

ADVERTISEMENT FOR BIDS

Sealed bids for the project entitled **SITE IMPROVEMENTS, ASHEVILLE HIGH SCHOOL**, will be received by the Asheville City Board of Education at **2:00 p.m.** local time **September 10, 2024**, in the Training Room of the Asheville City Schools Office, 85 Mountain Street, Asheville, North Carolina and then publicly opened and read aloud.

THE PROJECT GENERALLY CONSISTS OF the milling, placement of new CABC and asphalt pavement, installation of stand-up curbing, restriping, yard inlet and piping, landscaping, and miscellaneous items at the existing parking lot and adjacent drive at the baseball field to the south of the main school building.

The Contract Documents may be examined at the following locations:

Davis CivilSolutions, P.A.
135-A Charlotte Highway, Asheville, North Carolina
Asheville City Schools Maintenance Director's Office
441 Haywood Road, Asheville, North Carolina

Copies of the Contract Documents may be obtained in digital form from the Asheville City Schools web site. Paper or digital copies may be obtained at the office of Henco Reprographics Plan Room, 54 Broadway, Asheville, NC 28801 upon payment to Henco. There will be no refund to any party for Contract Documents so obtained.

A certified check or cashier's check payable to Asheville City Schools or a satisfactory Bid Bond executed by a corporate surety licensed under the laws of North Carolina to execute such bonds in the amount equal to five percent of the total of the bid shall be submitted with each bid.

The bid deposit shall be retained by the Owner if the successful bidder fails to execute the contract or fails to provide the required bonds, as stated above, within ten (10) days after award of the contract.

Attention is called to the fact that the Contractor must ensure that employees and applicants for employment are not discriminated against because of their race, color, religion, sex or national origin.

The Owner reserves the right to waive any informalities or reject any or all bids.

A Pre-Bid Conference will be held on August 29, 2024, at 2:00 pm local time at the site of the project at the parking lot at the baseball field located to the south of the main school building, at 419 McDowell Street, Asheville, North Carolina. The entrance to the baseball field is located off of McDowell Street to the south of the main school entrance. The purpose of this conference is to allow prospective bidders and other interested parties to meet with the engineers and the School+ staff to discuss the project, ask any questions about the project, and clarify the plans and specifications.

Each bidder must be appropriately licensed as a Contractor in the State of North Carolina as provided in General Statutes Chapter 87. Each bidder shall make positive efforts to use small and minority owned business enterprises on this project.

The OWNER reserves the right to award a contract to the lowest, responsive, responsible bidder. The OWNER may make such investigations as he deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to

satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.

A conditional or qualified BID will not be accepted.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

The ENGINEER is **Davis CivilSolutions, P.A.** The Engineer's address is **135-A Charlotte Highway, Asheville, North Carolina 28803.**

ASHEVILLE CITY BOARD OF EDUCATION

BID DOCUMENTS

ASHEVILLE CITY
BOARD OF EDUCATION

SITE IMPROVEMENTS
ASHEVILLE HIGH SCHOOL

419 McDOWELL STREET
ASHEVILLE, NORTH CAROLINA



Davis CivilSolutions, PA

July, 2024
21109



TABLE OF CONTENTS**SECTION****TITLE****PAGES**

DIVISION 0 - BIDDING AND CONTRACT REQUIREMENTS		
---	--	--

IB	INSTRUCTIONS TO BIDDERS	3
BP	BID PROPOSAL	1
BS	BID SCHEDULE	6
NA	NOTICE OF AWARD	1
AG	AGREEMENT	6
PEB	PERFORMANCE BOND	2
PAB	PAYMENT BOND	2
IC	INSURANCE CERTIFICATES	1
MB	HUB CERTIFIED/MINORITY BUSINESS PARTICIPATION FORMS	6
NP	NOTICE TO PROCEED	1
AP	APPLICATION FOR PAYMENT	1
GC	GENERAL CONDITIONS OF THE CONTRACT	77
EGCA	EXHIBIT TO GENERAL CONDITIONS	7
NCOC	NC ONE CALL	1

DIVISION 1 - GENERAL REQUIREMENTS
--

10 0100	SUPPLEMENTAL CONSTRUCTION REQUIREMENTS	11
10 0150	RECOMMENDED STANDARD FORMS	5

DIVISION 2 - NOT USED

DIVISION 3 - SITE WORK

31 2100	BORROW	1
31 2200	WASTE MATERIAL DISPOSAL	2
31 2300	EXCAVATION AND BACKFILL	10
31 2500	SUBGRADE	1
32 1100	RESTORATION OF SURFACES	2
32 1200	MILLING BITUMINOUS PAVEMENT	2
32 1215	BITUMINOUS PAVING	4
32 1225	AGGREGATE BASE COURSE	3
32 1350	MISCELLANEOUS SITE CONCRETE	9
32 1725	PAVEMENT MARKINGS	2

DIVISION 0

BIDDING AND CONTRACT REQUIREMENTS

**SECTION IB
INSTRUCTIONS TO BIDDERS**

IB-01. PREPARATION OF BIDS

All bids shall be prepared in accordance with the following requirements:

1. The Bid form furnished by the Engineer shall be used and shall not be altered.
2. All entries including signatures shall be written in ink.
3. The Bidder shall submit a unit or lump sum price for every item in the Bid form. The unit or lump sum prices bid for the various Contract Items shall be written figures.
4. Changes in any entry shall be made by marking through the entry in ink and making the correct entry adjacent thereto in ink. The individual signing the Bid shall initial the change in ink.
5. The Bid shall be properly executed. In order to constitute proper execution, the Bid shall be executed in strict compliance with the following. No other forms of execution will be accepted.
 - a. If a Bid is by an individual, it shall show the name and address of the individual and shall be signed by the individual.
 - b. If the Bid is by a Corporation, it shall be executed in the name of the Corporation by the President or Vice President. It shall be attested by the Secretary or Assistant Secretary. The seal of the Corporation shall be affixed. The Bid shall show the address of the principal office of the Corporation.
 - c. If the Bid is made by a Partnership, it shall be executed in the name of the Partnership by one of the partners. The address of the Partnership shall also be shown.
 - d. If the Bid is a joint venture, it shall be executed by each of the joint venturers in the appropriate manner set out above. The address for the joint venture shall be shown.
6. The Bid shall not contain any unauthorized additions, deletions, or conditional bids.
7. The Bidder shall not add any provision reserving the right to accept or reject an award, or to enter into a Contract pursuant to an award.
8. The Bid shall not contain irregularities of any kind which make the Bid incomplete, indefinite, or ambiguous as to its meaning.
9. Alternative Bids will not be considered unless specifically called for. Where numbered Alternate Bid Items are provided under any Contract, each Bidder must submit at bid price for each numbered Alternate Item.
10. All attachments, certifications or acknowledgements attached to the Bid shall be executed in the same manner as the Bid.

IB-02. RECEIPT AND OPENING OF BIDS

The envelopes containing the Bids must be sealed and addressed to:

Asheville City Board of Education
85 Mountain Street
Asheville, North Carolina 28801

The outside of the envelopes must bear the name, address, license number, and limits of license of the Bidder and designate the particular Contract by name for which the Bid is submitted.

IB-03. WITHDRAWAL OR REVISION OF BIDS

A Bidder may, without prejudice to himself, withdraw a Bid after it has been delivered, providing the request for such withdrawal is made in writing to the Engineer presiding over the opening of the Bids before the date set for the receiving of Bids. No Bid may be withdrawn for a period of sixty (60) days after Bids have been opened pending the execution of a Contract with the successful Bidder except as provided for in Section 143-129.1 of the North Carolina General Statutes.

Only those persons authorized to sign Bids shall be recognized as being qualified to withdraw a Bid.

IB-04. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the Plans, Specifications or other portions of the Contract Documents will be made orally. Every request for such interpretation must be addressed to the office of Davis CivilSolutions, PA, 135-A Charlotte Hwy., Asheville, North Carolina 28803, and, to be given consideration, must be received at the above address at least four (4) business days prior to the date fixed for the receipt of Bids. Any and all such interpretations and any supplemental instructions will be in the form of written Addenda which, if issued, will be sent by mail, or e-mailed to all holders of Contract Documents at the respective address furnished for such purpose not later than twenty four (24) hours prior to the day fixed for the opening of Bids. Failure of any Bidder to receive any such Addenda shall not relieve said Bidder from any obligation under his Bid as submitted. All Addenda so issued shall become a part of the Contract Documents.

Prospective Bidders are cautioned concerning the use of a Post Office Box address as telegraphic Addenda cannot be sent to Post Office Boxes.

IB-05. QUALIFICATIONS OF BIDDERS

The Owner may make such investigation as he deems necessary to determine the qualifications of the Bidder to perform the work and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the contract, and to complete the work contemplated therein. Conditional bids will not be accepted.

Bidders shall comply with all applicable laws regulating the practice of General Contracting as contained in Chapter 87 of the General Statutes of North Carolina.

IB-06. RESPONSIBILITIES OF BIDDERS

Each Bidder shall, by careful examination, satisfy himself as to the nature and location of the work, the configuration of the ground, the character quality and quantity of the facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work or the cost thereof under the Contract.

The Contractor shall make his own determination as to the nature and extent of the existing facilities, including proposed adjustments, new facilities, or temporary work to be performed by the Owner or his representative; and as to whether or not any work is planned by the Owner in conjunction with the project construction. The contractor shall consider in his Bid all of the permanent and temporary facilities in their present or relocated positions, whether or not specifically shown on the plans or covered in the project Special Conditions. It will be the Contractor's responsibility to anticipate any additional costs to him resulting from such work to reflect these costs in his Bid for the various items in the Contract.

The failure or omission of any Bidder to thoroughly examine and familiarize himself with the Contract Documents or to receive or examine any form, instrument or document or to visit the site and acquaint himself with the conditions there existing shall in no way relieve any Bidder from any obligation in respect to his Bid.

No verbal agreement or conversation with any officer, agent or employee of the Owner, either before or after the execution of the Contract, shall affect or modify any of the terms or obligations therein.

IB-07. NOT USED

IB-08. COMPARISON OF BIDS

Bids will be compared on the basis of the totals of the lump sum or unit prices bid. The resulting Total Contract Bid Price will be compared which will include and cover the furnishing of all materials, and the performance of all labor requisite or proper, and completing of all the work called for under the accompanying Contract, and in the manner set forth and described in the Contract Documents. The lowest Bidder under each Contract will be that Bidder whose Bid totals the lowest number of dollars as determined above.

IB-09. AWARD OF CONTRACT

The award of the contract will be made to the lowest bidder, who, in the opinion of the Owner, is qualified to perform the work required.

These bids are asked for in good faith, and awards will be made as soon as practicable, provided satisfactory Bids are received.

The Owner may consider informal and reject any Bid not prepared and submitted in accordance with the provisions hereof.

The right is reserved to waive informalities in bidding, to reject any or all Bids, or to accept a Bid other than the lowest submitted if such action is deemed to be in the best interest of the Owner.

IB-10. COMMENCEMENT OF WORK:

Upon execution and delivery of the Contract and the delivery of the required performance and labor and material bonds and insurance certificates and policies by the Contractor to the Owner, the Contractor will be notified to proceed with the work of the Contract. The work of the Contract shall be commenced within ten (10) days following such notification or as otherwise specified in the Notice to Proceed.

The Contractor shall notify the Engineer and the County, in writing, of his intention to enter upon the site of the work at least four (4) business days in advance of such entrance.

END OF SECTION

SECTION BP – BID PROPOSAL

Date: _____

Gentlemen:

In compliance with your Advertisement for Bids, the undersigned hereby proposes to furnish all labor, equipment and materials and to perform all work for the construction of improvements referred to herein as:

**ASHEVILLE CITY BOARD OF EDUCATION
SITE IMPROVEMENTS
ASHEVILLE HIGH SCHOOL
419 McDOWELL STREET
ASHEVILLE, NORTH CAROLINA**

in strict accordance with the Contract Documents and in consideration of the amounts shown on the Bid Schedule (printed on yellow paper) attached hereto and totaling:

\$ _____ (\$ _____).
(words) (numbers)

The undersigned hereby agrees that, upon written acceptance of this Bid, he will within **10** days of receipt of such notice execute a formal Contract agreement with the Owner, and that he will provide any bonds or guarantees required by the Contract Documents.

The undersigned agrees that, if awarded the Contract, he will commence the work within **10** calendar days after the date of receipt of written Notice to Proceed, and that he will complete the work within **75** calendar days thereafter.

The undersigned acknowledges receipt of the following addenda:

Respectfully submitted,

Firm Name

Business Address

(Seal)

By: _____

ATTEST: _____

Title: _____

END OF SECTION BP

BID SCHEDULE
 (ATTACH TO BID PROPOSAL)
SITE IMPROVEMENTS
ASHEVILLE HIGH SCHOOL
 419 McDOWELL STREET
 ASHEVILLE, NORTH CAROLINA

ITEM	DESCRIPTION	QUANTITY		UNIT PRICE	EXTENSION
1	MOBILIZATION (3% MAXIMUM)	1	LS		
2	SITE GRADING COMPLETE INCL. BUT NOT LIMITED TO GRADING, EXCAVATION, COMPACTION, STRAW MATTING ON SLOPES, AND RELATED ACTIVITIES INCL. MAINTENANCE & REPAIR (1300 SY IN LOCATION OF CLR. AND GRB.)	1,300	SY		
3	3" MILLING OF EXISTING ASPHALT SOUTH PARKING LOT, PORTION OF EXISTING DRIVE	2,412	SY		
4	S9.5C - 3" THICKNESS OVERLAY, SOUTH PARKING LOT	2,412	SY		
5	RESTRIPE PARKING LOT SPACES, SOUTH	17	EA		
6	RESTRIPE NO PARKING SPACES, SOUTH	3	EA		
7	S9.5B - 2" THICKNESS, NEW DRIVE	605	SY		
8	CABC - 6" THICKNESS, NEW DRIVE	605	SY		
9	STRIPE HANDICAPPED SPACE, NEW DRIVE	1	EA		
10	STRIPE HANDICAPPED AISLE, NEW DRIVE	1	EA		
11	HANDICAPPED SIGN	1	EA		
12	PARKING BUMPER (AT HANDICAPPED PARKING SPACE)	1	EA		
13	6" STAND-UP CONCRETE CURB, VARIABLE HEIGHT	108	LF		
14	15" X 6" WYE	2	EA		
15	18" YARD INLET	1	EA		
16	6" HDPE, ROOF DRAIN LATERAL, YARD INLET CONNECTION	12	LF		
17	LANDSCAPING - TREES, LARGE DECIDUOUS, BASSWOOD	2	EA		
18	LANDSCAPING - TREES, SMALL DECIDUOUS, TRIDENT MAPLE	2	EA		
19	LANDSCAPING - TREES, SMALL DECIDUOUS, SERVICEBERRY	2	EA		
20	LANDSCAPING - SHRUBS, SMALL DECIDUOUS, DWARF FOTHERGILLA	5	EA		
21	LANDSCAPING - SHRUBS, SMALL DECIDUOUS, SUMMERSWEET	5	EA		
22	LANDSCAPING - SHRUBS, SMALL EVERGREEN, SAINT JOHN'S WORT	20	EA		
23	LANDSCAPING - SHRUBS, SMALL EVERGREEN, LITTLE LEAF BOXWOOD	20	EA		
24	LANDSCAPING - SHRUBS, SMALL EVERGREEN, INKBERRY HOLLY	20	EA		
25	LANDSCAPING - SHRUBS, MEDIUM EVERGREEN, DROOPING LEUCHTOE	3	EA		
26	MISC. WASHED STONE	50	TN		
27	MISC. CABC	50	TN		
28	MISC. CONCRETE	10	CY		
				TOTAL BID	\$
ALTERNATES					
A1	ACO KLASSIKDRAIN, K100S TRENCH DRAIN, OR EQUAL	6	LF		
A2	2' X 2' X 2' DROP INLET, INCLUDING CASTINGS, COMPLETE	1	EA		
A3	CONCRETE BOLLARD	2	EA		

END OF SECTION BS

SECTION NA - NOTICE OF AWARD

TO:

Project Description: **ASHEVILLE CITY BOARD OF EDUCATION
SITE IMPROVEMENTS, ASHEVILLE HIGH SCHOOL
419 McDOWELL STREET
ASHEVILLE, NORTH CAROLINA**

The Owner has considered the Bid Proposal submitted by you for the above-described Project in response to its receipt of Bids on _____, and the Instruction to Bidders.

You are hereby notified that your Bid Proposal has been accepted in the amount of _____ (\$_____).

You are required by the Instructions to Bidders to execute the Agreement and furnish the required Contractor's Performance Bond, Payment Bonds and Certificates of Insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said Bonds with ten (10) days from the date of this Notice, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your Bid Proposal as abandoned and as a forfeiture of your Bid Proposal. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the Owner.

Dated this _____ day of _____, **2024**.

ASHEVILLE CITY BOARD OF EDUCATION
OWNER

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged this **17th** day of **May, 2018**.

CONTRACTOR

By: _____

Title: _____

END OF SECTION NA

**AGREEMENT BETWEEN OWNER AND CONTRACTOR
(Less Than \$500,000)**

THIS AGREEMENT, made this ____ day of _____ 20_____, by and between the **ASHEVILLE CITY BOARD OF EDUCATION** ("Owner"), on the one hand, and _____ ("Contractor"), on the other hand, for the **SITE IMPROVEMENTS, ASHEVILLE HIGH SCHOOL** ("Project").

WITNESSETH:

That the Owner and the Contractor, for the consideration herein named, agree as follows:

1. Scope of Work: The Contractor shall furnish all material, equipment, labor, services and supervisions necessary to complete the Project as specified in the RFP and/or bid package dated **July 22, 2024** any documents referenced herein, and the Project Specifications (collectively "Specifications"), which are incorporated herein and attached hereto as Exhibit A. If there are any contradictions between this Agreement and the Specifications, this Agreement shall control. A copy of the Contractor's bid is incorporated herein and attached hereto as Exhibit B.

2. Beginning Work and Substantial Completion: The Contractor will begin work within **ten (10) calendar days** after receiving a Notice to Proceed from the Owner and shall substantially complete the Project in accordance with the Specifications no later than **forty-five (45) calendar days** from the date of the Notice to Proceed. The Owner and/or the Owner's Design Professional shall make an inspection to determine whether the Project is substantially complete. When the Owner and/or Owner's Design Professional determines that the Project is substantially complete in accordance with the Specifications, the Contractor shall prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion.

Contractor may be allowed delays beyond any number given for inclement weather in the specifications for sustained inclement beyond normal weather conditions in the locality wherein the Project site is determined to be unworkable for sustained periods of time by the Owner or the Owner's Design Professional. Such days will not be unreasonably withheld.

If the Contractor believes such weather condition applies, a written request shall be made within seven (7) calendar days following the beginning of the condition to the Owner and/or Owner's Designer Professional for a site meeting and a determination of the site conditions and approval of the delay. Any days granted will be incorporated into a Change Order for signature by the Owner and Contractor.

The Owner shall assess liquidated damages against the Contractor in the amount of Five Hundred dollars (\$500) per day for every day that the Project extends beyond the contractual date of substantial completion (as may be amended). At its election, owner may also pursue any actual damages available at law but may not assess liquidated damages and actual damages related to the same contractor delay.

3. Punch List and Final Completion. The Contractor shall diligently complete all punch list items and shall complete Final Completion no later than thirty (30) days from the date of Substantial Completion. In addition, the Contractor shall execute a Final Certificate and Release as a precondition to final payment from the Owner, the form of which is attached as Exhibit C.

4. Default and Termination: If the Contractor fails to complete the Project within the times specified in Sections 2 and 3 or fails to diligently perform the work with sufficient workmen and equipment or with sufficient materials to ensure the prompt completion of said work or performs the work unsuitably or shall discontinue the prosecution of the work or not carry on the work in an acceptable manner, the Owner may give written notice, sent by certified mail return receipt requested, to the Contractor of such delay, neglect or default, specifying the same, and, if the Contractor, within a period of fifteen (15) calendar days after such notice, shall not proceed in accordance therewith, the Owner may declare this Agreement in default and shall have full power and authority, without violating the Agreement or waiving any other rights at law, to take the prosecution of the work out of the hands of the Contractor, to appropriate or use any or all contract materials and equipment on the grounds as may be suitable and acceptable and may enter into an agreement for the completion of this Agreement according to the terms and provisions thereof or use such other methods as in the Owner's opinion shall be required for the completion of the Agreement in an acceptable manner. All costs and charges incurred by the Owner, together with the costs of completing the work under the Agreement, including liquidated damages, if any, shall be deducted from any monies due or which may become due to the Contractor. In case the expense so incurred by the Owner, including liquidated damages, if any, shall be less than the sum which would have been payable under the Agreement, if it had been completed by the Contractor, then the Contractor shall be entitled to receive the difference, but in case such expense shall exceed the sum which would have been payable under the Agreement, then the Contractor shall be liable and shall pay to the Owner the amount of said excess.

5. Payment: The Owner shall pay to the Contractor, as specified in the Contractor's bid, the total contract sum of _____ (\$_____) for completion of Project, unless altered as allowed herein. Payment shall be made based on the following schedule (hereinafter "Project Cost"):

- a. Contract Unit Prices shall include purchase, transfer, storage, and installation of all materials and supplies complete. There will be no separate payment for purchase of materials and supplies to begin work.
- b. No later than the fifth day of each month, the Contractor shall present to the Owner, or designee, a pay application for the preceding month demonstrating the total percentage of work completed for that preceding month. The Owner or Owner's Design Professional shall inspect the work to determine that the pay application accurately reflects the completed work. If the Owner or Owner's Professional agrees with the submitted pay application, payment for the completed work, less five percent (5%) retainage of the amount of such request, shall be made to the Contractor no later than fifteen (15) calendar days after the pay application is submitted. If the Owner does not agree with the pay application, the pay application

shall be immediately returned to the Contractor and asked that it be resubmitted with revisions. If the Owner agrees with the resubmitted pay application, payment for the completed work, less five percent (5%) retainage of the amount of such request, shall be made to the Contractor no later than ten (10) calendar days after the resubmittal. Except as permitted by law, no further retainage shall be withheld when the Project is at least fifty percent (50%) completed.

The amount of five percent (5%) retained from each approved request for payment shall be retained by the Owner until all work has been finally completed and performed strictly in accordance with this Agreement and the Specifications and until such work has been accepted by the Owner, at which time such retained sums shall be paid to the Contractor within ten (10) days after receipt of the Final Completion certificate. All payments to the Contractor, including the five percent (5%) retainage, are subject to approval by the Owner or Owner's Design Professional.

6. Changes in the Work / Delay: During the Project, if the Contractor encounters any additional charges resulting from unanticipated conditions or additional work requested by the Owner which may alter the total contract sum as stated in Section 5 or the contract time as stated in Section 2, prior to commencing the work, the Contractor must submit a written change order to the Owner or its designee. The written change order must specify the need for the change and the cost of the proposed change. No later than five (5) calendar days after receipt of the written change order, the Owner, or its designee, shall provide to the Contractor a written response either accepting or rejecting the change order. No additional payment shall be made for additional work completed by the Contractor unless the Contractor has submitted a written change order and received the Owner's approval. Contractor shall not be entitled to delay damages from the Owner unless said delay is caused solely by the Owner or its agent. A reasonable time for the Owner to respond to a requested change order shall not be considered an Owner's caused delay pursuant to this Section.

7. Construction Meetings: The Contractor shall meet with the Owner or Owner's Design Professional as specified in the Specifications and at such other construction meetings as required by the Owner or its designee.

8. Correction of Work:

- a. Before Substantial Completion. The Owner, or its designee, shall, from time to time, inspect the status of the Project. The Contractor shall promptly correct work not conforming to the Specifications and rejected by the Owner or Owner's Design Professional and may withhold payment until said work is corrected and accepted.
- b. After Substantial Completion. If, within one (1) year after the date of Substantial Completion, any of the work is found to be nonconforming to the Specifications, the Contractor shall promptly correct the nonconforming work after receipt of written notice from the Owner to do so.

9. Construction Site & Indemnity: The Contractor shall be responsible for the construction site(s) during the performance of the work and shall be responsible for any and all damages to persons and property during the performance of the work and shall further provide all necessary safety measures and shall fully comply with all federal, state and local laws, building codes, rules and regulations to prevent accidents or injury to persons or property on or about the location of the work, especially if school is in session during the performance of portions of the work. The Contractor agrees to indemnify and hold harmless the Owner for any and all losses, including all applicable costs, expenses, other claims, including attorneys' fees, which the Owner might incur due to any act or omission by Contractor, its employees or agents and subcontractors that occur in conjunction with this Agreement.

10. Warranty: The Contractor hereby warrants and guarantees to the Owner that materials and equipment furnished under the Agreement will be of good quality and new, unless otherwise allowed, and the work will be free from defects and will conform to the Owner's Specifications, as specified in Section 1 herein, and shall present to Owner a one (1) year warranty running from the date of Final Completion and shall provide to the Owner any pass-through manufacturers' warranties or other warranties required by the Specifications.

11. Insurance: As a condition precedent to this Agreement, the Contractor shall provide proof of insurance for the required policies and coverages: 1) Workers' Compensation (statutory coverage limits); 2) Commercial General Liability ("CGL") (one million dollar occurrence, two million dollar aggregate); and 3) Comprehensive Automotive Liability (one million dollars). The Owner shall be listed as an additional insured on the Contractor's CGL policy. The Contractor will submit to the Owner copies of Certificates of Insurance on the latest approved North Carolina Department of Insurance Acord Form 25 by an insurer authorized to do business in North Carolina by the North Carolina Department of Insurance and rated A- (minus) or better by A.M. Best Company. The certificates shall certify that the insurance policies carried by Contractor were in force before the Project commenced and certifying that these policies will not be canceled during the Contract unless the Owner has received thirty (30) days written notice via registered or certified letter from the Contractor or carrier. Certificates of Insurance containing disclaimers holding the insurer harmless for failure to notify the Owner of Contractor policy cancellations will not be acceptable and should be modified to delete such disclaimers from the Insurance Certificate forms.

12. Jessica Lunsford Act: Under North Carolina law, certain sex offenders are prohibited from coming onto school campuses. The Contractor agrees to conduct a check of all employees working at the Project site on the N.C. Sex Offender and Public Protection Registration Program, the N.C. Sexually Violent Predator Registration Program and the National Sex Offender Registry. As a term of this Agreement, said checks must be performed by the Contractor and reported to the Asheville City Schools' Superintendent.

13. Relationship: The Contractor shall be considered an independent contractor and not an employee of the Owner.

14. Situs: The place of this Agreement, its situs, forum, shall be Buncombe County, North Carolina, where all matters, whether sounding in contract or tort, relating to its validity, construction, interpretation and enforcement shall be determined.

15. Governing Law: This Agreement shall be governed by the laws of the State of North Carolina.

16. Mutually Agreed Agreement: All the Parties to this Agreement have had the opportunity to be fully and completely represented by counsel of their own choosing in the making of this Agreement. Accordingly, the Parties agree that any rule of construction of contracts resolving any ambiguities against the drafting party shall be inapplicable to this Agreement.

17. Entire Agreement: The Parties hereby affirm that the only consideration for executing this Agreement are the terms and conditions herein and no other promises or agreements of any kind have been made by any person or entity to cause the Parties to execute this Agreement. Further, the Parties agree that if any provisions herein are declared invalid by a court of competent jurisdiction, such invalidation shall not affect the remaining provisions of this Agreement, which shall remain in full force and effect.

18. Authority: The Parties hereby represent and warrant that they have taken all actions and obtained all authorizations, consents and approvals as are conditions precedent to their authority to execute this Agreement.

19. Iran Divestment and E-Verify: The Contractor shall comply with the requirements of G.S. Chapter 64, Article 2 (the "E-Verify Requirements"). The Contractor certifies that it is not listed on the Final Divestment List created by the State Treasurer pursuant to N.C.G.S. § 147-86.58, the Iran Divestment Act of 2015 (S.L. 2015-118). In the event that the Contractor utilizes a subcontractor to perform the Work of this Contract, the Contractor shall require any such subcontractor to comply with the E-Verify Requirements and the Iran Divestment Act.

20. Dispute Resolution: Prior to litigation concerning a dispute, the parties must do the following:

- a. Submit the dispute for review by the Superintendent or designee and the Design Professional, if any; and
- b. Participate in mediation if the matter cannot be resolved by the parties. The cost of the dispute resolution process will be divided between the parties to the dispute. If the Board of Education is a party to the dispute, the Board of Education will pay at least one-third of the cost.

21. MBE/HUB: If the Project Cost of this Agreement is \$100,000 or more and if the Owner has received appropriations or grant funds from the State of North Carolina for the construction of the Project, then the Specifications will contain a notice of that fact and the Contractor shall comply with the MBE and HUB pre-bid and post-award requirements contained in the Specifications.

If the Project Cost of this Agreement is \$300,000 or more, regardless of the source of funds for construction of the Project, the Contractor shall comply with the MBE and HUB pre-bid and post-award requirements contained in the Specifications.

22. Assignment: This Agreement shall be not assigned without the prior, written consent of the Owner which shall not be unreasonably withheld.

23. Bonds: If the Project cost of this Agreement is \$300,000 or more, regardless of the source of funds for construction of the Project, the Contractor shall provide performance and payment bonds as required by law on forms provided by the School Board Attorney.

IN WITNESS WHEREOF, the Contractor and the Owner have executed this Agreement the day and year first above written.

CONTRACTOR:

Signature
Print: _____

TITLE: _____

OWNER:

ASHEVILLE CITY BOARD OF EDUCATION

Signature
Print: _____

TITLE: _____

This instrument has been pre-audited in the manner required by the School Budget and Fiscal Control Act.

Finance Officer

SECTION PEB - PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a **Corporation** hereinafter called PRINCIPAL, and

(Name of Surety)

(Address of Surety)

hereinafter called SURETY, are held and firmly bound unto

Asheville City Board of Education

(Name of Owner)

85 Mountain Street, Asheville, North Carolina 28801

(Address of Owner)

Hereinafter called OWNER, in the penal sum of _____
_____ (\$_____) in lawful money of the United States, for the
payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and
severally, firmly by these presents.

