10% for participation by minority businesses in each construction project as mandated by GS 143-128.2. Nothing in these guidelines shall be construed to require contractors, or awarding authorities, to award contracts or subcontracts to make purchases of materials or equipment from minority-business contractors, or minority-business subcontractors, who do not submit the lowest responsible, responsive bid(s).

SECTION B: DEFINITIONS

1. Minority - A person who is a citizen or lawful permanent resident of the United States, and who is:
 - a. Black; that is, a person having origins in any of the black racial groups in Africa;
 - b. Hispanic; that is, a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race;
 - c. Asian American; that is, a person having origins in any of the original peoples of the Far East, Southeast Asia, Asia, the Indian subcontinent, and the Pacific Islands;
 - d. American Indian; that is, a person having origins in any of the original peoples of North America; or
 - e. Female.

2. Minority Business - Means a business:
 - a. In which at least fifty one percent is owned by one or more minority persons; or in the case of a corporation, in which at least fifty one percent of the stock is owned by one or more minority persons, or socially and economically disadvantaged individuals; and
 - b. Of which the management and daily business operations are controlled by one or more of the minority persons, or socially and economically disadvantaged individuals who own it.
3. Socially and Economically Disadvantaged Individual - Means the same as defined in 15 U.S.C. 637. “Socially Disadvantaged Individuals are those who have been subjected to racial or ethnic prejudice, or cultural bias because of their identity as a member of a group without regard to their individual qualities. Economically Disadvantaged Individuals are socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities, as compared to others in the same business area who are not socially disadvantaged.”
4. Public Entity - Means local governmental units.
5. Owner - The local government unit named in the contract.
6. Designer - Any person, firm, partnership, or corporation, which has contracted with the Public Entity to perform architectural or engineering work.
7. Bidder - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.
8. Contract - A mutually binding legal relationship, or any modification thereof, obligating the seller to furnish equipment, materials or services, including construction, and obligating the buyer to pay for them.
9. Contractor - Any person, firm, partnership, corporation, association, or joint venture which has contracted with the Public Entity to perform construction work or repair.
10. Subcontractor - A firm under contract with the prime contractor or construction manager-at-risk for supplying materials, labor, and/or installation. The subcontractor may or may not provide materials in his subcontract.

SECTION C: RESPONSIBILITIES

1. Office for Historically Underutilized Businesses, Department of Administration
(hereinafter referred to as HUB Office.)

The HUB Office has established a program which allows interested persons or businesses, qualifying as a minority business under G. S. 143-128.2, to obtain certification in the State of North Carolina procurement system. The information provided by the minority businesses will be used by the HUB Office to:

- a. Identify those areas of work for which there are minority businesses, as requested;
- b. Make available to interested parties, a list of prospective minority-business contractors and subcontractors;
- c. Assist in the determination of technical assistance needed by minority-business contractors.

In addition to being responsible for the certification/verification of minority businesses that want to participate in the State construction program, the HUB Office will:

- (1) Maintain a current list of minority businesses. The list shall include areas of work in which each minority business is interested;
- (2) Inform minority businesses on how to identify and obtain contracting and subcontracting opportunities through the public entity;
- (3) Inform minority businesses of the contracting and subcontracting process for public construction building projects;
- (4) Work with the North Carolina trade and professional organizations to improve the ability of minority businesses to compete in the State construction projects;
- (5) The HUB Office also oversees the minority business program by:
 - a. Monitoring compliance with the program requirements;
 - b. Assisting in the implementation of training and technical assistance programs;
 - c. Identifying and implementing outreach efforts to increase the utilization of minority businesses;
 - d. Reporting the results of minority business utilization to the Secretary of the Department of Administration, the Governor, and the General Assembly.

2. Owner

Before awarding a contract, the owner shall do the following:

- a. Develop and implement a minority business participation outreach plan to identify minority businesses that can perform public building projects, and to implement outreach efforts to encourage minority business participation in these projects to include education, recruitment, and interaction between minority businesses and non-minority businesses;
- b. Attend the scheduled Pre-bid Conference;
- c. At least 10 days prior to the scheduled day of bid opening, notify minority businesses that have requested notices from the Public Entity for public construction or repair work, and minority businesses that otherwise indicate to the Office for Historically Underutilized Businesses an interest in the type of work being bid, or the potential contracting opportunities listed in the proposal. The notification shall include the following:
 1. A description of the work for which the bid is being solicited;
 2. The date, time, and location where bids are to be submitted;
 3. The name of the individual within the owner's organization who will be available to answer questions about the project;
 4. Where bid documents may be reviewed;
 5. Any special requirements that may exist;
- d. Utilize other media, as appropriate, likely to inform potential minority businesses of the bid being sought;
- e. Maintain documentation of any contracts, correspondence, or conversation with minority business firms made in an attempt to meet the goals;
- f. Review, jointly with the designer, all requirements of G.S. 143-128.2(c) and G.S. 143-128.2(f) - (i.e. bidders' proposals for identification of the minority businesses that will be utilized with corresponding total dollar value of the bid and an affidavit listing good faith efforts, or an affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) prior to recommendation of award;
- g. Evaluate documentation to determine that good faith effort has been achieved for minority business utilization prior to recommendation of award.

- h. Make documentation showing evidence of implementation of Owner's responsibilities available for review by the North Carolina Construction Grants and Loans Section and the HUB Office, upon request.

3. Designer

Under the single-prime bidding, separate-prime bidding, construction manager-at-risk, or alternative contracting method, the designer will:

- a. Attend the scheduled Pre-bid Conference to explain minority business requirements to prospective bidders;
- b. Assist the owner to identify and notify prospective minority business prime and subcontractors of potential contracting opportunities;
- c. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals;
- d. Review jointly with the owner, all requirements of G.S. 143-128.2(c) and G.S. 143-128.(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with corresponding total dollar value of the bid, and affidavit listing good faith efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award.
- e. Make documentation showing evidence of implementation of Designer's responsibilities available for review by the North Carolina Construction Grants and Loans Section and the HUB Office, upon request.

4. Prime Contractor(s), Construction Manager-at-risk, and its First-Tier Subcontractors

- a. Attend the scheduled Pre-bid Conference;
- b. Identify or determine those work areas of a subcontract where minority businesses may have an interest in performing subcontract work;
- c. At least ten (10) days prior to the scheduled day of bid opening, notify minority businesses of potential subcontracting opportunities listed in the proposal. The notification will include the following:
 - 1. a description of the work for which the sub-bid is being solicited;
 - 2. The date, time, and location where sub-bids are to be submitted;
 - 3. The name of the individual within the company who will be available to answer questions about the project;
 - 4. Where bid documents may be reviewed;

5. Any special requirements that may exist, such as insurance, licenses, bonds, and financial arrangements.

If there are more than three minority businesses in the general locality of the project who offer similar contracting or subcontracting services in the specific trade, the contractor(s) shall notify three (3), but may contact more, if the contractor(s) so desires;

- d. During the bidding process, comply with the contractor'(s) requirements listed in the proposal for minority participation;
- e. Identify on the bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid, and an affidavit listing good faith efforts as required by G.S. 143-128.2(c) and G.S. 143-128.2(f);
- f. Make documentation showing evidence of implementation of Prime Contractor(s), Construction Manager-at-risk, and First-Tier Subcontractor responsibilities available for review by the North Carolina Construction Grants and Loans Section and the HUB Office, upon request;
- g. Upon being named the apparent low bidder, the bidder shall provide one of the following:
 1. An affidavit (Affidavit C) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price which is equal to, or more than the applicable goal.
 2. If the percentage is not equal to the applicable goal, then documentation of all good faith efforts is taken to meet the goal. Failure to comply with these requirements is grounds for rejection of the bid and award to the next lowest responsible and responsive bidder;
- h. The contractor(s) shall identify the name(s) of minority business subcontractor(s) and corresponding dollar amount of work on the Schedule of Values. The Schedule of Values shall be provided as required in Article 31 of the General Conditions of the contract to facilitate payments to the subcontractors;
- i. During the construction of a project, at any time, if it becomes necessary to replace a minority business subcontractor, immediately advise the owner, the North Carolina Construction Grants and Loans Section, and the Director of the HUB Office, in writing, of the circumstances involved. The prime contractor shall make a good faith effort to replace a minority business subcontractor with another;
- j. If during the construction of a project additional subcontracting opportunities become available, make a good faith effort to solicit sub-bids for minority businesses;

- k. It is the intent that these requirements apply to all contractors performing as prime contractor, first-tier subcontractor, or construction manager-at-risk;
- l. In accordance with GS143-135.5(b) contractors who have been found guilty of discrimination within the last two years are not allowed to bid.

6. Minority Business Responsibilities

Minority businesses contracted by owners or bidders must respond promptly, whether or not they wish to submit a bid.

SECTION D: DISPUTE PROCEDURES

It is the policy of this State that, disputes involving a person's rights, duties, or privileges, should be settled through informal procedures. To that end, minority business disputes, arising under these guidelines, should be resolved as governed under G.S. 143-128(g).

MINORITY BUSINESS CONTRACT PROVISIONS (CONSTRUCTION)

APPLICATION:

The **Guidelines for Recruitment and Selection of Minority Businesses for Construction Projects funded through the Construction Grants and Loans Section** are hereby made a part of these contract documents. These guidelines shall apply to all contractors regardless of ownership. Copies of these guidelines may be obtained from:

Department of Environment and Natural Resources
Division of Water Quality
Construction Grants and Loans Section
1633 Mail Service Center
Raleigh, North Carolina 27699-1633
Website: www.nccgl.net

MINORITY BUSINESS SUBCONTRACT GOALS:

The goals for participation by minority firms as subcontractors on this project have been set at 10%.

The bidder must identify on its bid the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit (Affidavit A) listing good faith efforts, or affidavit (Affidavit B) self-performance of work, if the bidder will perform work under contract by its own workforce, as required by G.S. 143-128.2(c) and G.S. 143-0128.2(f).

The lowest responsible, responsive bidder must provide Affidavit C; which includes a description of the portion of work to be executed by minority businesses expressed as a percentage of the total contract price which is equal to, or more than the applicable goal.

OR

Provide Affidavit D; which includes a description of the portion of work to be executed by minority businesses expressed as a percentage of the total contract price, **with documentation of good faith effort, if the percentage is not equal to the applicable goal.**

OR

Provide Affidavit B; which includes sufficient information for the State to determine that the bidder does not customarily subcontract work on this type of project.

The above information must be provided as required. Failure to submit these documents is grounds for rejection of the bid.

MINIMUM COMPLIANCE REQUIREMENTS:

All written statements, affidavits, or intentions made by the Bidder shall become a part of the agreement between the Contractor and the Public Entity for performance of this contract. Failure to comply with any of these statements, affidavits, or intentions, or with the minority business guidelines shall constitute a breach of the contract. A finding by the Public Entity that any information submitted, either prior to the award of the contract or during the performance of the contract, is inaccurate, false, or incomplete, shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the State whether to terminate the contract for breach or not.

In determining whether a contractor has made good faith efforts, the State will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and the results of these efforts. Good faith efforts include:

1. Contacting minority businesses that reasonably could have been expected to submit a quote, that were known to the contractor, or available to the State or local government maintained lists at least 10 days before the bid or proposal date, and notifying them of the nature and scope of the work to be performed;
2. Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due;
3. Breaking down or combining elements or work into economically feasible units to facilitate minority participation;
4. Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses;
5. Attending any Pre-bid meetings scheduled by the public owner;

6. Providing assistance in getting the required bonding or insurance, or providing alternative bonding or insurance for subcontractors;
7. Negotiating, in good faith, with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business, based on lack of qualification, should have the reasons documented in writing;
8. Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit;
9. Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project, when possible;
10. Providing quick pay agreements and policies to enable minority contractors and suppliers meet cash-flow demands.

Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid

State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of _____

I have made a good faith effort to comply under the following areas checked:

Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- 1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- 2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- 3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- 4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- 5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- 6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- 7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- 8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- 9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- 10 - (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

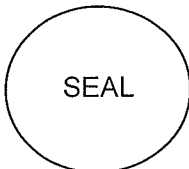
The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid
**State of North Carolina --AFFIDAVIT B-- Intent to Perform Contract
with Own Workforce.**

County of _____

Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____
_____ contract.
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

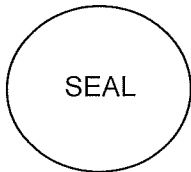
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

Do not submit with bid Do not submit with bid Do not submit with bid Do not submit with bid

State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by Minority Firms

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by minority businesses as defined in GS143-128.2(g) is equal to or greater than 10% of the bidders total contract price, then the bidder must complete this affidavit. This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____ I do hereby certify that on the
(Name of Bidder)

_____ (Project Name)
Project ID# _____ Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required

Name and Phone Number	*Minority Category	Work description	Dollar Value

*Minority categories: Black, African American (B), Hispanic (H), Asian American (A) American Indian (I), Female (F) Socially and Economically Disadvantaged (D)

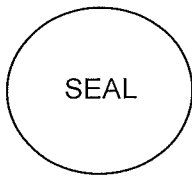
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

Do not submit with the bid Do not submit with the bid Do not submit with the bid Do not submit with the bid Do not submit with the bid

State of North Carolina AFFIDAVIT D – Good Faith Efforts

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 10% participation by minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

(Name of Bidder)

Affidavit of: _____

I do certify the attached documentation as true and accurate representation of my good faith efforts.