The condition of this obligation is such that whereas, the Principal entered into a certain contract with the
Owner, dated the ____ day of _____, **2024**, a copy of which is hereto attached and made a part
hereof for the construction of:

**ASHEVILLE CITY BOARD OF EDUCATION
SITE IMPROVEMENTS, ASHEVILLE HIGH SCHOOL
419 McDOWELL STREET
ASHEVILLE, NORTH CAROLINA**

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings,
covenants, terms, conditions, and agreements of said contract during the original term thereof, and any
extensions thereof which may be granted by the Owner, with or without notice to the Surety and during
the one year guaranty period, and if he shall satisfy all claims and demands incurred under such
Contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it
may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense
which the Owner may incur in making good any default, then this obligation shall be void; otherwise to
remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no
change, extension of time, alteration or addition to the terms of the Contract or to Work to be performed
thereunder or the specifications accompanying the same shall in any wise affect its obligation on this
Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the
terms of the contract or to the Work or to the Specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be deemed an original, this the ____ day of _____, **2024**.

ATTEST:

(Principal) Secretary

(SEAL)

Principal

BY: _____

Address

Witness as to Principal

(Address)

ATTEST:

(Surety) Secretary

(SEAL)

Surety

BY: _____

Attorney-in-Fact

Address

Witness as to Surety

(Address)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute Bond.

IMPORTANT:

Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.

END OF SECTION PEB

SECTION PAB - PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a **Corporation**, hereinafter called PRINCIPAL, and

(Name of Surety)

(Address of Surety)

hereinafter called SURETY, are held and firmly bound unto

Asheville City Board of Education

(Name of Owner)

85 Mountain Street, Asheville, North Carolina 28801

(Address of Owner)

Hereinafter called OWNER, in the penal sum of _____
(\$ _____) in lawful money of the United States, for the
payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and
severally, firmly by these presents.

The condition of this obligation is such that whereas, the Principal entered into a certain contract with the
Owner, dated the ____ day of _____, **2024**, a copy of which is hereto attached and made a

**ASHEVILLE CITY BOARD OF EDUCATION
SITE IMPROVEMENTS, ASHEVILLE HIGH SCHOOL
419 McDOWELL STREET
ASHEVILLE, NORTH CAROLINA**

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, Subcontractors,
and corporations furnishing materials for or performing labor in the prosecution of the Work provided for in
such contract, and any authorized extension or modification thereof, including all amounts due for
materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed
or used in connection with the construction of such Work, and all insurance premiums on said Work, and
for all labor, performed in such Work whether by Subcontractor or otherwise, then this obligation shall be
void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no
change, extension of time, alteration or addition to the terms of the contract or to the Work to be
performed thereunder or the Specifications accompanying the same shall in any wise affect its obligation
on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or
addition to the terms of the contract or to the Work or to the Specifications.

PROVIDED, FURTHER, that no final settlement between the OWNER and the Contractor shall abridge
the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in ____ counterparts, each one of which shall be deemed an original, this the ____ day of _____, **2024**.

ATTEST:

(Principal) Secretary

(SEAL)

Principal

BY: _____

Address

Witness as to Principal

(Address)

ATTEST:

_____(Surety)
Secretary)

(SEAL)

BY: _____

Attorney-in-Fact

Address

Witness as to Surety

(Address)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute Bond.

IMPORTANT:

Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.

END OF SECTION PAB

SECTION IC – INSURANCE CERTIFICATE

ATTACH INSURANCE CERTIFICATES HERE

END OF SECTION IC

do hereby certify that on this project, we will use the following HUB Certified/ minority business as construction subcontractors, vendors, suppliers or providers of professional services.

****HUB**
Certified
(Y/N) _____

[illegible]

The total value of minority business contracting will be (\$)_____.

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

County of _____

Affidavit of _____

(Name of Bidder)

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

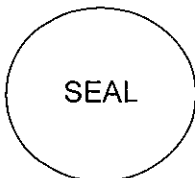
Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- ☐ **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 _____, County of _____
 Subscribed and sworn to before me this _____ day of _____, 2024
 Notary Public _____
 My commission expires _____

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
_____ **SITE IMPROVEMENTS, ASHEVILLE HIGH SCHOOL** _____ contract.
(Project Name)

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

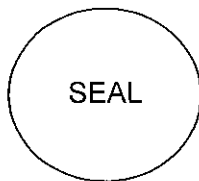
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

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 _____, County of _____

Subscribed and sworn to before me this _____ day of _____, 2024

Notary Public _____

My commission expires _____

State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses

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 HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) 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)

_____ **SITE IMPROVEMENTS, ASHEVILLE HIGH SCHOOL** _____
(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	**HUB Certified Y/N	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**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

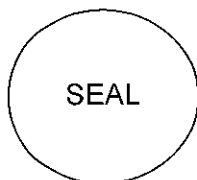
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

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 _____, County of _____

Subscribed and sworn to before me this _____ day of _____, 2024

Notary Public _____

My commission expires _____

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 HUB Certified/ minority business is not achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of _____ I do hereby certify that on the _____

(Name of Bidder)

SITE IMPROVEMENTS, ASHEVILLE HIGH SCHOOL

(Project Name)

Project ID# _____ Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with HUB certified/ 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	**HUB Certified Y/N	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)

** HUB Certification with the state HUB Office required to be counted toward state participation goals.

Examples of documentation that may be required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

- 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.
- Copies of quotes or responses received from each firm responding to the solicitation.
- A telephone log of follow-up calls to each firm sent a solicitation.
- 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.
- Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- Copy of pre-bid roster
- Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- Letter detailing reasons for rejection of minority business due to lack of qualification.
- 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.

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

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 _____, County of _____

Subscribed and sworn to before me this _____ day of _____, 2024

Notary Public _____

My commission expires _____

SECTION NP - NOTICE TO PROCEED

TO:

DATE: _____, 2024

PROJECT: **ASHEVILLE CITY BOARD OF EDUCATION**
SITE IMPROVEMENTS, ASHEVILLE HIGH SCHOOL
419 McDOWELL STREET
ASHEVILLE, NORTH CAROLINA

You are hereby notified to commence WORK in accordance with the Agreement dated, _____, 2024, on or before _____, 2024, and you are to complete the Work within **45** Consecutive calendar days thereafter. The date of completion of all Work is therefore _____, 2024.

ASHEVILLE CITY BOARD OF EDUCATION
OWNER

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____ this the _____ day of _____, 2024.

CONTRACTOR

By: _____

Title: _____

END OF SECTION NP

APPLICATION FOR PAYMENT

PROJECT: ASHEVILLE CITY BOARD OF EDUCATION
SITE IMPROVEMENTS. ASHEVILLE HIGH SCHOOL
419 McDOWELL STREET
ASHEVILLE, NORTH CAROLINA

Application Number: _____
Date Notice Proceed: _____
Completion Date: _____
Days Remaining in Contract: _____
Percent Complete: _____

ENGINEER: Davis CivilSolutions, P.A.
Asheville, North Carolina

CONTRACTOR:
Contractor's Address:

Federal ID # _____

CONTRACT: ORIGINAL CONTRACT AMOUNT
APPROVED CHANGE ORDER AMOUNT
REVISED CONTRACT AMOUNT

\$ _____
\$ _____
\$ _____

SUMMARY: TOTAL WORK COMPLETED TO DATE
TOTAL MATERIALS STORED ON SITE
TOTAL EARNED THIS APPLICATION
LESS ____% RETAINAGE
SUBTOTAL
LESS PREVIOUS APPLICATIONS FOR PAYMENT
CURRENT PAYMENT DUE

\$ _____
\$ _____
\$ _____
\$ _____
\$ _____
\$ _____
\$ _____

SIGNATURE:
CONTRACTOR:

Name Title Date

VERIFICATION:

IN ACCORDANCE WITH THE CONTRACT AND THIS APPLICATION FOR PAYMENT, THE CONTRACTOR HAS COMPLETED THE WORK STATED ABOVE AND IS ENTITLED THE FULL PAYMENT IN THE AMOUNT SHOWN.
ENGINEER: **DAVIS CIVILSOLUTIONS, P.A.**

Name Title Date

APPROVAL:

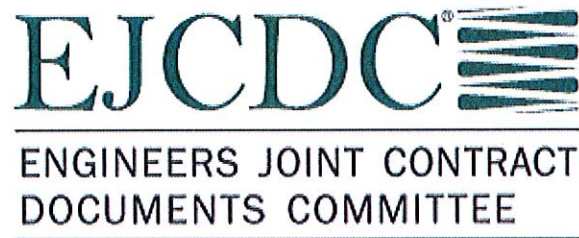
THIS APPLICATION IS HEREBY APPROVED FOR PAYMENT:
OWNER: **ASHEVILLE CITY BOARD OF EDUCATION**

Name Title Date

END OF SECTION AP

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared By



Copyright© 2018

National Society of Professional Engineers
1420 King Street, Alexandria, VA 22314-2794
(703) 684-2882
www.nspe.org

American Council of Engineering Companies
1015 15th Street N.W., Washington, DC 20005
(202) 347-7474
www.acec.org

American Society of Civil Engineers
1801 Alexander Bell Drive, Reston, VA 20191-4400
(800) 548-2723
www.asce.org

The copyright for this EJCDC document is owned jointly by the three sponsoring organizations listed above. The National Society of Professional Engineers is the Copyright Administrator for the EJCDC documents; please direct all inquiries regarding EJCDC copyrights to NSPE.

NOTE: EJCDC publications may be purchased at www.ejcdc.org, or from any of the sponsoring organizations above.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS

	Page
Article 1—Definitions and Terminology	1
1.01 Defined Terms	1
1.02 Terminology.....	6
Article 2—Preliminary Matters	7
2.01 Delivery of Performance and Payment Bonds; Evidence of Insurance.....	7
2.02 Copies of Documents	7
2.03 Before Starting Construction.....	7
2.04 Preconstruction Conference; Designation of Authorized Representatives	8
2.05 Acceptance of Schedules.....	8
2.06 Electronic Transmittals.....	8
Article 3—Contract Documents: Intent, Requirements, Reuse	9
3.01 Intent	9
3.02 Reference Standards	9
3.03 Reporting and Resolving Discrepancies	10
3.04 Requirements of the Contract Documents	10
3.05 Reuse of Documents	11
Article 4—Commencement and Progress of the Work.....	11
4.01 Commencement of Contract Times; Notice to Proceed	11
4.02 Starting the Work	11
4.03 Reference Points	11
4.04 Progress Schedule	12
4.05 Delays in Contractor’s Progress.....	12
Article 5—Site; Subsurface and Physical Conditions; Hazardous Environmental Conditions.....	13
5.01 Availability of Lands.....	13
5.02 Use of Site and Other Areas	14
5.03 Subsurface and Physical Conditions.....	15
5.04 Differing Subsurface or Physical Conditions.....	16

5.05	Underground Facilities	17
5.06	Hazardous Environmental Conditions at Site.....	19
Article 6—Bonds and Insurance		21
6.01	Performance, Payment, and Other Bonds	21
6.02	Insurance—General Provisions	22
6.03	Contractor’s Insurance	24
6.04	Builder’s Risk and Other Property Insurance	25
6.05	Property Losses; Subrogation.....	25
6.06	Receipt and Application of Property Insurance Proceeds.....	27
Article 7—Contractor’s Responsibilities.....		27
7.01	Contractor’s Means and Methods of Construction.....	27
7.02	Supervision and Superintendence.....	27
7.03	Labor; Working Hours	27
7.04	Services, Materials, and Equipment.....	28
7.05	“Or Equals”	28
7.06	Substitutes.....	29
7.07	Concerning Subcontractors and Suppliers	31
7.08	Patent Fees and Royalties	32
7.09	Permits	33
7.10	Taxes.....	33
7.11	Laws and Regulations	33
7.12	Record Documents.....	33
7.13	Safety and Protection.....	34
7.14	Hazard Communication Programs	35
7.15	Emergencies	35
7.16	Submittals.....	35
7.17	Contractor’s General Warranty and Guarantee.....	38
7.18	Indemnification	39
7.19	Delegation of Professional Design Services.....	39
Article 8—Other Work at the Site		40
8.01	Other Work.....	40
8.02	Coordination.....	41
8.03	Legal Relationships	41

Article 9—Owner’s Responsibilities	42
9.01 Communications to Contractor	42
9.02 Replacement of Engineer	42
9.03 Furnish Data	42
9.04 Pay When Due	42
9.05 Lands and Easements; Reports, Tests, and Drawings	43
9.06 Insurance	43
9.07 Change Orders	43
9.08 Inspections, Tests, and Approvals	43
9.09 Limitations on Owner’s Responsibilities	43
9.10 Undisclosed Hazardous Environmental Condition	43
9.11 Evidence of Financial Arrangements	43
9.12 Safety Programs	43
Article 10—Engineer’s Status During Construction	44
10.01 Owner’s Representative	44
10.02 Visits to Site	44
10.03 Resident Project Representative	44
10.04 Engineer’s Authority	44
10.05 Determinations for Unit Price Work	45
10.06 Decisions on Requirements of Contract Documents and Acceptability of Work	45
10.07 Limitations on Engineer’s Authority and Responsibilities	45
10.08 Compliance with Safety Program	45
Article 11—Changes to the Contract	46
11.01 Amending and Supplementing the Contract	46
11.02 Change Orders	46
11.03 Work Change Directives	46
11.04 Field Orders	47
11.05 Owner-Authorized Changes in the Work	47
11.06 Unauthorized Changes in the Work	47
11.07 Change of Contract Price	47
11.08 Change of Contract Times	49
11.09 Change Proposals	49
11.10 Notification to Surety	50

Article 12—Claims	50
12.01 Claims	50
Article 13—Cost of the Work; Allowances; Unit Price Work	51
13.01 Cost of the Work	51
13.02 Allowances.....	55
13.03 Unit Price Work	55
Article 14—Tests and Inspections; Correction, Removal, or Acceptance of Defective Work.....	56
14.01 Access to Work	56
14.02 Tests, Inspections, and Approvals	56
14.03 Defective Work.....	57
14.04 Acceptance of Defective Work.....	58
14.05 Uncovering Work.....	58
14.06 Owner May Stop the Work.....	58
14.07 Owner May Correct Defective Work	59
Article 15—Payments to Contractor; Set-Offs; Completion; Correction Period.....	59
15.01 Progress Payments	59
15.02 Contractor’s Warranty of Title	62
15.03 Substantial Completion	62
15.04 Partial Use or Occupancy	63
15.05 Final Inspection	64
15.06 Final Payment.....	64
15.07 Waiver of Claims.....	65
15.08 Correction Period	66
Article 16—Suspension of Work and Termination.....	67
16.01 Owner May Suspend Work	67
16.02 Owner May Terminate for Cause	67
16.03 Owner May Terminate for Convenience.....	68
16.04 Contractor May Stop Work or Terminate	68
Article 17—Final Resolution of Disputes.....	69
17.01 Methods and Procedures	69
Article 18—Miscellaneous.....	69
18.01 Giving Notice	69
18.02 Computation of Times.....	69

18.03	Cumulative Remedies	70
18.04	Limitation of Damages	70
18.05	No Waiver	70
18.06	Survival of Obligations	70
18.07	Controlling Law	70
18.08	Assignment of Contract	70
18.09	Successors and Assigns	70
18.10	Headings	70

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document 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, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*
 - a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
 - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
 - d. A demand for money or services by a third party is not a Claim.
- 11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
 - 12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
 - 13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
 - 14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
 - 15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
 - 16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
 - 17. *Cost of the Work*—See Paragraph 13.01 for definition.
 - 18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
 - 19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
 - 20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
 - 21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *Notice to Proceed*—A written notice 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.
30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *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, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *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.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *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 of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, 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 a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
 - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
 - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *Work*—The entire 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; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, 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 exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the 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 is not intended to and 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 Article 10 or any other provision of the Contract Documents.
- C. *Day:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - 1. does not conform to the Contract Documents;
 - 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - 3. 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 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
 - 1. The word “furnish,” when used in connection with services, materials, or equipment, means 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, means 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, means to furnish and install said services, materials, or equipment complete and ready for intended use.
 - 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for 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;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work

into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, 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 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will 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 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 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 the component parts of the Work.
 - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required 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.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will 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.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 *Reference Standards*

- A. *Standards Specifications, Codes, Laws and Regulations*
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract 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, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer 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 part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
3. 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 had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); 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 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. 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 its consultants, including electronic media versions, or reuse any 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 adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract 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 Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 *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.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 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 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. Abnormal weather conditions;
 - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
 - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing 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.

- 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 permanent improvements are to be made 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.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

- 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all 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 directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.
 - C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas 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 of 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 structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

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

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

C. *Reliance by Contractor on Technical Data:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
2. is of such a nature as to require a change in the Drawings or Specifications;
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 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

E. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, 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 fall within any one or more of the categories described in Paragraph 5.04.A;
 - 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 Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;
 - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
 4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then 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 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
 2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
 3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
 4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. 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 Paragraph 13.03;
 - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
 - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
 4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

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

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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;
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 removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) 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. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. 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, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. 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, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, 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, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, 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 failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

Regulations, and must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and "Occupational Accident and Excess Employer's Indemnity Policies," are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
- F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.
- H. Contractor shall require:
 - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
 - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
- I. If either party does not purchase or maintain the insurance required of such party by the Contract, 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.
- J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
- K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
 - 1. include at least the specific coverages required;
 - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
 - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
 - 4. apply with respect to the performance of the Work, whether such performance is 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; and
 - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
 - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
 - 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
 - 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, 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, risks, 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 Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
 2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights 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 insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *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.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. 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 will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, 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, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will 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.
- C. All materials and equipment must 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.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item 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 is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
 - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) has a proven record of performance and availability of responsive service; and
 - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 Substitutes

- A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
 - a. will certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design;
 - 2) be similar in substance to the item specified; and
 - 3) be suited to the same use as the item specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
 - 2) whether 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 other work on the Project) to adapt the design to the proposed substitute item; and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from the item specified; and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 Concerning Subcontractors and Suppliers

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *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 an 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 will be disclosed in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, 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 specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, 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 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.

7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. 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 the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *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.

7.11 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, 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 such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. 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, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.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 at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer 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).
- E. 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.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as 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.

7.15 *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 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 by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Contractor shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
 - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
 - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings must 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 7.16.C.
 2. *Samples*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, 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.
- C. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. 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, comply with the requirements of 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, or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.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. Engineer will

document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. Resubmittal Procedures for Shop Drawings and Samples

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.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
 - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
 - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
- 2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 Contractor's General Warranty and Guarantee

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
 - 1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
 - 2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, or improper modification, 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.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
 - 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 review and approval of a Shop Drawing or Sample submittal;
 - 6. The issuance of a notice of acceptability by Engineer;
 - 7. The end of the correction period established in Paragraph 15.08;
 - 8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.

- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (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 from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused 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.
- B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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 7.18.A will 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.

7.19 *Delegation of Professional Design Services*

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
 - 1. Checking for conformance with the requirements of this Paragraph 7.19;
 - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
 - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. 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 such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, 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.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. The extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all 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 damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

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

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *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.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *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.

10.02 *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 10.07. 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.

10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

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

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, 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, will 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 Contractor under Paragraph 15.06.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 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in 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;
 - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
 - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

- B. If Owner has issued a Work Change Directive and:
 - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
 - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes 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. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *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, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. 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, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
 2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
 3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will 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 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
 - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 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 Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
 - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
 - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

- A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.
- B. *Change Proposal Procedures*
 - 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
 - 2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
 - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
 - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

- 3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
- 4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety 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), 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.

ARTICLE 12—CLAIMS

12.01 *Claims*

A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.

B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
 - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval:* If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim:* If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results:* If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 Cost of the Work

- A. *Purposes for Determination of Cost of the Work:* The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will 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 accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will 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, which 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 will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
 4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
 5. Other costs consisting of the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, 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.

- 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
 - 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
 - 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.
- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as 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 builder's risk or other property insurance established in accordance with Paragraph 6.04), 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 include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will 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 communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

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

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, 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 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
- 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 5. 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.
- 6. Expenses incurred in preparing and advancing Claims.
- 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
 - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
 - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
 - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
 - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
- 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

- E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 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 and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances*: Contractor agrees that:
1. the cash 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, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 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.
- B. 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. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. 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.
- D. 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, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- 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, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 3. by manufacturers of equipment furnished under the Contract Documents;
 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. 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, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then 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, and provide all necessary labor, material, and equipment.
1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages 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 pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, 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, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *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, then 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 will 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.

14.07 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 defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or 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, 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 incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. 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 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 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments*
 - 1. At least 20 days before the date established in the Agreement 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.
 - 2. 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 must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations 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, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and 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:
 - a. 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; or
 - b. 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:
 - a. to supervise, direct, or control the Work;
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
 - e. 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 stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. The Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. The Contract Price has been reduced by Change Orders;
 - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
 - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. 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; or
 - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, 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, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
 3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *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 and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

- B. Promptly after Contractor's notification, 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.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy 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, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. 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 15.03 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.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.05 *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, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *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, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

- d. a list of all duly pending Change Proposals and Claims; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, 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, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Final Application and Recommendation of Payment:* 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 have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. 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. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 Waiver of Claims

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such adjacent areas;
 - 2. correct such defective Work;
 - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all 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). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. 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.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, 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.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *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 written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and 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);
 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, 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 complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds 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.

- F. 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, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

- A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. 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. 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; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 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 16.03.
- B. 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, 7 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 are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
 - 2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
 - 1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
 - 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
 - 3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract 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.

18.03 *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. 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.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is 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.

18.09 *Successors and Assigns*

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

18.10 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

**EXHIBIT GC-A
TO GENERAL CONDITIONS
OF THE AGREEMENT BETWEEN THE OWNER AND CONTRACTOR

DISPUTE RESOLUTION AGREEMENT**

OWNER and CONTRACTOR hereby agree that Article 17 of the General Conditions to the Agreement between OWNER and CONTRACTOR is amended to include the following agreement of the parties:

- 17.01 All claims, disputes and other matters in question between OWNER and CONTRACTOR arising out of or relating to the Contract Documents or the breach thereof (except for claims which have been waived by the making or acceptance of final payment as provided by paragraph 15.06) will be decided in accordance with the attached "RULES IMPLEMENTING MEDIATED SETTLEMENT CONFERENCES IN NORTH CAROLINA PUBLIC CONSTRUCTION PROJECTS" as adopted on February 26, 2003 (or latest) by the North Carolina State Building Commission.

**RULES IMPLEMENTING MEDIATED
SETTLEMENT CONFERENCES IN
NORTH CAROLINA PUBLIC CONSTRUCTION PROJECTS**

Adopted February 26, 2002

Table of Rules

Rule

1. Initiating Mediated Settlement Conferences
 - A. Purpose of Mandatory Settlement Conferences.
 - B. Initiating the Dispute Resolution Process.
2. Selection of Mediator
 - A. Selection of Certified Mediator by Agreement of the Parties.
 - B. Nomination and Court Approval of a Non-Certified Mediator.
 - C. Appointment of Mediator by the SCO.
 - D. Mediator Information Directory.
 - E. Disqualification of Mediator.
3. The Mediated Settlement Conference
 - A. Where Conference is to be Held.
 - B. When Conference is to be Held.
 - C. Request to Extend Deadline for Completion.
 - D. Recesses.
 - E. The Mediated Settlement Conference shall not be cause for the Delay of the Construction Project which is the focus of the Dispute.
4. Duties of Parties and Other Participants in Formal Dispute Resolution Process
 - A. Attendance.
 - B. Finalizing Agreement.
 - C. The Mediation Fee shall be paid in accordance with G.S. 143-128(g).
 - D. Failure to Compensate Mediator.
5. Authority and Duties of Mediators
 - A. Authority of Mediator.
 - B. Duties of Mediator.
6. Compensation of the Mediator
 - A. By Agreement.
 - B. By Appointment.
7. Mediator Certification
8. Rule Making
9. Definitions
10. Time Limits

RULE 1. INITIATING MEDIATED SETTLEMENT CONFERENCES

- A. **Purpose of Mandatory Settlement Conferences.** Pursuant to G.S. 143-128(g) 143-135.26(11), these Rules are promulgated to implement a system of settlement events which are designated to focus the parties' attention on settlement rather than on claim preparation and to provide a structured opportunity for settlement negotiations to take place. Nothing herein is intended to limit or prevent the parties from engaging in settlement procedures voluntarily at any time prior to or during commencement of the dispute resolution process.
- B. **Initiating the Dispute Resolution Process**
- 1) Any party to a public construction contract governed by Article 8. Ch. 143 of the General Statutes and identified in G.S. 143-128(g) and who is a party to a dispute arising out of the construction process in which the amount in controversy is at least \$15,000 may submit a written request to the public owner for mediation of the dispute.
 - 2) Prior to submission of a written request for mediation to the public owner, the parties requesting mediation,
 - a) If a prime contractor, must have first submitted its claim to the Project Designer for review as set forth in Exhibit A. If the dispute is not resolved through the Project Designer's instructions, then the dispute becomes ripe for mediation in the Formal Dispute Resolution Process, and the party may submit his written request for mediation to the public owner.
 - b) If the party requesting mediation is a subcontractor, it must first have submitted its claim for mediation to the prime contractor with whom it has a contract. If the dispute is not resolved through the Prime Contractor's involvement, then the dispute becomes ripe for mediation in the Formal Dispute Resolution Process, and the party may submit its written request for mediation to the public owner.
 - c) If the party requesting mediation is the Project Designer, then it must first submit its claim to the public owner to resolve. If the dispute is not resolved with the public owner's involvement, then the Project Designer's dispute is ripe for mediation in the Formal Dispute Resolution Process, and the Project Designer may submit its written request to the public owner for mediation.

RULE 2. SELECTION OF MEDIATOR

- A. **Selection of Certified Mediator by Agreement of the Parties.** The parties may select a mediator certified pursuant to the Rules by agreement within 21 days of requesting mediation. The requesting party shall file with the State Construction Office (hereinafter collectively referred to as the "SCO") or public owner if a non-State project a Notice of Selection of Mediator by Agreement within 10 days of the request; however, any party may file the notice. Such notice shall state the name, address and telephone number of the mediator selected; state the rate of compensation of the mediator; state that the mediator and opposing counsel have agreed upon the selection and rate of compensation; and state that the mediator is certified pursuant to these Rules.
- B. **Nomination and Public Owner Approval of a Non-Certified Mediator.** The parties may select a mediator who does not meet the certification requirements of these rules but who, in the opinion of the parties and the SCO or public owner, is otherwise qualified by training or experience to mediate the action. If the parties select a non-certified mediator, the requesting party shall file with the SCO a Nomination of Non-Certified Mediator within 10 days of the request. Such nomination shall state the name, address and telephone number of the mediator; state the training, experience or other qualifications of the mediator; state the rate of compensation of the mediator; and state that the mediator and opposing counsel have agreed upon the selection and rate of compensation. The SCO or public owner shall rule on said nomination, shall approve or disapprove of the parties' nomination and shall notify the parties of its decision.
- C. **Appointment of Mediator by the SCO.** If the parties cannot agree upon the selection of a mediator, the party or party's attorney shall so notify the SCO or public owner and request, on

behalf of the parties, that the SCO or public owner appoint a mediator. The request for appointment must be filed within 10 days after request to mediate and shall state that the parties have had a full and frank discussion concerning the selection of a mediator and have been unable to agree. The request shall state whether any party prefers a certified attorney mediator, and if so, the SCO or public owner shall appoint a certified attorney mediator. If no preference is expressed, the SCO or public owner may appoint a certified attorney mediator or a certified non-attorney mediator.

- D. **Mediator Information Directory.** To assist the parties in the selection of a mediator by agreement, the parties are free to utilize the list of certified mediators maintained in any county participating in the Superior Court Mediation Settlement Conference Program.
- E. **Disqualification of Mediator.** Any party may request replacement of the mediator by the SCO or public owner for good cause. Nothing in this provision shall preclude mediators from disqualifying themselves.

RULE 3. THE MEDIATED SETTLEMENT CONFERENCE

- A. **Where Conference is to be Held.** Unless all parties and the mediator otherwise agree, the mediated settlement conference shall be held in the county where the project is located. The mediator shall be responsible for reserving a place and making arrangements for the conference and for giving timely notice of the time and location of the conference to all attorneys, unrepresented parties and other persons and entities required to attend.
- B. **When Conference is to be Held.** The deadline for completion of the mediation shall be not less than 30 days nor more than 60 days after the naming of the mediator.
- C. **Request to Extend Deadline for Completion.** A party, or the mediator, may request the SCO or public owner to extend the deadline for completion of the conference. Such request shall state the reasons the extension is sought and shall be served by the moving party upon the other parties and the mediator. If any party does not consent to the request, said party shall promptly communicate its objection to the SCO or public owner.

The SCO or public owner may grant the request by setting a new deadline for completion of the conference.

- D. **Recesses.** The mediator may recess the conference at any time and may set times for reconvening. If the time for reconvening is set before the conference is recessed, no further notification is required for persons present at the conference.
- E. **The mediated settlement conference shall not be cause for the delay of the construction project which is the focus of the dispute.**

RULE 4. DUTIES OF PARTIES AND OTHER PARTICIPANTS IN FORMAL DISPUTE RESOLUTION PROCESS

A. Attendance:

- 1) All parties to the dispute originally presented to the Designer or Prime Contractor for initial resolution must attend the mediation. Failure of a party to a construction contract to attend the mediation will result in the public owner's withholding of monthly payment to that party until such party attends the mediation.
- 2) Attendance shall constitute physical attendance, not by telephone or other electronic means. Any attendee on behalf of a party must have authority from that party to bind it to any agreement reached as a result of the mediation.
- 3) Attorneys on behalf of parties may attend the mediation but are not required to do so.
- 4) Sureties or insurance company representatives are not required to attend the mediation unless any monies paid or to be paid as a result of any agreement reached as a result of mediation require their presence or acquiescence. If such agreement or presence is required, then authorized representatives of the surety or insurance company must attend the mediation.

- B. **Finalizing Agreement.** If an agreement is reached in the conference, parties to the agreement shall reduce its terms to writing and sign it along with their counsel.
- C. **The mediation fee shall be paid in accordance with G.S. 143-128(g).**
- D. **Failure to compensate mediator.** Any party's failure to compensate the mediators in accordance with G.S. 143-128(g) shall subject that party to a withholding of said amount of money from the party's monthly payment by the public owner.

Should the public owner fail to compensate the mediator, it shall hereby be subject to a civil cause of action from the mediator for the 1/3 portion of the mediator's total fee as required by G.S. 143-128(g).

RULE 5. AUTHORITY AND DUTIES OF MEDIATORS

A. Authority of Mediator.

- 1) *Control of Conference.* The mediator shall at all times be in control of the conference and the procedures to be followed.
- 2) *Private Consultation.* The mediator may communicate privately with any participant or counsel prior to and during the conference. The fact that private communications have occurred with a participant shall be disclosed to all other participants at the beginning of the conference.
- 3) *Scheduling the Conference.* The mediator shall make a good faith effort to schedule the conference at a time that is convenient with the participants, attorneys and mediator. In the absence of agreement, the mediator shall select the date for the conference.

B. Duties of Mediator.

- 1) The mediator shall define and describe the following at the beginning of the conference:
 - a) The process of mediation;
 - b) The difference between mediation and other forms of conflict resolution;
 - c) The costs of the mediated settlement conference;
 - d) That the mediated settlement conference is not a trial, the mediator is not a judge, and the parties retain their legal rights if they do not reach settlement;
 - e) The circumstances under which the mediator may meet and communicate privately with any of the parties or with any other person;
 - f) Whether and under what conditions communications with the mediator will be held in confidence during the conference;
 - g) The inadmissibility of conduct and statements as provided by G.S. 7A-38.1(1);
 - h) The duties and responsibilities of the mediator and the participants; and
 - i) That any agreement reached will be reached by mutual consent.
- 2) *Disclosure.* The mediator has a duty to be impartial and to advise all participants of any circumstance bearing on possible bias, prejudice or partiality.
- 3) *Declaring Impasse.* It is the duty of the mediator timely to determine that an impasse exists and that the conference should end.
- 4) *Reporting Results of Conference.* The mediator shall report to the SCO or public owner within 10 days of the conference whether or not an agreement was reached by the parties. If an agreement was reached, the report shall state the nature of said agreement. The mediator's report shall inform the SCO or public owner of the absence of any party known to the mediator to have been absent from the mediated settlement conference without permission. The SCO or public owner may require the mediator to provide statistical data for evaluation of the mediated settlement conference program.

- 5) *Scheduling and Holding the Conference.* It is the duty of the mediator to schedule the conference and conduct it prior to the deadline of completion set by the rules. Deadlines for completion of the conference shall be strictly observed by the mediator unless said time limit is changed by a written order of the SCO or public owner.

RULE 6. COMPENSATION OF THE MEDIATOR

- A. **By Agreement.** When the mediator is stipulated by the parties, compensation shall be as agreed upon between the parties and the mediator provided that the provision of G.S. 143-128(g) are observed.
- B. **By Appointment.** When the mediator is appointed by the SCO or public owner, the parties shall compensate the mediator for mediation services at the rate in accordance with the rate charged for Superior Court mediation. The parties shall also pay to the mediator a one-time per case administrative rate in accordance with the rate charged for Superior Court mediation, which is due upon appointment.

RULE 7. MEDIATOR CERTIFICATION.

All mediators certified in the Formal Dispute Resolution Program shall be properly certified in accordance with the rules certifying mediators in Superior Court in North Carolina. * When selecting mediators, the parties may designate a preference for mediators with a background in construction law or public construction contracting. Such requirements, while preferred, are not mandatory under these rules.

All mediators chosen must either demonstrate they are certified in accordance with the Rules Implementing Scheduled Mediated Settlement Conference in Superior Court or must gain the consent of the SCO or public owner to mediate any dispute in accordance with these rules.

* Except when otherwise allowed by the SCO or public owner upon the request of the parties to the mediation.

RULE 8. RULE MAKING.

These Rules are subject to amendment by rule making by the State Building Commission.

These Rules are mandated for State projects when the contracting state entity has not otherwise adopted its own dispute resolution provision. These rules are optional for all other projects subject to Article 8, Ch. 143 of the General Statutes.

RULE 9. DEFINITIONS

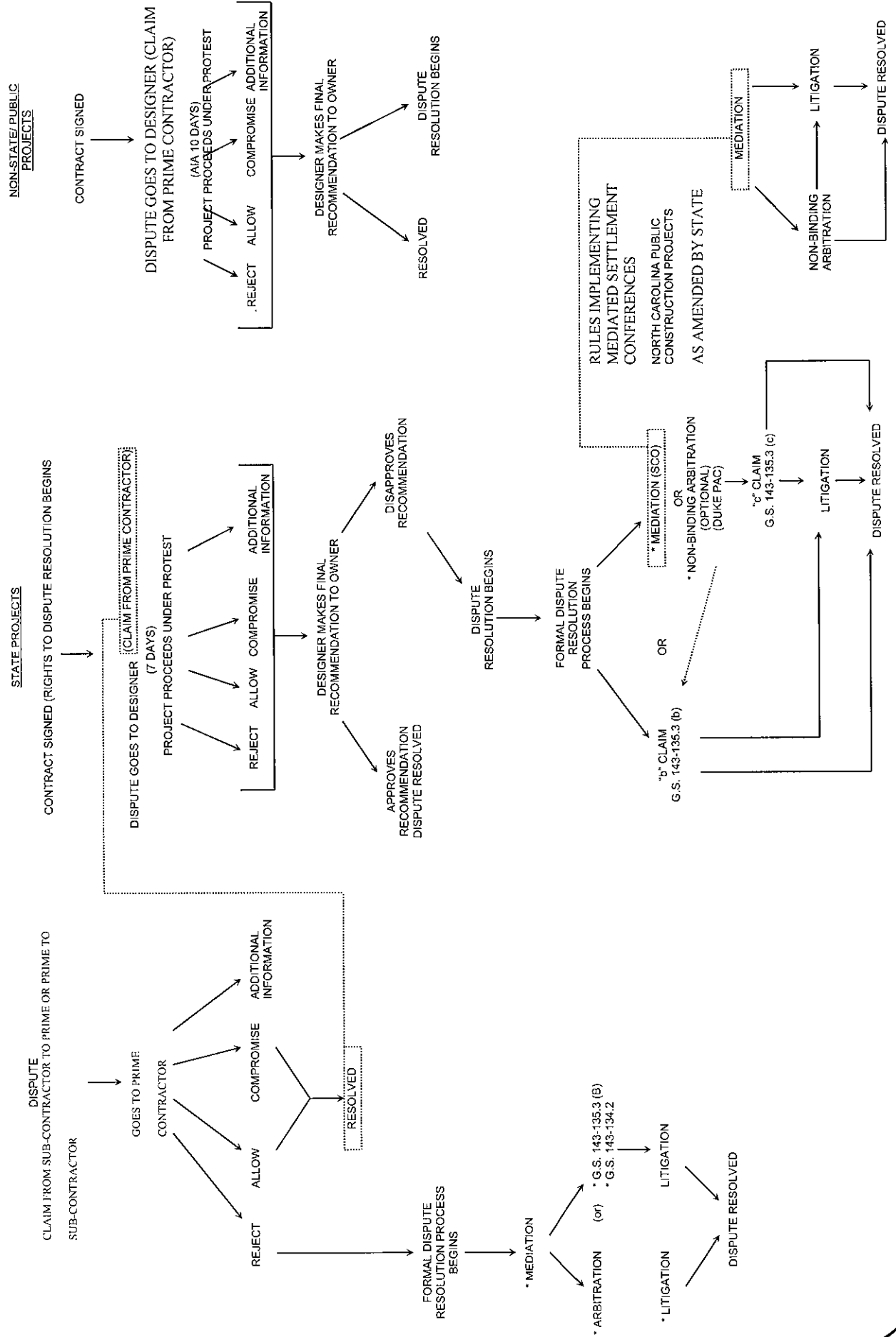
When the phrase "SCO or public owner" is used in these rules, "SCO" shall apply to state projects, "public owner" shall apply to non-state public projects.

RULE 10. TIME LIMITS

On state contracts, any time limit provided for by these Rules may be waived or extended by the SCO for good cause shown.

On non-state contracts, any time limit provided for by these Rules may be waived or extended by the mediator it appoints for good cause shown. If the mediator has not yet been appointed, the designer of record shall decide all waivers or extensions of time for good cause shown.

Exhibit A DISPUTE RESOLUTION



SECTION NCOC – MEET NORTH CAROLINA ONE-CALL CENTER

North Carolina One-Call is a Corporation formed and funded by participating utility companies and municipalities in the interest of community and job safety and improved service through damage reduction to the utilities.

A one-call toll free number, **1-800-632-4949**, provides an avenue to all of the participating members from any point within the State of North Carolina.

Anyone proposing to excavate, dig, bore, tunnel, blast or disturb the earth in any manner in which buried utilities may be damaged is requested to call the toll-free number between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, forty-eight hours before starting the proposed work.

Within minutes of your telephone call, the participating members will be made aware of your plans and will be given pertinent information that has been provided by you about your planned work. You will be told the names of the participating members from whom you can expect a response. If there are buried facilities in the path of your activity, the route of the utilities will be staked and/or marked at no expense to you. If there are no facilities in the area of the planned work, you will be called or notified by a representative of the participating company accordingly.

Should a non-participating utility operator be serving your area, we recommend that you call them on an individual basis. All utility operators, whether company or municipality, will be provided an opportunity to become a member of North Carolina One-Call.

Naturally, knowing the route of the utilities, the excavator is expected to exercise caution and to avoid damage as the project progresses.

Damage prevention does not just happen - it is a planned and orderly process through which each of us can participate - **Yes, we can and will dramatically reduce damages to the utilities in the State of North Carolina! Thanks for your help.**

BEFORE YOU DIG

IN THE INTEREST OF COMMUNITY AND JOB SAFETY

AND IMPROVED SERVICE

CALL NORTH CAROLINA ONE-CALL

1-800-632-4949

END OF SECTION NCOC

DIVISION 1

GENERAL REQUIREMENTS

SECTION 101000 - SUPPLEMENTAL CONSTRUCTION REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY OF WORK

- A. The project generally consists of the minor grading of the site to the contours indicated on the project drawings; the installation of storm drainage and related facilities; the installation of erosion control facilities; the milling of portion of the existing parking area; the installation of stone and asphalt paving in parking area; the installation of additional stone surface and stone base on areas indicated; installation of landscaping; seeding; site clean-up; and other related items as indicated on the Contract Drawings.

1.2 PROJECT MEETINGS

A. PRECONSTRUCTION CONFERENCE

A preconstruction conference will be scheduled by the Engineer after issuance of the Notice of Award. The Contractor and his major subcontractors shall attend the meeting, which will be chaired by the Engineer or his representative. The purpose of the pre-construction conference will be to discuss administration of the Contract and the execution of work, and to answer any questions relative to performance of work under these Contract Documents. All decisions, instructions, and interpretations made at this conference shall be binding and conclusive. The proceedings of this conference will be recorded and copies of the proceeding minutes will be issued to the Contractor for his use and distribution to his subcontractors.

B. PROGRESS MEETINGS

The Contractor and any subcontractors, material suppliers or vendors whose presence is necessary or requested shall attend meetings, referred to as Progress Meetings, when requested by the Engineer or his representative for the purpose of discussing the execution of the Work. Each meeting will be held at the time and place designated by the Engineer or his representative. Any decisions, instructions, and interpretations made at these meetings shall be binding and conclusive on the Contractor and such decisions, instructions, and interpretations will be confirmed in writing by the Engineer or his representative. The proceedings of these meetings will be recorded and the Contractor will be furnished with a reasonable number of copies for his use and for his distribution to the subcontractors, material suppliers, and vendors involved.

1.3 PROJECT PAYMENTS AND RETAINAGE

- A. The Owner may retain a portion of the amount otherwise due the Contractor. Except as provided elsewhere, the amount retained by the Owner shall be limited to the following:
1. Withholding of not more than 10% of the payment claimed until work is 50% complete.
 2. When the work is 50% complete, reduction of the withholding to 5% of the dollar value of all work satisfactorily completed to date, provided that the Contractor is making satisfactory progress and there is not specific cause for greater withholding. The Owner may reinstate up to 10% withholding if the Owner determines, at his discretion, that the Contractor is not making satisfactory progress or there is other specific cause for such withholding.
 3. When the work is substantially complete (operational or beneficial occupancy), withholding shall be further reduced below 5% to only that amount necessary to assure completion provided that amount is less than 5%.

4. The Owner may accept securities negotiable without recourse, conditions or restrictions; a release of retainage bond; or an irrevocable letter of credit provided by the Contractor in lieu of all or part of the cash retainage.
- B. For unit price projects, the Contractor may use the "Unit Bid Item Summary" form included at the end of this Section, or a similar form that provides the required information.
- C. **SALES TAX STATEMENT**

When requested by the Owner, each request for progress payment submitted by the Contractor shall include a sales tax reimbursement statement. The Contractor shall utilize the form provided at the end of this Section, or a similar form that provides the required information and certification.

1.4 SUBMITTALS

A. GENERAL

All transmittals from the Contractor shall be accompanied by a transmittal cover form that includes pertinent information related to the Project and the particular transmittal.

B. CONSTRUCTION SCHEDULE

The Contractor shall, within ten (10) days after receipt of the Notice of Award, prepare and submit to the Engineer for approval a practicable construction schedule for the required Site Work showing the order in which the Contractor proposes to carry on the Work, the date on which he will start the several salient features, and the contemplated dates for completing such salient features. The schedule shall be in the form required by the Contract Documents and shall maintain current with each submittal for progress payment, at least the following information:

1. The various classes and area of work broken down into times projected for submittals, approvals, and procurement; times for installation and erection; and times for testing and inspection.
2. The work completed and the work remaining to complete the Project.
3. Any items of work which will delay the start or completion of other major items of work so as to delay completion of the whole Project.

C. NOT USED

D. MATERIAL SUPPLIERS AND SUBCONTRACTOR LISTINGS

As soon as possible, but in no case more than fifteen (15) days after receipt of the Notice of Award, the Contractor shall supply the names and addresses of all major material suppliers and subcontractors to the Engineer.

E. SHOP DRAWINGS AND SAMPLES

The Contractor shall submit shop drawings for all material items to be utilized in the construction of the Project. The Contractor shall submit shop drawings accompanied by the "Submittal and Routing Form" included at the end of this Section.

F. RECORD DOCUMENTS

The Contractor shall keep a complete and accurate record of changes and/or deviations from the Contract Documents and shop drawings, indicating the Work as actually installed. Changes shall be neatly and correctly shown on the respective portion of the

affected document, using prints of the Drawings affected, with appropriate supplementary notes. The record set of marked-up Drawings and shop drawings shall be kept at the job site during construction and be available for inspection by the Engineer. These marked prints shall be included in the package of final documentation, and shall be submitted before final payment is released.

1.5 TYPES AND LIMITS OF INSURANCE

A. CERTIFICATES OF INSURANCE

Satisfactory certificates of insurance shall be filed with the Owner through the Engineer prior to starting any construction work on this Contract. The Owner and Bank will be named as additional insureds on all policies of insurance and all certificates shall contain a thirty (30) day Notice of Cancellation. All such insurance shall meet all laws of the State of North Carolina and shall be obtained from companies that are authorized to provide such coverage and that are authorized by the Commissioner of Insurance to do business in North Carolina. In connection with the provisions set forth in the General Conditions Article 2.7, the Notice to Proceed will not be issued until satisfactory certificates of insurance are filed.

The Contractor shall purchase and maintain at his own cost and expense the following insurance policies:

1. Worker's Compensation and Employer's Liability

- a. This insurance shall protect the Contractor and Owner against all claims under applicable state workmen's compensation laws. The Contractor and Owner shall also be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a workmen's compensation law. This policy shall include an "all states" endorsement.
- b. The liability limits shall be not less than:

i.	Worker's Compensation	Statutory
ii.	Employer's Liability	\$500,000 each occurrence

2. Comprehensive Automobile Liability

- a. This insurance shall be written in comprehensive form and shall protect the Contractor and Owner against all claims for injuries to members of the public and damage to property of others arising from the use of motor vehicles, and shall cover operation on or off the site of all motor vehicles, whether they are owned, non-owned or hired.
- b. The liability limits shall be not less than \$1,000,000 combined single limit.

3. Comprehensive General Liability

- a. This insurance shall be written in comprehensive form and shall protect the Contractor and Owner against all claims including but not limited to those claims arising from injuries to persons other than his employees or damage to property of the Owner or others arising out of any act or omission of Contract or his agents, employees or subcontractors. Contractor shall provide Completed Operations insurance coverage (to remain in force during the correction period).
- b. The Contractor shall include contractual liability insurance applicable to Contractor's obligations under this Contract.

- c. To the extent that the Contractor's work, or work under his direction, may require blasting, explosive conditions, or underground operations, the comprehensive general liability coverage shall contain no exclusion relative to blasting, explosion, collapse of building, or damage to underground property.
- d. The liability limits shall be not less than \$1,000,000 combined single limit.

4. **Umbrella Liability Policy**

This insurance shall protect the Contractor and Owner against all claims in excess of the limits provided under the workmen's compensation and employer's liability, comprehensive automobile liability, and general liability policies. The liability limits of the umbrella liability policy shall not be less than \$5,000,000.

B. HOLD HARMLESS

To the fullest extent permitted by laws and regulations, the Contractor covenants and agrees that it shall protect, indemnify, and save harmless the Owner and its officials, agents, and employees, and the Bank from and against any and all liability, claims, demands, damages, losses, suits, actions, judgments and costs, including attorneys fees, for personal injury including death, property damage, or both, sustained or claimed to have been sustained by any person, firm or corporation in the performance of this Contract or the actions of the Contractor or its officials, employees, or contractors under this Contract or under contracts entered into by the Contractor in connection with this Contract. This indemnification shall survive the termination of the Contract.

1.6 DELIVERY, STORAGE AND HANDLING

- A. The Contractor shall be responsible for delivery, storage, and handling of all materials and equipment, unless otherwise noted.

1.7 NOT USED

PART 2 - PRODUCTS

2.1 EQUIPMENT AND MATERIAL STANDARDS

- A. All equipment and materials of construction described in this specification shall meet the more stringent requirements of the applicable codes listed below:
 - 1. OSHA - Occupational Safety and Health Administration.
 - 2. ASTM - American Society for Testing Materials.
 - 3. ANSI - American National Standards Institute.
 - 4. NCDOT – North Carolina Department of Transportation.

2.2 NOT USED

PART 3 - EXECUTION

3.1 SPECIAL REQUIREMENTS

- A. **LIMITS OF CONSTRUCTION**

The Contractor shall confine all operations and personnel to the limits of construction as shown on the Plans. There shall be no disturbance whatsoever of any areas outside the limits of construction nor shall the workmen be allowed to travel at will through the surrounding private or school property.

B. CONSTRUCTION SUPERINTENDENT

The Contractor shall place in charge of the Work a competent and reliable superintendent, who shall have the authority to act for the Contractor and who shall be accountable to the Engineer. The Contractor shall, at all times, employ labor and equipment sufficient to accomplish the several classes of work to full completion in the manner and time specified.

C. SITE CONDITIONS

1. The Contractor shall maintain the Work and the project grounds free from rubbish, debris, and waste materials during all phases of the Work.
2. Immediately upon completion of the Work and prior to final acceptance, the Contractor shall remove all rubbish, debris, temporary structures, equipment, excess or waste materials and shall leave the Work and project grounds in a neat and orderly condition that is satisfactory to the Engineer.
3. All vegetation outside the limits of construction (shrubs, trees, landscaping, etc.) not scheduled to be removed shall be protected during construction. Any damage to such vegetation shall be restored or properly replaced to the satisfaction of the property owner, at the Contractor's expense.
4. All existing storm drainage facilities (including but not limited to catch basins, drop inlets, pipes, rocks or concrete slabs covering pipe inlets, headwalls, etc.) shall be protected from damage during construction. Adequate erosion control measures shall be implemented during construction to prevent sedimentation into the storm drainage system and receiving watercourses.
5. The normal hours of operation for the Contractor shall be 8:00 AM to 7:00 PM, Monday through Friday. Any work after 7:00 PM must be pre-approved by the Engineer and Owner. Any work on Saturday or Sunday is allowed with the prior notification to the Owner.
6. All Contractor personnel shall be properly dressed properly for work, included but not limited to, shirts worn at all times, hard hats, and safety vests. All personnel must carry proper credentials which identify them as employees of the Contractor. All personnel shall limit their activities to the limits of construction and work areas, and shall not trespass onto private property or other areas of school property unless a direct requirement of the construction work. The Contractor shall provide off-premises parking for employees' personal vehicles, and no personal vehicles will be allowed to park in the project area, unless otherwise approved by the Owner and Engineer. Parking is allowed in the circular drive area on school property to the north of the site below the grassed field and adjacent to Argyle Street.
7. The locations of portable toilet facilities for the Contractor's use shall be approved by the Owner and Engineer prior to their placement, and shall be moved as construction progresses.
8. Alignment of each storm drain line shall be coordinated with the Engineer in the field prior to construction, and constantly monitored as construction proceeds to provide the best possible trench location to avoid existing utilities. The Contractor shall be responsible for repairs to utilities damaged during construction, at the Contractor's own expense.
9. The exact quantity of storm drainage installation shall be verified in the field in each location by the Engineer prior to construction. Any replacement of a publicly owned utility shall be inspected by personnel from the local agency having jurisdiction over the utility prior to and during construction. All utility construction must be performed in accordance with the latest specifications of the utility owner.
10. The Engineer will schedule progress meetings during the project as required to maintain communications, discuss schedules, resolve construction issues, or

- address Owner issues. All parties (Engineer, Owner, and Contractor) will be notified of these meetings and attendance by the Contractor is MANDATORY.
11. The Contractor may stockpile materials at the same location indicated above for parking. Stockpile of materials on-site shall be allowed only on the approval of the Construction Manager and Engineer. **No** equipment, materials, or other items may be left along the entrances to the school.
 12. In no case shall a trench be left open overnight.
 13. The Contractor shall backfill, landscape, and perform all final cleanup and restoration as the Work progresses.
 14. The Contractor shall confirm the existing site information provided in the Contract Drawings **PRIOR** to construction of the Project and shall carefully study and compare the Contract Documents with each other. Discrepancies, errors, inconsistencies, or omissions shall be brought to the attention of the Engineer immediately, **BEFORE** disturbing the site. The Contractor shall be liable (at his own expense) for any damage resulting from such if the Contractor recognizes or should have recognized such and failed to report it to the Engineer before executing the Work.
 15. By executing this Agreement, the Contractor represents that it has investigated, examined, inspected, and thoroughly familiarized himself with the Contract Documents, the site, and the adjoining premises and facilities, and that he has thoroughly informed himself and the Engineer of any difficulties in connection therewith. Commencement of the Work or any portion thereof by the Contractor shall be conclusive evidence that the jobsite, or any part thereof at which the Work is being performed, is in proper condition for the reception and installation of the Work.
 16. Digital files will be made available to the Contractor for layout of the Project. Dimensions shall **NOT** be scaled from the Drawings, nor shall grid coordinates be utilized for the layout of storm drainage facilities or structures, curbing and pavements, and all related items, unless specifically provided on the Contract Drawings.
 27. The project entrance shall be of the I-240 ramp as indicated on the Drawings. Access from any other location shall be coordinated with, and approved by, the Owner prior to utilization.
 28. The Contractor shall provide for safe passage of students, parents, school personnel, Owner's staff, and the like requiring entrance to the school along the west side to the extent possible. The Contractor shall coordinate the use of this entrance with the Owner.

D. RIGHT OF ENTRY

The Engineer and his representative shall at all times have access to the Work. In addition, authorized representatives and agents of any participating Federal, State, or local agency shall be permitted to inspect all work, materials, and other relevant data and records.

E. TEMPORARY CONSTRUCTION SERVICES AND FACILITIES

The Contractor shall obtain all necessary permits, licenses, etc. and shall pay all costs incidental to the furnishing, installation, and maintenance of temporary utility services and facilities required for the duration of the Work.

F. CONTROL OF EROSION, SILTATION, AND POLLUTION

1. The Contractor shall take whatever measures are necessary to minimize soil erosion and siltation, water pollution, and air pollution caused by his operations. The Contractor shall also comply with the applicable regulations of all legally constituted authorities relating to pollution prevention and control. The Contractor shall keep himself fully informed of all such regulations which in any

way affect the conduct of the Work, and shall at all times observe and comply with all such regulations. In the event of conflict between such regulations and the requirements of the Specifications, the more restrictive requirements shall apply.

2. Erosion control is field performance based and additional silt fence, temporary sediment basins, check dams, and other measures may need to be added to the approved plan and installed on the site as necessary. Measures indicated on the approved plans may be adjusted as necessary to assure maximum protection of the site. The Engineer, Construction Manager, or regulatory agencies having jurisdiction shall have the right to require additional measures if, in their opinion, individually or collectively, the installed measures are performing inadequately. Fines resulting from the Contractor not following approved plans shall be the sole responsibility of the Contractor.
3. The Contractor shall control dust throughout the life of the Project within the Project area and at all other areas affected by the construction of the Project, including, but not specifically limited to, unpaved roads or drives, milled areas, and related areas of construction. Dust control shall not be considered effective where the amount of dust creates a potential or actual unsafe condition, public nuisance, or condition endangering the value, utility, or appearance of any property.
4. The Contractor shall not be directly compensated for any dust control measures necessary.

G. DISPOSAL OF MATERIALS

Debris and waste materials, including all combustibles, shall be removed by the Contractor from the construction area unless otherwise approved in writing by the Construction Manager or his Representative.

H. QUANTITIES OF ESTIMATE

The estimated quantities of work to be done and materials to be furnished under this Contract shown in any of the documents, including the proposal, are given for use in comparing bids and to indicate **approximately** the total amount of the Contract; and the right is especially reserved, except as herein otherwise specifically limited to, to increase or diminish the quantities as may be reasonably necessary or desirable by the Owner to complete the Work contemplated by this Contract.

I. UTILITY COORDINATION

The Contractor shall make all necessary arrangements with private and public utility companies to avoid any possible damage to or interruption of utility equipment or service. The Contractor shall be responsible for all inquiries concerning locations of utility lines. Repair of any damage to public or private utilities resulting from this Work shall be the responsibility of the Contractor.

J. CONSTRUCTION SURVEYING

All Work shall be constructed in accordance with the lines, grades and elevations shown on the Plans or as given by the Engineer in the field. The Contractor shall be fully responsible for maintaining alignment and grade. All principal controlling points and base lines for locating the principal components of the Work together with a suitable number of benchmarks adjacent to the Work will be provided by the Contractor.

K. LAYING OUT WORK

1. It is imperative that the Contractor work within the shown limits of construction and property boundaries at all times, unless approved otherwise by the Engineer.

2. The Contractor shall provide competent engineering survey services where required and shall provide and maintain accurate, detailed, survey work.
3. The Plans and supplementary Drawings shall NOT be scaled and the Contractor must verify all dimensions and elevations at the site prior to proceeding with the Work. The Contractor shall also verify existing and proposed utility locations prior to purchasing materials affected by these locations.
4. Digital files will be made available to the Contractor for layout of the Project. Utility and storm drainage facilities or structures, curbing and pavements, and all related items, shall NOT be installed by utilizing grid coordinates taken from the Plans, unless those coordinates are specifically provided.

L. RIGHT TO STOP WORK

The Owner or his authorized representative has the authority to stop the Contractor from further work progress if, during the construction, the Owner or his authorized representative deems the work being performed is not in compliance with these Contract Documents.

M. OMITTED

N. USE OF CHEMICALS

All chemicals used during project construction, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in conformance with instructions.

O. SAFETY AND HEALTH REGULATIONS

1. The Contractor shall comply with all Federal, State and Local Safety and Health Regulations including the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (P.L. 91 - 596) and under Section 107 of the Contract Work Hours and Safety Standards Act (P.L. 91-54).
2. The Contractor shall provide continuous, safe access to all properties, both public and private, along the project in all cases where such access will be provided by the completed facility and shall conduct his operations in such a manner that inconvenience to the property owners will be held to a minimum.

P. EQUIPMENT AND MATERIAL STORAGE

The Contractor shall plan his activities so that all materials and equipment can be stored within the Project Limits or at sites indicated above. There shall be no disturbance whatsoever of any areas outside the Project Limits without the prior approval of the Engineer.

Q. DISTURBED AREAS

All areas disturbed as a result of the work of the Contractor shall be restored to the original or better condition. Reasonable care shall be taken during construction to avoid damage to the project property or that of any adjacent property owner(s).

R. TREE AND PLANT PROTECTION

No trees or shrubs except those specifically indicated, shall be removed or trimmed without prior approval from the Engineer. All trees and shrubs within the construction limits to be retained by the Construction Manager shall be properly protected by fencing, posts or other means approved by the Engineer. Where any trees or shrubs are

damaged or where limbs are required to be trimmed or removed because of operations under this Contract a qualified horticulturist shall be consulted and the trimming performed in the proper manner. Any landscape plantings severely damaged or which die as a result of the Contractor's operations shall be replaced at no additional cost to the Owner.

S. TEMPORARY SANITARY FACILITIES

The Contractor shall be solely responsible for furnishing and maintaining temporary sanitary facilities during the construction period. Such facilities shall include but not be limited to, potable water supply and toilet facilities. Such facilities shall be in compliance with all applicable state and local laws, codes, and ordinances and shall be placed convenient to work stations and secluded from public observation. Once the project is completed all temporary sanitary facilities shall be removed by the Contractor.

T. TRAFFIC MAINTENANCE

1. The Contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient warning lights, danger signals, and signs, shall provide a sufficient number of flagmen to direct the traffic where necessary and shall take all necessary precautions for the protection of the work and the safety of the public.
2. All barricades and obstructions or hazardous conditions shall be illuminated as necessary to provide for safe traffic conditions.
3. Warning and caution signs shall be posted throughout the length of any portion of the project where traffic flow is restricted.