(Attach additional sheets if required)

Name and Phone Number	*Minority Category	Work description	Dollar Value

*Minority categories: Black, African American (B), Hispanic (H), Asian American (A) American Indian (I), Female (F) Socially and Economically Disadvantaged (D)

Documentation of the Bidder's good faith efforts to meet the goals set forth in these provisions. Examples of documentation include, but are not limited to, the following evidence:

- A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- F. Copy of pre-bid roster.
- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- H. Letter detailing reasons for rejection of minority business due to lack of qualification.
- I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of North Carolina, County of _____
 Subscribed and sworn to before me this _____ day of _____ 20____
 Notary Public _____
 My commission expires _____

Henderson County Facilities Paving 2025

Part 3 - CONTRACT DOCUMENTS

Notice of Award
Agreement
Performance Bond
Payment Bond
Notice to Proceed

NOTICE OF AWARD

Dated _____

TO: _____
(BIDDER)

ADDRESS: _____

Project: Henderson County Facilities Paving 2025

OWNER's Contract No. _____

You are notified that your Bid dated _____ for the above Project has been considered. You are the apparent Successful Bidder and have been awarded a Contract for Henderson County Facilities Paving 2025

(Indicate total Work, alternates or sections or Work awarded)

The Contract Price of your Contract (Unit Price Contract) is \$_____.

You must comply with the following conditions precedent within 10 days of the date you receive this Notice of Award.

1. Deliver with the executed Contract Documents the Contract security (Bonds) as specified in the Instructions to Bidders (Article 20), [and] General Conditions (paragraph 5.01) [and Supplementary Conditions (paragraph SC-5.01).]

Following receipt and review of these items, we will schedule a preconstruction meeting to sign final contract documents and to discuss the project.

Failure to comply with these conditions within the time specified will entitle OWNER to consider your Bid in default, to annul this Notice of Award and to declare your Bid security forfeited.

Henderson County

(OWNER)

By:

(AUTHORIZED SIGNATURE)

(TITLE)

Acknowledgement:

(CONTRACTOR)

By:

(AUTHORIZED SIGNATURE)

(TITLE)

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

THIS AGREEMENT is by and between Henderson County _____,
(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 generally described as follows:
2025 County Facilities Paving

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:
2025 County Facilities Paving

ARTICLE 3 - ENGINEER

3.01 The Project has been designed by
WGLA Engineering, PLLC
724 5th Avenue West
Hendersonville, NC 28792

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 Contract Documents 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. The Work will be completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions on or before **June 30th, 2025**. Completion date will be based on schedule submitted by the successful bidder.

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 neglect, refuse, or fail to complete the Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER \$ 200.00 for each day that expires after the time specified in paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready 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 below:

- A. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated in this paragraph 5.01.B:

TOTAL OF ALL UNIT PRICES

(dollars)

_____ (use words)

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; Retainage

A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment on or about the 20th day of each month during performance of the Work as provided in paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established in paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

I. 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 may determine or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions:

a. 95 % of Work completed (with the balance being retainage). If the Work has been 50% completed as determined by ENGINEER, and if the character and progress of the Work have been satisfactory to OWNER and ENGINEER, OWNER, on recommendation of ENGINEER, may determine that as long as the character and progress of the Work remain satisfactory to them, progress payments may be made in an amount equal to 100% of the Work completed (with the balance being retainage).

b. 95% % of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B. The ENGINEER may refuse to approve the whole or any part of any payment if, in his opinion, he is unable to make such representations to the OWNER. He may also refuse to approve any such payment, or because of subsequently discovered evidence, or the results of subsequent inspection or tests, nullify any such payment previously approved, to such extent as may be necessary in his opinion to protect the OWNER from loss, because:

1. The work is defective, or completed work has been damaged, requiring correction or replacement;
2. The work for which payment is requested cannot be verified;
3. Claims or Liens have been filed, or there is reasonable evidence indicating the probable filing, thereof;
4. The contract price has been reduced because of modifications;
5. The OWNER has been required to correct defective work, or complete portions of the work.
6. Of unsatisfactory prosecution of the work, including failure to clean up as required in specifications.

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 6 % 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
2. Performance Bond
3. Payment Bond
4. General Conditions
5. Supplementary Conditions **(including Special Conditions)**
6. Specifications as listed in the table of contents of the Project Manual;
7. Drawings consisting of a cover sheet and sheets numbered C-100 through C-113 inclusive, with each sheet bearing the following general title: 2025 County Facilities Paving.
8. Addenda (numbers ___ to ___, inclusive);
9. Exhibits to this Agreement (enumerated as follows):
 - a. Notice to Proceed
 - b. CONTRACTOR's Bid

10. The following which may be delivered or issued on or after the Effective Date of the Agreement may not be 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.

10.05 Other Provisions

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

This contract is being executed under the laws of the State of North Carolina.

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

OWNER:

CONTRACTOR:

Henderson County

By: _____

By: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest _____

Attest _____

Address for giving notices:

Address for giving notices:

1 Historic Courthouse Square, Hendersonville, NC 28792

(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. _____

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

Designated Representative:

Designated Representative:

Name: _____

Name: _____

Title: _____

Title: _____

Address: _____

Address: _____

Phone: _____

Phone: _____

Facsimile: _____

Facsimile: _____

NOTICE TO PROCEED

Date _____

TO: _____
(CONTRACTOR)

ADDRESS: _____

Contract: Henderson County Facilities Paving 2025
(Insert name of Contract as it appears in the Contract Documents)

You are notified that the Contract Times under the above contract will commence to run on _____ . By that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 4 of the Agreement the date of Substantial Completion is **June 30, 2025** and the date of readiness for final payment is **June 30, 2025** .

Before you may start any Work at the Site, paragraph 2.05.C of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insured's) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also, before you may start any Work at the Site, you must
(add other requirements)

Henderson County
(OWNER)

By: _____
(AUTHORIZED SIGNATURE)

(TITLE)

Acknowledgement

(Contractor)

By: _____
(AUTHORIZED SIGNATURE)

(TITLE)

Henderson County Facilities Paving 2025

Part 4 - GENERAL CONDITIONS

General Conditions

STANDARD
GENERAL CONDITIONS
OF THE
CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

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

AMERICAN CONSULTING ENGINEERS COUNCIL

AMERICAN SOCIETY OF CIVIL ENGINEERS

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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.

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 conflict, 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

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*

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
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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, 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) 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 therefor. 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 GENERAL CONDITIONS EJCDC No. 1910-8 (1996 Edition)

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 CONTRACTOR 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 GENERAL CONDITIONS EJCDC No. 1910-8 (1996 Edition)

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 to 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 GENERAL CONDITIONS EJCDC No. 1910-8 (1996 Edition)

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
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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
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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
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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

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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, CON-

TRACTOR 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, ENGINEER 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 GENERAL CONDITIONS EJCDC No. 1910-8 (1996 Edition)

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 accor-

dance 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.

Henderson County Facilities Paving 2025

Part 5 - TECHNICAL SPECIFICATIONS

Project Special Provisions

DIVISION 2 – SITE CONSTRUCTION

02230 Site Clearing

02300 Earthwork

02370 Erosion and Sedimentation Control

02607 Precast Concrete

02630 Storm Drainage

02741 Hot-Mix Asphalt Paving

02751 Concrete Walks, Steps, AND Paving

02771 Concrete Curbs and Gutters

02920 Lawns and Grasses

**SPECIAL CONDITIONS TO:
Henderson County Facilities Paving 2025**

The following special conditions are to be a part of the contact documents:

1. Existing Utilities: The contractor should be aware of existing utilities in and adjacent to the project area. All manholes, catch basins, water valve boxes, etc. shall be adjusted to meet the new grade of the roadway prior to resurfacing. For purposes of the bid, please assume that the use of grade rings will be allowed. All costs associated with this work should be considered incidental to the project and included in the unit price items provided.
2. Traffic Control: All costs associated with traffic control are considered incidental to the project. Contractors are REQUIRED to provide the Owner with a minimum of one weeks notice prior to mobilizing on site.
3. Technical Specifications: All materials and standards shall meet NCDOT standards unless otherwise noted or approved by the Owner prior to construction.
4. QA/QC Testing: The Owner will contract separately with a geotechnical engineering to provide QA/QC testing for this project.
5. Existing Utilities: Depth and location of existing utilities shall be verified by the contractor at each culvert installation. Utilities shown in the plans are based on recent location.
6. Asphalt Striping: All roads that are resurfaced will be restriped with standard white lines on both sides of the road. Roads with double yellow centerlines should include replacing the centerline in the restriping. Parking lots should be restriped to match existing conditions. Snow plowable delineators do not have to be replaced on roads that are resurfaced. Paint striping can be regular paint, thermoplastic is not required.
7. Project Schedule: The date of availability for the project will be **April 15, 2025** with the project to be substantially complete by **June 30, 2025**. At the date of substantial completion, all work should be completed with the final pay request submitted. Note that work cannot begin until contract documents have been signed by all parties and performance and payment bonds have been provided by the successful bidder.
8. All questions about the project must be submitted to the Project Engineer no later than **Monday, March 17, 2025 at 5:00 PM**. Questions received after this date and time may not be addressed prior to the bid date.

SECTION 02230 - SITE CLEARING AND STRIPPING

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 work of this Section.

1.2 SCOPE:

a. Related Work Specified Elsewhere:

1. Site Demolition (Section 02220).
2. Erosion and Sedimentation Control (Section 02370).
3. Earthwork (Section 02300).
4. Excavation and backfilling for plumbing and mechanical work (Division 15).
5. Excavation and backfilling for electrical work (Division 16).

a. Work Included This Section:

1. Protection of existing trees to remain.
2. Removal of trees, shrubs and other vegetation.
3. Clearing and grubbing.
4. Stripping of both suitable and unsuitable topsoil down to subsoil.
5. Removing above-grade improvements.
6. Removing below-grade improvements.

1.3 EXISTING CONDITIONS:

- a. Site Conditions: Existing conditions are shown in general on the Drawings. Contractor shall visit the site, familiarize himself with actual conditions and verify existing conditions in the field.
- b. Acceptance: The Contractor is required to accept actual conditions at the site, and to perform the work specified or shown without additional compensation for possible variation from grades and conditions shown, whether surface or subsurface, except as specifically provided for by the Contract Documents.
- c. Record Information: Survey maps, subsurface soil report and other recorded site information may be examined at the office of the Engineer.

1.4 PROJECT CONDITIONS:

- a. Traffic: Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction.
- b. Protection of Existing Improvements: Provide protection necessary to prevent damage to existing improvements indicated to remain in place.
 1. Protect improvements on adjoining properties and on Owner's property.
 2. Restore damaged improvements to their original condition, as acceptable to property owners.

- c. Protection of Existing Trees and Vegetation: Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning or bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line. Provide temporary guards to protect trees and vegetation to remain.
 - 1. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations.
 - 2. Provide protection for roots over 1 1/2 inch diameter that are cut during construction operations. Coat cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.
 - 3. Repair or replace trees and vegetation indicated to remain which are damaged by construction operations, in a manner acceptable to Engineer. Employ a licensed arborist to repair damages to trees and shrubs.
 - 4. Replace trees which cannot be repaired and restored to full-growth status, as determined by arborist.
- d. Improvements on Adjoining Property: Authority for performing removal and alteration work on property adjoining Owner's property will be obtained by Owner prior to award of contract.
 - 1. Extent of work on adjacent property is indicated on Drawings.
- e. Salvable Items: Carefully remove items indicated to be salvaged, and store on Owner's premises where indicated or directed.

1.5 PROTECTION:

- a. Bench Marks: Maintain carefully all bench marks, monuments and other reference points. If disturbed or destroyed, replace as directed by the Engineer.
- b. Existing Utilities: Should any functioning underground utilities be uncovered during the work, the Contractor shall notify the Engineer promptly in writing. The Contractor shall be held responsible for any damage to underground or overhead utility lines and shall promptly repair and restore services in accordance with requirements of authority having jurisdiction at no additional cost to the Owner.

PART 2: PRODUCTS

- 2.1 FILL MATERIAL for depressions left by removed stumps or other clearing work shall be as specified in Section 02300.

PART 3: EXECUTION

3.1 SITE CLEARING:

- a. General: Remove trees, shrubs, grass and other vegetation, improvements, or obstructions as required to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated. "Removal" includes digging out and off-site disposing of stumps and roots.
 - 1. Cut minor roots and branches of trees indicated to remain in a clean and careful manner, where such roots and branches obstruct installation of new construction.