U. OMITTED

V. OMITTED

W. OMITTED

X. OMITTED

3.2 WEATHER DELAYS

A. EXTENSIONS OF CONTRACT TIME FOR DOCUMENTED ABNORMAL WEATHER

1. If the basis exists for an extension of time in accordance with the pertinent article of the Standard General Conditions of the Construction Contract, an extension of time on the basis of Abnormal Weather may be granted only for the number of Weather Delay Days in excess of the number of days listed as the Standard Baseline for the period of the Contract.
2. In the event adverse weather other than those conditions described in the Section entitled "Adverse Weather and Rain Delay Days", delays construction activity, such as temperature extremes as one (1) example, the baseline must be adjusted to reflect the number of expected days as described in the Section entitled "Development of Adverse Weather Baseline".
3. The Contractor shall maintain a rain gauge on site to determine precipitation at the Contract Site. The rain gauge shall be read daily and documentation of Adverse Weather Days shall be coordinated with the Engineer or his Representative. Adverse Weather Days shall not be allowed unless properly documented and reported.

B. STANDARD BASELINE FOR AVERAGE CLIMACTIC RANGE

1. Weather data available from the National Oceanic and Atmospheric Administration (NOAA) has been used to determine a Standard Baseline of average climatic range for the City of Asheville, North Carolina and is provided below. In the event that the standard baseline for the construction site differs significantly from the Asheville, North Carolina Standard Baseline, or if the Contractor disagrees with the standard baseline provided below, it shall be the Contractor's responsibility to provide documentation of said differences.
2. The Standard Baseline shall be regarded as the normal and anticipatable number of calendar days for each month during which construction activity shall be expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days each month as listed in the Standard Baseline is included in the Work and is not eligible for extension of Contract Time.
3. The Standard Baseline is as follows:

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
8	6	6	7	5	8	7	5	6	3	5	7

C. ADVERSE WEATHER AND RAIN DELAY DAYS

1. Adverse Weather is defined as the occurrence of one or more of the following conditions which prevent exterior construction activity or access to the site within twenty-four (24) hours:
 - a. Precipitation (rain, snow, and/or ice) in excess of two-tenths (0.20) inch liquid measure.
 - b. Standing snow in excess of one (1.00) inch.
2. Adverse Weather may include, if appropriate, "dry-out" or "mud" days for rain days above the standard baseline:
 - a. Only if there is a hindrance to site access or site work such as excavation, backfill, footings; and,
 - b. At a rate no greater than one (1) make-up day for each day or consecutive days of rain beyond the standard baseline that total one (1.0) inch or more, liquid measure, unless specifically recommended otherwise by the Engineer.
3. A Weather Delay Day may be counted if adverse weather prevents work on the project for fifty (50) percent or more of the Contractor's scheduled work day, including a weekend day or holiday if the Contractor has scheduled construction activity for that day.

D. DEVELOPMENT OF ADVERSE WEATHER BASELINE

1. Development of Adverse Weather Data – This is the process of collecting, compiling, and analyzing the raw weather data (NOAA and other sources) that forms the baseline for estimating anticipated delays and project durations and determining the occurrence of unusually severe weather. The following actions make up the development process:
 - a. Analyze the project scope and site geography to determine which weather parameters (temperature, precipitation, wind, etc.) are applicable. The parameters selected should present adverse conditions that could potentially delay construction activities.
 - b. Review the technical specifications to determine the numerical values that will be assigned to each parameter in order to establish the anticipated adverse weather. Usually when two (2) or more construction phases are affected by the same parameter, the less severe numerical value should be used (i.e. if the first phase of work is delayed by temperatures below 40

degrees F and the second phase of work is delayed by temperatures below 32 degrees F, the numerical value used to define adverse weather should be 40 degrees F unless some other factor renders the first phase insignificant in terms of schedule criticality).

- c. Compile the number of days per month that the anticipated weather is expected to be adverse by analysis of NOAA or other weather data. The last ten (10) years of consecutive data shall be used to establish the baseline. However, in the absence of ten (10) years of data, a shorter period may be used. It may be necessary to extrapolate the number of calendar days that the temperature is expected to fall below the selected numerical value (say, 40 degrees F) from raw data.
- d. Adverse weather data must be periodically updated in order to reflect changes in the ten-year averages and incorporate any necessary corrections derived from actual field experience. It is recommended that data used for establishing adverse weather baselines be reviewed annually.

3.03 PROJECT CLOSEOUT

A. FINAL DOCUMENTATION

Prior to final payment, and before the issuance of a Final Certificate for Payment in accordance with the provisions of the General Conditions, the Contractor shall file with the Engineer the documents listed hereinafter:

- 1. Guarantees - The Contractor's one (1) year guarantee required by the General Conditions and all other guarantees stated in the Specifications.
- 2. Affidavit and Waiver of Liens - As required by General Conditions. The Contractor shall utilize the form provided at the end of this Section.
- 3. Consent of Surety Company to Final Payment.
- 4. Certified Final Sales Tax Statement (as required)
- 5. Certified Payroll Records (as required)

B. OMITTED

C. OMITTED

END OF SECTION 10 1000
(Recommended Standard Forms follow)

Transmittal Date: _____
Return Date: _____

FOR: ☐ Transmittal Only
 ☐ Approval
 ☐ Approved as noted
 ☐ Revise & Resubmit

TO _____

Name
Davis CivilSolutions, P.A.

Company
135-A Charlotte Hwy., Asheville, NC 28803

Address
(828)299-9449

Telephone _____

[illegible]

By: _____
Signature

ATTENTION: CONSTRUCTION ADMINISTRATION **SUBMITTAL AND ROUTING FORM**

(TO BE USED WITH EACH INDIVIDUAL PLAN SUBMITTAL OR SHOP DRAWING)

SUBMITTAL AND APPROVAL (Contractor to complete)			
Project Name:	SITE IMPROVEMENTS, ASHEVILLE HIGH SCHOOL	DCSPA Project #:	21109
Contractor:		Submittal #:	
Contract For:	ASHEVILLE CITY BOARD OF EDUCATION	Specification Section:	
Submittal Title:			
Sheet/Item Numbers:			
Subcontractor:		Supplier:	
Date:		Date Needed:	
Change From Contract Documents?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Attached Documentation:	
Complete Submittal?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
The Contractor must review and approve this submittal for all requirements and conformance to Contract documents prior to submittal to Davis CivilSolutions, P.A. Submittals forwarded without the Contractor's approval will be returned without review or comment.			
Reviewed By:		Date:	

DAVIS CIVILSOLUTIONS, P.A. SUBMITTAL ROUTING (DCSPA to complete)				
Date Received:	Logged By:	To:	Return by:	
REVIEW CODES: 1 = <u>Approved</u>; 2 = <u>Approved as Noted</u>; 3 = <u>Revise & Resubmit</u>; 4 = <u>Not Approved</u>				
Reviewed By (in order)	Review Code	COMMENTS	Date	Initials
Project Engineer's Approval:			Date:	

CONTRACTOR'S FINAL AFFIDAVIT AND WAIVER OF LIEN

PROJECT: SITE IMPROVEMENTS OWNER: ASHEVILLE CITY BOARD OF EDUCATION
ASHEVILLE HIGH SCHOOL 85 MOUNTAIN STREET
ASHEVILLE, NORTH CAROLINA 28801

CONTRACTOR: _____

CONTRACT AMOUNT: _____

STATE OF: NORTH CAROLINA
COUNTY OF: BUNCOMBE

CONTRACT DATE: _____, 2024
DATE: _____

This is to certify that all claims for labor, material, services and any other just claims arising out of the performance of this Contract have been satisfied, except for payment to subcontractors to be made out of retainage presently being held by the Owner, and that no claims or liens exist against this Contractor in connection with this contract; that to the best of our knowledge no claims or liens exist, and if any such claims or liens appear after payment of the retained amount due on the Contract, this Contractor shall save the Owner harmless on account thereof. After payment of the retained amount the undersigned does hereby waive, release and relinquish any and all claims or rights of lien presently held or hereafter accruing upon the above project.

CONTRACTOR: _____

BY: _____

TITLE: _____

Sworn to and subscribed before me this
_____ day of _____ 20 _____

(Notary Public)

My Commission expires: _____

DIVISION 2

NOT USED

DIVISION 3

SITE WORK AND PAVING

**SECTION 31 2100
BORROW**

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The work of this Section consists of furnishing, loading, hauling, and placing of borrow material for the construction of embankments or ditches or the work of other Sections as shown and specified.

PART 2 - PRODUCTS

2.1 MATERIALS

A. GENERAL

1. Borrow material shall be selected to meet the requirements and conditions of the particular fill for which its use is intended. Sand-clay soils shall be capable of being readily shaped and compacted to the required densities, and shall be free of roots, trash, and other deleterious material. Unless specifically provided, no borrow shall be obtained within the limits of the project site without written approval. Borrow shall meet the requirements listed below.
2. Borrow shall consist of material obtained from sources provided by the Contractor and approved by the Engineer, and shall meet the requirements of the classifications in accordance with Universal Soil Classification (USCS) listed below:
 - a. Acceptable Classifications: GW, GP, GM, GC, SW, SP, SC, SM, ML, and CL.
 - b. Unacceptable Classifications: PT, OH, OL, CH, AND MH.

B. COHESIONLESS MATERIALS

Cohesionless materials include poorly and well-graded gravels (GP and GW) and poorly and well-graded sands (SP and SW). Cohesionless soils are generally regarded as free draining.

C. COHESIVE MATERIALS

Clayey gravels (GC), clayey sands (SC), lean clays (CL), fat clays (CH), silts (ML and MH), and organic (GM) and silty sands (SM) will be considered cohesionless only when the fines have a plastic index of 0. Otherwise they will be considered cohesive.

PART 3 - EXECUTION

3.1 INSTALLATION

A. GENERAL

The Contractor shall place only borrow material that has been specifically identified as acceptable for this Section, unless otherwise directed by the Engineer.

END OF SECTION 31 2100

**SECTION 31 2200
WASTE MATERIAL DISPOSAL**

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The work covered by this Section consists of the disposal of waste and debris in accordance with the requirements of these Specifications. Waste will be considered to be all excavated, grubbed, or removed materials which are not utilized in the construction of the project.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Waste shall be disposed of in areas that are outside of the project area and provided by the Contractor, unless otherwise required by the plans or special provisions, or unless otherwise permitted by the Engineer.
- B. Concrete that is painted must be disposed of in accordance with requirements and regulations of the North Carolina Department of Environment and Natural Resources (NCDENR) Solid Waste Section. Prior to disposal of painted concrete, the Contractor shall submit a written certification to NCDENR that the paint on the concrete is **not** lead-based. Certification that paint on concrete is not lead-based paint is required prior to management as inert debris. Lead-based paint is defined by federal statute (Title X of the Housing and Community Development Act and the Toxic Substances Control Act, by reference). Concrete that is painted with lead-based paint, or paint that has not been certified to the satisfaction of the North Carolina Department of Environment and Natural Resources Solid Waste Section to be below the federal standard to be considered lead-based paint, must be disposed of at a properly permitted construction and demolition landfill or a permitted municipal solid waste landfill.
- C. The Contractor shall maintain the earth surfaces of all waste areas, both during the work and until the completion of all seeding and mulching or other erosion control measures specified, in a manner which will effectively control erosion and siltation.
- D. The following requirements shall also be applicable to all waste or disposal areas other than active public waste or disposal areas:
 - 1. Rock waste shall be shaped to contours which are comparable to and blend in with the adjacent topography where practical, and shall be covered with a minimum six (6) inch thick layer of earth material either from the project waste or from borrow.
 - 2. Earth waste shall be shaped to contours which are comparable to and blend in with the adjacent topography where practicable, but in no case will slopes steeper than 2:1 be permitted.
 - 3. Construction debris, grubbed debris and milled and all broken pavement and masonry shall be covered with a minimum six (6) inch thick layer of earth waste material from the project or borrow. The completed waste area shall be shaped as required above for disposal of earth waste.
 - 4. Seeding and mulching shall be performed over all earth or earth covered waste areas. The work of seeding and mulching shall be performed in accordance with the appropriate sections of the Contract Specifications.
 - 5. Where the Engineer has granted permission to dispose of waste and debris within the project, the Engineer shall have the authority to establish whatever additional requirements may be necessary to insure the satisfactory appearance of the completed project.

- E. Disposal of waste or debris in active public waste or disposal areas will not be permitted without prior approval by the Engineer. Such disposal will not be permitted when, in the opinion of the Engineer, it will result in excessive siltation or pollution.

END OF SECTION 31 2200

**SECTION 31 2300
EXCAVATION AND BACKFILL**

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. GENERAL

1. The work covered by this Section shall consist of furnishing all materials, labor, equipment, and services for the excavation and backfill of trenches and structures. Work is limited to the areas of construction, and includes (but is not necessarily limited to) stockpiling of topsoil; site grading; excavation of footings, foundations, piping, and trenches; filling; backfilling; compaction; finish grading; spreading of topsoil; disposal of waste material; and proof rolling.
2. All excavation, dewatering, sheeting, bracing, and backfilling shall be performed in such a manner as to eliminate all possibility of undermining or disturbing the foundations of existing structures.
3. All work shall be performed in compliance with applicable requirements of governing authorities having jurisdiction.
4. Excavations shall provide adequate working space and clearances for the work to be performed therein, and for installation and removal of concrete forms, utility appurtenances or other items to facilitate the work. In no case shall excavation faces be undercut for extended footings.
5. Subgrade surfaces shall be made clean and free of loose material of any kind before concrete is placed thereon.
6. Backfilling during freezing weather shall not be performed except by permission of the Engineer. No backfill, fill, or embankment materials shall be installed on frozen surfaces, nor shall frozen materials, snow, or ice be placed in any backfill, fill, or embankment material.

1.2 QUALITY ASSURANCE

A. REFERENCED STANDARDS

Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these Specifications shall in no way invalidate the minimum requirements of the referenced standards. The Contractor shall comply with the provisions of the following codes and standards, except as otherwise shown or specified.

1. ASTM D698: Standard Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb. Rammer and 12" Drop.
2. ASTM D3282: Standard Recommended Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes.
3. Standard Specifications for Roadways and Structures, North Carolina Department of Transportation, latest edition.
4. Erosion and Sediment Control Planning and Design Manual, North Carolina Department of Environment and Natural Resources, Land Quality Section, latest edition.

B. OMITTED

C. EXISTING UTILITIES

1. The Contractor shall locate all existing underground utilities in the area of work. If utilities are to remain in place, adequate means of protection shall be provided during construction.
2. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, the Contractor shall consult the Engineer immediately for

directions as to procedure. The Contractor shall cooperate with the Construction Manager and utility companies in keeping respective services and facilities in operation and shall repair damaged utilities to the satisfaction of the utility companies.

1.3 SITE CONDITIONS

A. SUBSURFACE INFORMATION

No subsurface information is available for this project. The Contractor at his own sole expense, may undertake additional test borings and other exploratory operations, provided such operations are acceptable to the Owner. The Contractor shall be responsible for verifying the location of any existing utilities or other underground facilities or materials.

PART 2 - PRODUCTS

2.1 MATERIALS

A. CLASSIFICATION OF EXCAVATED MATERIALS

1. Satisfactory Subgrade Soil Materials: Soils complying with ASTM D3282, soil classification Groups A-1, A-2-4, A-2-5, and A-3.
2. Unsatisfactory Subgrade Soil Materials: Soils described in ASTM D3282, soil classification groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7; also peat and other highly organic soils, unless otherwise acceptable to the Engineer.
3. Cohesionless Soil Materials: Gravels, sand-gravel mixtures, sands, and gravelly-sands.
4. Cohesive Soil Materials: Clayey and silty gravels, sand-clay mixtures, gravel-silt mixtures, clayey and silty sands, sand-silt mixtures, clays, silts, and very fine sands.
5. Rock: Sandstone, limestone, flint, graphite, quartzite, slate, hard shale, or similar material that cannot be excavated with a Caterpillar Model 225, or equal minimum 25-ton hydraulic excavator equipped with rock teeth on a 24-inch wide bucket, and which requires systematic drilling and blasting.
6. Backfill and Fill Materials: Satisfactory soil materials free of masonry, rock, or gravel larger than four (4) inches in any dimension, and free of metal, gypsum, lime, debris, waste, frozen materials, vegetable, and other deleterious matter. Only excavated material that has been sampled, tested, and certified as satisfactory soil material shall be used.
7. Select Backfill: Backfill and fill material that is transported to the site from **outside** the Project Limits, and which meets the soil requirements specified above under "Backfill and Fill Materials". Material excavated in conjunction with the construction of this project cannot be considered as "select backfill" for payment purposes.
8. Pipe Bedding: Crushed stone or crushed gravel meeting the requirements of ASTM C33, Gradation 67 or standard size No. 57.
9. Inundated Sand: Clean sand with not more than 25% retained on a No. 4 sieve and not more than 7% passing a No. 200 sieve having an effective size between 0.10 mm and 0.30 mm. Sand shall be deposited in, or placed simultaneously with, application of water so that the sand shall be compacted by a mechanical probe type vibrator. Inundated sand shall be compacted to 70% relative density as determined by ASTM D4253 and D4254.
10. Graded Gravel: Gravel for compacted backfill shall conform to the following gradation:

Sieve Size	Percent Passing by Weight
1"	100
3/4"	85 - 100

3/8"	50 - 80
No. 4	35 - 60
No. 40	15 - 30
No. 200	05 - 10

The gravel mixture shall contain no clay lumps or organic matters. The fraction passing the No. 4 sieve shall have a liquid limit not greater than 25 and a plasticity index not greater than 5. Gravel backfill shall be deposited in uniform layers not exceeding 12" in uncompacted thickness. The backfill shall be compacted by a suitable vibratory roller or platform vibrator to not less than 70% relative density as determined by ASTM D4253 and D4254.

2.2 EQUIPMENT

A. MECHANICAL EXCAVATION

1. The use of mechanical equipment will not be permitted in locations where its operation would cause damage to trees, buildings, culverts, or other existing property, utilities, or structures above or below ground. In all such locations, hand-excavating methods shall be used.
2. Mechanical equipment used for trench excavation shall be of a type, design, and construction and shall be controlled, such that uniform trench widths and vertical sidewalls are obtained at least from an elevation one (1) foot above the top of the installed pipe to the bottom of the trench, and that trench alignment is such that pipe, when accurately laid to specified alignment, will be centered in the trench with adequate clearance between the pipe and sidewalls of the trench. Undercutting the trench sidewall to obtain clearance shall not be permitted.

PART 3 - EXECUTION

3.1 PREPARATION

A. DEWATERING

1. The Contractor shall provide, and maintain, adequate dewatering equipment to remove and dispose of all surface and subsurface water entering excavations, trenches, or other parts of the Work. Each excavation shall be kept dry during subgrade preparation and continually thereafter until the structure to be built, or the pipe to be installed therein, is completed to the extent that no damage from hydrostatic pressure, flotation, or other cause will result.
2. All excavations for structures or trenches which extend down to or below groundwater shall be dewatered by lowering and keeping the groundwater level twelve (12) inches or more beneath such excavations.
3. Surface water shall be diverted or otherwise prevented from entering excavated areas or trenches to the greatest extent practicable without causing damage to adjacent property.
4. The Contractor shall be responsible for the condition of any pipe or conduit which may be used for drainage purposes.
5. Where trench sheeting is left in place, such sheeting shall not be braced against the pipe, but shall be supported in a manner which will preclude concentrated loads or horizontal thrusts on the pipe. Cross braces installed above the pipe to support sheeting may be removed after pipe embedment has been completed.

B. STABILIZATION

1. Subgrades for structures and trench bottoms shall be firm, dense, and thoroughly compacted and consolidated; free from mud and muck; and sufficiently stable to remain firm and intact under the feet of the workmen.

2. Subgrades for structures or trench bottoms, which are otherwise solid but which become mucky on top due to construction operations, shall have muck removed to sound subgrade. Material removed shall be replaced with one (1) or more layers of crushed rock or gravel, spread and compacted to a depth of not more than four (4) inches. If the required depth exceeds four (4) inches, the material shall be furnished and installed as specified for granular fills. Not more than one-half (1/2) inch depth of mud or muck shall be allowed to remain on stabilized trench bottoms when the pipe bedding material is placed thereon. The finished elevation of stabilized subgrades for structures shall not be above subgrade elevations indicated on the drawings.

C. CUTTING CONCRETE OR ASPHALT SURFACE

1. All pavement cutting and repair shall be done in accordance with local ordinances. Cuts in concrete and asphalt pavements shall be no larger than necessary to provide adequate working space for proper installation of pipe and appurtenances. Cutting shall be performed with appropriate equipment (approved by the Engineer) in a manner which will provide a clean groove for the full depth of the concrete or asphalt structure along each side of the trench and along the perimeter of cuts for structures.
2. Concrete and asphalt over trenches excavated for pipelines shall be removed so that a shoulder not less than twelve (12) inches in width at any point is left between the cut edge of the surface and the top edge of the trench. Trench width at the bottom shall not be greater than at the top and no undercutting will be permitted. Pavement cuts shall be made to and between straight or accurately marked curved lines which, unless otherwise required, shall be parallel to the centerline of the trench.
3. Pavement or other surfaces removed for connections to existing lines or structures shall not be of greater extent than that necessary for the installation.
4. Where the trench parallels the length of concrete walks and the trench location is all or partially under the walk, the entire walk shall be removed and replaced. Where the trench crosses drives, walks, curbs, or other surface construction, the surface construction shall be removed and replaced between existing joints or between saw cuts as specified for payment.

D. SITE GRADE

1. General: Areas within limits of grading under this Section, including adjacent transition areas, shall be uniformly graded. Surfaces shall be smooth finished within specified tolerances, and compacted with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.
2. Ground Surface Preparation: Vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials shall be removed from ground surface prior to placement of fills. Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stripped, or broken up so that fill material will bond with existing surface. Subgrade shall be shaped as indicated on the Drawings by forking, furrowing, or plowing so that the first layer of new material placed thereon will be well bonded to it. Fill placement shall be in accordance with Section 31 2000 of these Specifications.

3.2 FIELD MEASUREMENTS

A. ALIGNMENT, GRADE, AND MINIMUM COVER

1. Vertical and horizontal alignment of pipes, and maximum joint deflection used in connection therewith, shall be in conformity with the requirements of the Section covering installation of pipe.
2. Where pipe grades or elevations are not definitely fixed by the Contract Drawings, trenches shall be excavated to a depth sufficient to provide a minimum

depth of backfill cover over the top of the pipe in accordance with the pipe manufacturer's instructions. Additional cover depths may be necessary on vertical curves, or to provide necessary clearance beneath existing pipes, conduits, drains, drainage structures, or other obstructions encountered at normal pipe grades. Measurement of pipe cover depth shall be made vertically from the outside top of pipe to finished ground or pavement surface elevation except where future surface elevations are indicated on the Drawings.

3.3 PROTECTION

A. TEMPORARY PROTECTION

1. The Contractor shall protect adjacent structures, utilities, sidewalks, pavements, and other facilities from damages caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
2. Dirt excavated from the trench shall be placed no closer than two (2) feet from the edge of the trench or retaining structure.

B. SHEETING AND BRACING

1. All excavations shall be made in accordance with the rules and regulations promulgated by the Department of Labor, Occupational Safety, and Health Administration (OSHA) Regulations for Construction. The Contractor shall furnish, install, and maintain such sheeting, bracing, etc., as may be necessary to support the sides of the excavation and to prevent any movement of earth which could in any way diminish the width of the excavation to less than that necessary for proper construction, or could otherwise result in personal injury, delay the work, or endanger adjacent structures, roads, utilities, or other improvements.
2. All trenches over four (4) feet in depth, at trench depths prescribed by OSHA, or in poor supporting soils shall have sheeting and bracing. No sheeting and bracing shall be removed until all workers are out of the trench.

C. BLASTING

Blasting will not be allowed on this Project.

D. CARE AND RESTORATION OF PROPERTY

1. Trunks of trees adjacent to the work which are to remain shall be enclosed with protective fencing. No material shall be piled or equipment stored or operated within the drip line of trees to remain. Work within the drip line of the trees shall only be performed as approved by the Engineer. Excavating machinery and cranes of suitable type shall be operated with care to prevent injury to remaining tree trunks, roots, branches, and limbs.
2. Branches, limbs, and roots shall not be cut except by permission of the Engineer, and shall be cut smoothly and neatly without splitting or crushing. In case of unavoidable cutting or injury to branches, limbs, or trunks of trees, the injured portions shall be neatly trimmed and covered with an application of tree healing paint as directed.
3. All cultivated hedges, shrubs, and plants which might be injured by the Contractor's operations shall be protected. Any such trees or shrubbery necessary to be removed and replanted shall be properly heeled in. Heeling in and replanting shall be performed under the direction of a licensed and experienced nurseryman engaged by the Contractor at the Contractor's own expense. All removed shrubbery and trees shall be replanted in their original position after construction operations have been substantially completed and cared for until growth is re-established.
4. Cultivated hedges, shrubs, and plants injured to such a degree as to affect their growth or diminish their beauty or usefulness, shall be replaced by items of kind

and quality at least equal to the kind and quality existing at the start of the work. Replacement shall be at the Contractor's own expense.

5. Tractors, bulldozers, or other power-operated equipment shall not be operated on paved surfaces if the treads or wheels of the equipment are so shaped as to cut or otherwise injure the surfaces.
6. All surfaces, including lawns, grassed, and planted areas that have been injured by the Contractor's operations, shall be restored at the Contractor's own expense, to a condition at least equal to that in which they were found immediately before the work was begun. Suitable materials and methods shall be used for such restoration. All restored plantings shall be maintained by cutting, trimming, fertilizing, etc., until acceptance. Existing property or structures shall be restored as promptly as practicable and shall not be left until the end of construction period.

E. OMITTED

F. AIR POLLUTION

1. The Contractor shall comply with all pollution control rules, regulations, ordinances, and statutes which apply to any work performed under the Contract, including any air pollution control rules, regulations, ordinances and statutes, or any municipal regulations pertaining to air pollution.
2. During the progress of the Work, the Contractor shall maintain the area of activity, including the sweeping and sprinkling of streets as necessary, so as to minimize the creation and dispersion of dust. If the Engineer decides that it is necessary to use calcium chloride or more effective dust control, the Contractor shall furnish and spread the material, as directed, and without additional compensation.

G. BRIDGING TRENCHES

1. The Contractor shall provide suitable and safe bridges and other crossings where required for the accommodation of travel and/or access to private property during construction and shall remove said structures and restore all disturbed areas thereafter.
2. The Contractor shall bridge or backfill trenches in any portion of the travel lanes of public or private roads or drives, at the end of each day's operation to provide for safe travel. No additional compensation will be made for this work.

3.4 TRENCH EXCAVATION

A. LENGTH OF TRENCH

1. No more trench shall be opened in advance of pipe laying than is necessary to expedite the work. One hundred (100) feet shall be the maximum length of trench on any line under construction which may be left open prior to testing, backfill, landscaping, and cleanup. Additional length requires the Engineer's approval.
2. Trench length shall be limited to a length in which workers, at all times, are at a minimum distance from the trench exits as required by safety regulations.

B. TRENCH EXCAVATION

1. General: All excavation of every description and of whatever substance encountered shall be performed so that the pipe can be laid to the alignment and depth shown on the Drawings.
2. All trenches, where required, shall be braced and shored in accordance with the rules and regulations promulgated by the Department of Labor, Occupation

Safety and Health Administration (OSHA), "Safety and Health Regulations for Construction".

3. All excavations shall be by open cut unless otherwise specified or indicated on the Drawings.
4. Width of Trenches: Trenches shall be excavated sufficiently wide to allow proper installation of pipe, fittings and other materials, and not more than eighteen (18) inches clear of pipe on either side at any point. Trenches shall not be widened by scraping or loosening materials from the sides.
5. Trench Excavation in Earth: Earth excavation includes all excavation of whatever substance encountered. In locations where pipe is to be bedded in earth-excavated trenches, the Contractor shall fine grade the bottoms of such trenches to allow firm bearing for the bottom of the pipe on undisturbed earth. Where any part of the trench has been excavated below the grade of the pipe, the part excavated below such grade shall be filled with pipe bedding material and compacted at the Contractor's expense.
6. Trench Excavation in Fill: If pipe is to be laid in embankments or other recently filled material, the fill material shall be placed to the finish grade or to a height of at least one (1) foot above the top of the pipe, whichever is the lesser. Particular care shall be taken to ensure maximum consolidation of material under the pipe location. The pipe trench shall be excavated as though in undisturbed material.
7. Trench Bottom in Poor Soil: Unstable or unsuitable soils shall be excavated and removed to a width and depth as directed by the Engineer, and refilled with thoroughly compacted gravel bedding.
8. Bell Holes: Bell holes shall be provided at each joint to permit the joint to be made properly and to provide a continuous bearing and support for the pipe.

C. TRENCH BACKFILL

1. General: Unless otherwise specified or indicated on the Drawings, suitable material which was removed in the course of making the construction excavations shall be used for backfill. Frozen material shall not be used for the backfill and backfill shall not be placed on frozen material. Previously frozen material shall be removed before new backfill is placed. Backfilling shall begin as soon as practicable after pipes have been laid, or structures have been built and are structurally adequate to support the loads, including construction loads to which they will be subjected, and shall proceed until its completion.
2. With the exception mentioned below in this paragraph, trenches at pipe joints shall not be backfilled until after that section of the pipeline has successfully passed any specified tests required. Should the Contractor wish to minimize the maintenance of lights, and barricades, and the obstruction of traffic, he may, at his own risk, backfill the entire trench as soon as practicable after installation of pipe, and the related structures have acquired a suitable degree of strength. The Contractor shall, however, be responsible for removing and later replacing such backfill, at his own expense, should he be ordered to do so in order to locate and repair or replace leaking or defective joints or pipe.
3. Material: The nature of the materials will govern both their acceptability for backfill and the methods best suited for their placement and compaction in the backfill. Both are subject to the approval of the Engineer. Stone or rock fragments larger than four (4) inches in greatest dimension shall not be placed in the backfill. Large masses of backfill material shall not be placed into the trench in such a manner as to endanger the pipeline. Bituminous pavement shall be excluded from the backfill unless their use is expressly permitted.
4. Zone Around Pipe: Bedding material shall be placed to the level shown on the Drawings and material worked carefully around the pipe to insure that all voids are filled, particularly in bell holes. For backfill up to a level of two (2) feet over the top of the pipe, only selected materials containing no rock, clods, or organic materials shall be used. Backfill shall be placed and compacted thoroughly under the pipe haunches and up to the mid-line of the pipe in layers not exceeding six (6) inches in depth. Each layer shall be placed and tamped

carefully and uniformly so as to eliminate the possibility of lateral displacement. Backfill shall be placed in the remainder of the zone around the pipe and to a height of one (1) foot above the pipe in layers not exceeding six (6) inches and shall be compacted to a maximum density of at least 100 % as determined by ASTM D698.

5. Tamping: Backfill materials shall be deposited and spread in uniform, parallel layers not exceeding eight (8) inches in thickness before compaction. Each layer shall be tamped before the next layer is placed to obtain a thoroughly compacted mass. An adequate number of power driven tampers, each weighing at least 20 pounds, shall be furnished and used for this purpose. Material adjacent to the bank, as well as in all other portions of the trench, shall be thoroughly compacted. When the trench width and the depth to which backfill has been placed are sufficient to make it feasible, and it can be done effectively and without damage to the pipe, backfill may, on approval, be compacted by the use of suitable rollers or similarly powered equipment instead of by tamping. For compaction by tamping (or rolling), the rate at which backfill material is deposited in the trench shall not exceed that permitted by the equipment for its spreading, leveling and compacting, as furnished by the Contractor.
6. Trench Moisture: Backfill material shall be moistened by sprinkling, if necessary, to insure proper compaction by tamping (or rolling). No compaction shall be performed by tamping (or rolling) when the material is too wet, either from rain or applied water, to be compacted properly.
7. Trench Compaction: Backfill in pipe trenches above the initial one (1) foot over the top of the pipe shall be compacted to the maximum density as shown on the Drawings, or as listed in Section 3.7 of this Specification, with moisture content within the range of values of maximum density as indicated by the moisture-density relationship curve.

3.5 SITE GRADE

A. PLACEMENT AND COMPACTION

1. Backfill and fill material shall be placed in layers not exceeding eight (8) inches in loose depth. Before compaction, each layer shall be moistened or aerated as necessary to provide the optimum moisture content. Each layer shall be compacted to the required percentage of maximum density for each area classification. No backfill or material may be placed on surfaces that are muddy, frozen, or contain frost or ice.
2. In areas not accessible to rollers or compactors, mechanical hand tampers shall be used. If the mixture is excessively moistened by rain, the material shall be aerated by means of blade graders, harrows, or other approved equipment, until the moisture content of the mixture is satisfactory. The surface of the layer shall be finished by blading or rolling with a smooth roller, or a combination thereof, and shall be left smooth and free from waves and inequalities.
3. Backfill and fill materials shall be placed evenly adjacent to structures, to the required elevations. The Contractor shall take care to prevent wedging action of backfill against structures. The material shall be placed uniformly around all parts of structures to approximately the same elevation in each lift.
4. When the existing ground surface has a density less than that specified under the Section 3.07 of this Specification for the particular area classification, the ground surface shall be broken up, pulverized, moisture-conditioned to the optimum moisture content, and compacted to the required depth and percentage of maximum density.

B. PLANTING AREAS

Areas to receive topsoil shall be finished to within not more than one-tenth (0.01) foot above or below the required subgrade elevations, compacted as specified, and free from irregular surface changes.

C. PROTECTION OF GRADED AREAS

Newly graded areas shall be protected from traffic and erosion, and kept free of trash and debris. Grades in settled, eroded, and rutted areas shall be repaired and re-established to specified tolerances.

D. RECONDITIONING COMPACTED AREAS

Where completed compacted areas are disturbed by subsequent construction operations or adverse weather prior to acceptance of the Work, the areas shall be scarified, reshaped, and recompact to required density prior to further construction.

E. UNAUTHORIZED EXCAVATION

1. Unauthorized excavation consists of the removal of materials beyond indicated elevations without the specific direction of the Engineer. Under footings, foundations, bases, etc., unauthorized excavation shall be filled by extending the indicated bottom elevation of the concrete to the bottom of the excavation, without altering the required top elevation. Lean concrete fill may be used to bring elevations to proper position only when acceptable to the Engineer. The required additional concrete shall be provided and placed at the Contractor's own expense.
2. Elsewhere, unauthorized excavations shall be backfilled and compacted to the required grades and elevations as specified for authorized excavations of the same classification, unless otherwise directed by the Engineer.

3.6 OMITTED

3.7 COMPACTION

A. GENERAL

Soil compaction shall be controlled during construction, providing at least the minimum percentage of density specified for each area classification.

B. PERCENTAGE OF MAXIMUM DENSITY REQUIREMENTS

After compaction, all fill shall be tested in accordance with Method "C" of ASTM D698, unless specified otherwise. Except as noted otherwise for the zone around pipe, not less than the following percentages of maximum density of soil material, compacted at optimum moisture content, for the actual density of each layer of soil material placed, shall be provided:

UNPAVED AREAS	Compact Full Depth to 95%
DRIVES AND PARKING	Compact Full Depth to 95% (100% for Top 18")

C. MOISTURE CONTROL

Where subgrade or layer of soil material must be moisture conditioned before compaction, the Contractor shall uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations. Soil material that is too wet to permit compaction to specified density shall be removed and replaced, or scarified and air dried. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Discing, harrowing or pulverizing shall be performed as necessary to reduce moisture content to a satisfactory value, as determined by moisture-density relation tests.

D. DISPOSAL OF SURFACE MATERIAL

Upon approval of the Engineer, haul all surplus materials not needed or acceptable for backfill and dispose of at location approved by the Engineer.

3.8 FIELD QUALITY CONTROL

A. SOIL TESTING AND INSPECTION SERVICE:

1. Compaction tests of all fill areas shall be made by an independent testing laboratory. The services of qualified soils testing personnel may be engaged by the Construction Manager for the making of tests to determine moisture-density relationships; relative densities; plastic and liquid limits; suitability of materials for compaction; and for inspection and control of the site preparation including selection, placing, and compaction of the fill. Such tests will be provided and paid for by the Construction Manager, except that **all succeeding tests after the first test for the same area, which reveal non-conformance with the Specifications and all succeeding tests for the same area, until conformance with the Specifications is established, shall be at the expense of the Contractor.** The Construction Manager will be responsible for paying for only the successful tests and for only the first test in an area which reveals non-conformance. A copy of the testing personnel's daily field report including results of in-place density and moisture content tests should be forwarded to the Construction Manager and the Engineer at the end of each working day.
2. The Contractor shall cooperate with the testing personnel so as to permit proper inspection and control of the work without unnecessary delays.

B. NUMBER OF TESTS (The following represents a minimum only.)

1. Under paved areas, no less than one (1) density test per horizontal layer per 5,000 square feet of subgrade shall be made.
2. Under unpaved areas, no less than one (1) density test per horizontal layer per 10,000 square feet shall be made.
3. Under curb and gutter, no less than one (1) density test per every 300 linear feet.
4. Above pipe placed in areas under pavement, one (1) density test per every 300 linear feet.

C. PROOF ROLLING

1. The Contractor shall proof roll the subgrade of all curb and gutter, paved areas, and on the base of all paved areas where designated by the Engineer. Proof rolling shall take place after all underground utilities are installed and backfilled. The operation shall consist of rolling the subgrade or base with a fully loaded ten (10) wheeled dump truck. A full load shall consist of ten (10) to twelve (12) cubic yards of soil or rock. The dump truck shall be capable of traveling at a speed of two (2) to five (5) miles per hour and be in sound mechanical shape with no exhaust leaks or smoking from burning oil. The Engineer shall determine the number of passes and areas rolled.

END OF SECTION 31 2300

**SECTION 31 2500
SUBGRADE**

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The work covered by this Section consists of the preparation, shaping, and compaction of that portion of the roadbed upon which base or pavement, including base and paving for shoulders, is to be placed.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 CONSTRUCTION

- A. The subgrade shall be shaped to the lines, grades, and typical sections shown on the plans. All unsuitable material, boulders, and all vegetative matter shall be removed and replaced with suitable material. Suitable material, when not available from the subgrade work, shall be taken from roadway excavation or borrow pits.
- B. Material excavated in preparing the subgrade shall be stored or stockpiled in such a manner as to not interfere with proper drainage or any of the subsequent operations of placing base or pavement.
- C. The subgrade shall be compacted at a moisture content which is approximately that required to produce the maximum density. The Contractor shall dry or add moisture to the subgrade when required to provide a uniformly compacted and acceptable subgrade.

3.2 QUALITY CONTROL

- A. A tolerance of plus or minus one-half (1/2) inch from the established grade will be permitted after the subgrade has been graded to a uniform surface.
- B. Ditches and drains shall be provided and maintained where required to satisfactorily drain the subgrade. Where previously approved subgrade is damaged by natural causes, by hauling equipment, or by other traffic, the Contractor shall restore the subgrade to the required lines, grades, and typical sections and to the required density at no cost to the Owner.

END OF SECTION 31 2500

**SECTION 31 2200
WASTE MATERIAL DISPOSAL**

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The work covered by this Section consists of the disposal of waste and debris in accordance with the requirements of these Specifications. Waste will be considered to be all excavated, grubbed, or removed materials which are not utilized in the construction of the project.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Waste shall be disposed of in areas that are outside of the project area and provided by the Contractor, unless otherwise required by the plans or special provisions, or unless otherwise permitted by the Engineer.
- B. Concrete that is painted must be disposed of in accordance with requirements and regulations of the North Carolina Department of Environment and Natural Resources (NCDENR) Solid Waste Section. Prior to disposal of painted concrete, the Contractor shall submit a written certification to NCDENR that the paint on the concrete is **not** lead-based. Certification that paint on concrete is not lead-based paint is required prior to management as inert debris. Lead-based paint is defined by federal statute (Title X of the Housing and Community Development Act and the Toxic Substances Control Act, by reference). Concrete that is painted with lead-based paint, or paint that has not been certified to the satisfaction of the North Carolina Department of Environment and Natural Resources Solid Waste Section to be below the federal standard to be considered lead-based paint, must be disposed of at a properly permitted construction and demolition landfill or a permitted municipal solid waste landfill.
- C. The Contractor shall maintain the earth surfaces of all waste areas, both during the work and until the completion of all seeding and mulching or other erosion control measures specified, in a manner which will effectively control erosion and siltation.
- D. The following requirements shall also be applicable to all waste or disposal areas other than active public waste or disposal areas:
 - 1. Rock waste shall be shaped to contours which are comparable to and blend in with the adjacent topography where practical, and shall be covered with a minimum six (6) inch thick layer of earth material either from the project waste or from borrow.
 - 2. Earth waste shall be shaped to contours which are comparable to and blend in with the adjacent topography where practicable, but in no case will slopes steeper than 2:1 be permitted.
 - 3. Construction debris, grubbed debris and milled and all broken pavement and masonry shall be covered with a minimum six (6) inch thick layer of earth waste material from the project or borrow. The completed waste area shall be shaped as required above for disposal of earth waste.
 - 4. Seeding and mulching shall be performed over all earth or earth covered waste areas. The work of seeding and mulching shall be performed in accordance with the appropriate sections of the Contract Specifications.
 - 5. Where the Engineer has granted permission to dispose of waste and debris within the project, the Engineer shall have the authority to establish whatever additional requirements may be necessary to insure the satisfactory appearance of the completed project.

- E. Disposal of waste or debris in active public waste or disposal areas will not be permitted without prior approval by the Engineer. Such disposal will not be permitted when, in the opinion of the Engineer, it will result in excessive siltation or pollution.

END OF SECTION 31 2200

**SECTION 31 2300
EXCAVATION AND BACKFILL**

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. GENERAL

1. The work covered by this Section shall consist of furnishing all materials, labor, equipment, and services for the excavation and backfill of trenches and structures. Work is limited to the areas of construction, and includes (but is not necessarily limited to) stockpiling of topsoil; site grading; excavation of footings, foundations, piping, and trenches; filling; backfilling; compaction; finish grading; spreading of topsoil; disposal of waste material; and proof rolling.
2. All excavation, dewatering, sheeting, bracing, and backfilling shall be performed in such a manner as to eliminate all possibility of undermining or disturbing the foundations of existing structures.
3. All work shall be performed in compliance with applicable requirements of governing authorities having jurisdiction.
4. Excavations shall provide adequate working space and clearances for the work to be performed therein, and for installation and removal of concrete forms, utility appurtenances or other items to facilitate the work. In no case shall excavation faces be undercut for extended footings.
5. Subgrade surfaces shall be made clean and free of loose material of any kind before concrete is placed thereon.
6. Backfilling during freezing weather shall not be performed except by permission of the Engineer. No backfill, fill, or embankment materials shall be installed on frozen surfaces, nor shall frozen materials, snow, or ice be placed in any backfill, fill, or embankment material.

1.2 QUALITY ASSURANCE

A. REFERENCED STANDARDS

Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these Specifications shall in no way invalidate the minimum requirements of the referenced standards. The Contractor shall comply with the provisions of the following codes and standards, except as otherwise shown or specified.

1. ASTM D698: Standard Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb. Rammer and 12" Drop.
2. ASTM D3282: Standard Recommended Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes.
3. Standard Specifications for Roadways and Structures, North Carolina Department of Transportation, latest edition.
4. Erosion and Sediment Control Planning and Design Manual, North Carolina Department of Environment and Natural Resources, Land Quality Section, latest edition.

B. OMITTED

C. EXISTING UTILITIES

1. The Contractor shall locate all existing underground utilities in the area of work. If utilities are to remain in place, adequate means of protection shall be provided during construction.
2. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, the Contractor shall consult the Engineer immediately for

directions as to procedure. The Contractor shall cooperate with the Construction Manager and utility companies in keeping respective services and facilities in operation and shall repair damaged utilities to the satisfaction of the utility companies.

1.3 SITE CONDITIONS

A. SUBSURFACE INFORMATION

No subsurface information is available for this project. The Contractor at his own sole expense, may undertake additional test borings and other exploratory operations, provided such operations are acceptable to the Owner. The Contractor shall be responsible for verifying the location of any existing utilities or other underground facilities or materials.

PART 2 - PRODUCTS

2.1 MATERIALS

A. CLASSIFICATION OF EXCAVATED MATERIALS

1. Satisfactory Subgrade Soil Materials: Soils complying with ASTM D3282, soil classification Groups A-1, A-2-4, A-2-5, and A-3.
2. Unsatisfactory Subgrade Soil Materials: Soils described in ASTM D3282, soil classification groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7; also peat and other highly organic soils, unless otherwise acceptable to the Engineer.
3. Cohesionless Soil Materials: Gravels, sand-gravel mixtures, sands, and gravelly-sands.
4. Cohesive Soil Materials: Clayey and silty gravels, sand-clay mixtures, gravel-silt mixtures, clayey and silty sands, sand-silt mixtures, clays, silts, and very fine sands.
5. Rock: Sandstone, limestone, flint, graphite, quartzite, slate, hard shale, or similar material that cannot be excavated with a Caterpillar Model 225, or equal minimum 25-ton hydraulic excavator equipped with rock teeth on a 24-inch wide bucket, and which requires systematic drilling and blasting.
6. Backfill and Fill Materials: Satisfactory soil materials free of masonry, rock, or gravel larger than four (4) inches in any dimension, and free of metal, gypsum, lime, debris, waste, frozen materials, vegetable, and other deleterious matter. Only excavated material that has been sampled, tested, and certified as satisfactory soil material shall be used.
7. Select Backfill: Backfill and fill material that is transported to the site from **outside** the Project Limits, and which meets the soil requirements specified above under "Backfill and Fill Materials". Material excavated in conjunction with the construction of this project cannot be considered as "select backfill" for payment purposes.
8. Pipe Bedding: Crushed stone or crushed gravel meeting the requirements of ASTM C33, Gradation 67 or standard size No. 57.
9. Inundated Sand: Clean sand with not more than 25% retained on a No. 4 sieve and not more than 7% passing a No. 200 sieve having an effective size between 0.10 mm and 0.30 mm. Sand shall be deposited in, or placed simultaneously with, application of water so that the sand shall be compacted by a mechanical probe type vibrator. Inundated sand shall be compacted to 70% relative density as determined by ASTM D4253 and D4254.
10. Graded Gravel: Gravel for compacted backfill shall conform to the following gradation:

Sieve Size	Percent Passing by Weight
1"	100
3/4"	85 - 100

3/8"	50 - 80
No. 4	35 - 60
No. 40	15 - 30
No. 200	05 - 10

The gravel mixture shall contain no clay lumps or organic matters. The fraction passing the No. 4 sieve shall have a liquid limit not greater than 25 and a plasticity index not greater than 5. Gravel backfill shall be deposited in uniform layers not exceeding 12" in uncompacted thickness. The backfill shall be compacted by a suitable vibratory roller or platform vibrator to not less than 70% relative density as determined by ASTM D4253 and D4254.

2.2 EQUIPMENT

A. MECHANICAL EXCAVATION

1. The use of mechanical equipment will not be permitted in locations where its operation would cause damage to trees, buildings, culverts, or other existing property, utilities, or structures above or below ground. In all such locations, hand-excavating methods shall be used.
2. Mechanical equipment used for trench excavation shall be of a type, design, and construction and shall be controlled, such that uniform trench widths and vertical sidewalls are obtained at least from an elevation one (1) foot above the top of the installed pipe to the bottom of the trench, and that trench alignment is such that pipe, when accurately laid to specified alignment, will be centered in the trench with adequate clearance between the pipe and sidewalls of the trench. Undercutting the trench sidewall to obtain clearance shall not be permitted.

PART 3 - EXECUTION

3.1 PREPARATION

A. DEWATERING

1. The Contractor shall provide, and maintain, adequate dewatering equipment to remove and dispose of all surface and subsurface water entering excavations, trenches, or other parts of the Work. Each excavation shall be kept dry during subgrade preparation and continually thereafter until the structure to be built, or the pipe to be installed therein, is completed to the extent that no damage from hydrostatic pressure, flotation, or other cause will result.
2. All excavations for structures or trenches which extend down to or below groundwater shall be dewatered by lowering and keeping the groundwater level twelve (12) inches or more beneath such excavations.
3. Surface water shall be diverted or otherwise prevented from entering excavated areas or trenches to the greatest extent practicable without causing damage to adjacent property.
4. The Contractor shall be responsible for the condition of any pipe or conduit which may be used for drainage purposes.
5. Where trench sheeting is left in place, such sheeting shall not be braced against the pipe, but shall be supported in a manner which will preclude concentrated loads or horizontal thrusts on the pipe. Cross braces installed above the pipe to support sheeting may be removed after pipe embedment has been completed.

B. STABILIZATION

1. Subgrades for structures and trench bottoms shall be firm, dense, and thoroughly compacted and consolidated; free from mud and muck; and sufficiently stable to remain firm and intact under the feet of the workmen.

2. Subgrades for structures or trench bottoms, which are otherwise solid but which become mucky on top due to construction operations, shall have muck removed to sound subgrade. Material removed shall be replaced with one (1) or more layers of crushed rock or gravel, spread and compacted to a depth of not more than four (4) inches. If the required depth exceeds four (4) inches, the material shall be furnished and installed as specified for granular fills. Not more than one-half (1/2) inch depth of mud or muck shall be allowed to remain on stabilized trench bottoms when the pipe bedding material is placed thereon. The finished elevation of stabilized subgrades for structures shall not be above subgrade elevations indicated on the drawings.

C. CUTTING CONCRETE OR ASPHALT SURFACE

1. All pavement cutting and repair shall be done in accordance with local ordinances. Cuts in concrete and asphalt pavements shall be no larger than necessary to provide adequate working space for proper installation of pipe and appurtenances. Cutting shall be performed with appropriate equipment (approved by the Engineer) in a manner which will provide a clean groove for the full depth of the concrete or asphalt structure along each side of the trench and along the perimeter of cuts for structures.
2. Concrete and asphalt over trenches excavated for pipelines shall be removed so that a shoulder not less than twelve (12) inches in width at any point is left between the cut edge of the surface and the top edge of the trench. Trench width at the bottom shall not be greater than at the top and no undercutting will be permitted. Pavement cuts shall be made to and between straight or accurately marked curved lines which, unless otherwise required, shall be parallel to the centerline of the trench.
3. Pavement or other surfaces removed for connections to existing lines or structures shall not be of greater extent than that necessary for the installation.
4. Where the trench parallels the length of concrete walks and the trench location is all or partially under the walk, the entire walk shall be removed and replaced. Where the trench crosses drives, walks, curbs, or other surface construction, the surface construction shall be removed and replaced between existing joints or between saw cuts as specified for payment.

D. SITE GRADE

1. General: Areas within limits of grading under this Section, including adjacent transition areas, shall be uniformly graded. Surfaces shall be smooth finished within specified tolerances, and compacted with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.
2. Ground Surface Preparation: Vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials shall be removed from ground surface prior to placement of fills. Sloped surfaces steeper than one (1) vertical to four (4) horizontal shall be plowed, stripped, or broken up so that fill material will bond with existing surface. Subgrade shall be shaped as indicated on the Drawings by forking, furrowing, or plowing so that the first layer of new material placed thereon will be well bonded to it. Fill placement shall be in accordance with Section 31 2000 of these Specifications.

3.2 FIELD MEASUREMENTS

A. ALIGNMENT, GRADE, AND MINIMUM COVER

1. Vertical and horizontal alignment of pipes, and maximum joint deflection used in connection therewith, shall be in conformity with the requirements of the Section covering installation of pipe.
2. Where pipe grades or elevations are not definitely fixed by the Contract Drawings, trenches shall be excavated to a depth sufficient to provide a minimum

depth of backfill cover over the top of the pipe in accordance with the pipe manufacturer's instructions. Additional cover depths may be necessary on vertical curves, or to provide necessary clearance beneath existing pipes, conduits, drains, drainage structures, or other obstructions encountered at normal pipe grades. Measurement of pipe cover depth shall be made vertically from the outside top of pipe to finished ground or pavement surface elevation except where future surface elevations are indicated on the Drawings.

3.3 PROTECTION

A. TEMPORARY PROTECTION

1. The Contractor shall protect adjacent structures, utilities, sidewalks, pavements, and other facilities from damages caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
2. Dirt excavated from the trench shall be placed no closer than two (2) feet from the edge of the trench or retaining structure.

B. SHEETING AND BRACING

1. All excavations shall be made in accordance with the rules and regulations promulgated by the Department of Labor, Occupational Safety, and Health Administration (OSHA) Regulations for Construction. The Contractor shall furnish, install, and maintain such sheeting, bracing, etc., as may be necessary to support the sides of the excavation and to prevent any movement of earth which could in any way diminish the width of the excavation to less than that necessary for proper construction, or could otherwise result in personal injury, delay the work, or endanger adjacent structures, roads, utilities, or other improvements.
2. All trenches over four (4) feet in depth, at trench depths prescribed by OSHA, or in poor supporting soils shall have sheeting and bracing. No sheeting and bracing shall be removed until all workers are out of the trench.

C. BLASTING

Blasting will not be allowed on this Project.

D. CARE AND RESTORATION OF PROPERTY

1. Trunks of trees adjacent to the work which are to remain shall be enclosed with protective fencing. No material shall be piled or equipment stored or operated within the drip line of trees to remain. Work within the drip line of the trees shall only be performed as approved by the Engineer. Excavating machinery and cranes of suitable type shall be operated with care to prevent injury to remaining tree trunks, roots, branches, and limbs.
2. Branches, limbs, and roots shall not be cut except by permission of the Engineer, and shall be cut smoothly and neatly without splitting or crushing. In case of unavoidable cutting or injury to branches, limbs, or trunks of trees, the injured portions shall be neatly trimmed and covered with an application of tree healing paint as directed.
3. All cultivated hedges, shrubs, and plants which might be injured by the Contractor's operations shall be protected. Any such trees or shrubbery necessary to be removed and replanted shall be properly heeled in. Heeling in and replanting shall be performed under the direction of a licensed and experienced nurseryman engaged by the Contractor at the Contractor's own expense. All removed shrubbery and trees shall be replanted in their original position after construction operations have been substantially completed and cared for until growth is re-established.
4. Cultivated hedges, shrubs, and plants injured to such a degree as to affect their growth or diminish their beauty or usefulness, shall be replaced by items of kind

and quality at least equal to the kind and quality existing at the start of the work. Replacement shall be at the Contractor's own expense.

5. Tractors, bulldozers, or other power-operated equipment shall not be operated on paved surfaces if the treads or wheels of the equipment are so shaped as to cut or otherwise injure the surfaces.
6. All surfaces, including lawns, grassed, and planted areas that have been injured by the Contractor's operations, shall be restored at the Contractor's own expense, to a condition at least equal to that in which they were found immediately before the work was begun. Suitable materials and methods shall be used for such restoration. All restored plantings shall be maintained by cutting, trimming, fertilizing, etc., until acceptance. Existing property or structures shall be restored as promptly as practicable and shall not be left until the end of construction period.

E. OMITTED

F. AIR POLLUTION

1. The Contractor shall comply with all pollution control rules, regulations, ordinances, and statutes which apply to any work performed under the Contract, including any air pollution control rules, regulations, ordinances and statutes, or any municipal regulations pertaining to air pollution.
2. During the progress of the Work, the Contractor shall maintain the area of activity, including the sweeping and sprinkling of streets as necessary, so as to minimize the creation and dispersion of dust. If the Engineer decides that it is necessary to use calcium chloride or more effective dust control, the Contractor shall furnish and spread the material, as directed, and without additional compensation.

G. BRIDGING TRENCHES

1. The Contractor shall provide suitable and safe bridges and other crossings where required for the accommodation of travel and/or access to private property during construction and shall remove said structures and restore all disturbed areas thereafter.
2. The Contractor shall bridge or backfill trenches in any portion of the travel lanes of public or private roads or drives, at the end of each day's operation to provide for safe travel. No additional compensation will be made for this work.

3.4 TRENCH EXCAVATION

A. LENGTH OF TRENCH

1. No more trench shall be opened in advance of pipe laying than is necessary to expedite the work. One hundred (100) feet shall be the maximum length of trench on any line under construction which may be left open prior to testing, backfill, landscaping, and cleanup. Additional length requires the Engineer's approval.
2. Trench length shall be limited to a length in which workers, at all times, are at a minimum distance from the trench exits as required by safety regulations.

B. TRENCH EXCAVATION

1. General: All excavation of every description and of whatever substance encountered shall be performed so that the pipe can be laid to the alignment and depth shown on the Drawings.
2. All trenches, where required, shall be braced and shored in accordance with the rules and regulations promulgated by the Department of Labor, Occupation

Safety and Health Administration (OSHA), "Safety and Health Regulations for Construction".

3. All excavations shall be by open cut unless otherwise specified or indicated on the Drawings.
4. Width of Trenches: Trenches shall be excavated sufficiently wide to allow proper installation of pipe, fittings and other materials, and not more than eighteen (18) inches clear of pipe on either side at any point. Trenches shall not be widened by scraping or loosening materials from the sides.
5. Trench Excavation in Earth: Earth excavation includes all excavation of whatever substance encountered. In locations where pipe is to be bedded in earth-excavated trenches, the Contractor shall fine grade the bottoms of such trenches to allow firm bearing for the bottom of the pipe on undisturbed earth. Where any part of the trench has been excavated below the grade of the pipe, the part excavated below such grade shall be filled with pipe bedding material and compacted at the Contractor's expense.
6. Trench Excavation in Fill: If pipe is to be laid in embankments or other recently filled material, the fill material shall be placed to the finish grade or to a height of at least one (1) foot above the top of the pipe, whichever is the lesser. Particular care shall be taken to ensure maximum consolidation of material under the pipe location. The pipe trench shall be excavated as though in undisturbed material.
7. Trench Bottom in Poor Soil: Unstable or unsuitable soils shall be excavated and removed to a width and depth as directed by the Engineer, and refilled with thoroughly compacted gravel bedding.
8. Bell Holes: Bell holes shall be provided at each joint to permit the joint to be made properly and to provide a continuous bearing and support for the pipe.

C. TRENCH BACKFILL

1. General: Unless otherwise specified or indicated on the Drawings, suitable material which was removed in the course of making the construction excavations shall be used for backfill. Frozen material shall not be used for the backfill and backfill shall not be placed on frozen material. Previously frozen material shall be removed before new backfill is placed. Backfilling shall begin as soon as practicable after pipes have been laid, or structures have been built and are structurally adequate to support the loads, including construction loads to which they will be subjected, and shall proceed until its completion.
2. With the exception mentioned below in this paragraph, trenches at pipe joints shall not be backfilled until after that section of the pipeline has successfully passed any specified tests required. Should the Contractor wish to minimize the maintenance of lights, and barricades, and the obstruction of traffic, he may, at his own risk, backfill the entire trench as soon as practicable after installation of pipe, and the related structures have acquired a suitable degree of strength. The Contractor shall, however, be responsible for removing and later replacing such backfill, at his own expense, should he be ordered to do so in order to locate and repair or replace leaking or defective joints or pipe.
3. Material: The nature of the materials will govern both their acceptability for backfill and the methods best suited for their placement and compaction in the backfill. Both are subject to the approval of the Engineer. Stone or rock fragments larger than four (4) inches in greatest dimension shall not be placed in the backfill. Large masses of backfill material shall not be placed into the trench in such a manner as to endanger the pipeline. Bituminous pavement shall be excluded from the backfill unless their use is expressly permitted.
4. Zone Around Pipe: Bedding material shall be placed to the level shown on the Drawings and material worked carefully around the pipe to insure that all voids are filled, particularly in bell holes. For backfill up to a level of two (2) feet over the top of the pipe, only selected materials containing no rock, clods, or organic materials shall be used. Backfill shall be placed and compacted thoroughly under the pipe haunches and up to the mid-line of the pipe in layers not exceeding six (6) inches in depth. Each layer shall be placed and tamped

carefully and uniformly so as to eliminate the possibility of lateral displacement. Backfill shall be placed in the remainder of the zone around the pipe and to a height of one (1) foot above the pipe in layers not exceeding six (6) inches and shall be compacted to a maximum density of at least 100 % as determined by ASTM D698.