- b. Suitable Topsoil: Friable clay loam surface soil found in a depth of not less than 4 inches. Suitable topsoil is reasonably free of subsoil, clay lumps, stones, and other objects over 2 inches in diameter, and without weeds, roots, and other objectionable material.
 - 1. Strip suitable topsoil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material.
 - (a) Remove heavy growths of grass from areas before stripping.
 - (b) Where existing trees are indicated to remain, leave existing topsoil in place within drip lines to prevent damage to root system.
 - 2. Stockpile suitable topsoil in storage piles in areas indicated or directed. Construct storage piles to provide free drainage of surface water. Cover storage piles, if required, to prevent wind erosion.
 - 3. Dispose of excess suitable topsoil same as specified for disposal of waste material or unsuitable topsoil.
- a. Unsuitable Topsoil: Surface soil that does not qualify as suitable topsoil but exhibits some of the characteristics of topsoil, such as containing organic matter, and is located above subsoil.
 - 1. Strip unsuitable topsoil to whatever depths encountered down to subsoil.
 - 2. Dispose of unsuitable topsoil as specified hereinafter.
- b. Completion of topsoil stripping (suitable and unsuitable) shall result in all areas that are to be graded, including both cut and fill areas, being completely stripped of all topsoil down to the underlying subsoil.
- c. Clearing and Grubbing: Clear site of trees, shrubs and other vegetation, except for those indicated to remain.
 - 1. Completely remove stumps, roots and other debris protruding through ground surface.
 - 2. Use only hand method for grubbing inside drip line of trees indicated to remain.
 - 3. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.
 - (a) Place fill material in horizontal layers not exceeding 6 inches loose depth, and thoroughly compact to a density equal to adjacent original ground.
- d. Removal of Improvements: Remove existing above-grade and below-grade improvements as indicated and as necessary to facilitate new construction.
 - 1. Abandonment or removal of certain underground pipe or conduits may be indicated on mechanical or electrical drawings, and is included under work of related Division 15 and 16 Sections. Removal of other abandoned underground piping or conduit interfering with construction is included under this Section.

3.2 DISPOSAL OF WASTE MATERIALS:

- a. Burning on Owner's Property: Burning is not permitted on Owner's property.
- c. Removal from Owner's Property: Remove waste materials from Owner's property.

END OF SECTION

SECTION 02300 - EARTHWORK

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 work of this Section.

1.2 SCOPE:

a. Related Work Specified Elsewhere:

1. Site Clearing and Stripping (Section 02230).
2. Erosion and Sedimentation Control (Section 02370).
3. Lawns and Grass and Landscape Work (Sections 02920)
4. See subsurface soil report included under the "Bidding Information and Conditions of the Contract" part of this Project Manual.
5. Storm Drainage (Section 02630).
6. Excavation and backfilling for plumbing and mechanical work (Division 15).
7. Excavation and backfilling for electrical work (Division 16).

b. Work Included This Section:

1. Grading and preparation of required subgrades.
2. Excavating and backfilling for buildings and structures.
3. Excavating and backfilling of trenches under building and within 5' of building perimeter, except plumbing, mechanical and electrical trenches are specified in Divisions 15 and 16.
4. Drainage fill course for support of building slabs.
5. Distribution of stockpiled topsoil on all grassed and landscaped areas.

1.3 SUBMITTALS:

a. Compaction Equipment:

1. Submit (for information only) list of compaction equipment proposed for use for overlot grading. Show weights, consolidation devices on equipment.
2. Submit (for information only) type of compaction equipment proposed for confined areas. Show weight, vibration frequency and stroke, and size of foot.

a. Grading Equipment:

1. Submit (for information only) description of proposed grading equipment.

1.4 REFERENCE STANDARDS:

- a. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard referenced.

The American Society for Testing and Materials (ASTM)

1.5 COMPACTION STANDARDS: Required densities of compaction are expressed hereinafter in terms of percentages. Such terms shall mean percentages of maximum density at optimum moisture content, as determined and controlled in accordance with Standard Proctor Method, ASTM D 698.

1.6 FIELD TESTING:

- a. Test will be made by testing laboratory selected by the Owner. All tests will be paid for by the Owner except retesting made necessary by failed tests shall be paid for by the Contractor.

1.7 EXISTING CONDITIONS:

- a. Site Conditions: Existing conditions are shown in general on the Drawings. Contractor shall visit the site, familiarize himself with actual conditions and verify existing conditions in the field.
- b. Acceptance: The Contractor is required to accept actual conditions at the site, and to perform the work specified without additional compensation for possible variation from grades and conditions shown, whether surface or subsurface, except as provided for by the Contract Documents.
- c. Record Information: Topographic maps and other recorded site information may be examined at the office of the Engineer.
- d. A subsurface investigation was NOT made of the site.

1.8 PROTECTION:

- a. Bench Marks and Monuments: Maintain carefully all bench marks, monuments and other reference points. If disturbed or destroyed, replace as directed. If found at variance with the Drawings, notify the Engineer before proceeding to layout work.
- b. Protection of Existing Work Remaining: All existing curbs, sidewalks, and paving damaged in performance of this work shall be restored without extra cost to the Owner in the manner prescribed by authorities having jurisdiction.

1.9 DISPOSITION OF UTILITIES:

- a. Rules and Regulations of the authority having jurisdiction shall be followed in executing all work under this Section.
- b. Active Utilities shown on the Drawings shall be adequately protected from damage and removed or relocated only as indicated or specified. Where active utilities are encountered, but are not shown on the Drawings, the Engineer shall be advised. The work shall be adequately protected, supported, or relocated as directed. If the utility is not shown on the Drawings and has to be relocated, this work will be done by Change Order and extra pay to the Contractor as described in Changes In The Work provisions of the General Conditions.
- c. Inactive and Abandoned Utilities encountered in excavating and grading operations shall be removed, plugged or capped as directed. In the absence of specific requirements, plug or cap such utility lines at least 3' outside of new building walls, or as required by local authorities.

1.10 ROCK AND UNSUITABLE SOIL REMOVAL:

a. Rock

1. Notification of Engineer and Submittal of Monitoring Plan: If rock is encountered and must be removed in a quantity more than or less than the quantity to be included in the Contractor's Base Bid, the Contract Price will be adjusted in compliance with the General and Supplementary Conditions based on unit prices submitted with the Project Bid.

(a) When rock is encountered, the Contractor shall immediately notify the Engineer and shall not proceed further until instructions are given and measurements are made for purposes of establishing volume of rock and value of excavating same.

(b) Prior to conducting any blasting, the Contractor shall submit to the Engineer his proposed plan for monitoring seismic waves and ensuring that no damage is done to existing buildings or structures. Contractor shall not conduct any blasting prior to written approval of this plan by the Engineer.

2. Definition: All excavated material shall be classified as either Rock or Earth Excavation .

(a) Rock for general earth excavation is hereby defined as that material which cannot be removed by equipment equivalent to a crawler-tractor rated at a minimum of 50,000 pounds draw bar pull at one mile per hour, pulling a single-tooth ripper. Rock in trench excavation is hereby defined as that material which cannot be removed by track equipment equivalent to a backhoe with a 1/2 cubic yard bucket on a machine with a lifting capacity of 7,500 pounds in a trench depth of 10 feet. Any material which can be removed by such equipment shall be defined as "earth" material. The Contractor may be required to provide equipment, specification data verifying that the equipment used complies with the above requirements. The equipment is to be in good repair and in proper working condition.

(b) Earth excavation shall comprise clay, silt, sand, muck, gravel, hard pan, loose shale, and loose stone.

(c) Unsuitable Soil: (See Section 01220 for quantity allowances included in Base Bid for unsuitable soil removal

1. Definition: The Engineer in conjunction with recommendations of the Soils Technician will be the final judge as to what is to be classified as unsuitable soil material (soft subgrade, organic material, etc.).

2. Measurement: No credit will be given or payment made for removal of unsuitable material unless classified as such by the Engineer and Soils Technician and authorized to be removed and measured by the Engineer and Soils Technician.

3. Notification of Engineer: If unsuitable soil is encountered and must be removed in a quantity more than or less than the quantity to be included in the Contractor's Base Bid, the Contract Price will be adjusted in compliance with the General and Supplementary Conditions based on unit prices submitted with the Project Bid.

1.11 RELOCATION OF UTILITIES: If utility lines require relocation and are not so indicated or noted on the Drawings, the Contract Price will be adjusted for such additional work in compliance with provisions of the General and Supplementary Conditions.

1.12 EROSION CONTROL:

- a. The Contractor shall provide and maintain erosion, sedimentation and storm water controls to comply with Federal, State and local ordinances as they apply to this Contract. This shall include, but not be limited to, the erosion control devices shown on the Drawings. See Section 02370 for additional requirements regarding erosion control.

PART 2: PRODUCTS

2.1 MATERIALS:

- a. Unsuitable and Surplus Material: Remove unsuitable material and surplus excavated material from the site.
1. Earth used for structural fill, fill under floor slabs and other paved areas shall be approved by laboratory test by the testing laboratory employed for the Project.
 2. Stones larger than 4" maximum dimension shall not be used in the upper 12" of fill or embankment.
- b. Fill Materials: Satisfactory soil materials free of clay, rock or gravel larger than 2" in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter.
1. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups GW, GP, GM, SM, SW and SP. as classified in the Unified Soil Classification System.
 2. Unsatisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH and PT.
- c. Subbase Materials: For pavement outside the building, provide artificially graded crushed gravel or crushed stone.
- d. Drainage Fill: For concrete slabs on grade inside the building, provide clean, washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, with 100% passing a 1 1/2" sieve and not more than 5% passing a No. 4 sieve.
- e. Borrow Fill: Use suitable excavated materials for required fills and backfills. Provide any additional fill material from off the site as necessary to produce the required grades at no additional cost to the Owner. Borrow fill is subject to testing and approval of the Owner's Testing Laboratory.
- f. Improved bedding material shall be North Carolina Department of Transportation (NCDOT) #78 coarse aggregate for storm drains and NCDOT #ABC(M) or #5A aggregate for sanitary sewers.
- g. Trench stabilization material shall be NCDOT #467M coarse aggregate.

PART 3: EXECUTION

3.1 PREPARATION:

- a. Layout: Grade and layout stakes shall be provided and maintained as required by the contractor. The building, drives, walks, and other site improvements shall be staked. Layout work shall be referenced to bench marks, base lines, property lines, easements and/or rights-of-way as indicated.
- b. Verification of Work: Where new grades tie into existing grades, existing grades shall be verified. If existing conditions are at variance with the Drawings, the Engineer shall be notified before proceeding with the work and adjustments made only as directed by the Engineer.

3.2 SITE GRADING PROVISIONS:

- a. Grades: Do all cutting, filling, compacting of fills, and grading required to bring the entire Project Area to subgrades as follows:
 - 1. For lawn and planted areas to receive topsoil, to 4" below finished grade.
 - 2. For areas under walks, pavement, pads, footings and other surfaced areas, bring to subgrade according to sections shown on the Drawings.
- b. Rock Excavation: When rock is encountered in grading the areas outside of buildings, it shall be removed to depths as follows:
 - 1. Under paved areas, to underside of the respective subgrade for such areas.
 - 2. Under lawn and planted areas and under buildings, to 2'-0" below finished grade, except that boulder of protruding rock outcrops where so indicated by the Engineer shall be left undisturbed.
 - 3. Provisions regarding rock excavation hereinbefore set forth in paragraph titled "Rock and Unsuitable Soil Removal" (in Part 1 of this Section) shall apply. Areas of rock excavation shall be backfilled to subgrade level with earth compacted in place.
 - 4. Blasting shall be utilized only upon written approval by the Engineer. See Paragraph titled "Rock and Unsuitable Soil Removal" in Part 1 of this Section.

3.3 GRADING:

- a. Grade all required areas within the limits of work, including excavated and filled sections and adjacent transition areas to the lines and grades specified and lines and grades indicated on the plans.
- b. After grading, and before any filling, proofroll areas to receive structural fill as hereinafter specified. Proofroll cut (non-fill) areas beneath the building and pavement.
- c. Grading shall produce reasonably smooth, compacted surfaces free from irregular changes. Provide roundings at top and bottom of banks and at other breaks in grade.
- d. Degree of finish shall be that ordinarily obtainable from either blade-grader or scraper operations, except as specified otherwise.
- e. If excavations are carried by the Contractor below the indicated or specified levels, without proper authorization, they shall be refilled to the required levels with compacted fill as hereinafter specified at the contractor's expense.

- f. Tolerances: The finished subgrade surface generally shall not be more than 0.2' above or below the established grade or approved cross section, with due allowance for topsoil, sod and other landscape material depths; the tolerance for areas within 10' of buildings and all areas to be paved shall not exceed 0.15' above or below the established subgrade.
- g. Drainage: Contractor shall control the grading around buildings so that ground is pitched to prevent water from running into the excavated areas or damaging the structures. Unless otherwise indicated, the subgrade shall be evenly sloped to provide drainage away from building walls in all directions at a slope not less than 1/4" per foot. Maintain all pits and trenches, where footings are to be placed, free of water at all times. Provide all pumping required to keep excavated spaces clear of water during construction. Should any springs or running water be encountered in the excavation, the Engineer shall be notified and the Contractor shall provide discharge of it by trenches or pumping and drain to an appropriate point of disposal as directed. If permanent provision, not shown on the Drawings or specified, must be made for disposal of water, the Contract Price will be adjusted.
- h. Frost Protection: When freezing temperatures are expected, do not excavate to the full depth indicated, unless the pavements, footings or other construction can be placed immediately after the excavation has been completed. Protect the excavated bottoms from frost if placing of concrete is delayed.

3.4 PROOFROLLING:

- a. After the existing earth is graded, before placing any fill or construction, the excavated surface shall be proofrolled with a 25 ton dump truck loaded to its maximum capacity. A minimum of two passes of the truck shall be made in each direction. This operation shall be witnessed by the soils inspector. Any areas that yield excessively, or that will not compact during this proofrolling, shall be undercut and new fill placed and compacted as specified and directed by the soils inspector.