5. Tamping: Backfill materials shall be deposited and spread in uniform, parallel layers not exceeding eight (8) inches in thickness before compaction. Each layer shall be tamped before the next layer is placed to obtain a thoroughly compacted mass. An adequate number of power driven tampers, each weighing at least 20 pounds, shall be furnished and used for this purpose. Material adjacent to the bank, as well as in all other portions of the trench, shall be thoroughly compacted. When the trench width and the depth to which backfill has been placed are sufficient to make it feasible, and it can be done effectively and without damage to the pipe, backfill may, on approval, be compacted by the use of suitable rollers or similarly powered equipment instead of by tamping. For compaction by tamping (or rolling), the rate at which backfill material is deposited in the trench shall not exceed that permitted by the equipment for its spreading, leveling and compacting, as furnished by the Contractor.
6. Trench Moisture: Backfill material shall be moistened by sprinkling, if necessary, to insure proper compaction by tamping (or rolling). No compaction shall be performed by tamping (or rolling) when the material is too wet, either from rain or applied water, to be compacted properly.
7. Trench Compaction: Backfill in pipe trenches above the initial one (1) foot over the top of the pipe shall be compacted to the maximum density as shown on the Drawings, or as listed in Section 3.7 of this Specification, with moisture content within the range of values of maximum density as indicated by the moisture-density relationship curve.

3.5 SITE GRADE

A. PLACEMENT AND COMPACTION

1. Backfill and fill material shall be placed in layers not exceeding eight (8) inches in loose depth. Before compaction, each layer shall be moistened or aerated as necessary to provide the optimum moisture content. Each layer shall be compacted to the required percentage of maximum density for each area classification. No backfill or material may be placed on surfaces that are muddy, frozen, or contain frost or ice.
2. In areas not accessible to rollers or compactors, mechanical hand tampers shall be used. If the mixture is excessively moistened by rain, the material shall be aerated by means of blade graders, harrows, or other approved equipment, until the moisture content of the mixture is satisfactory. The surface of the layer shall be finished by blading or rolling with a smooth roller, or a combination thereof, and shall be left smooth and free from waves and inequalities.
3. Backfill and fill materials shall be placed evenly adjacent to structures, to the required elevations. The Contractor shall take care to prevent wedging action of backfill against structures. The material shall be placed uniformly around all parts of structures to approximately the same elevation in each lift.
4. When the existing ground surface has a density less than that specified under the Section 3.07 of this Specification for the particular area classification, the ground surface shall be broken up, pulverized, moisture-conditioned to the optimum moisture content, and compacted to the required depth and percentage of maximum density.

B. PLANTING AREAS

Areas to receive topsoil shall be finished to within not more than one-tenth (0.01) foot above or below the required subgrade elevations, compacted as specified, and free from irregular surface changes.

D. DISPOSAL OF SURFACE MATERIAL

Upon approval of the Engineer, haul all surplus materials not needed or acceptable for backfill and dispose of at location approved by the Engineer.

3.8 FIELD QUALITY CONTROL

A. SOIL TESTING AND INSPECTION SERVICE:

1. Compaction tests of all fill areas shall be made by an independent testing laboratory. The services of qualified soils testing personnel may be engaged by the Construction Manager for the making of tests to determine moisture-density relationships; relative densities; plastic and liquid limits; suitability of materials for compaction; and for inspection and control of the site preparation including selection, placing, and compaction of the fill. Such tests will be provided and paid for by the Construction Manager, except that **all succeeding tests after the first test for the same area, which reveal non-conformance with the Specifications and all succeeding tests for the same area, until conformance with the Specifications is established, shall be at the expense of the Contractor.** The Construction Manager will be responsible for paying for only the successful tests and for only the first test in an area which reveals non-conformance. A copy of the testing personnel's daily field report including results of in-place density and moisture content tests should be forwarded to the Construction Manager and the Engineer at the end of each working day.
2. The Contractor shall cooperate with the testing personnel so as to permit proper inspection and control of the work without unnecessary delays.

B. NUMBER OF TESTS (The following represents a minimum only.)

1. Under paved areas, no less than one (1) density test per horizontal layer per 5,000 square feet of subgrade shall be made.
2. Under unpaved areas, no less than one (1) density test per horizontal layer per 10,000 square feet shall be made.
3. Under curb and gutter, no less than one (1) density test per every 300 linear feet.
4. Above pipe placed in areas under pavement, one (1) density test per every 300 linear feet.

C. PROOF ROLLING

1. The Contractor shall proof roll the subgrade of all curb and gutter, paved areas, and on the base of all paved areas where designated by the Engineer. Proof rolling shall take place after all underground utilities are installed and backfilled. The operation shall consist of rolling the subgrade or base with a fully loaded ten (10) wheeled dump truck. A full load shall consist of ten (10) to twelve (12) cubic yards of soil or rock. The dump truck shall be capable of traveling at a speed of two (2) to five (5) miles per hour and be in sound mechanical shape with no exhaust leaks or smoking from burning oil. The Engineer shall determine the number of passes and areas rolled.

END OF SECTION 31 2300

**SECTION 31 2500
SUBGRADE**

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The work covered by this Section consists of the preparation, shaping, and compaction of that portion of the roadbed upon which base or pavement, including base and paving for shoulders, is to be placed.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 CONSTRUCTION

- A. The subgrade shall be shaped to the lines, grades, and typical sections shown on the plans. All unsuitable material, boulders, and all vegetative matter shall be removed and replaced with suitable material. Suitable material, when not available from the subgrade work, shall be taken from roadway excavation or borrow pits.
- B. Material excavated in preparing the subgrade shall be stored or stockpiled in such a manner as to not interfere with proper drainage or any of the subsequent operations of placing base or pavement.
- C. The subgrade shall be compacted at a moisture content which is approximately that required to produce the maximum density. The Contractor shall dry or add moisture to the subgrade when required to provide a uniformly compacted and acceptable subgrade.

3.2 QUALITY CONTROL

- A. A tolerance of plus or minus one-half (1/2) inch from the established grade will be permitted after the subgrade has been graded to a uniform surface.
- B. Ditches and drains shall be provided and maintained where required to satisfactorily drain the subgrade. Where previously approved subgrade is damaged by natural causes, by hauling equipment, or by other traffic, the Contractor shall restore the subgrade to the required lines, grades, and typical sections and to the required density at no cost to the Owner.

END OF SECTION 31 2500

**SECTION 32 1100
RESTORATION OF SURFACES**

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. This Section covers the furnishing of all labor, equipment and materials necessary for the proper restoration of existing surfaces disturbed or damaged as a result of construction operations which are not specifically scheduled or specified for topsoil and seeding, paving, landscaping or other surfacing.
- B. In general, the types of replacement included in this Section are seeding along pipelines, concrete sidewalks, driveways, roadways, ditches, lawns and landscaped areas, curb and gutter.
- C. Any damage to existing structures shall be repaired using materials and workmanship equal to those of original construction.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 RESTORATION OF SURFACES

A. SEEDING ALONG PIPELINES

- 1. All ground surfaces along pipelines, which are not classified as lawns, landscaped areas, or pavement areas, but would be classified as open fields, shall be raked smooth and seeded in accordance with the section entitled Seeding, Fertilizing and Mulching. Large rocks, clumps of earth and excessive spoil material shall be removed from the area prior to seeding.
- 2. Shoulders of all roads shall be restored as specific for lawns and landscaped areas.
- 3. Omitted

B. ROADWAY REPLACEMENT

- 1. Bituminous or Asphaltic pavements shall include all areas paved with blacktop; built-up pavements or oil and stone, tar and stone and similar pavements constructed with a bituminous or asphalt and stone materials.
- 2. If, in the opinion of the Engineer, the area adjacent to the milling or excavation has not been damaged to the extent that the base course need to be replaced, restoration may consist of a surface course of sufficient thickness to meet the existing pavement.
- 3. Portland cement concrete walkways or roadways shall be replaced with Class B Concrete and shall have equal thickness and reinforcing steel as the original roadway. An aggregate of six (6) inches shall be placed prior to the placing of concrete.
- 4. Differential settlement of restored pavements shall be corrected immediately.
- 5. The Contractor shall repair and restripe any traffic markings that were damaged, removed or covered during construction. All work shall be done in accordance with NCDOT requirements and specifications.
- 6. Omitted

E. DITCHES

Ditches shall be regraded to the original grade and line. The surface of all ditches shall be returned to the same condition as found before commencing work.

F. LAWNS AND LANDSCAPED AREAS

1. Lawns and landscaped areas shall be regraded and replaced as follows:
 - a. Grading shall be to the grade existing before construction of the work under this Contract.
 - b. Lawn replacement shall be in accordance with the section entitled Landscaping. Topsoiled areas shall be replaced with topsoil of equal quality and quantity.
2. Landscaped areas shall be replaced with shrubs, hedges, ornamental trees, flowers, or other items to original condition.

G. DAMAGE TO STRUCTURES

Any damage to existing structures shall be repaired of materials and workmanship equal to those of original construction. Extensively damaged structures, where the structural stability has been affected or which cannot be repaired in a suitable fashion shall be replaced entirely. Replacement shall not commence until approval of the plan of replacement has been given by the Engineer. Replacement costs shall be responsibility of the Contractor.

END OF SECTION 32 1100

**SECTION 32 1200
MILLING BITUMINOUS PAVEMENTS**

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. The work covered by this Section consists of milling bituminous pavement at locations, depths, widths, and typical sections indicated in the Plans and Special Provisions or as directed by the Engineer.

The work also includes transporting and stockpiling milled material at the asphalt plant; disposing of excess milled material; and cleaning the milled pavement surface.

The milled material shall become the property of the Contractor. All milled material shall be disposed of by the Contractor in areas provided by him which are outside the right-of-way, except where the milled material is used in the work.

PART 2: PRODUCTS

2.01 EQUIPMENT

- A. Equipment shall include a self propelled unit capable of removing the existing bituminous pavement to the depths, widths and typical sections shown in the Plans. The equipment shall have been designed and built exclusively for pavement milling operations and shall have a past history of satisfactory performance. The machine shall be equipped with a grade control system which will automatically control the longitudinal profile and cross slope of the milled surface by the use of one or more skid sensors moving along the pavement surface. The machine shall be capable of leaving a uniform surface suitable for handling traffic without excessive damage to the underlying pavement structure. The milling machine and other loading equipment shall be capable of loading milled material to be used in other parts of the work without excessive segregation.

Additional equipment necessary to satisfactorily remove the pavement in the area of manholes, water valves, curb and gutter, and other obstructions shall be provided.

The milling equipment shall be equipped with a means of effectively limiting the amount of dust escaping from the removal operation in accordance with local, State, and Federal air pollution control laws and regulations.

PART 3: EXECUTION

3.01 SURFACE PREPARATION

- A. CONSTRUCTION REQUIREMENTS

The existing pavement shall be milled in a manner which will restore the pavement surface to a uniform longitudinal profile and cross section at the locations and in accordance with typical sections shown in the Plans. Where indicated in the Plans or Project Special Provisions, removal shall be to a specified depth and shall produce a specified cross slope.

The Contractor may elect to make multiple cuts to achieve the required depth of cut or cross slope required by the Plans.

The longitudinal profile of the milled surface shall be established by a mobile string line on the side of the cut nearest the centerline of the road. The cross slope of the milled surface shall be established by an automatic cross slope control mechanism or by a second skid sensing device located on the outside edge of the cut. The Engineer may

waive the requirement for automatic grade and cross slope controls where conditions warrant.

The milling equipment shall be operated in such a manner as to prevent damage to the underlying pavement structure, utilities, drainage facilities, curb and gutter, paved surfaces outside the milled area, and any other appurtenances. The milled pavement surface shall be reasonably smooth and free of excessive scarification marks or other damage as determined by the Engineer. Any leveling or patching required as a result of negligence by the Contractor shall be repaired with hot bituminous plant mix at no cost to the Owner and in a manner acceptable to the Engineer. The Contractor shall coordinate the adjustment of manholes, meter boxes and valves boxes with the milling operation.

The Engineer may require remilling any area where surface laminations or defects resulting from the Contractor's operations cause a non-uniform surface to occur.

The milled pavement surface shall be thoroughly cleaned of all loose aggregate particles, dust and other objectionable material by the use of power brooms, power blowers, power vacuums or other means. Disposal or wasting of oversize pieces of pavement or loose aggregate material will not be permitted within the right-of-way.

The pavement removal operations shall be conducted in such a manner as to effectively minimize the amount of dust being emitted. The operation shall be planned and conducted so that it is safe for persons and property adjacent to the work including the traveling public.

END OF SECTION 32 1200

**SECTION 32 1215
BITUMINOUS PAVING**

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The work covered by this Section shall consist of the construction, production, delivery, and placement of bituminous plant mix base and surface courses properly laid on a prepared aggregate base course, in accordance with these Specifications and in conformity with the lines, grades, thickness, and typical sections shown on the Plans.

1.2 QUALITY ASSURANCE

- A. When required by the Engineer, the automatic weighing and recording system shall be checked by weighing a truckload of mix with an approved set of platform scales. Other means of checking the automatic weighing and recording system will be designated by the Engineer if such checking becomes necessary.
- B. The Contractor will not be permitted to use mixture delivered to the site which is not accompanied by a load ticket signed by the weigh man or an automatic printout ticket in accordance with the above requirements.
- C. The original of all tickets, including any voided tickets or tickets for rejected mixture, shall become the property of the Engineer.
- D. Omitted

1.3 SUBMITTALS

- A. In all cases, the Contractor shall furnish copies of certified weight tickets for all bituminous base and surface course installed on the Project.
- B. The Contractor shall submit a certification that all bituminous production is performed under the exact requirements and specifications used by the North Carolina Department of Transportation (NCDOT). If required by the Engineer, the Contractor shall arrange for an inspection of the production facilities.

1.4 OMITTED

1.5 REFERENCES

- A. All work and materials required under this Section of the Specifications shall conform to the applicable sections of the latest editions of the North Carolina Department of Transportation, Division of Highways, Standard Specifications for Roads and Structures and the North Carolina Department of Transportation Pavement Construction Section Superpave Hot Mix Asphalt / Quality Management System.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. All bituminous paving materials shall conform to the following standards, latest edition.
 - 1. North Carolina Department of Transportation Standard Roadway Specifications, Section 1012 Aggregate for Asphalt Pavements.
 - 2. North Carolina Department of Transportation Standard Roadway Specifications, Section 1020 Asphalt Materials.

ALL STANDARDS AND REQUIREMENTS, AS LISTED IN THE ABOVE REFERENCED NCDOT DOCUMENTS, SHALL SUPERCEDE THOSE LISTED WHERE THERE IS CONFLICT UNLESS OTHERWISE INDICATED BELOW.

B. COMPOSITION OF MIXTURES

1. The job mix formula for each mixture shall be in effect until modified in writing by the Engineer.
2. All mixtures furnished for the Work shall conform to the job mix formula within the tolerance ranges specified for the particular mix involved as specified herein.
3. Should a change in sources of aggregate materials be made, a new job mix formula will be required before the new mixture is produced.
4. When unsatisfactory results or other conditions make it necessary, the Engineer may establish a new job mix formula.

PART 3 - EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

- A. **PREPARATION OF SUBGRADE:** The work covered under this Section of this Specifications shall be performed in strict accordance with Section 500 or Section 505 whichever is applicable, of the North Carolina Department of Transportation Division of Highways Standard Specifications for Road and Structures, latest edition.
- B. **APPLICATION OF AGGREGATE BASE COURSE:** The work covered under this Section of these Specifications shall be performed in strict accordance with Section 520 of the North Carolina Department of Transportation Division of Highways Standard Specifications for Road and Structures, latest edition.
1. The aggregate base course shall be compacted to a density of at least 100% of the maximum theoretical dry density using the Standard Proctor method of moisture-density relationship test.
- C. **BITUMINOUS PLANT MIX – GENERAL:** The work covered under this Section of this Specifications shall be performed in strict accordance with Section 600, Section 605, Section 610, and Section 620 of the North Carolina Department of Transportation Division of Highways Standard Specifications for Road and Structure, latest edition and Sections 2 through 6 and Section 9 of the Superpave Hot Mix Asphalt / Quality Management System of the North Carolina Department of Transportation Pavement Construction Section, with the exception that recycled products are not permitted.
1. Pavement repairs shall be performed in accordance with Section 654 of the Superpave Hot Mix Asphalt / Quality Management System of the North Carolina Department of Transportation Pavement Construction Section, latest edition.
- D. OMITTED
- E. OMITTED
- F. OMITTED
- G. **BITUMINOUS BINDER COURSE (TYPE I 19.0B):** The work covered under this Section of this Specification shall be performed in strict accordance with Section 4 of the Superpave Hot Mix Asphalt / Quality Management System of the North Carolina Department of Transportation Pavement Construction Section, latest edition.
- H. **BITUMINOUS SURFACE COURSE (TYPE SF 9.5B AND S 9.5C):** The work covered under this Section of this Specification shall be performed in strict accordance with

Section 4 of the Superpave Hot Mix Asphalt / Quality Management System of the North Carolina Department of Transportation Pavement Construction Section, latest edition.

- I. **TRAFFIC MARKINGS:** The Contractor shall repair and restripe any traffic markings that were damaged, removed or covered during construction. All work shall be performed in strict accordance with the North Carolina Department of Transportation requirements and specifications.
- J. **OMITTED**
- K. **COMPACTION:**
 - 1. Immediately after the bituminous mixture has been spread, struck off, and surface and edge irregularities adjusted, it shall be thoroughly and uniformly compacted. The degree of compaction required shall be in accordance with the applicable Section of the Specifications for the type of mixture being placed.
 - 2. Omitted
 - 3. The use of rolling equipment which results in excessive crushing of the aggregate or excessive displacement of the mixture shall not be permitted.
 - 4. In areas inaccessible to equipment, the mixture shall be thoroughly compacted by the use of hand tampers or hand operated mechanical tampers.
- L. **OMITTED**
- M. **WEATHER AND TEMPERATURE LIMITATIONS:**
 - 1. Bituminous mixtures shall not be produced or placed during rainy weather, when the subgrade or base course is frozen, or when the moisture on the surface to be paved would prevent proper bond. Bituminous material shall not be placed when the air temperature, measured in the shade away from artificial heat at the location of the paving operations, is less than the following temperatures:

Table
Weather and Temperature Limitations

Material	Thickness Of Layer Being Placed	Air Temperature
Bituminous Concrete Binder or Base Course	1-1/2" or Greater	40°F
Bituminous Concrete Binder or Base Course	Less Than 1-1/2"	40°F
Surface Course Materials	1" or Greater	40°F (except final layer)
Surface Course Materials	1" or Greater	40°F for Final Layer except 50°F Between Nov. 1 & April 1
Surface Course Materials	Less Than 1"	50°F, except 60°F Between Nov. 1 & April 1

- 2. As an exception to the above, when in any day's operations the placement of a layer of bituminous base course material or binder material 1-1/2" or greater in thickness has started, it may continue until the temperature drops to 32° F.

3.2 QUALITY CONTROL AND TESTING

A. TESTING

1. All of the above work will be subject to thickness and compaction tests as deemed necessary by the Engineer and shall conform to Section 10 of the Superpave Hot Mix Asphalt / Quality Management System of the North Carolina Department of Transportation Pavement Construction Section.
2. Such tests will be provided and paid for by the Construction Manager, except that **tests which reveal non-conformance with the Specifications and all succeeding tests for the same area until conformance with the Specifications is established shall be at the expense of the Contractor.** The Construction Manager will be responsible for paying for **only** the successful tests.

B. OMITTED

C. SURFACE REQUIREMENTS

1. The surface of the plant mix base or pavement after compaction shall be smooth and true to the required cross section and grade. Any defective areas shall be corrected with satisfactory material which shall be immediately compacted to conform with the surrounding area. Any area showing an excess of asphalt cement shall be removed and replaced.
2. The surface will be tested at all joints and at other selected locations using a ten (10) foot straightedge. The variation of the surface from the testing edge of the straightedge, when applied parallel to the centerline of the surface, shall not exceed one-eighth (1/8) inch between any two (2) contact points. Areas found to exceed this tolerance shall be corrected by the Contractor by removal of the defective work and replacement with new material unless other corrective measures are permitted by the Engineer. The work and materials required in the correction of defective work shall be provided by the Contractor at **no** cost to the Construction Manager.
3. The Contractor shall repaint and restripe any traffic markings that were damaged, removed, or covered during construction. All work shall be performed in accordance with the latest NCDOT requirements and specifications.
4. All existing manhole and valve covers shall be raised by the Contractor as necessary prior to paving so that the tops of the covers are flush with the final surface. Adjustments shall be made just prior to the placing of the final asphalt course.

END OF SECTION 32 1215

**SECTION 32 1225
AGGREGATE BASE COURSE**

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The work covered by this Section consists of the construction of a base composed of an approved aggregate material hauled to the site, placed on the site, compacted, and shaped to conform to the lines, grades, depths, and typical sections shown on the Plans or established by the Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Aggregate base course materials shall consist of crushed stone or uncrushed gravel, or other similar material having hard, strong, durable particles free of adherent coatings.
- B. All aggregate base course materials shall conform to the following standards, latest edition.
 - 1. North Carolina Department of Transportation Standard Roadway Specifications, Division 5, Aggregate Base Course.

ALL STANDARDS AND REQUIREMENTS, AS LISTED IN THE ABOVE REFERENCED NCDOT DOCUMENTS, SHALL SUPERCEDE THOSE LISTED WHERE THERE IS CONFLICT UNLESS OTHERWISE INDICATED BELOW.

- C. The Contractor shall furnish aggregate base course material produced in accordance with the requirements indicated herein for Type A aggregate unless otherwise specified in the special provisions.
- D. All aggregates shall be from approved sources. Sources will not be approved unless the material has satisfactory soundness and satisfactory resistance to abrasion. Satisfactory soundness will be considered to be a weighted average loss of not greater than 15% when subjected to five (5) alternations of the sodium sulfate soundness test in accordance with AASHTO T104. Satisfactory resistance to abrasion will be considered to be a percentage of wear of not greater than 55% when tested in accordance with AASHTO T96.
- E. Aggregates shall be handled in such a manner as to minimize segregation.
- F. Sites for aggregate stockpiles shall be grubbed and cleaned prior to storing aggregates, and the ground surface shall be firm, smooth, and well drained. A cover of at least three (3) inches of aggregate shall be maintained over the ground surface in order to avoid the inclusion of soil or foreign material. Stockpiles shall be built in such a manner as to minimize segregation. When it is necessary to operate trucks or other equipment on a stockpile in the process of building the stockpile, it shall be done in a manner approved by the Engineer.
- G. Stockpiles of different types or sizes of aggregates shall be spaced far enough apart, or else separated by suitable walls or partitions, to prevent the mixing of the aggregates.
- H. Any method of stockpiling aggregates which allows the stockpile to become contaminated with foreign matter or causes excessive degradation of the aggregate will not be permitted. Excessive degradation will be determined by sieve tests of samples taken from any portion of the stockpile over which equipment has been operated, and failure of such samples to meet all grading requirements for the aggregate will be considered cause for discontinuance of such stockpiling procedure.

- I. All standard sizes of aggregates shall meet the gradation requirements when tested in accordance with AASHTO T27.

PART 3 - EXECUTION

3.1 CONSTRUCTION OF STONE BASE

- A. APPLICATION OF AGGREGATE BASE COURSE: The work covered under this Section of these Specifications shall be performed in strict accordance with Division 5, Section 520 of the North Carolina Department of Transportation Division of Highways Standard Specifications for Road and Structures, latest edition.
 1. The aggregate base course shall be compacted to a density of at least 100% of the maximum theoretical dry density using the Standard Proctor method of moisture-density relationship test.
- B. The aggregate material shall be spread on the subgrade to a uniform loose depth and without segregation.
- C. Where the required compacted thickness of base is eight (8) inches or less the base material may be spread and compacted in one (1) layer. Where the required compacted thickness of base is more than eight (8) inches, the base material shall be spread and compacted in two (2) or more approximately equal layers. The minimum compacted thickness of any one layer shall be approximately four (4) inches.
- D. The minimum compaction for each layer shall be 100% Standard Proctor.
- E. Each layer of material shall have been sampled, tested, compacted, and approved prior to placing succeeding layers of base material or pavement. Such tests will be provided and paid for by the Construction Manager, except that **all succeeding tests after the first test for the same area, which reveal non-conformance with the Specifications, until conformance with the Specifications is established, shall be at the expense of the Contractor.** The Construction Manager will be responsible for paying for only the successful tests and for only the first test in an area which reveals non-conformance.
- F. No base material shall be placed on frozen subgrade or base. Hauling equipment shall not be operated on subgrade or a previously completed layer of base material soft enough to rut or weave beneath the equipment.
- G. The maximum speed of trucks hauling or traveling over any part of the subgrade or base shall be five (5) miles per hour.
- H. The Contractor shall utilize methods of handling, hauling, and placing which will minimize segregation and contamination. If segregation occurs, the Engineer may require that changes be made in the Contractor's methods to minimize segregation, and may also require mixing on the road which may be necessary to correct any segregated material. No additional compensation will be allowed for the work of road mixing as may be required under this provision. Aggregate which is contaminated with foreign materials to the extent the base course will not adequately serve its intended use shall be removed and replaced by the Contractor at no additional cost to the Construction Manager. The above requirements will be applicable regardless of the type of aggregate placed and regardless of prior acceptance.
- I. No aggregate base course shall be placed on contaminated base course material. Prior to placing new aggregate over existing aggregate base course, the Contractor shall contact the Engineer for approval to place the new material. The Engineer shall make the sole final determination as to whether or not the existing material is "contaminated".

In most locations within parking lots the existing aggregate base course will require removal of the top one (1) inch to two (2) inches of existing aggregate to accommodate the proposed paving. The Contractor shall prepare the surface to the level to accept the proposed asphalt. The Contractor shall contact the Engineer prior to placing the asphalt to determine the acceptability of the prepared subgrade aggregate. No asphalt shall be placed without the Engineer's approval.

All contaminated aggregate base course material shall be removed to a minimum depth of two (2) inches or to the depth as directed by the Engineer. New material shall be placed as described above. Material contaminated by the Contractor's operations shall be removed and replaced at the Contractor's own expense.

- J. **The Engineer or the Construction Manager's representative shall have the right to require that any portion of the work be done in his presence and if the work is covered up after such instruction, it shall be exposed by the Contractor for observation at no additional expense to the Construction Manager.**

3.2 QUALITY CONTROL

A. TOLERANCES

1. After final shaping and compaction of the base, the Engineer will check the surface of the base for conformance to grade and typical section and will determine the base thickness.
2. The thickness of the base shall be within a tolerance of plus or minus one-half (1/2) inches of the base thickness required by the plans.

B. MAINTENANCE

1. Where the base material is placed in a trench section, the Contractor shall provide adequate drainage through the shoulders to protect the subgrade and base until such time as the shoulders are completed. The Contractor shall maintain the surface of the base by watering, machining, and rolling or dragging when necessary to prevent damage to the base by weather or traffic.

END OF SECTION 32 1225

**SECTION 32 1350
MISCELLANEOUS SITE CONCRETE**

PART 1 - GENERAL**1.1 SCOPE OF WORK**

- A. The work of this Section includes cast-in-place concrete for miscellaneous site concrete such as pavements, slabs, and stairs as shown on Drawings, and as specified herein. In general, this work includes providing cast-in-place concrete consisting of Portland Cement, fine and coarse aggregate, selected admixtures, mixing, transporting, steel and/or wire reinforcing, placing, finishing, curing and all related activities and appurtenances as herein specified to provide complete installation of miscellaneous site concrete. This section further includes related items of quality control, testing, and evaluation of concrete strength.

1.02 SUBMITTALS

- A. The Contractor shall submit the proposed design mix for each class of concrete specified herein in accordance with the requirements herein. Design mixes shall be submitted two (2) weeks prior to placement of concrete.

1.03 QUALITY ASSURANCE

- A. If the average strength of the laboratory control cylinders shows the concrete to be below the specified design strength, the aggregate proportions and water content may be changed by the Engineer, who, in addition to such changes, may require core tests. Tests confirming concrete strengths on hardened concrete which was poured without testing shall be paid for by the Contractor.
- B. Design mixes shall be prepared for each class of concrete used in accordance with ACI 311.1. The Contractor shall pay for all design mix costs. Written reports shall be submitted to the Engineer for each proposed mix for each class of concrete prior to start of work. Concrete production shall not begin until mixes have been reviewed by the Engineer.

1.04 REFERENCES

- A. Some products and execution are specified in this section by reference to published specifications or standards of the following with respect abbreviations used.

1. American Concrete InstituteACI
2. The American Society for Testing and MaterialsASTM

B. STANDARD REFERENCES

The current edition of the following standard references shall apply to the work of this Section as indicated. Suffixes indicating issue date are omitted from reference numerals elsewhere in the text. Concrete work shall comply with the following standards and codes except as indicated otherwise on the Drawings or herein.

1. Publications of the North Carolina Department of Transportation Standard Roadway Specifications
 - a. Division 7 Section 700 Portland Cement Concrete Production and Delivery.
 - b. Division 7 Section 710 Concrete Paving.
2. ACI 301 "Specifications for Structural Concrete"
3. ACI 304 "Recommended Practice for Measuring, Mixing Transporting, and Placing Concrete"

4. ACI 305 "Recommended Practice for Hot Weather Concreting"
5. ACI 306 "Recommended Practice for Cold Weather Concreting"
6. ACI 308 "Recommended Practice for Curing Concrete"
7. ACI 309 "Recommended Practice for Consolidation of Concrete"
8. ACI 311 "Recommended Practice for Concrete Inspection"
9. ACI 214 "Recommended Practice for Evaluation of Compressive Test Results of Field Concrete"
10. ACI 211.1 "Recommended Practice for Selecting Proportions for Normal Weight Concrete"
11. ACI 212 "Guide for Use of Admixtures in Concrete"
12. ACI 214 "Recommended Practice for Evaluation of Compression Test Results of Field Concrete"

PART 2: PRODUCTS

2.01 MATERIALS

- A. All cast-in-place concrete shall conform to the following standards, latest edition:

1. North Carolina Department of Transportation Standard Roadway Specifications, Section 1000 Portland Cement Concrete Production and Delivery.
2. North Carolina Department of Transportation Standard Roadway Specifications, Section 1014 Aggregate for Portland Cement Concrete.
3. North Carolina Department of Transportation Standard Roadway Specifications, Section 1024 Materials for Portland Cement Concrete.
4. North Carolina Department of Transportation Standard Roadway Specifications, Section 1026 Portland Cement Concrete Curing Agents.
5. North Carolina Department of Transportation Standard Roadway Specifications, Section 1028 Portland Cement Concrete Joint Filler.
6. North Carolina Department of Transportation Standard Roadway Specifications, Section 1070 Portland Cement Concrete Reinforcing Steel.