3.5 EXCAVATION FOR BUILDINGS, STRUCTURES AND PIPE:

- a. Dimensions: Excavate to elevations and dimensions indicated. Allow additional space as required for construction operations and inspecting foundations.
- b. Do not open more than 100 feet of trench in advance of pipe laying. Trenching shall be by the open cut method.
- c. Trenches shall be excavated with vertical walls to the width indicated in the detail to a point one foot above the top of pipe. Where the trench width is exceeded, any redesign and additional materials required, to provide equivalent installation conditions shall be borne by the contractor at no additional cost to the Owner.
- d. The trench bottom shall be excavated to provide a firm, stable and uniform support for the full length of pipe. Bell holes shall be provided at each joint to permit the proper joint assembly and pipe support. Any part of the trench bottom excavated below the required grade shall be backfilled to grade and compacted to provide firm pipe support. Trenches shall have four (4) inches of loose soil in the bottom before pipe is placed, so pipe is firmly and continuously in contact with the soil. Pipe shall not bridge any areas. Rock larger than 3 inches shall be removed from the trench bottom and any voids filled with soil or improved bedding. Ledge rock, boulders and large stones shall be removed to provide six (6) inches of soil cushion on all sides of the pipe including the bottom, and on all sides of accessories.
- e. The trenches for gravity pipelines shall be excavated to the grade lines indicated which shall be the true elevation of the invert of the pipe. Gravity pipelines are defined as sanitary sewers, flexible pipe, storm and roof drains and culverts. Where improved bedding is required, the bottom of the trench shall be excavated to a minimum overdepth of four (4) inches below the bottom of the pipe to provide for improved pipe bedding for the entire length of the gravity pipeline.

- f. The trenches for water line shall be graded to avoid local high points. Trenches shall be graded either level or on a continuous upslope to the high points designated on the drawings. Trenches shall be such a depth as to provide a minimum cover over the top of the pipe of thirty-six (36) inches as measured from the existing ground surface, or the final grade, whichever is lower. Rock shall be removed six (6) inches below pipe and the void filled with improved bedding .

3.6 FILLS:

- a. Where fill is required to raise the subgrade for concrete floor or exterior slabs to the elevation indicated, such fills shall be of earth, placed and compacted as specified. The finished compacted areas shall be brought to a reasonably true and even plane at the required elevations. The placing and compaction of fill under slabs after foundation walls are in place shall be coordinated with the backfilling against the outside of the walls, or walls shall be adequately braced to prevent damage.
- b. Where fill is required to raise the existing grades to new subgrade elevation indicated or required, such fill shall be clean earth, placed and compacted as specified.
- c. Remove all material subject to termite attack, rot or corrosion, and all other deleterious materials from areas to be filled. Prior to placing fill material, the surface of the ground shall be scarified to a depth of 6" and the moisture content of the loosened material shall be such that it will readily bond with the first layer of fill material.
- d. Where structural fill is required to raise the subgrade for the support of building footings, fill material shall be as specified hereinbefore.
- e. Where fill is required to raise existing grades outside of building area and outside area requiring structural fill to the new subgrade elevation indicated, such fill shall be earth, placed and compacted as specified.

3.7 PLACING OF FILL:

- a. Surface Preparation: Before depositing fill, remove all topsoil, vegetation, and other unsuitable material from areas to receive fill. In no case shall fill be placed on a subgrade that is muddy, frozen, or that contains frost.
- b. Fill material shall be placed only on surfaces approved by the testing laboratory.
- c. Placement:
 - 1. Place the material in successive horizontal layers not exceeding 8" for the full width of the cross section.
 - 2. Deposit fill in layers not more than 6" thick in small areas where high-frequency vibratory tamper must be used in lieu of large rolling equipment.
 - 3. Deposit fill in layers not more than 1'-0" thick under lawn and landscaped areas.
 - 4. Fill shall be placed only when it is within 3% of its optimum moisture content as determined by a Standard Proctor ASTM D 698.
 - 5. Each layer of fill shall be spread evenly and shall be compacted to its specified density as determined by Standard Proctor ASTM D 698 before new layers are placed and compacted.
 - 6. Sloped ground surfaces steeper than one vertical to four horizontal, on which fill is to be placed, shall be plowed, stepped or benched such that fill material will bond to the existing surfaces.

7. Embankment slopes shall be constructed by filling one (1) foot beyond the proposed finished slope surface for each lift. Compaction equipment shall work to the edge of each lift. After the entire fill is placed and compacted, the outside foot of the slope shall be trimmed to the design slope with a dozer. Unless indicated on the drawings, no slopes shall be steeper than 2 horizontal to 1 vertical.

d. Compaction:

1. Structural Fill Under Buildings and Within 10' of Building Perimeter: 100% of Standard Proctor the entire depth of fill.
2. Under Walks, Drives, Pads, and Paved Areas: 95% of Standard Proctor except 100% of Standard Proctor in the upper 2'.
3. Under Lawns and Planting Areas Beyond 10' from Building: Compaction obtained by routing spreading equipment over the area.

3.8 BACKFILLING FOR BUILDINGS AND STRUCTURES:

- a. Preparation: Before placing backfill, remove all material subject to termite attack, rot or corrosion, and all other deleterious materials from areas to be backfilled. All backfill material shall be free from roots, plaster, brick bats and unsuitable material.
- b. Stones larger than 4" maximum dimension shall not be permitted in the backfill. Place the backfill material in successive horizontal layers, in loose depth as specified, for the full width of the cross section. Deposit backfill in layers not more than 8" thick. Thoroughly compact each layer by rolling or pneumatic tamping after a light sprinkling with water.
- c. Foundation Walls:
 1. Backfill against foundation walls only after walls have been supported either by bracing or after the floors have been installed to support top and bottom of the wall.
 2. Place and compact backfill so as to minimize settlement and to avoid damage to walls, to waterproofing, and to other work in place.
- d. Finish: The finished subgrade shall be brought to elevations indicated and sloped to drain water away from the building walls. Fill to required elevations any areas where settlement occurs.
- e. Compaction: All backfill under and within 10' of building shall be compacted to 100% of Standard Proctor. In case of settlement, provide additional fill to bring grade to that required.

3.9 FOOTINGS ON STRUCTURAL FILL:

- a. Material Type: Where structural fill is required to raise the subgrade for the support of building footings, fill material shall be as hereinbefore specified.
- b. Compaction for structural fill shall be 100% of Standard Proctor.
- c. Limits: Structural fills shall be provided under the entire building and to a line 10'-0" beyond the building perimeter.
- d. Excavation: Excavate in the structural fill for building footings as hereinbefore specified under "Excavation for Buildings and Structures".

3.10 BACKFILL IN TRENCHES:

- a. Take precautions in backfilling to prevent disalignment of pipe or structures.
- b. Compact approved fill material firmly and evenly on both sides of pipe. Fill remainder of trench in 8" layers and compact each layer with a vibratory tamper as specified elsewhere in this Section for the particular location of the backfill.
- c. Comply with compaction requirements elsewhere in this Section for the area through which the trench runs. , compact fill material to 95% maximum density at optimum moisture content.
- d. Improved bedding shall be provided for pipe in areas of rock or high water table. The trench for HDPE and PVC shall be bedded to the top of pipe with improved bedding. Concrete culverts and storm drains shall be bedded to the bottom quadrant of the pipe with improved bedding.

3.11 PAVEMENT SUBBASE COURSE:

- a. General: Subbase course consists of placing subbase material, in layers of specified thickness, over subgrade surface to support a pavement base course.
 - 1. Refer to other Division 2 Sections for paving specifications.
- b. Grade Control: During construction, maintain lines and grades including crown and cross-slope of subbase course.
- c. 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 simultaneous with the compaction and rolling of each layer of subbase course.
- d. Placing: Place subbase course material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting subbase material during placement operations.
 - 1. When a compacted subbase course is indicated to be 6" thick or less, place material in a single layer. When indicated to be more than 6" thick, place material in equal layers, except no singled layer more than 6" or less than 3" thickness when compacted.

3.12 BUILDING SLAB DRAINAGE COURSE:

- a. General: Drainage course consists of placement of drainage fill material, in layers of indicated thickness, over subgrade surface to support concrete building slabs.
- b. Placing: Place drainage fill material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting material during placement operations.
 - 1. In each compacted fill layer, perform one field density test for every 2,000 sq. ft. of overlaying building slab or paved area, but in no case fewer than three tests.
 - 2. Foundation Wall Backfill: Perform at least two field density tests at locations and elevations as directed.

3. If in opinion of Engineer, based on testing service reports and inspection, subgrade or fills that have been placed are below specified density, perform additional compaction and testing until specified density is obtained.

3.13 DISTRIBUTION OF TOPSOIL:

- a. Spread stored topsoil over graded areas to be grassed or landscaped as shown on Drawings.
- b. After topsoil is spread, remove all hard lumps of clay, stones over 1" in diameter, roots, limbs, and other deleterious matter which would be harmful or prevent proper establishment and/or maintenance of lawn and planting areas.

END OF SECTION

SECTION 02370 EROSION AND SEDIMENTATION CONTROL

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 work of this Section.

1.2 SCOPE:

a. Related Work Specified Elsewhere:

1. Earthwork (Section 02300).
2. Lawns and Grasses (Section 02920).

b. Work Included This Section:

1. Protection of the project area and surroundings from soil erosion, runoff, sedimentation or the effects of harmful waste discharges resulting from construction operations.
2. Installation and maintenance of erosion control devices and structures and temporary seeding of disturbed areas. See Section 02920 for permanent seeding.
3. Extent of erosion control work is shown in general on the Drawings. However, it is the responsibility of the Contractor to provide all erosion control construction required in order to comply with local and state regulations, even if not specifically shown on the Drawings or specified herein.

1.3 QUALITY ASSURANCE:

- a. General: Employ only experienced personnel familiar with required work. Provide adequate supervision by qualified foreman.
- b. Codes and Standards: Comply with applicable North Carolina Administrative Code, Title 15, Chapter 4, "Sedimentation Control" (15 NCAC4), and the North Carolina Erosion and Sediments Control Planning and Design Manual, latest edition.

PART 2: PRODUCTS

2.1 MATERIAL:

- a. Temporary Silt Fence: Provide as per NCDOT Standard Section 893, or equivalent materials.
 1. Posts: Provide steel (1 3/4" wide, self- or fastener-angle type, 5' long) posts.
 2. Fence Fabric: Galvanized steel wire; 32 inch overall height with at least 6 horizontal line wires; vertical stay wires spaced 12 inches apart; top and bottom wires 10 gauge, all other wire 12 1/2 gauge.
 3. Filter Fabric: 36 inch wide fabric; burlap, 6.7 oz./sq. yd., or Dominion Textile Corporation "Mirafi 100X" Trevira type 1127, Amoco type 2122 or equivalent.

- b. Baled Hay Barriers: Small grain straw or tame hay, compacted in bales with wire ties, approximate dimensions 24" x 48" x 24", weighing minimum 45 lbs. per bale, air dried free of undesirable weed seed.
- c. Erosion Control Blankets: Provide either AMXCO Curlex Blankets or AMXCO Hi-Velocity Curlex Blankets by American Excelsior Company, Arlington, Tx, Excelsior Blankets by Contech ,type S150 North Amercian Green or approved equal, as necessary to control erosion, depending upon steepness of the slope and velocity of storm water down the slope.
 - 1. AMXCO Curlex Blanket is a machine produced mat of curled wood excelsior of 80% six-inch or longer fiber length and of consistent thickness with the fiber mat evenly distributed over the entire area of the blanket. The top surface of the blanket is covered with a photogradeable extruded plastic mesh.
 - 2. AMXCO Hi-Velocity Curlex Blanket is the same as the AMXCO Curlex Blanket except is thicker and both sides are covered with extra heavy duty extruded plastic mesh.
 - 3. Wire staples for AMXCO Curlex Blanket are to be .091" minimum in diameter, U-shaped with 6" legs and 1" minimum crown.
 - 4. Wire staples for AMXCO Hi-Velocity Curlex Blanket are to be .091" minimum in diameter, U-shaped with 8" legs and 1" to 2" crown.
- d. Seeds for Temporary Ground Cover: Labeled to show they are within the requirements of the N.C. Department of Agriculture as to purity, germination, and the restriction of prohibited weed seeds. Use seed certified to have a minimum purity of 95% and to have passed a germination test of 90% with total weed seed in mixture not exceeding 1%.

1. Temporary Seeding Schedule:

<u>Plants & Mixtures</u>	<u>Planting Rates/Acre</u>	<u>Planting Dates</u>
Tall Fescue	80-150 lbs/acre	Aug. 15 - Oct. 15
Tall Fescue & Sericca Lespedeza	75 lbs/acre 60 lbs/acre	Feb. 15 - Apr. 30 Sc. Nov. 1 - Feb. Unscar
Tall Fescue & Browntop Millet or Sorghum - Sudan Hybrids (Millet & Sorghum must be kept at 10" max. height)	60 lbs/acre 30 lbs/acre	July - August
Tall Fescue & Ryegrain (Keep annuals cut to 10")	70 lbs/acre 25 lbs/acre	Nov. 1 - Jan.
Weeping Lovegrass	5 lbs/acre	April - June
Common Bermudagrass	8-12 lbs/acre (hulled) 15-20 lbs/acre (unhulled)	April 15 - June 30 Feb. 1 - March

- 2. Permanent Seeding: Conform to Section 02920 requirements for lawn work.
- e. Mulch: Small Grain straw or tame hay to be applied at 75 to 100 lbs/1000 sq. ft. or 1 1/2 tons/acre.
- f. Emulsified Asphalt: Suitable for application using liquid applicator on power mulch blower or other suitable equipment at the rate of 200 qa./ton of straw.
- g. Stone: Provide (ABC) or Base course as specified by NCSRS.