ALL STANDARDS AND REQUIREMENTS, AS LISTED IN THE ABOVE REFERENCED NCDOT DOCUMENTS, SHALL SUPERCEDE THOSE LISTED WHERE THERE IS CONFLICT UNLESS OTHERWISE INDICATED BELOW.

- B. PORTLAND CEMENT shall be fresh stock of an approved standard brand meeting the requirements of ASTM C-150, of Type II. Only one (1) brand of cement shall be used except when otherwise approved by the Engineer, and the Contractor shall inform the Engineer of the brand name of the cement proposed for use. The Contractor shall submit a copy of mill test reports on all cement delivered to the job seven (7) days prior to use of the cement. Cube strength from mill tests shall have a tolerance of ± 600 psi. The fineness of cement used shall not have more than 10% retained on a #325 mesh screen when tested in accordance with ASTM C-430.
- B. FLY ASH shall have a high fineness and low carbon content and shall exceed the requirements of ASTM C-618. Specifications for Fly Ash and Raw or Calcined Natural for use in Portland Cement Concretes for Class 7, except that the loss of ignition shall be less than 3%, and all fly ash shall be a classified processed material. Fly ash shall be obtained from one (1) source for the concrete delivered to the Project. Complete chemical and physical analysis of each carload of fly ash shall be submitted to the Engineer ten (10) days prior to use of each carload delivered. Concrete mixes proportioned with fly ash shall contain not less than 10% nor more than 20% by weight of cement of fly ash.
- C. CONCRETE AGGREGATE for stone concrete shall consist of clean crushed stone or gravel having hard, strong, uncoated particles free from injurious amounts of soft, thin, elongated or laminated pieces, alkali, organic or other deleterious matter. Maximum aggregate size shall be 3/4" for slabs, etc., or as required by the applicable NCDOT

specifications. The maximum permissible percentage of elongated particles shall not exceed 5% by weight. Elongated particles are those defined as having a length equal to or greater than five (5) times the width. Samples of coarse aggregate shall be submitted to the testing laboratory for testing and approval prior to use. The fineness modulus of the coarse aggregate shall not vary for more than $\pm 0.3\%$.

- D. FINE AGGREGATE shall consist of sand, stone screenings, or other inert materials with similar characteristics having clean, strong, durable, uncoated grains and free from lumps, soft or flaky particles, clay, shale, alkali, organic matter or other deleterious substances. Fine aggregate shall be submitted for testing and approval to the testing laboratory. The laboratory shall verify that fine aggregate conforms to ASTM standards by making standard colormetric, sediment, and comparative tensile tests, and by sieve analysis. The fineness modulus of the sand shall not vary by more than $\pm 0.2\%$. Color shall be standard as determined from colormetric tests.
- E. CONCRETE ADMIXTURES, when required or permitted shall conform to the appropriate specification listed. Do not use admixtures which have not been incorporated and tested in the accepted mixes unless otherwise authorized in writing by the Engineer. Air-entraining admixtures shall exceed the requirements of ASTM C-260, "Specifications for Air-Entraining Admixtures for Concrete". Water reducing admixtures shall be hydroxylated polymer type exceeding the requirements of ASTM C-494, Type A.
- F. PREMOLDED EXPANSION JOINT FILLERS shall conform to ASTM D1751.
- G. LIQUID CURING MATERIAL for concrete shall exceed the requirements of ASTM C-309, Type I. Products acceptable shall provide water retention not exceeding a loss of 0.020 grams per sq. cm. when tested at a coverage of 200 sq. ft. per gallon and tested in accordance with ASTM C-156. Submit test data verifying these requirements for approval.
- H. BURLAP shall be free of sizing or any substance that is injurious to cement or can cause discoloration. Burlap shall be rinsed in water prior to use. Burlap shall be sufficient thickness to retain water without requiring wetting.
- I. VAPOR BARRIER where required shall be Moistop as manufactured by the St. Regis Co., or an approved equal.
- J. JOINT SEALING COMPOUND shall be a two-part mineral filled epoxy polyurethane, and shall be used for all exposed joints in exterior paving slabs, sidewalks, and in exposed joints in slabs on grade.
- K. SURFACE COATING for all exposed concrete where indicated shall be "Thoroseal" as manufactured by the Standard Dry Wall Co., or an approved equal.

2.02 AIR ENTRAINMENT

Air-entraining admixtures shall be used for all concrete exposed to freezing and thawing or subjected to hydraulic pressure. Entrained air shall conform to the air control limits of Table 3.4.1 of ACI 301. The water-cement ratio for all air-entrained concrete exposed to freezing and thawing shall not exceed 0.53.

Air contents shall be as follows:

Maximum Aggregate Size

1 ½ inches

¾ to 1 inch

Percent Air

5 ½ percent plus 2 or minus 1 percent

6 percent plus 2 or minus 1 percent

2.03 SLUMPS

All concrete shall be proportioned and produced to have a maximum slump of four (4) inches and a minimum slump of two (2) inches.

2.04 CONCRETE MIXING

- A. Concrete shall be mixed at batch plants or it may be transit mixed as specified herein. Concrete batch plants must comply with the requirements of ASTM C-94 and ACI-304 with sufficient capacity of producing concrete of the quantity and quality as specified herein. All plant facilities are subject to inspection by the Engineer. Ready-mix concrete shall comply with requirements of ASTM C-94, and as specified herein, unless otherwise noted. During hot weather or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C-94 will be required as follows:
1. When air temperatures are between 80°F and 90°F, reduce the mixing and delivery time from 1-1/2 hours to 1 hour
 2. When outside air temperatures are above 90°F, reduce the mixing and delivery time from 1-1/2 hours to 45 minutes.
- B. Addition of water at the site for concrete mix with insufficient slumps, slumps less than the maximum specified herein, will not be permitted. Concrete delivered to the project with slump less than the minimum or greater than the maximum specified shall be rejected and discarded off site.
- C. Batch tickets for each load of concrete shall be submitted to the Engineer. The following information shall be provided on each batch ticket:
1. Design mix designation
 2. Exact time cement, water and aggregate were discharged into the mix
 3. Compressive strength of mix
 4. Amount of water added to the mix
- D. Equipment shall be maintained in proper operating condition, with drums cleaned before charging of each batch. Delivery of trucks shall be scheduled in order to prevent delay of placing after mixing.
- E. *CONCRETE TYPE AND STRENGTHS

Location	Maximum Size Aggregate	*28 Day Compressive Strength
Slabs on Grade	3/4"	4000 psi

*Twenty-eight day strength shall be as determined from concrete sampled in accordance with ASTM C-172 and standard 6" x 12" molded cylinders tested in accordance with ASTM C-31 and C-39.

**See notes on Plans for required concrete strengths where indicated.

Minimum flexural strength (third point loading) shall be 550 psi with a minimum compressive strength of 4000 psi at 28 days.

PART 3: EXECUTION

3.01 PREPARATION

Before placing concrete, all equipment for mixing and transporting and placing concrete shall be cleaned, all debris and ice removed from spaces to be occupied by the concrete, forms

thoroughly cleaned of soil, ice, or other coatings which will prevent proper bond, reinforcement shall be securely tied in place and expansion joint material, anchors, and other embedded items shall be securely positioned. Hardened concrete and foreign materials shall be removed from the conveying equipment.

3.02 **CONCRETE PLACEMENT**

- A. **All concrete shall be placed in accordance with the requirements of North Carolina Department of Transportation Standard Roadway Specifications, Section 700 Portland Cement Concrete Paving and Section 710 Concrete Pavement, latest editions, and all related specifications and requirements.**
- B. Concrete shall be placed in compliance with the practices and recommendations of ACI 304 and applicable section of the NCDOT specifications or as herein specified. Concrete shall be handled from the mixer to the place of final deposit as rapidly as practical by methods which will prevent separation or loss of ingredients and in a manner which will assure that the required quality concrete is obtained. Conveying equipment shall be of size and design to insure a continuous flow of concrete at the delivery end.
- B. Concrete shall be deposited continuously, or in layers of such thickness that no concrete will be deposited on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness within the section. If a section cannot be placed continuously, construction joints shall be located at points as provided for in the drawings or as approved. Placing shall be carried on at such a rate that the concrete which is being integrated with fresh concrete is still plastic. Concrete shall be deposited as nearly as possible to its final location to avoid segregation due to rehandling or flowing. Concrete shall not be subjected to any procedure which will cause segregation.
- C. Concrete shall not be allowed to "freefall" a distance greater than 3'-0". All concrete shall be placed through a tremie with the bottom or outlet of the tremie being held at maximum of 3'-0" above the surface where concrete is being placed.
- D. Screed concrete which is to receive other construction to the proper level to avoid excessive skimming or grouting.
- E. Concrete shall not be used which has become non-plastic and unworkable or does not meet the required quality control limits, or which has become contaminated by foreign material. Rejected concrete shall be removed from the Project site and disposed of in an acceptable location. Concrete shall be consolidated by mechanical vibrating equipment supplemented by hand-spading, rodding, and tamping. Vibration of forms and reinforcing steel will not be permitted.
- F. Vibrators shall be inserted and withdrawn vertically at uniformly spaced locations not further than the visible effectiveness of the vibrator. Vibrators shall not be inserted into lower levels of concrete that have begun to set. At each insertion, the duration of vibration shall be limited to the time necessary to consolidate the concrete and complete embedment of reinforcing and other embedded items without causing segregation of the mix.
- G. Concrete shall be deposited and consolidated in a continuous operation, within the limits of construction joints until the placing of the entire section is complete.
- H. Surfaces shall be brought to the correct elevations with a straight edge and struck off. The surfaces shall be free of lumps and hollows.
- I. Concrete placed by pumping shall conform to the recommendations of ACI Publication, "Placing Concrete by Pumping Methods."

3.03 **CONSTRUCTION JOINTS**

- A Joints not shown on the Drawings shall be made at locations that will least impair the strength of the structure and shall be approved by the Engineer.

3.04 COLD WEATHER PLACING AND CURING REQUIREMENTS

- A. All concrete placed in temperatures 40°F. or below or exposed to temperatures 40°F. or below within five (5) days after the concrete is placed, shall conform to the requirements of ACI 306, "Recommended Practice for Winter Concreting", unless otherwise specifically specified herein.
- B. The following protection requirements for concrete placed, protected, and cured in temperature 40°F. or less shall be considered the minimum acceptable standards.
 - 1. Slabs on Grade - Cover top with insulating blankets. Blankets shall remain in place for a minimum period of five days.
 - 2. Temperature of concrete at placement shall not be less than 55°F.

3.05 HOT WEATHER PLACING

An approved admixture designed to retard the rate of set shall be used for all concrete placed when temperatures exceed 75°F. Set retarding admixtures shall conform to ASTM C-494, Type D, water reducing and retarding. Wet forms thoroughly before placing. Cool reinforcing by wetting sufficiently so that steel temperatures will be nearly equal to the ambient air temperature. Provide wind breaks around the perimeter of the area where concrete is being placed. Fresh concrete with temperatures 90°F or above shall be discarded off site. The amount of cement used in the job is computed for the temperature indicated on the approved design mix. For higher concrete mix temperature, the weight of the cement shall be increased at the rate of 12 lbs. per cubic yard for each 10°F. above the concrete mix temperature.

3.06 CURING AND PROTECTION

- A. Freshly placed concrete shall be protected from premature drying and excessive cold or hot temperatures, and maintained without drying at a relatively constant temperature for the period of time necessary for hydration of the cement and proper hardening of the concrete.
- B. Curing for all horizontal slab surfaces, except those to receive a bonded finish material, during periods when the outside air temperature does not exceed 60°F shall be provided by applying a membrane-forming curing compound to concrete surfaces as soon as the final troweling or floating operation has been completed. Curing compound shall be applied uniformly at a rate not to exceed 200 sq. ft. per gallon. Curing for all horizontal surfaces during period when the outside air temperature will exceed 60°F shall be provided by covering the entire surface with burlap. The burlap shall be lapped 1/2 width in order to provide a double thickness of burlap. Immediately following the placement of the burlap, the entire surface shall be maintained continuously wet for a period of seven (7) days. Surfaces shall not be permitted to dry at any period during the required curing period.
- C. Formed surfaces shall be cured by moist curing with the forms in place for the full curing period, or until forms are removed.
- D. During the curing period, the concrete shall be protected from damaging mechanical disturbances, including load stresses, shocks, excessive vibration and from change caused by subsequent construction operations.

3.07 SURFACE REPAIRS

- A. Defective areas shall be repaired immediately after removal of forms as directed by the Engineer.

3.08 SLABS ON GRADE:

A. PREPARATION OF SUBGRADE

The subgrade shall be well drained and of adequate and uniform loadbearing nature. The in-place density of the subgrade soils shall be at least the minimum required in the Specifications. The subgrade shall be free of frost before concrete placing begins.

B. JOINTS

All exposed construction joints in the slabs on grade shall have the edges tooled and the crack and groove formed by the edging tool filled with a polyurethane joint sealant. No kold-key or metal form joints will be permitted.

3.09 FINISHES

A. STANDARD FINISH FOR EXPOSED SURFACES

Provide an applied surface finish of "Thoroseal" or an approved equal to all exposed interior and exterior concrete finishes unless otherwise noted. Interior faces of walls of water retaining structures, including areas which are normally submerged, are considered to be exposed surfaces and shall receive the specified standard finish for exposed surfaces. The surface finish shall consist of chopping and/or grinding down all high spots removing grinding of all burrs and/or other projections, filling all voids 3/8" and larger, and cutting out all unsound concrete and patching as specified herein. Before applying the finish, wet and clean the surface of all grease, oils, efflorescence, and other foreign material. Dampen surface immediately ahead of application. Apply the finish coat with a tampico fiber brush by laying the finish coat on the wall in a thick coat of a minimum of 2 lbs. per sq. yard, and brush to a uniform level surface. Do not apply in temperatures 40°F or below, or when temperatures are likely to fall below 40°F within 24 hours after application. The finish coat shall be mixed in strict accordance with the manufacturer's written instructions. After the finish coat has cured, apply a finish coat of "Quick Seal" at a minimum of 12 lb. per sq. yd. The Thoroseal shall be applied by trained technicians.

B. SLAB FINISHES

1. Floated Finish

After the concrete has been placed, consolidated, struck off, and leveled, the concrete shall not be worked further until ready for floating. Floating shall begin when the water sheen has disappeared and when the surface has stiffened sufficiently to permit the operation. During or after the first floating, planeness of surface shall be checked with a 10'-0" straight edge applied at not less than two different angles. All high spots shall be cut down and all low spots filled during this procedure to produce a surface with Class B tolerance throughout. This slab shall then be floated immediately to a uniform sandy texture.

2. Broom Finish

Immediately after the concrete has received a float finish as specified in Section B, it shall be given a coarse transverse scored texture by drawing a broom or burlap belt across the surface. A broom finish shall be applied to all parking surfaces, exterior concrete walks, and concrete slabs, unless otherwise stated in the Project Plans or Details.

3.10 FINISHING TOLERANCES

Individual deviations shall not exceed 0.3 inches over any 25-foot section tested.

3.11 OMITTED

3.12 OMITTED

3.13 INSPECTION

Before placing concrete, the formwork installation, reinforcing steel, and items to be embedded or cast-in must be complete. The Contractor shall notify the Engineer upon completion of installation of all reinforcing and other items in ample time to permit inspection of the work. Earthen foundation is subject to testing laboratory as directed by the Engineer.

3.14 TESTING AND QUALITY CONTROL

- A. The Construction Manager shall employ a concrete testing laboratory to provide all laboratory testing services on the Project and a concrete technician to perform all quality control tests on concrete and materials used to batch concrete. The testing agency employed shall meet the requirement of "Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as Used in Construction", (ASTM E-329).
- B. Such tests will be provided and paid for by the Construction Manager, except that **tests which reveal non-conformance with the Specifications and all succeeding tests for the same area until conformance with the Specifications is established shall be at the expense of the Contractor.** The Construction Manager will be responsible for paying for **only** the successful tests.
- C. The Contractor shall provide and maintain adequate facilities on the Project for the testing laboratory to locate the required testing equipment and for safe storage area for test cylinders. The Contractor shall provide at his own expense all casual labor needed to assist the concrete technician in obtaining samples of concrete and concrete materials and moving and transporting cylinders and materials which are being tested.
- D. The following services shall be performed by the designated testing agency:
 - 1. Review and/or check-test the Contractor's proposed materials for compliance with the specifications.
 - 2. Review and/or check-test the Contractor's proposed mix design as required by the Engineer.
 - 3. Secure production samples of materials at plants or stock-piles during the course of the Work and test for compliance with the Specifications.
 - 4. Conduct strength tests of the concrete during construction in accordance with the procedures outlined in the above referenced NCDOT Standards.

3.15 EVALUATION AND ACCEPTANCE OF CONCRETE STRUCTURES

- A. The concrete quality control testing as specified will be evaluated by the following criteria:
 - 1. Compressive strength tests for laboratory-cured cylinders will be considered satisfactory if the averages of all sets of three consecutive compressive strength test results equal or exceed the 28-day design compressive strength of the type of class of concrete. If compressive strength tests fail to meet these requirements, the concrete represented by these tests will be considered deficient and subject to additional testing and/or removal.
 - 2. Concrete work which does not conform to the specified requirements, including strength, tolerance and finishes, shall be corrected as directed at the Contractor's expense, without extension of time. The Contractor shall also be responsible for

the cost of corrections to any other work affected by or resulting from correction to the concrete work. Core tests, if required, shall be evaluated in accordance with the requirements of ACI 318-77.

3. The testing agency shall further provide quality control inspection and testing of materials used in concrete. The following inspection and tests shall be on all equipment and materials on a random basis:
 - a. Fineness modulus and gradation of sand
 - b. Fineness modulus and gradation of coarse aggregate.
 - c. Colorimetric of sand.
 - d. Weight per cu. ft. and percent of voids on a dry rodded basis of the coarse aggregate.
 - e. Check of aggregate stock piles for contamination or intermingling of aggregates.
 - f. Check of mixing equipment and trucks for compliance with ASTM C-94.
 - g. Absorption of stone and sand.

END OF SECTION 32 1350

**SECTION 32 1725
PAVEMENT MARKINGS**

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The work under this Section shall consist of furnishing all labor, equipment, materials and services for the proper placement and installation of all pavement markings in accordance with the requirements shown on the Plans and the provisions of these Specifications.

1.2 DELIVERY, STORAGE, AND HANDLING

- A. The Contractor shall deliver paint to site in sealed and labeled containers. Upon the Engineer's request, the Contractor shall make containers available for inspection to verify acceptance of the product. Paint shall be stored at a minimum ambient temperature of 45°F and a maximum of 90°F in well ventilated areas, unless required otherwise by the manufacturer's instructions.

1.3 RELATED DOCUMENTS

- A. All pavement markings shall be in accordance with latest edition of the "Manual of Uniform Traffic Control Devices (MUTCD)" published by the Federal Highway Administration and the North Carolina Supplement to the MUATCD.

PART 2 - PRODUCTS

2.1 MATERIALS

A. STANDARDS

- 1. All pavement markings shall conform to the North Carolina Department of Transportation Standard Roadway Specifications, Section 1087 Pavement Markings, latest edition.
- 2. The following are minimum requirements and shall govern except all local, state and/or federal highway or transportation department standard specifications shall govern when their requirements are in excess thereof.

B. PAINT

Paint shall be chlorinated rubber-alkyd type meeting the requirements of AASHTO M 248 (FS TT-P-II5), Type III factory mixed, quick drying and non-bleeding.

C. TRAFFIC AND LINE MARKINGS

- 1. Unless otherwise noted, paint for traffic and line markings shall be white in color.
- 2. Dimensions and spacing of markings shall be in accordance with MUTCD and as indicated in the pavement markings detail included in the Contract Drawings.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

- A. The Contractor shall insure that the pavement surface to be painted shall be clean and dry before application. All surface contamination such as oil, grease, dirt, foreign matter, or other deleterious materials shall be removed by the Contractor prior to the application of paint.

3.2 INSTALLATION

- A. No paint shall be applied when the atmospheric, surface, or material temperature is less than 40°F or when the relative humidity is greater than 85%.
- B. No paint shall be applied until the layout and placement has been verified by the Engineer.
- C. Paint shall be applied with mechanical equipment to produce uniform straight edges in strict compliance with the manufacturer's instructions. Paint shall be applied in two (2) coats at the manufacturer's recommended rates.

END OF SECTION 32 1725

Site Improvements For Asheville High

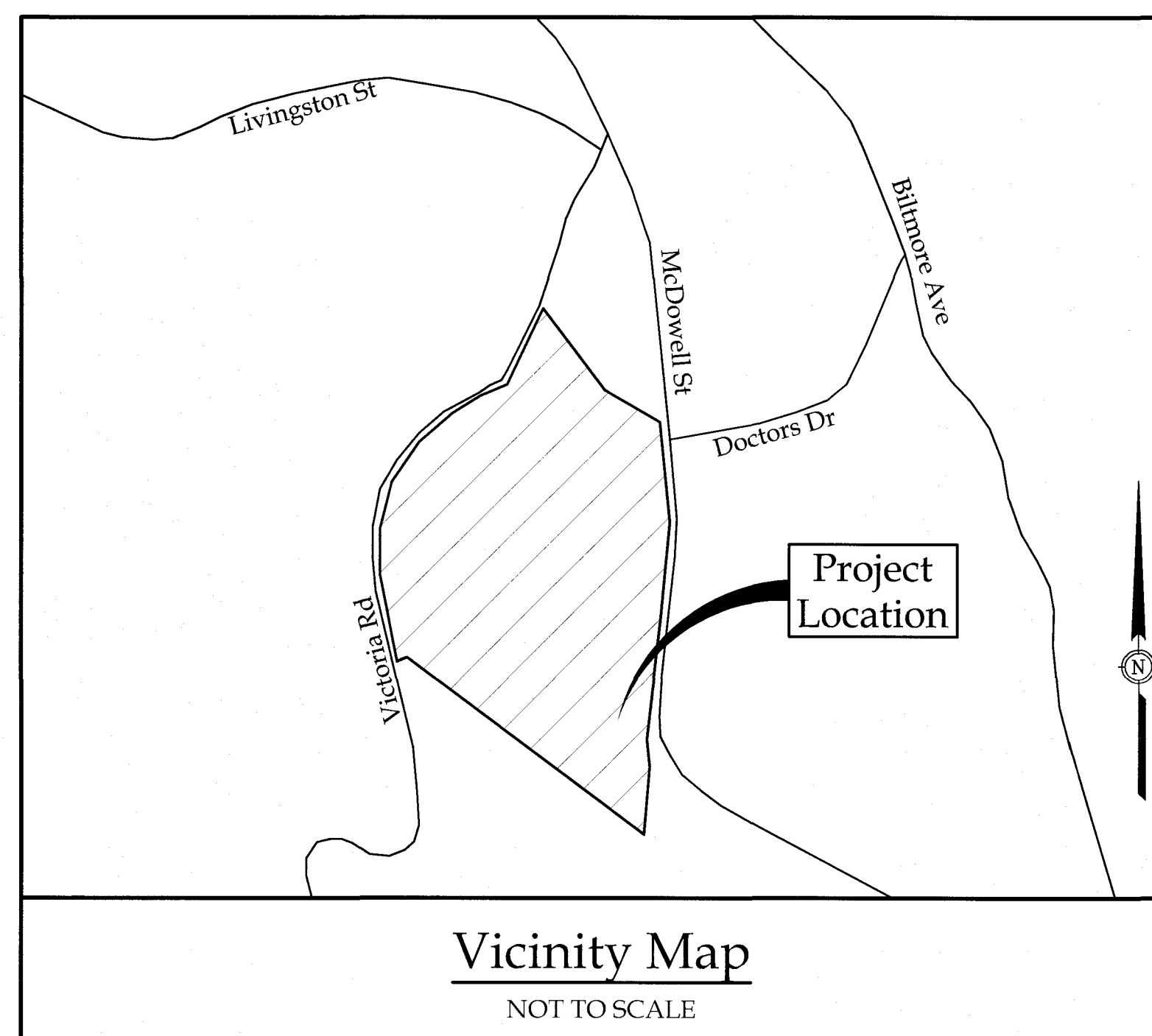
ASHEVILLE, NORTH CAROLINA

Index of Drawings

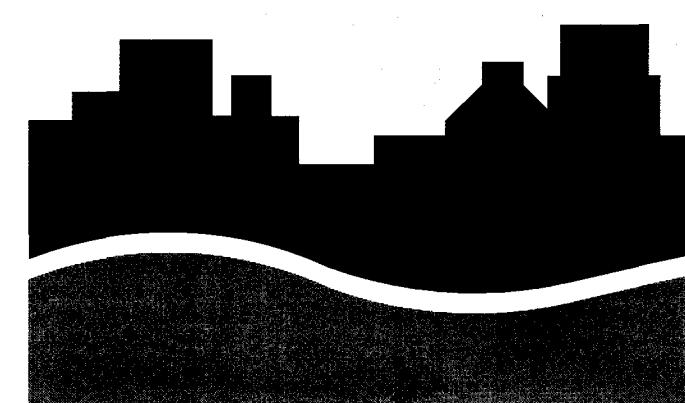
Owner/Developer: Asheville City Schools

Contact: Tim Holcombe
828.350.6194
85 Mountain Street
Asheville, North Carolina 28801

PIN: 9648-32-7199



- G1. Cover Sheet
- C1. Overall Site
- C2. Existing Conditions
- C3. Demolition
- C4. Layout
- C5. Paving Identification
- C6. Landscaping
- D1. Details
- D2. Details
- D3. Details



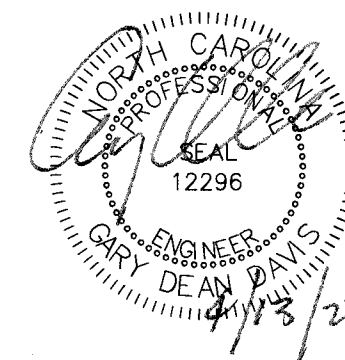
Davis CivilSolutions, PA

Site/Infrastructure • Engineering/Planning

135-A Charlotte Highway • Asheville, North Carolina 28803
828.299.9449 PH • www.daviscivilsolutions.com

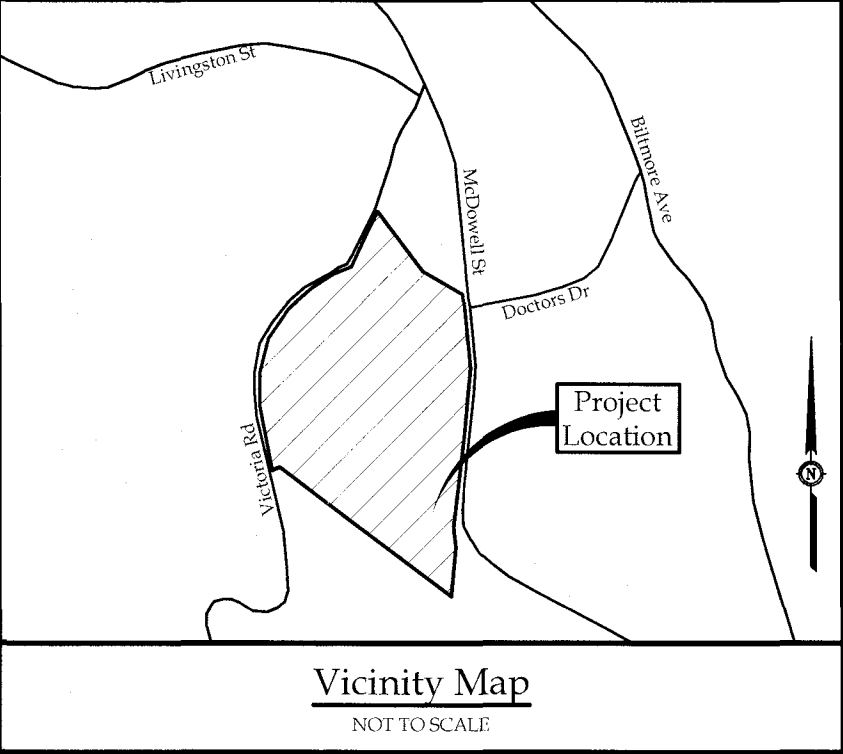
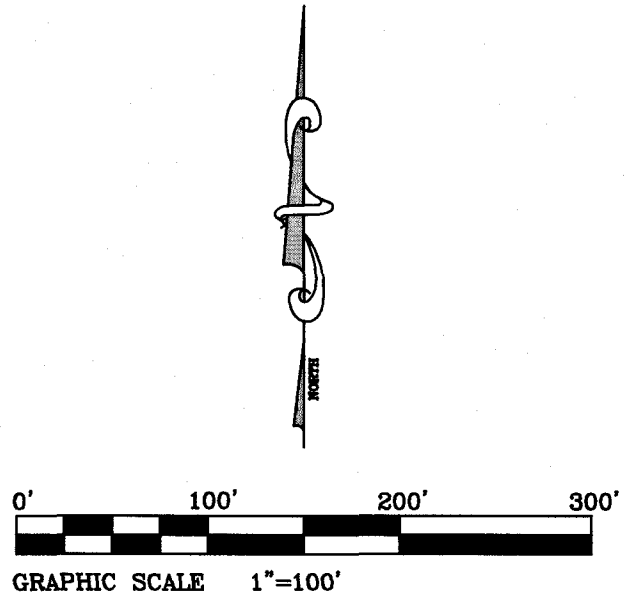
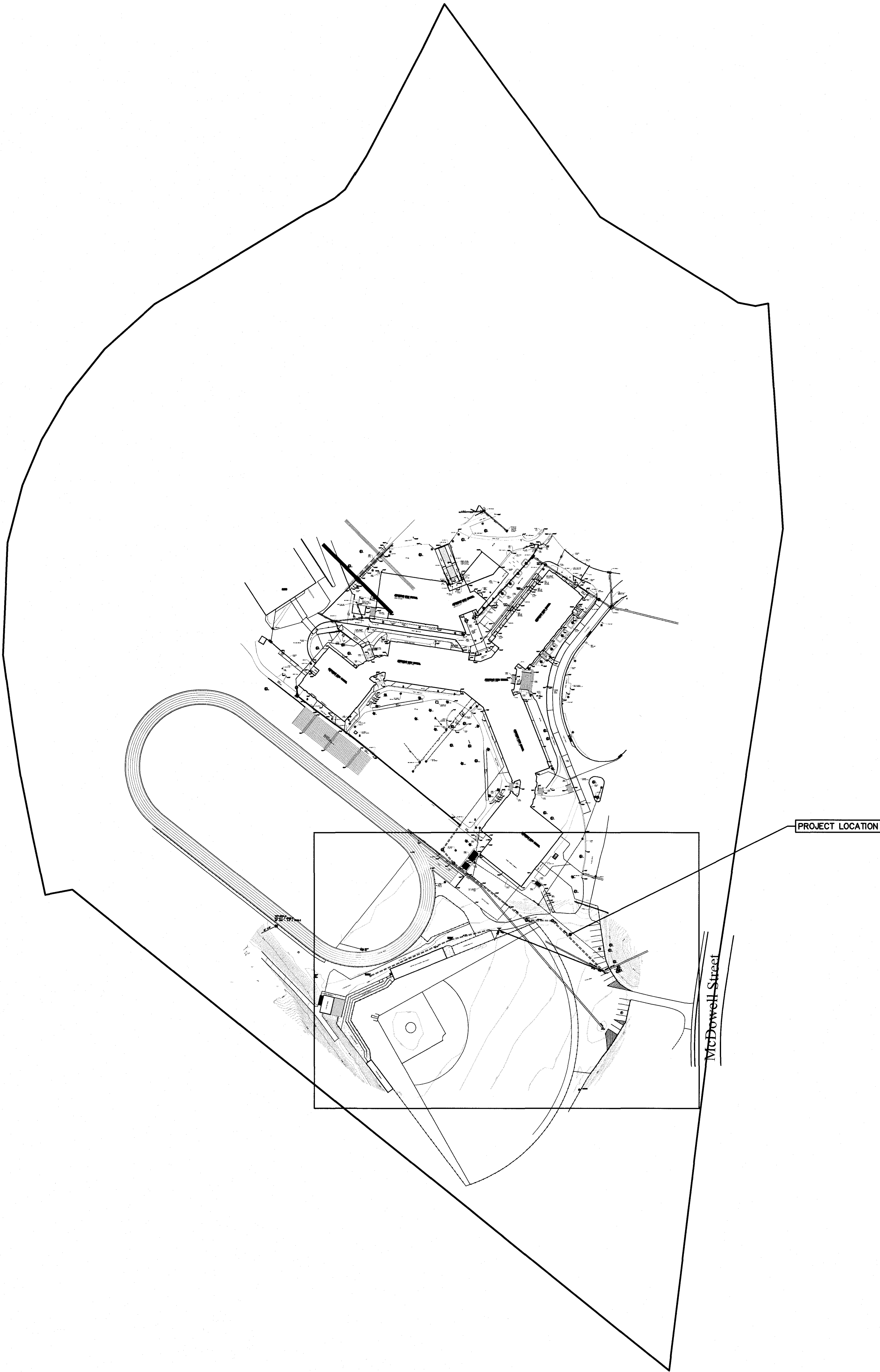
THIS DOCUMENT AND THE INFORMATION PROVIDED HEREIN IS COPYRIGHTED
CONFIDENTIAL MATERIAL AND IS THE PROPERTY OF DAVIS CIVILSOLUTIONS, P.A.
PROVIDED AS AN INSTRUMENT OF SERVICE. THIS DOCUMENT MAY NOT BE COPIED,
REPRODUCED, ALTERED, PROVIDED TO ANY OTHER PARTY, OR USED FOR ANYTHING
OTHER THAN THE SPECIFIC PROJECT IDENTIFIED OR REFERRED TO HEREIN, OR USED
FOR EXTENSION TO THIS PROJECT IN PART OR IN WHOLE, WITHOUT THE EXPRESS
WRITTEN CONSENT OF DAVIS CIVILSOLUTIONS, P.A.