- h. Plain Rip Rap: NCDOT Article 942-1, Class 1 (5 - 200 lb. d 50=8"). More than 50% of the mixture shall be larger than the d50 stone size indicated.

PART 3: EXECUTION

3.1 GENERAL:

- a. The construction sequence and scheduling of construction operations shall be an integral part of the control plan. Establish a sequence of operations that will facilitate the control of erosion:
- b. Limit initiation of work to the minimum area necessary to prosecute work, leaving soil cover on other areas undisturbed.
- c. Complete work on individual areas as quickly as possible to permit installation of planned temporary and permanent erosion control measures.
- d. Whenever land-disturbing activity is undertaken, plant a ground cover sufficient to restrain erosion or otherwise protect that portion of the site upon which further active construction is not being undertaken within 15 days.
- e. Silt Traps: (6.60) Silt traps, diversions and other earthwork shall be constructed in accordance with sections of the specification under Earthwork.
- f. Silt Fences: (6.62) Set posts not more than 10 feet apart. Attach fabric to posts with bottom at or just below grade.
 - 1. Attach filter fabric to fence and leave 6 inch skirt at bottom. Cover filter fabric skirt with compacted backfill to prevent water from washing under fence.
 - 2. Install silt fence along downhill side(s) of site.
- g. Erosion Control Blankets: Placement of the blankets and anchoring down with wire staples shall be in accordance with published recommendations of the erosion control blanket manufacturer.
- h. Temporary Gravel Construction Entrance: (6.06) Place stone entrance at all entrances/exits to construction site used by vehicular traffic.
- i. Diversion Ditches: Install diversion ditches as indicated on drawings and in accordance with Erosion Control Manual.
- j. Drop Inlet Protection: (6.50) Provide gravel inlet protection around storm drain inlets.

3.2 SITE GRADING OPERATION:

- a. Do not commence construction work until immediate and temporary soil erosion measures are installed. These temporary measures are to be installed as detailed on the approved Erosion and Sedimentation Control Plan.
- b. Temporary Ground Cover: Areas which will stand for over 30 days at temporary grade elevations shall be seeded with a temporary grass seed cover applied within 7 days of completing the rough grading operations.

- c. Areas which become eroded or do not have 75% minimum coverage of healthy grass or reveal bare spots shall be reseeded, or remulched, or renetted and watered such that the entire planted controlled erosion area contains a healthy and temporary stand of grass during the construction period.
- d. Permanent Ground Cover: On all ground areas that are graded to final elevations, permanent ground cover shall be established within 7 days of completing the rough grading of that area. Any temporary ground covers that exist on interim ground surfaces shall be removed prior to continuing with finish grading to prevent an undesirable mix of grass types for final grass areas. Overseeding will not be allowed since most temporary ground covers are very hardy types and will crowd out or overshadow the finer permanent ground covers.
- e. Stockpiled material shall be surrounded at the base with a temporary sediment barrier. Slopes of stockpiled material shall not exceed 2 to 1.
- f. Vehicles leaving the construction site shall be cleaned to remove mud prior to entrance onto public rights of way. Washing shall be done on a temporary construction entrance specified hereinafter.
- g. Cut and fill slopes shall be constructed in a manner that will minimize erosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected. Concentrated runoff shall not flow down cut or fill slopes unless contained within and adequate temporary or permanent flume or slope drain structure.
- h. All storm sewer inlets that are made operable during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment. Contractor shall clean up any inlets, pipes, ditches and culverts that have sediment from the project area.
- i. Where construction vehicle access routes intersect paved public roads, provisions shall be made to minimize the transport of sediment by [vehicular] tracking onto the paved surface. Where sediment is transported onto a public road surface, the road shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner.

3.3 MAINTENANCE:

- a. Relocate, repair, clean out and perform any other operation necessary to maintain protective devices in effective operating condition at least once per month during construction period.
- b. Periodic inspections will be made on all projects by the local enforcement authority. An inspection shall be made during or immediately following initial installation of erosion and sediment controls, at least once in every two week period, within 48 hours following any runoff producing storm event, and at the completion of the project prior to the release of any performance bonds.
- c. In the event the Contractor repeatedly fails to satisfactorily control erosion and siltation, the Owner reserves the right to employ outside assistance or to use his own forces to provide the erosion control measures indicated and specified. The cost of such work, plus related engineering costs, will be deducted from monies due the Contractor for other work.

3.4 CLEANUP:

- a. Remove all temporary devices and cover within 30 days of site stabilization or after temporary measures are no longer needed.

- b. Dispose of trapped sediment material when temporary erosion control measures are removed.

END OF SECTION

SECTION 02607 - PRECAST CONCRETE

PART 1 GENERAL

1.1 WORK INCLUDED

- a. The work shall include providing all equipment, materials, labor and services required to construct and install precast concrete structures and items as indicated on the plans and in accordance with the supplementary drawings.

1.2 RELATED WORK

- a Specified elsewhere:

- 1. Section 01110 - Summary of Work
- 2. Section 02606 - Metal Castings
- 3. Section 02630 - Storm Drain Installation
- 4. Section 02530 - Sanitary Sewer Installation
- 5. Section 02510 - Water System Installation

1.3 QUALITY ASSURANCE

- a. The materials and methods of construction for precast concrete shall comply with the latest revisions of the applicable American Society for Testing Materials (ASTM) and the North Carolina Department of Transportation (NCDOT) standards. Precast structures and items shall conform to the details on the drawings and herein.
- b. Comply with all codes, laws, ordinances and regulations of governmental authorities including, but not limited to, local municipalities and sanitary districts having jurisdiction over this part of the work.

1.4 SUBMITTALS

- a. Submit for approval at least five (5) copies of the shop drawings showing all dimensions, reinforcement, inserts and all other details necessary for the fabrication and installation of all precast concrete structures and items, in accordance with Section 01340.

1.5 REFERENCES

- a. North Carolina Department of Transportation (NCDOT) - Road and Bridge Standard Specifications for Roads and Structures and Standard Details; latest revisions.
- b. American Society for Testing Materials (ASTM); latest edition:
 - 1. C62 Specification for Building Brick (Solid Masonry Units Made from Clay or Shale)

2. C76 Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
3. C144 Standard Specification for Aggregate for Masonry Mortar
4. C150 Standard Specification for Portland Cement
5. C270 Specification for Mortar for Unit Masonry
6. C443 Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets
7. C478 Standard Specification for Precast Reinforced Concrete Manhole Sections
8. C923 Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- a. Precast structures shall be manufactured by D & M Concrete, Carolina Precast, Hydro Conduit, or equal.

2.2 STRUCTURES

- a. Manholes
 1. Manhole base, riser, taper and top or spacer units shall be precast reinforced concrete manufactured in accordance with ASTM C 478 and NCDOT Section 1077, with O-ring joints conforming to ASTM C443 or with flexible butyl gasket, CS-302 by Concrete Sealants, Inc., E-Z Stik by Concrete Products Supply or equal.
 2. Each unit shall have no more than two (2) holes for installation and/or handling. All holes shall be plugged with mortar or rubber stoppers, upon completion of manhole installation.
 3. Manhole unit joints shall be made with either flexible butyl sealants or gaskets, at the Contractor's option. Flexible butyl sealants shall be manufactured by Concrete Sealants, Inc. (CS-302) or equal and flexible butyl gaskets shall be manufactured by Concrete Products Supply Company (E-Z STIK) or equal. The gaskets or sealants shall be installed and the joint made in accordance with the recommendations of the manufacturer(s).
 4. Base units shall be tub or monolithic type with walls that extend above the top of the largest inlet or outlet pipe. Base units shall have a minimum inside diameter of four (4) feet for storm drain pipe with an inside diameter of twelve (12) inches to thirty-six (36)

inches and five (5) feet for storm drain pipe with an inside diameter of forty-two (42) inches to fifty-four (54) inches, unless specified or indicated otherwise.

Sanitary sewer manholes shall have an inside diameter of four (4) feet. Minimum wall thickness shall be five (5) inches. Concrete shall be minimum compressive strength of 4000 psi at 28 days.

5. Manhole top units shall be the eccentric taper type, at least three (3) feet in height, or flat top where indicated.
6. Manholes shall be constructed to the required height to insure that the top of the frame and cover will be set at the finished grade, unless specified or indicated otherwise. Spacer rings or other means up to eight (8) inches shall be provided to allow adjustment to final pavement surface, as required, at the time of paving. Maximum wall thickness shall be five (5) inches. Concrete shall be minimum compressive strength of 4000 psi at 28 days. Brackets and anchor bolts, when indicated, to bolt sections of manhole sections together shall be stainless steel. Watertight manholes shall have the cone bolted with three 8" x 2" x 1/4" SS straps with 1/2" SS anchor bolts (2) to the riser below.
7. Sanitary sewer pipe connections to sanitary manholes shall be made with flexible joints and shall conform to ASTM C923, latest revision. The flexible joints shall be a rubber gasket cast in the manhole base and a field installed gasket wedge equal to PS-10, PSX-Series 6, or Press Wedge II, manufactured by Press-Seal Gasket Corporation, or the Flexible Manhole Sleeve as manufactured by Lock Joint Pipe, Division of Interpace, the Fernco "CMA" concrete manhole adapter as manufactured by the General Engineering Company, Frederick, Maryland, A-LOK Manhole Pipe Seal, or KOR-N-SEAL system by National Pollution Control Systems, Inc. Ribbed pipe shall be connected to manholes with KOR-N-SEAL system, using section of smooth exterior wall pipe at the manhole.
8. Pipe connections to storm drain manholes shall be made with brick and mortar, or non-shrink grout, (A-LOK Manhole Pipe Seal or equal), except ribbed pipe shall be connected with KOR-N-SEAL system, or equal, using section of smooth exterior wall pipe at the manhole.

b. Inlets and Catch Basins

1. Drop inlets shall be constructed to the required height to insure that the collar and grate of the catch basin type inlets or the curb opening of the curb type inlets will be set at the finished grade. The locations of the drop inlets shall not interfere with existing or new entrances and/or sidewalks. Inlets shall be precast concrete conforming to the North Carolina Department of Transportation (NCDOT) Standard Specifications, latest revision, with cast iron frames, covers and grates. Precast concrete sections and the jointing between sections shall be as hereinbefore specified for manholes. Frames, grates and covers shall conform to ASTM A 48 Class 30B, and shall be factory coated with asphalt varnish. Inverts shall be shaped as indicated.

c. Invert Shaping

1. The invert channels of manholes, inlets and junction boxes shall be smooth and semi-circular in shape sized to match the inlet and outlet pipes and sloped to provide a smooth transition between the inlet and outlet pipes. Changes in direction of flow shall be made with a smooth curve channel with a radius as large as the base will permit.
2. The invert channels and benches may be formed directly in the concrete base unit of the manhole or may be constructed with brick and mortar. In no case shall the trough thickness be less than 3" as measured from the concrete base to the outlet pipe invert. The benches shall slope a minimum of one (1) inch per foot toward the invert channel. The surface of the channels and benches shall be concrete.
3. Modified shaping, defined as a channel two-thirds the height of the largest pipe, shall be acceptable.

d. Junction Boxes

9. Precast junction boxes shall conform to Standard Detail JB-1 and the applicable NCDOT Standards and shall be constructed with dimensions as indicated on the drawings. The computer program for the determination of wall reinforcing and thicknesses for the various pipe angles and sizes shall be NCDOT reviewed and approved. Riser cones shall be eccentric. Manhole steps shall be provided. Walls shall be bolted together with a minimum of three (3) 3/4 inch Richmond EC-2 lag screws at each joint. Joints shall be caulked before installing screws.

e. Endwalls

1. Endwalls shall be precast, reinforced concrete and shall be in conformance with current NCDOT Standards. Concrete shall be NCDOT Class A4.

f. Flared End Sections

1. Flared end sections shall be as specified in the current NCDOT Standards, Section 1032.

7. Valve Vaults (Concrete Cone Section)

1. Concrete valve vaults shall consist of a precast circular enclosure of a upon which rests a Cast-Iron frame and cover. The top of the cover shall be at finished street grade. The valve vault shall be constructed so that it will not transmit shock, strain or stress to the valve or the pipe main in which the valve is located. Precast concrete valve vaults shall be constructed in general accordance with the detail, and ASTM C478 and NCDOT Section 1077, with O-ring joints conforming to ASTM C 433 or flexible butyl gasket CS-302 by Concrete Sealants, E-Z Stick by Concrete Products Supply or equal.

8. Manhole Tees and Wyes

1. Manhole tees and large horizontal wyes, tees and bends shall be constructed of sections of ASTM C-76, Class V reinforced concrete pipe, cut to make the angle required by the alignment shown on the drawings. The manhole riser shall be as previously specified, shall be four (4) feet inside diameter, and shall align with one side of the pipe below. Riser cone shall be eccentric. The concrete shall be removed around the reinforcing steel at the point where the sections are to be joined and the reinforcing steel of each piece welded to the other. Concrete shall then be packed carefully around the steel, sufficiently rodding or vibrating to remove all voids. The inside surface of the concrete shall provide a smooth transition for the flow. The transition area shall be coated inside and out with Koppers 300M or equal. Manhole steps shall be provided. Tee shall be lifted by beam through pipe sections or by a sling, so as to not crack the joint.

2.3 BRICK AND MORTAR FOR INVERT SHAPING AND SEALING STORM DRAIN PIPES INTO STRUCTURES

- a. Brick shall be grade SW common 2 1/4" x 3 5/8" x 7 5/8" standard modular sizes, in accordance with ASTM C 62.
- b. Aggregate shall be clean, washed natural sand, free from dirt and foreign material, in accordance with ASTM C 144.
- c. Portland Cement shall be Type II, in accordance with ASTM C 150.
- d. Water shall be clean, clear and free from injurious amounts of oil, acid, alkali, organic or other deleterious matter.
- e. Mortar used for shaping invert channels and filling connection openings shall be composed of two (2) parts aggregate and one (1) part Portland Cement, mixed in accordance with ASTM C 270.

2.4 CONNECTIONS

- a. Pipes entering precast structures shall be securely set in the precast opening at the proper elevation and grade, using materials in Section "Pipe, Joint, Fittings and Appurtenances."

PART 3 EXECUTION

3.1 INSTALLATION

- a. The items shall be installed in accordance with the manufacturer's recommendations, the drawings and details, and as specified hereinafter.

END OF SECTION

SECTION 02630
STORM DRAINAGE

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 work of this Section.

1.2 SCOPE:

a. Related Work Specified Elsewhere:

1. Earthwork (Section 02300).
2. Precast Concrete (02607)
3. Asphalt paving (Section 02741).
4. Concrete curbs and gutters (Section 02771).
5. Concrete paving (Section 02751).

b. Work Included This Section:

1. Installation of drainage system, including but not limited to, curb inlets, drain lines, catch basins, manholes and other drainage appurtenances as shown on Drawings and as specified herein.

1.3 INDUSTRY STANDARDS:

- a. Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the standard referenced.

The American Society for Testing and Materials (ASTM)
U. S. Department of Commerce, Commercial Standard (CS)
American Concrete Institute (ACI)

1.4 SUBMITTALS:

a. Shop Drawings:

1. Submit manufacturer's cuts on cast-iron drainage structures including gratings, frames, covers, step rungs and pipes.
2. Submit shop drawings on reinforcing for concrete headwall in accordance with requirements of Section 03300.
3. Submit shop drawings on concrete drainage structures.

PART 2: PRODUCTS

- 2.1 ACCEPTABLE MANUFACTURERS: Products of the following manufacturers similar and equal to those specified herein will be acceptable for use on the Project when the specified submittals are approved (in writing) by the Engineer:

a. Cast-Iron Products, Frames, Covers and Step Rungs:

Campbell Foundry Co.

US Foundry, Greensboro, NC
McKinley Iron Works, Fort Worth, TX

- b. Pipe
Neenah Foundry Co., Neenah, WI
- c. Source: Products for use on this Project shall be of one manufacturer for each function unless noted specifically otherwise herein.

2.2 MATERIALS:

- a. Concrete: Designed for a compressive strength of at least 3,000 psi at 28 days. Concrete shall conform to requirements of Section 03300 for exterior concrete exposed to weather.
- b. Mortar: Type M mortar complying with requirements of ASTM C 270. Mortar shall consist of 1 part portland cement, 1/4 part hydrated lime and 3 parts sand.
- c. Brick: Standard weight concrete brick, modular size, conforming to ASTM C 55, Grade N, Type II or clay brick, Grade SW, Type FBS in accordance with ASTM C 216.
- d. Concrete Pipe:
 - 1. Non-Reinforced: ASTM C 14.
Reinforced: ASTM C 76.
- e. HDPE Pipe: Pipe in accordance with ASTM D 3350 minimum cell classification 335420C. The pipe shall have a smooth interior and annular outer corrugations.
- f. Cast-Iron Pipe: Service weight, conforming to U. S. Dept. of Commerce Standard CS 188.
- g. PVC Pipe: Plastic drain, waste and vent pipe (DWV), Schedule 40, in accordance with ASTM D 2665.
- h. HDPE: Joints shall meet AASHTO M252, AASHTO M294, or AASHTO MP7. Gaskets in accordance with ASTM F477. Watertight joints shall be used if noted on the plans.
- i. Cast-Iron Drainage Products:
 - 1. Cast-iron products shall be NCDOT approved and as produced by US Foundry Co., or approved equal. See Paragraph "Manufacturers" hereinbefore for other acceptable manufacturers.
 - (a) Grating and Frame for Catch Basins or Curb Inlets: USF 5181.
 - (b) Grating and Frame for Drop Inlets: USF 4616 Frame and 6221 Grate
 - (c) Manhole Cover: USF 669.
- j. Drain for Landscaped Areas: Provide Type 0173 by Josam Inc., or approved equal by J. R. Smith or Zurn. Drain to be of lacquered cast iron with tapered body having medium deck flange, 3" IPS bottom outlet, bolted flashing clamp integral with gravel stop, and removable non-tilting beehive dome covered with copper mesh screen secured in position by bolts.
- k. Reinforcing for Headwall: Conforming to requirements of Section 03300.
- l. Rip-Rap: Crushed granite.
- m. Coarse Aggregate: Hard, durable, uncoated gravel or crushed stone conforming to ASTM C 33. Size of coarse aggregate shall conform to N. C. State Highway Aggregate Size No. 3.

- n. Pipe Joint Mortar: One part portland cement to 3 parts sand.
- o. Pipe Joint Rubber Gasket: Extruded or molded and cured natural or synthetic rubber gasket in compliance with ASTM C 443.
- p. Pipe Joint Sealant: Sealant material similar and equal to Joint Sealant RV 30 by RuVan Inc., and complying with ASTM C990-91.
- q. Drop Inlets: Precast concrete in accordance with NCSSRS.
- r. Manholes: Precast concrete in accordance with NCSSRS.

PART 3: EXECUTION

3.1 TRENCHING:

- a. Trenches shall be excavated no wider than necessary to work efficiently. Round bottom to fit curve of pipe. Trenches shall have bottom cut so as to form an accurate, uniform pitch for lines.
- b. The bottom of the trench shall be of solid, undisturbed earth. If trench is inadvertently cut too deep, or soft spots are encountered, bring the bottom of the trench to grade by use of fine crushed stone well tamped.
- c. When ready to lay pipe, the bottom of the trench shall not be less than 1% from precise grade at any point. Lay the pipe as soon as trench is ready. Do not complete excavation of trench in which pipe cannot be laid the same day. Lay pipe on true line and grade using batter boards and chalk line or approved equal method for this purpose.
- d. Trenches shall be properly shored to prevent cave-in.

3.2 LAYING PIPE:

- a. Locations: The following types of pipe shall be used at the following locations unless specifically noted otherwise on the Drawings:
 - 1. Under paving for parking or driveways:
 - (a) HDPE, PCV, cast-iron or reinforced concrete.
 - 2. Under sidewalks, steps, etc.:
 - (a) PVC, cast-iron, reinforced concrete or HDPE.
 - 3. Underneath buildings and to 5' outside of building perimeters:
 - (a) PVC, cast-iron or reinforced concrete.
 - 4. Under lawns, planting areas, fields and other unpaved areas:
 - (a) PVC, cast-iron, reinforced concrete or HDPE.

b. Storm Sewer Line:

1. Pipe shall have uniform slope to discharge outlet.
2. Install pipe in strict accordance with requirements of N.C. State Plumbing Code.
3. All joints of concrete pipe and HDPE shall be made with mortar, rubber gasket, or joint sealant material (Contractor option) in accordance with material specifications hereinbefore. Clean surplus joint mortar from inside of pipe to prevent obstruction to flow of water. Install rubber gasket and joint sealant material in accordance with the manufacturer's written instructions.
4. Each joint of pipe shall set on a solid bed to prevent settlement.
5. Install cap-plug in end of pipe when work is halted.
6. Proper connections between dissimilar pipe materials shall be made in accordance with current plumbing practices and the NC State Plumbing Code.
7. The installation of the storm drain system shall begin at the downstream outfall or structure and proceed upstream. The downstream sections shall be completed, prior to allowing upstream storm drainage to enter the system.
8. Install only one (1) type of pipe between the structures and/or the outfall section, unless specified or indicated otherwise.
9. Pipe that may require field cutting shall be done so in a neat and workmanlike manner, so as to leave a smooth end at right angles to the axis of the pipe. Care shall be taken to avoid damaging the pipe and any coatings or linings.
10. The interior of the pipe shall be clear of all soil, debris and superfluous materials prior to and during the installation.
11. The pipe structures shall be lowered carefully into the trench by suitable means and handled with care at all times to avoid damage. Under no circumstances shall the materials be dropped or dumped into the trenches.
12. The pipe shall be installed in accordance with the pipe manufacturer's recommendations.
13. Establish and maintain the horizontal alignment and vertical elevation and grade of the system in accordance with the survey information indicated on the plans.
14. The horizontal alignment of the pipe shall be maintained by a transit plumbed over the center of the downstream manhole. The vertical elevation and grade shall be maintained by an adjustable laser level mounted at the invert of the downstream manhole with target(s) placed in the bell end of the pipe being laid.
15. The storm drain system shall be laid and joined complete-in-place in order that each length and section of pipe between the structures and/or outfall section have a smooth and uniform invert.
16. The previous joint shall have been completed and the entire length of pipe shall be well bedded and firmly backfilled before jointing another length of pipe.
17. Do not use excavation equipment to push the pipe into the home position, unless approved by the Engineer, and then only for one length of pipe at a time.

18. Use standard adapter fittings for making joins of pipes of different material unless indicated specifically otherwise.
19. Join the pipe as recommended by the manufacturer to obtain the degree of watertightness required. The use of lubricants, primers, adhesives and similar materials shall be as recommended by the manufacturers.

3.3 DRAINAGE STRUCTURES:

- a. Manholes, Drop inlets, catch basins, junction boxes, headwalls, etc., shall be constructed as indicated on the Drawings and as specified in this Section.
 1. Drop Inlets, Catch Basins and Manholes:
 - (a) Construct in accordance with the location, designs and dimensions as shown on the Drawings. Grates and frames shall be set in a full bed of mortar.
 - (b) Inlet and outlet pipes shall be extended through the wall for a sufficient distance beyond the outside surface to allow for connections, and the masonry around them shall be constructed neatly so as to prevent leakage along their outer surface.
 - (c) No pipes, cables or other structures shall be built into or through these structures except the attendant drainage pipes.
 - (d) Form inverts in bottom.
 - (e) Wrap all storm drainage boxes in filter fabric
 2. Headwall: See Drawings for location and details. Concrete work and reinforcing shall conform to requirements of Sections 03200 and 03300.

3.4 BACKFILL:

- a. Take precautions in backfilling to prevent disalignment of pipe or structures.
- b. Compact approved fill material firmly and evenly on both sides of pipe in 6" layers to a depth of 12" over top of pipe. Fill remainder of trench in 8" layers and compact each layer with a vibratory tamper as specified under Section 02300 for the particular location of the backfill.
- c. Comply with compaction requirements of Section 02300 for the area through which the trench runs. Where no requirement has been established, compact fill material to 95% maximum density at optimum moisture content as determined by ASTM D 698.

3.5 FIELD QUALITY CONTROL:

- a. Inspection: Contractor shall notify Engineer in ample time to permit inspection of completed underground piping before backfilling is commenced.

3.6 CONNECTION TO EXISTING SYSTEMS:

- a. The new pipe connection to be made to an existing structure, where no stub or opening exists, shall be made through an opening of minimum diameter cut into the structure wall at the required location and elevation.
- b. The new pipe connected to an existing structure shall be secured in position and the remaining opening shall be filled with brick and sealed with mortar. The outer surface of the connection shall be covered with concrete a minimum of 8 inches thick, covering the joint

area completely and thoroughly.

3.7 CLEANING EXISTING STRUCTURES AND PIPES

- a. Existing drainage structures and pipes, within the construction limits, to remain shall be cleared and cleaned of debris and sediment in order to facilitate proper drainage.
- b. The expense for the clearing and cleaning shall be incidental to the work and included in the price of new pipe or structures installed complete-in-place.

3.8 CONNECTIONS TO PIPES WITHOUT MANHOLES

- a. Where pipes from inlets are indicated to be connected to the main lines, the pipe from the inlet shall enter the larger pipe as a factory made connection with its invert above the point of 1/3 of the height of the large pipe, and shall not protrude into the large pipe. The area around the junction shall be packed with grout with the inside being "formed" to result in a smooth surface. The transition area shall be coated inside and out with Koppers 300M or equal products by W.R.Meadows; Owens Corning Trumbull Division or equal. As an alternate, factory fabricated tees made of class III concrete (minimum) pipe or ASTM rated PVC or HDPE material and shapes are acceptable.

END OF SECTION

SECTION 02741 - ASPHALT PAVING

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 work of this Section.

1.2 SCOPE:

a. Related Work Specified Elsewhere:

1. Concrete curbs and gutters (Section 02771).
2. Pavement markings (Section 02763).
3. Storm drainage (Section 02630).

b. Work Included This Section:

1. Aggregate base-course, bituminous base course and bituminous surface-course on drives and parking areas as shown on Drawings and as specified herein. Work of this Section shall include necessary fine grading and local compaction necessary to provide proper subgrade.
2. Provide pavement as specified and at locations specified hereinafter and as shown on the Drawings.

1.3 INDUSTRY STANDARDS:

- a. Reference is made hereinafter to the "Standard Specifications for Roads and Structures", as published by the N. C. Department of Transportation. The abbreviation NCSSRS is used hereinafter to refer to these N. C. Department of Transportation Specifications. The most current version of each text shall be used.
- b. This reference applies to all requirements for materials, installation and testing. All the work of this Section is under the General Contract, therefore the compensation provisions of this reference do not apply.

1.4 SUBMITTALS:

a. Certificates:

1. Submit (in duplicate) certificates stating that materials used meet requirements of this Section for materials, mixing and handling.

PART 2: PRODUCTS

2.1 MATERIALS:

- a. Aggregate Base Course: Shall comply with requirements of NCSSRS Section 520. Shall be type A size ABC conforming to NCDOT section 1005
- b. Bituminous Concrete Base Course: Conforming to composition and materials of Type XXX as required by NCSSRS Section 610.

- c. Bituminous Concrete Surfacing: Conforming to composition and materials of Type **S9.5B**, as required by NCSSRS Section **610**.

PART 3: EXECUTION

3.1 ESTABLISHMENT OF GRADES:

- a. Establish grades and set grade-stakes to the required section. In establishing grades, make due allowances for existing improvements, proper drainage and adjoining property rights. No gradient shall be less than 1%.

3.2 PREPARATION OF SUBGRADE:

a. Subgrade for Drives and Parking:

1. Compaction shall be as defined in Section 02300. Test compaction in accordance with requirements of Section 02300.
2. Remove spongy and otherwise unsuitable material to a depth of 2'-0" as directed by the Engineer and replace with approved material. Loosen exceptionally hard spots and recompact. Take every precaution to obtain a subgrade of uniform bearing power.
3. Maintain subgrades in satisfactory condition and properly drain until surface improvement is placed.

- 3.3 AGGREGATE BASE COURSE:** Placing and compacting of aggregate base course shall be in accordance with NCSSRS Section 520. Compacted base course shall be not less than 6" or the thickness shown on the plans (whichever is greater).

3.4 BITUMINOUS CONCRETE BASE COURSE:

- a. Placing and compacting base course shall be in accordance with NCSSRS Section 630 and Section 610. Compacted base course shall be not less than the thickness shown on the plans.

3.5 BITUMINOUS CONCRETE SURFACING:

- a. Production, transport and placement of bituminous concrete surfacing shall comply with NCSSRS Section 610. Compacted bituminous concrete surface course shall be not less than shown on the plans.
- b. Surface requirements shall be in accordance with Section 610-14 except that surface variation shall be limited to 1/4" in 10', measured as specified.

3.7 TESTING:

- a. Laboratory: Owner will employ services of an independent testing laboratory to perform tests required under this Section. When retesting is required because of failure to pass initial testing, the Contractor shall pay the cost of retesting.
- b. Aggregate Base Course:
 1. Laboratory will take samples and test base course for compliance with requirements for materials, placing and compaction as stated herein.

2. Sampling and testing will be performed in accordance with procedure stated in NCSSRS Section 520. Sampling will be not less than 2 per area and not more than 100 feet apart in paved area.

c. Bituminous Base Course:

1. Laboratory will take sampler and test for compliance with requirements for materials, placing and compaction as stated herein.
2. Sampling and testing will be performed in accordance with procedure stated in NCSSRS Section 630 and Section 610.

d. Bituminous Concrete Surfacing:

1. Laboratory will take samples and test surfacing for compliance with requirements for materials, placing, compaction and finishing as stated herein.
2. Sampling and testing will be performed in accordance with procedure stated in NCSSRS Section 610.

- 3.8 CONSTRUCTION SEQUENCE: The aggregate base course and asphalt binder shall be installed as soon as possible during construction. The final asphalt surface course shall be installed near project completion.

END OF SECTION

SECTION 02751 - CONCRETE WALKS, STEPS AND PAVING

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 work of this Section.

1.2 SCOPE:

a. Related Work Specified Elsewhere:

1. Concrete curbs (Section 02771).
2. Sealants (Division 7).

b. Work Included This Section:

1. Concrete walks.
2. Concrete steps.
3. Concrete paving, including pads for mechanical and electrical equipment as shown on the Drawings.
4. All accessories required for a complete and proper installation.

1.3 INDUSTRY STANDARDS:

- a. Reference: Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the referenced standard.

The American Society for Testing and Materials (ASTM)

PART 2: PRODUCTS

2.1 MATERIALS:

a. Reinforcement:

1. Reinforcing Bars: Deformed bars conforming to ASTM A 615, Grade 60, size and spacing shown on the Drawings.
2. Welded Wire Fabric: ASTM A 185, size and gauge shown on the Drawings and if not shown on the Drawings provide 6" x 6" mesh with 9 gauge wire in both directions.

- b. Concrete: Standard weight, ready-mixed concrete conforming to ASTM C 94. Maximum size aggregate of 1". Maximum slump of 4". Minimum compressive strength at 28 days, 4,000 psi. Concrete shall comply with requirements of Section 03300 - Cast-In-Place Concrete for air entrained concrete.

- c. Aggregate Base: In compliance with North Carolina Standard Specifications for Roads and Structures (NCSSRS), latest edition, Section 520.

d. Forms:

1. Wood or steel, straight, of sufficient strength to resist springing during depositing and consolidating concrete, and of a height equal to the full depth of the finished paving.
2. Wood forms shall be surfaced plank, 2" nominal thickness.
3. If of steel, forms shall be of approved section with a flat top surface.
- e. Expansion Joint Filler: Material shall be asphalt-impregnated fiber strips 1/2" thick, ASTM 1751 equal to "Flexcell" by Celotex ; Fibre Expansion Joint by W.R. Meadows , Inc. ; Joint Filler Code 1390 by W.R. Grace or equal.
- f. Curing Compound: Liquid curing compound shall be Masterseal by Master Builders Inc., Clear Seal by A. C. Horn, Kure-N-Seal by Sonneborn, or approved equal, and shall comply with ASTM C 309, Type I.
- g. Sealant: Provide as work of this Section and in accordance with Division 7.

PART 3: EXECUTION

3.1 SUBGRADE FOR WORK OF THIS SECTION:

- a. Perform any grading necessary to bring subgrades, after final compaction, to required grades and sections for site improvements. Fill and compact traces of trenches resulting from underground work.
- b. Remove spongy and otherwise unsuitable material and replace with approved material. Loosen exceptionally hard spots and recompact. Take every precaution to obtain a subgrade of uniform bearing power. When necessary, compact subgrade with a high-energy mechanical tamper. Compaction shall be a minimum of 95% of Standard Proctor to within 2' of final grade and 100% of Standard Proctor in the upper 2' in accordance with ASTM D 698.

3.2 AGGREGATE BASE:

- a. Provide aggregate base under all concrete paving to receive vehicular traffic. Unless shown on the Drawings, aggregate base is not required under sidewalks and other walkways to receive pedestrian traffic only.

3.3 FORM WORK:

- a. Steps: Form steps and cheek walls with smooth plywood, oiled with non-staining oil, to produce smooth surfaces. Form to dimensions and profiles shown on Drawings.
- b. Walks: Form to depths and sections shown on Drawings.
- c. Forms shall be straight, true to plane, plumb and shall be braced to prevent displacement during concrete placing. Forms shall be tight to prevent leakage of concrete.
- d. Provide expansion joints with premoulded filler, not more than 30' apart; also at junction of concrete pavement and other materials, where pavement abuts buildings and elsewhere as shown.
- e. Slope walks and paving as noted on Drawings or if not shown, as required to provide drainage and prevent ponding of water on walks and paving. Make slight adjustments in grades and cross slopes to connect with intersecting walks and to adapt work to drainage scheme.

3.4 REINFORCEMENT:

- a. Reinforce concrete as shown on Drawings and as specified herein. All concrete paving and sidewalks are to be reinforced with woven wire mesh specified hereinbefore.

3.5 PLACING CONCRETE:

a. Preparation Before Placing:

1. Before concrete is placed, clean all mixing and transporting equipment and remove debris, ice, water and deleterious material from forms and reinforcement which would affect quality or appearance of concrete or inhibit bond of concrete to reinforcing.
2. Provide runways and access to areas to be placed which will protect forms and reinforcement from displacement.
3. Place concrete on a firm, dry subgrade. In no case place concrete on frozen subgrade.

- b. Conveying: Convey concrete from mixer to place of final deposit by methods which will prevent separation or loss of materials. Equipment for conveying concrete shall be of such size and design as to insure a practically continuous flow of concrete from delivery end to point of deposit without separation of materials.

c. Depositing:

1. Do not mix or place concrete when atmospheric temperature is below 40° F., nor when such temperatures are expected within 2 days unless cold weather procedures specified in Section 03300 are followed.
2. Deposit concrete as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. Maximum free fall of concrete shall be 3'.
3. Deposit concrete at a rate so that concrete is plastic at all times and is being integrated with concrete which is still plastic. Deposit continuously until concrete work between construction joints is complete.
4. Consolidate concrete thoroughly by suitable means during placement. Work thoroughly around reinforcement and embedded items and into corners of forms.
5. Spade concrete thoroughly along forms and expansion joints.
6. Where surface mortar is basis of finish of concrete, work coarse aggregate back from forms without formation of surface voids.
7. Vibrators may be used provided they are used by experienced operators and provided forms have been designed against deflection and displacement by vibrated concrete.
8. Tamp and screed concrete true to grade and section. Do not trowel concrete (after darbying) until surface water has evaporated.
9. Score walkways at 5'-0" on center unless shown otherwise on Drawings. Use edging tool with 1/4" radius to provide rounded corners at joints.

10. Expansion Joints: Provide joints with premolded joint filler wherever concrete abuts other rigid construction and vertical abutments. Unless shown otherwise on the Drawings, locate expansion joints at 30' o.c. for concrete paving in the field of the paving and also at 30' o.c. in walks.
- 3.6 SEALANTS: Seal all expansion joints in concrete pavement, both in the field of the pavement and where concrete pavement abuts vertical surfaces such as building walls and concrete island curbs. Top of joint fillers in expansion joints shall be kept approximately 1/2" below top surface of concrete. The specified sealant shall be installed from top of joint filler to flush with top surface of concrete. See Division 7 for material and installation requirements.
- 3.7 ABRASIVE AGGREGATE:
 - a. Soak aggregate in clear water and drain off surplus.
 - b. Sprinkle aggregate uniformly on concrete surface at the rate of 25 lbs. of aggregate per 100 sq. ft.
 - c. Tamp aggregate into concrete lightly with trowel.
 - d. Apply aggregate to full area of tread of steps.
- 3.8 REMOVAL OF FORMS:
 - a. Remove forms carefully. Do not damage face of concrete.
- 3.9 FINISHES:
 - a. Location:
 1. Concrete Pavement to Receive Pedestrian or Vehicular Traffic: Light broom non-slip finish.
 2. Exposed Surfaces Not Receiving Traffic: Steel trowel finish.
 - b. Light Broom Finish:
 1. Bring to correct level with straight edge and strike off. Bring to a smooth surface (free of bumps and hollows) with bull-float or darby. Sprinkling dry cement, or mixture of dry cement and sand, will not be permitted. Do not work concrete further until water sheen has disappeared and/or mix has stiffened sufficiently so that the weight of a man leaves only slight imprint. Apply a fine broom finish at this time as final finish.
 - c. Steel Troweled Finish:
 1. First step shall be same as for wood float finish. Delay troweling until after water and surface sheen have disappeared and concrete is hard enough to ring a steel trowel. Trowel and burnish concrete to a smooth, hard, dense wearing surface, free of trowel marks, hollows or other imperfections.
- 3.10 PROTECTION AND CURING:
 - a. All exposed surfaces of concrete shall be protected from premature drying by application of liquid curing compound specified hereinbefore. Freshly placed concrete shall be protected against wash by rain.

b. Curing Compound:

1. Concrete shall be cured by use of a chemical curing compound as specified herein. As soon as the newly finished concrete can be walked on, apply one coat of curing compound in strict accordance with manufacturer's printed instructions.
2. Do not cure surfaces with chemical compound which would inhibit bond of portland cement grout. Instead use wet burlap or equal wet cure method as specified in Section 03300.

END OF SECTION

SECTION 02771 - CONCRETE CURBS AND GUTTERS

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 work of this Section.

1.2 SCOPE:

- a. Related Work Specified Elsewhere:
 1. Earthwork (Section 02300).
 2. Storm drainage (Section 02630).
 3. Asphalt paving (Section 02741).
 4. Cast-in-place concrete (Section 03300).
- b. Work Included This Section: The work required by this Section consists of all concrete curbs and gutters together with related items necessary to complete work shown on Drawings and as specified herein.

1.3 DAMAGE TO EXISTING CURBS AND GUTTERS:

- a. Existing curbs and gutters to remain are assumed to be in good condition.
- b. Prior to beginning any work, the General Contractor shall inspect the existing curbs and gutters to remain and shall notify the Engineer by letter of any existing damage to same.
- c. Any existing curbs and gutters to remain that are not identified as damaged prior to beginning of construction by the General Contractor by means of letter to the Engineer, and are damaged at substantial completion of the Project, shall be replaced or repaired as directed by the Engineer at no cost to the Owner.

1.4 INDUSTRY STANDARDS:

- a. References: Some products and execution are specified in this Section by reference to published specifications or standards of the following (with respective abbreviations used). Reference is to the latest edition of the referenced standard.
- b. The American Society for Testing and Materials (ASTM)

PART 2: PRODUCTS

2.1 MATERIALS:

- a. Concrete: Conforming to ASTM C 94. Maximum slump of 3". Standard weight, with minimum compressive strength of 3,000 psi at 28 days. Concrete shall comply with requirements of Section 03300 for air entrained concrete.
- b. Forms: Wood or steel.
- c. Expansion Joint Filler: Material shall be asphalt-impregnated fiber strips 1/2" thick unless otherwise shown on Drawings, equal to "Flexcell" by Celotex ; Fibre Expansion Joint by W.R. Meadows , Inc. ; Joint Filler Code 1390 by W.R. Grace or equal and shall be cut and shaped to the cross section of the curb.

2.2 FABRICATION:

a. Forms:

1. Forms shall be straight and of sufficient strength to resist springing during depositing and consolidating concrete.
2. Profile shall conform to standard curb and gutter detail.
3. Outside forms shall have a height equal to the full depth of curb or gutter. The inside form or curb shall have profile as indicated and shall be securely fastened to, and supported by, the outside form.
4. Straight forms of wood shall be 2" nominal surfaced plank; if of steel, forms shall be of approved section with a flat surface at the top.
5. Rigid forms shall be provided for curb returns, except that benders of thin plank forms may be used for curb or curb returns with a radius of 10' or more where grade changes occur in the return, or where the central angle is such that a rigid form with a central angle of 90° cannot be used.
6. Back forms of curb returns may be made of 1/2" benders for the full height of the curb, cleated together.

PART 3: EXECUTION

3.1 PREPARATION OF SUBGRADE:

- a. Subgrade shall be constructed true to grade and cross section as shown on Drawings and as specified in other Sections of these Specifications.
- b. Subgrade for curbs shall extend in all cases at least 1'-0" behind the curb. Subgrade shall be tested for grade and cross section by means of a template extending full width of the curb or combination curb and gutter.
- c. Subgrade shall be maintained in a smooth, compacted condition in conformance with the required section and established grade until concrete is placed. Remove spongy and otherwise unsuitable material and replace with approved material. Subgrade shall be compacted to a minimum of 95% of Standard Proctor to within 2' of final grade and 100% of Standard Proctor in the upper 2' in accordance with ASTM D 698. The subgrade shall be in a moist condition when concrete is placed.
- d. In cold weather, subgrade shall be prepared and protected so as to produce a subgrade not frozen and free from frost when concrete is deposited.

3.2 CURB FORMS:

- a. Set curb forms to alignment and grade conforming to dimensions of the curb.
- b. Forms shall be held rigidly in place by use of stakes placed at intervals not to exceed 4'-0". Clamps, spreaders and braces shall be used where required to insure rigidity in forms.
- c. Forms on the front of the curb shall be removed not less than 2 hours nor more than 6 hours after concrete has been placed. Forms at back of curb shall remain in place until face and top of curb have been finished as specified in paragraph regarding finishing hereinafter. Forms shall not be removed while concrete is sufficiently plastic to slump in any direction.

- d. Forms shall be cleaned and coated with form oil each time before concrete is placed. Wood forms may instead be thoroughly wetted with water before concrete is placed, except that, with probable freezing temperatures, oiling is mandatory.

3.3 JOINTS:

- a. Alignment: Expansion and contraction joints shall be constructed at right angles to edge of curbs. Dowels, tie-bars and reinforcement, when required, shall be as shown on the Drawings and shall be installed in accordance with applicable details.
- b. Contraction Joints:
 - 1. Construct by means of 1/8" thick by 1" deep separators of a section conforming to cross section of the curb. Contraction joints shall be constructed directly opposite contraction joints in abutting concrete pavement. Where curbs do not abut concrete pavements, contraction joints shall be so placed that monolithic sections between joints will be not greater than 15'-0" in length.
 - 2. Separators shall be removed as soon as practicable after the concrete has set sufficiently to preserve width and shape of joint.
 - 3. After separator plates have been removed, all exposed edges of joints shall be rounded with proper edging tool to a radius of 1/4".
- c. Expansion Joints:
 - 1. Form by means of preformed expansion joint filler materials cut and shaped to the cross section of the curb.
 - 2. Expansion joints shall be provided at ends of all returns. Expansion joints shall be provided directly opposite expansion joints of abutting concrete pavement and shall be of same type and thickness as joints in the pavement.
 - 3. Where curbs do not abut concrete pavement, expansion joints at least 1/2" in width shall be provided at intervals not exceeding 60'-0" unless the Drawings indicate joints at closer intervals.
 - 4. Insert asphalt-impregnated fiberboard expansion joint filler specified hereinbefore.

3.4 CONSTRUCTION:

- a. Curbs: Shall be of dimensions and sections shown on the Drawings.
- b. Gutters: Shall be of dimensions and sections shown on the Drawings. Provide flat gutter sections where required to allow proper drainage of water from gutters to catch basins located elsewhere in parking area.
- c. Placing Concrete: Concrete shall be placed in forms to the specified depth and thoroughly consolidated by tamping and spading so that there are no rock pockets at forms and mortar entirely covers top surfaces. Concrete may be compacted by means of mechanical vibrators.
- d. Finishing:
 - 1. Top of curb shall be rounded with an edging tool to a radius of 1 1/2" and surfaces shall be floated and finished with a smooth wood float until true to grade and section and uniform in texture.
 - 2. The floated surfaces shall then be brushed with longitudinal strokes using a fine-hair brush.

3. Immediately after removing front curb form, the face of the curb shall be rubbed with a wood or concrete rubbing block and water until blemishes, form marks and tool marks have been removed.
4. While still wet, the surface shall be brushed in same manner as curb top.
5. Except at grade changes or curves, finished surfaces shall not vary from testing edge of a 10' straight-edge more than 1/4" for top and face of curb. Irregularities exceeding the above shall be satisfactorily corrected.
6. Visible surfaces and edges shall be free of blemishes and form and tool marks and shall be uniform in color, shape and appearance.

e. Machine Placing:

1. At Contractor's option, curbs and gutters may be constructed by means of machine placing of concrete. Profiles shall be as specified herein and as approved by Engineer.

3.5 CURING AND PROTECTION:

- a. Curing: Immediately after finishing operations, the exposed concrete surfaces shall be cured in accordance with Section 03300 - Concrete Work.
- b. Protection:
 1. After curing, debris shall be removed and the backfill shall be placed as indicated.
 2. Completed work shall be protected from damage until accepted. Contractor shall repair damaged concrete and clean concrete discolored during construction. Work that is damaged shall be removed and reconstructed for the entire length between regularly scheduled joints, not by refinishing the damaged portion. Removed damaged portions shall be deposited off the site or as directed.

END OF SECTION

SECTION 02920 - LAWNS AND GRASSES

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 work of this Section.

1.2 SCOPE:

- a. Related Work Specified Elsewhere:
 1. Earthwork including topsoil (Section 02300).
 2. Landscape work (Section 02930).
 3. Temporary seeding for erosion control (Section 02370).
- b. Work Included This Section:
 1. Soil preparation.
 2. Fertilizing and liming.
 3. Grassing and all associated work specified herein.

1.3 SUBMITTALS:

- a. Guarantees:
 1. Submit guarantee in writing stating terms of guarantee, name of nurseryman, name of Owner, name of Project, location and date.
 2. Guarantee shall include the following:
 - (a) Seeding work and material under this Section shall be guaranteed through the maintenance period and until the next planting season (as defined herein for seeding).
 - (b) If a satisfactory stand of grass has not been produced at the end of the maintenance period, the Contractor shall renovate and reseed the lawn or unsatisfactory portions immediately (or as soon as the weather permits).
 - (c) If a satisfactory stand of grass is produced by the end of the one year guarantee period, the lawn will be accepted. If the stand is not satisfactory or accepted, perform a complete replanting during the following planting season in accordance with requirements of this Section.

1.4 PRODUCT HANDLING:

- a. Storage: Store lime, fertilizer and seed in a dry area free from physical abuse. Store on pallets off of floor.

1.5 TESTS:

- a. Topsoil and Soil To Be Seeded: Submit sample of soil to be seeded from Project to North Carolina Department of Agriculture for analysis and recommendation on soil conditioners and plant food for the varieties and percentages of grass specified herein. Method of procurement of soil sample and method of delivery shall comply with requirements of North Carolina Department of Agriculture.

PART 2: PRODUCTS

2.1 MATERIALS:

- a. Fertilizer: Shall be a commercial fertilizer delivered to the site in unopened original containers each bearing the manufacturer's guaranteed analysis. Any fertilizer which becomes caked or otherwise damaged shall not be accepted. Fertilizer shall contain a 10-10-10 ratio of nitrogen, phosphate and potash unless recommended otherwise by the Department of Agriculture Report.
- b. Lime: Freshly ground agricultural limestone without lumps and cakes. Not less than 85% total carbonates and magnesium. Ground so that 50% passes 100 mesh sieve and 90% passes 20 mesh sieve.
- c. Permanent Grass: All seed shall be 99% pure, 85% germination (tested within 6 months of planting). Seed shall be a uniform mixture of equal parts of Titan Tall Fescue, Falcon II and Shenandoah Fescue. Seed mixture shall be Velva-Turf by Mayo Seed Company or equal.
- d. Temporary Grass: See Section 02370 - Erosion and Sedimentation Control.
- e. Mulch:
 1. Straw: Small grain straw, undamaged, air dry, threshed free of undesirable weed seeds.
 2. Mesh: Woven jute yarn with 3/4" openings.
- f. Topsoil: To be provided under Section 02300.

PART 3: EXECUTION

3.1 EXISTING CONDITIONS:

- a. Grades: The site, when ready for this work, will be at finish grade and this grade shall be maintained.

3.2 PREPARATION OF SOIL:

- a. General:
 1. Preparation shall not start until after all other site and utility work has been completed and approved by the Engineer within the areas to be seeded.
 2. Remove weeds and undesirable material in area designated on Drawings to be grassed.

b. Tillage:

1. Loosen and rip the soil thoroughly to a depth of 4" to 6" until tillage is suitable for subsequent operations.
2. Smooth out any irregularities in the surface resulting from tillage or other operations. Leave area free of rocks which will not pass through tines of a standard garden rake. Remove any material which hinders seeding or future maintenance.

c. Lime: If required by tests, distribute uniformly at rate specified in report from North Carolina Department of Agriculture. (Distribute uniformly at minimum rate of 100 lbs. per thousand sq. ft.) Work into soil thoroughly to a depth of 4".

d. Slow Release Fertilizer: Distribute uniformly at rate specified in report by Department of Agriculture. (Distribute uniformly at minimum rate of 12 lbs. per thousand sq. ft.) Work into soil thoroughly to a depth of approximately 4" along with tillage operation.

3.3 SEEDING:

- a. Plant grass seed only between February 1st through May 15th; August 20th through October 25th. Sow grassed areas evenly with a mechanical spreader to produce a uniform and reasonably thick stand of grass.
- b. Seeding shall be performed with the soil moist but not wet. Seed shall be covered lightly (1/4") and rolled with a light roller or cultipacker to firm the seed in the soil.

3.4 MULCHING AND PROTECTION:

- a. Mulch seeded areas (with a slope greater than 5%) with a uniform, light cover of straw at the rate of 1 1/2 tons per acre.
- b. Mulch seeded areas (with a slope greater than 20%) with excelsior mat in strips paralleling slope. Cover seeded area completely. Pin mulch to ground with 4" long wire staples at 5' intervals immediately after seeding.
- c. Protect slopes from damage due to erosion by concentrated streams of water.

3.5 MOWING:

- a. The Contractor shall conduct mowing operations as necessary to keep the lawn in a neat and well groomed appearance. The lawn shall only be cut when the grass and soil are dry, and not more than 50% of the total leaf surface is to be removed at one mowing. All clippings shall be removed and, prior to acceptance, a final mowing shall be conducted.
- b. Mowing for Fescue shall be done with a rotary type mower set at 2 1/2" to 3".

3.6 MAINTENANCE:

- a. Maintain work of this Section until issuance of Certificate of Final Acceptance of Project. Maintenance shall include watering of lawns, mowing and repairs to lawn.
- b. Where maintenance is taken over by the Owner during the guarantee period, the Contractor shall inspect (periodically) the maintenance operation by the Owner until guarantee period has ended.
- c. Report to the Owner (promptly) any methods, practices or operations which the Contractor considers unsatisfactory, not in accordance with his interests, or not good horticultural practice. Advise Owner regarding general care, weed control, fertilizing and insect and disease control necessities.
- d. Failure of the Contractor to inspect and report shall be construed as an acceptance by him of Owner's operations. He shall not claim thereafter that any defects developing later are the results of such methods, practice or operations.

3.7 CLEAN-UP:

- a. Completion: On completion of the work, remove from the site all equipment and other articles used and leave the areas in a clean and neat condition.

END OF SECTION