COPYRIGHT 2023
DAVIS CIVILSOLUTIONS, P.A.
ALL RIGHTS RESERVED



April 13, 2023

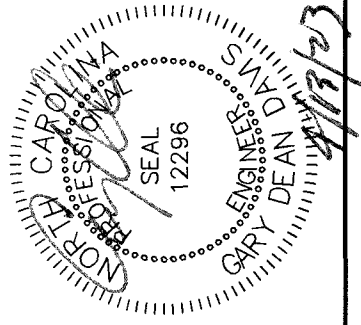
Revision	Date	Description



DEVELOPMENT DATA BLOCK	
OWNER/DEVELOPER:	CITY OF ASHEVILLE
CONTACT:	TIM HOLT COMBE
PHONE:	828.350.694
ADDRESS:	85 MOUNTAIN STREET ASHEVILLE, NORTH CAROLINA 28801
PIN:	9648-32709
PHYSICAL ADDRESS:	419 MCDOWELL STREET ASHEVILLE, NORTH CAROLINA 28801
PROPERTY SIZE:	39.7AC.
ZONING DISTRICT:	INST

THIS DOCUMENT AND THE INFORMATION PROVIDED HEREIN IS COPYRIGHTED MATERIAL AND IS THE PROPERTY OF DAVIS CIVILSOLUTIONS, P.A. PROVIDED AS AN INSTRUMENT OF SERVICE. THIS DOCUMENT MAY NOT BE COPIED, REPRODUCED, ALTERED, PROVIDED TO ANY OTHER PARTY, OR USED FOR ANYTHING OTHER THAN THE EXPLICIT PROJECT IDENTIFIED HEREIN. ANY REUSE OR EXTENSION TO THIS PROJECT IN PART OR IN WHOLE WITHOUT THE EXPRESS WRITTEN CONSENT OF DAVIS CIVILSOLUTIONS, P.A. IS PROHIBITED.

COPYRIGHT 2023
DAVIS CIVILSOLUTIONS, P.A.
ALL RIGHTS RESERVED



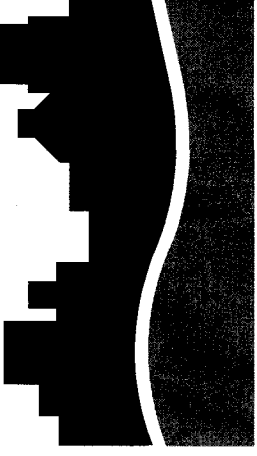
Site Improvements For Asheville High

ASHEVILLE, NORTH CAROLINA

Job No: 21109
Date: April 13, 2023
Scale: 1" = 100'
Revision:

Overall Site

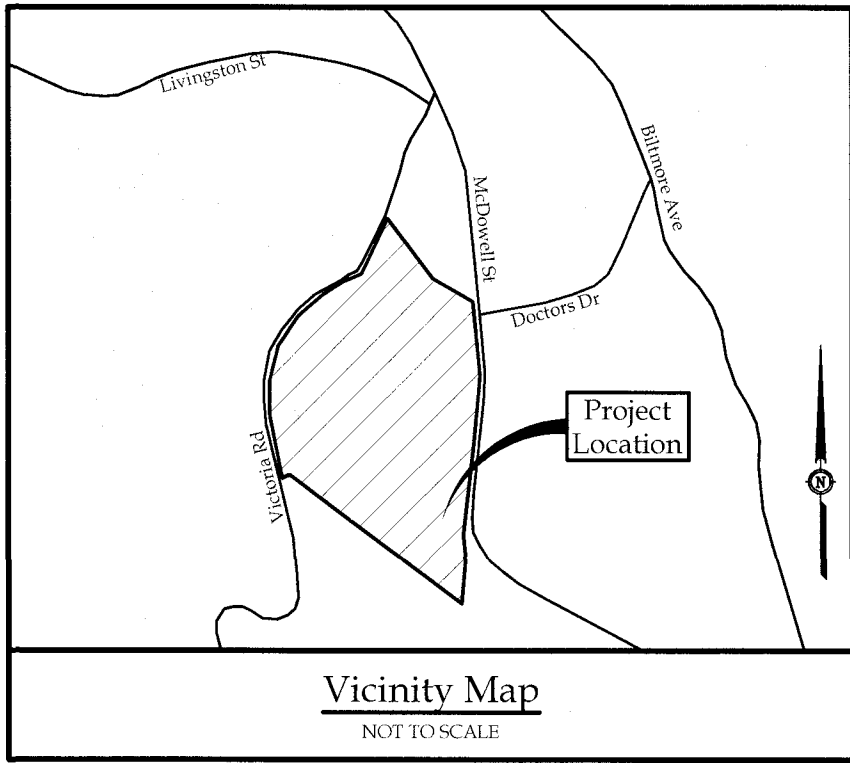
Sheet
C1



Davis CivilSolutions, PA
Site/Infrastructure Engineering/Planning
135-A Charlotte Highway • Asheville, North Carolina 28803
828.299.9449 P14



ROADWAY CENTERLINE DATA				
CURVE	RADIUS	CHORD BEARING AND DISTANCE	ARC LENGTH	
C1	36.00'	N 85°-56'-59" E 22.49'	22.88'	



DEVELOPMENT DATA BLOCK	
OWNER/DEVELOPER:	CITY OF ASHEVILLE
CONTACT:	TIM HOLCOMBE
PHONE:	828.350.694
ADDRESS:	85 MOUNTAIN STREET ASHEVILLE, NORTH CAROLINA 28801
PIN:	9648-32-709
PHYSICAL ADDRESS:	419 MCDOWELL STREET ASHEVILLE, NORTH CAROLINA 28801
PROPERTY SIZE:	39.7 AC.
ZONING DISTRICT:	INST
PARKING SPACE INFORMATION:	
TOTAL EXISTING PARKING SPACES:	
APPROX. 384 PARKING SPACES OF THOSE, 8 HANDICAPPED OF THOSE, 7 VAN ACCESSIBLE	
PROPOSED ADDITION OF 1 VAN ACCESSIBLE HANDICAPPED PARKING SPACE	

Davis CivilSolutions, PA
Site/Infrastructure Engineering/Planning
135-A Charlotte Highway Asheville, North Carolina 28803
828.293.4449/714

THIS DOCUMENT AND THE INFORMATION PROVIDED HEREIN IS COPYRIGHTED CONFIDENTIAL MATERIAL AND IS THE PROPERTY OF DAVIS CIVILSOLUTIONS, P.A. PROVIDED AS AN INSTRUMENT OF SERVICE. THIS DOCUMENT MAY NOT BE COPIED, REPRODUCED, ALTERED, OR USED FOR ANY OTHER PURPOSE OR REFERRED TO IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF DAVIS CIVILSOLUTIONS, P.A.

CONTRACT 2023
DAVIS CIVILSOLUTIONS, P.A.
ALL RIGHTS RESERVED

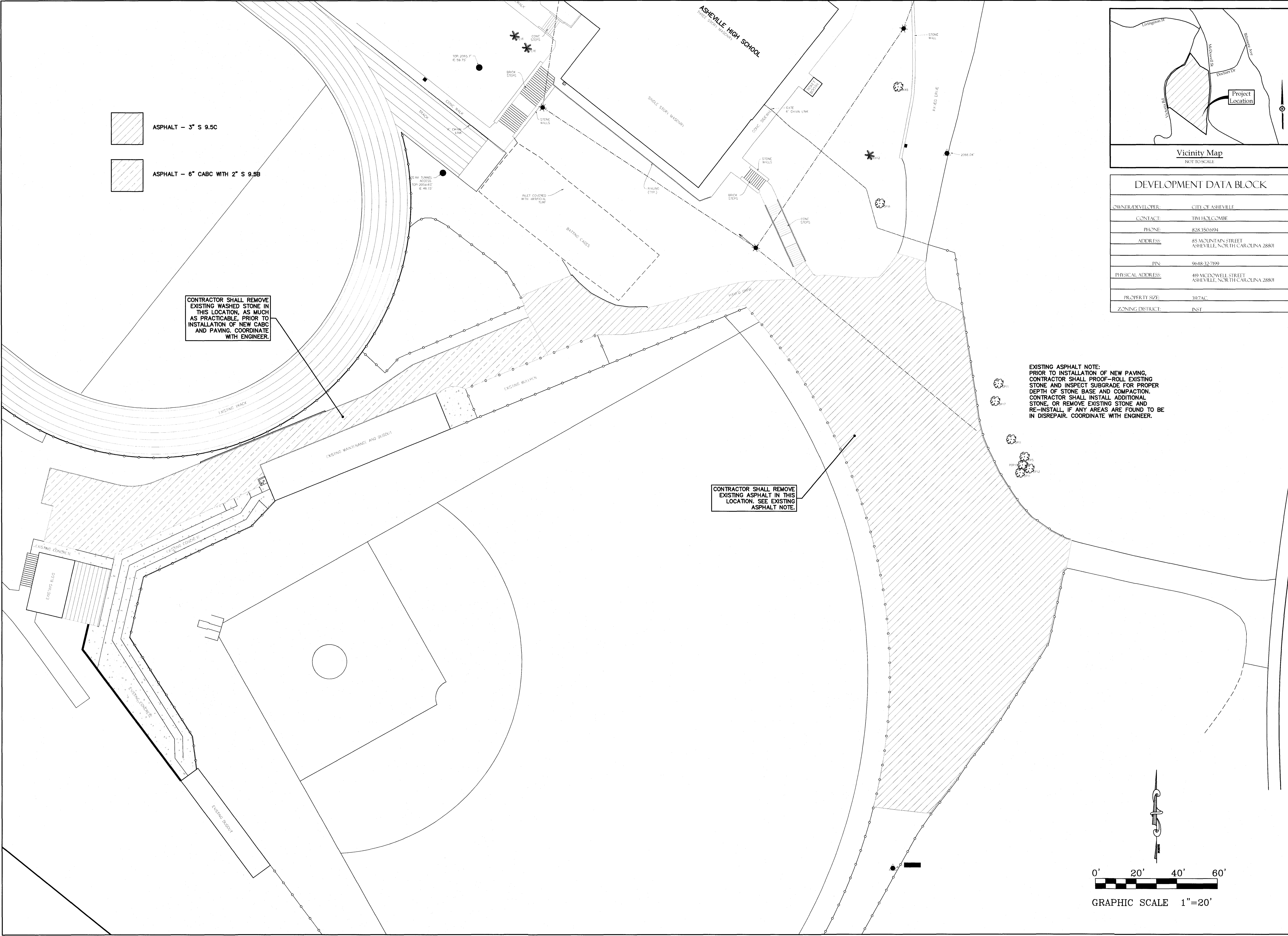
CAROLINA
SEAL
1/2586
DEAN
9/15/23

Site Improvements For
Asheville High
ASHEVILLE, NORTH CAROLINA

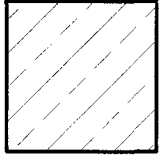
Job No. 21109
Date: April 13, 2023
Scale: 1"=20'
Revision:

Layout

Sheet
C4



ASPHALT - 3" S 9.5C

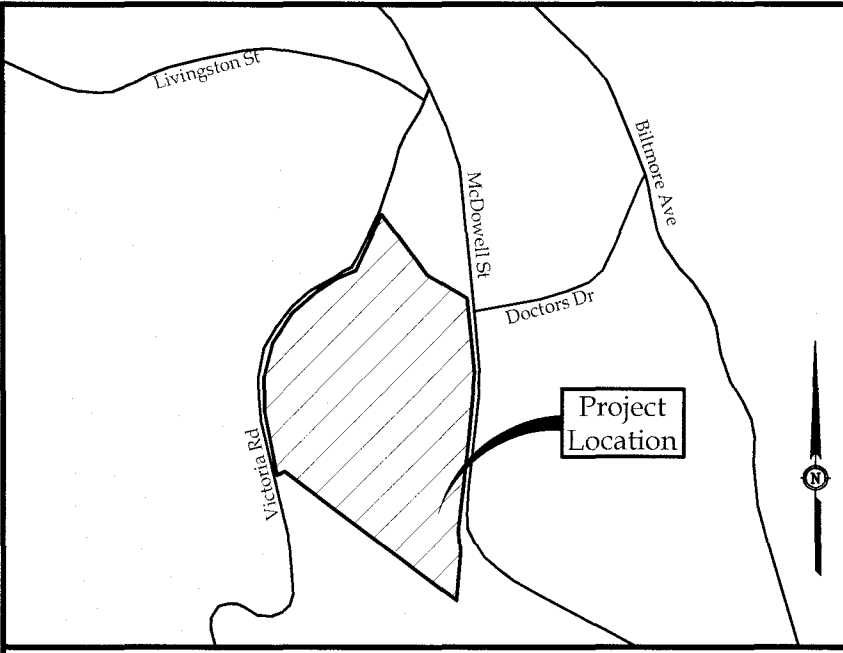


ASPHALT - 6" CABC WITH 2" S 9.5B

CONTRACTOR SHALL REMOVE EXISTING WASHED STONE IN THIS LOCATION, AS MUCH AS PRACTICABLE, PRIOR TO INSTALLATION OF NEW CABC AND PAVING. COORDINATE WITH ENGINEER.

CONTRACTOR SHALL REMOVE EXISTING ASPHALT IN THIS LOCATION. SEE EXISTING ASPHALT NOTE.

EXISTING ASPHALT NOTE:
PRIOR TO INSTALLATION OF NEW PAVING, CONTRACTOR SHALL PROOF-ROLL EXISTING STONE AND INSPECT SUBGRADE FOR PROPER DEPTH OF STONE BASE AND COMPACTION. CONTRACTOR SHALL INSTALL ADDITIONAL STONE, OR REMOVE EXISTING STONE AND RE-INSTALL, IF ANY AREAS ARE FOUND TO BE IN DISREPAIR. COORDINATE WITH ENGINEER.



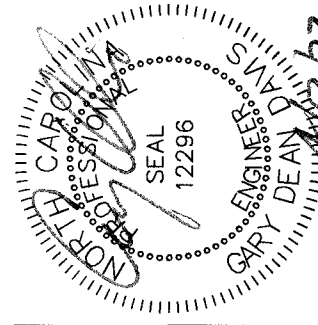
Vicinity Map
NOT TO SCALE

DEVELOPMENT DATA BLOCK

OWNER/DEVELOPER:	CITY OF ASHEVILLE
CONTACT:	TIM HILLCOMBE
PHONE:	828.350.6094
ADDRESS:	85 MOUNTAIN STREET ASHEVILLE, NORTH CAROLINA 28801
PIN:	9648-32-7899
PHYSICAL ADDRESS:	419 MCDOWELL STREET ASHEVILLE, NORTH CAROLINA 28801
PROPERTY SIZE:	39.7AC
ZONING DISTRICT:	INST

THIS DOCUMENT AND THE INFORMATION PROVIDED HEREIN IS CONSIDERED THE PROPERTY OF DAVIS CIVILSOLUTIONS, P.A. PROVIDED AS AN INSTRUMENT OF SERVICE. THIS DOCUMENT MAY NOT BE COPIED, REPRODUCED, ALTERED, PROVIDED TO ANY OTHER PARTY, OR USED FOR ANYTHING OTHER THAN THE SPECIFIC PROJECT IDENTIFIED OR REFERRED TO HEREIN, OR USED FOR EXTENSION OF THIS PROJECT, IN WHOLE OR IN PART, WITHOUT THE EXPRESS WRITTEN CONSENT OF DAVIS CIVILSOLUTIONS, P.A.

COPYRIGHT 2023
DAVIS CIVILSOLUTIONS, P.A.
ALL RIGHTS RESERVED



Site Improvements For
Asheville High
ASHEVILLE, NORTH CAROLINA

Job No: 21109
Date: April 13, 2023
Scale: 1"=20'
Revision:

Paving Identification

GENERAL CONSTRUCTION NOTES

1. FINISH GRADE TOLERANCES SHALL BE AS NOTED IN THE SPECIFICATIONS. THE ENGINEER MAY MAKE GRADE CHANGES AS REQUIRED IN THE FIELD WITHOUT EFFECTING THE UNIT BID PRICE FOR UNCLASSIFIED EXCAVATION.
2. UNLESS OTHERWISE STATED, ALL FILL AREAS SHALL BE CONSTRUCTED IN LAYERS OF 8" MAXIMUM THICKNESS, WITH WATER ADDED OR SOIL CONDITIONED TO THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE ENGINEER AND COMPACTED WITH A SHEEP'S FOOT ROLLER TO A COMPACTION EQUAL TO OR GREATER THAN 95% (100% IN THE TOP 2' OF THE SUB GRADE BELOW ROADWAYS, PARKING LOTS, AND SLABS) OF THE DENSITY OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH THE STANDARD PROCTOR METHOD OF MOISTURE-DENSITY RELATIONSHIP TEST, ASTM D698 OR AASHTO-99 UNLESS SPECIFIED IN OTHER SPECIFICATIONS. COPIES OF COMPACTION REPORTS SHALL BE PROVIDED TO THE LOCAL REGULATORY AGENCY, WHERE REQUIRED.
3. ENTIRE AREA TO BE GRADED SHALL BE CLEARED AND GRUBBED. NO FILL SHALL BE PLACED ON ANY AREA NOT CLEARED AND GRUBBED.
4. ALL SOIL EROSION CONTROL MEASURES REQUIRED BY THE GRADING PLAN SHALL BE PERFORMED PRIOR TO GRADING, CLEARING OR GRUBBING. ALL EROSION CONTROL DEVICES SUCH AS SILT FENCES, ETC., SHALL BE MAINTAINED IN WORKABLE CONDITION FOR THE LIFE OF THE PROJECT BY THE CONTRACTOR AT HIS EXPENSE. EROSION CONTROL FACILITIES SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT ONLY ON THE ENGINEER'S APPROVAL. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO CLEARING AND GRUBBING UNLESS OTHERWISE SPECIFIED. IF DURING THE LIFE OF THE PROJECT, A STORM CAUSES SOIL EROSION WHICH CHANGES FINISH GRADES OR CREATES "GULLIES" AND "WASHED AREAS", THESE SHALL BE REPAIRED AT NO ADDITIONAL COST, AND ALL SILT WASHED OFF OF THE PROJECT SITE ONTO ADJACENT PROPERTY SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST. THE CONTRACTOR SHALL ADHERE TO ANY APPROVED EROSION CONTROL PLANS WHETHER INDICATED IN THE CONSTRUCTION PLANS OR UNDER SEPARATE COVER.
- EROSION CONTROL IS FIELD PERFORMANCE BASED AND ADDITIONAL SILT FENCE, TEMPORARY SEDIMENT BASINS AND OTHER MEASURES MAY NEED TO BE INSTALLED IN ADDITION TO THE APPROVED PLAN AS NECESSARY. MEASURES INDICATED ON THE DRAWINGS CAN AND SHOULD BE ADJUSTED TO ASSURE MAXIMUM PROTECTION OF THE SITE.
5. DISPOSABLE MATERIAL.
- A. CLEARING AND GRUBBING WASTES SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR AT HIS EXPENSE, UNLESS SPECIFIED OTHERWISE.
- B. SOLID WASTES TO BE REMOVED, SUCH AS SIDEWALKS, CURBS, PAVEMENT, ETC., MAY BE PLACED IN SPECIFIC DISPOSAL AREAS Delineated ON THE PLANS WITH THE PRIOR APPROVAL OF THE ENGINEER OR SHALL BE REMOVED FROM THE SITE AS REQUIRED BY THE SPECIFICATIONS. THIS MATERIAL SHALL HAVE A MINIMUM COVER OF 2'. THE CONTRACTOR SHALL MAINTAIN SPECIFIED COMPACTION REQUIREMENTS IN THESE AREAS. WHEN DISPOSAL SITES ARE NOT PROVIDED, THE CONTRACTOR SHALL REMOVE THIS WASTE FROM THE SITE AND PROPERLY DISPOSE OF IT AT HIS EXPENSE.
- C. ABANDONED UTILITIES SUCH AS CULVERTS, WATER PIPE, HYDRANTS, CASTINGS, PIPE APPURTENANCES, UTILITY POLES, ETC., SHALL BE THE PROPERTY OF THE SPECIFIC UTILITY AGENCY, OR COMPANY HAVING JURISDICTION. BEFORE THE CONTRACTOR CAN REMOVE, DESTROY, SALVAGE, REUSE, SELL, OR STORE FOR HIS OWN USE ANY ABANDONED UTILITY, HE MUST PRESENT TO THE OWNER WRITTEN PERMISSION FROM THE UTILITY INVOLVED.
- D. ON SITE BURNING IS AN ACCEPTABLE METHOD OF DISPOSING OF FLAMMABLE WASTES WHERE ALLOWED BY LOCAL CODES. WHEN BURNING IS ANTICIPATED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND MEETING GOVERNING CODES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR HIS REPRESENTATIVE AS TO THE SPECIFIC LOCATION OF BURNING AND SHALL PROVIDE COPIES OF SECURED PERMITS. AFTER BURNING IS COMPLETED, PURE ASH MAY BE DISPOSED OF BY MIXING WITH FILL DIRT UPON THE APPROVAL OF THE ENGINEER. ALL MATERIAL NOT TOTALLY BURNED SHALL BE DISPOSED OF AS SPECIFIED IN "B" ABOVE. THE CONTRACTOR SHALL NOT HOLD UP WORK PROGRESS FOR THE PURPOSE OF WAITING FOR A "BURNING DAY".
6. IN THE EVENT EXCESSIVE GROUNDWATER OR SPRINGS ARE ENCOUNTERED WITHIN THE LIMITS OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL NECESSARY UNDER DRAINS AND STONE AS DIRECTED BY THE ENGINEER AND AS APPROVED BY PERMITTING FROM THE REGULATORY AGENCIES. ALL WORK SHALL BE PAID BASED UPON UNIT BIDS, UNLESS SPECIFIED OTHERWISE.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OR ADJUSTMENT OF ALL UTILITY SURFACE ACCESSSES WHETHER HE PERFORMS THE WORK OR A UTILITY COMPANY PERFORMS THE WORK.
8. THE CONTRACTOR SHALL CONTROL ALL "DUST" BY PERIODIC WATERING AND SHALL PROVIDE ACCESS AT ALL TIMES FOR PROPERTY OWNERS WITHIN THE PROJECT AREA AND FOR EMERGENCY VEHICLES. ALL OPEN DITCHES AND HAZARDOUS AREAS SHALL BE CLEARLY MARKED IN ACCORDANCE WITH THE SPECIFICATIONS.

NOTE-1

PRECAST CONCRETE CONSTRUCTION NOTES

1. ALL PRECAST COMPONENTS SHALL MEET REQUIREMENTS ASTM C-478, LATEST REVISION, AND ASTM C-890.
2. ALL "FORMED IN PLACE" CONCRETE SHALL BE CLASS "B", 4000 PSI MIN.
3. ALL PRECAST SECTIONS SHALL BE CONSTRUCTED PLUMB.
4. IF MANHOLES OR VAULTS ARE SET IN LOCATION OF HIGH WATER TABLE OR UNDERGROUND WATER IS ENCOUNTERED, THE CONTRACTOR SHALL INSTALL UNDER DRAINS AND STONE AS DIRECTED IN THE FIELD BY THE ENGINEER.
5. THE PRECAST SUPPLIER SHALL BE RESPONSIBLE FOR THE STRUCTURAL DESIGN OF THE STRUCTURE AND, WHEN REQUESTED BY THE ENGINEER, SHALL SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS WHICH HAVE BEEN SIGNED AND SEALED BY A REGISTERED STRUCTURAL ENGINEER.

NOTE-8

GENERAL CONSTRUCTION NOTES CONT'D.

9. ALL AREAS WHERE THERE IS EXPOSED DIRT SHALL BE SEEDED, FERTILIZED AND MULCHED ACCORDING TO THE SPECIFICATIONS. THE FINISHED SURFACE SHALL BE TO GRADE AND SMOOTH, FREE OF ALL ROCKS LARGER THAN 3", EQUIPMENT TRACKS, DIRT CLODS, BUMPS, RIDGES AND GOGGES PRIOR TO SEEDING; THE SURFACE SHALL BE LOOSENED TO A DEPTH OF 4"-6" TO ACCEPT SEED. THE CONTRACTOR SHALL NOT PROCEED WITH SEEDING OPERATIONS WITHOUT FIRST OBTAINING THE ENGINEER'S APPROVAL OF THE GRADED SURFACE. ALL SEEDING SHALL BE PERFORMED BY A MECHANICAL "HYDRO-SEEDER". HAND SEEDING SHALL BE AUTHORIZED ON AN AREA BY AREA APPROVAL BY THE ENGINEER. ALL FILL AND CUT SLOPES 2:1 HORIZONTAL TO VERTICAL, OR STEEPER, SHALL BE COVERED, AFTER SEEDING, WITH EROSION CONTROL MATTING CONSISTING OF BIODEGRADABLE STRAW WITH NATURAL FIBER OR BIODEGRADABLE NETTING, APPROVED BY THE ENGINEER.
10. WHERE SPECIFIED, STORM DRAIN PIPE SHALL BE CORRUGATED METAL PIPE (CMP) CONFORMING TO AASHTO M-36, WITH PREROLLED ENDS TO ACCOMMODATE CORRUGATED COUPLING BANDS. 18" PIPE SHALL BE 16 GAUGE, 24" AND 30" PIPE SHALL BE 14 GAUGE AND 36" PIPE AND OVER SHALL BE 12 GAUGE AS SPECIFIED ON THE PLANS. PIPE AND COUPLING BANDS SHALL CONFORM TO NCDOT 1032-3 FOR PLAIN PIPE OR 1032-4(A) FOR BITUMINOUS COATED AND PARTIALLY PAVED PIPE. DIMPLE BANDS SHALL NOT BE USED.
- WHERE SPECIFIED, STORM DRAIN PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) CONFORMING TO AASHTO M-170, AS CONTAINED IN NCDOT STANDARD SPECIFICATION 1032-9 FOR WALL "B" TYPE.
- WHERE SPECIFIED, ALL STORM DRAIN PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE), CORRUGATED EXTERIOR, SMOOTH WALL INTERIOR, WITH SOIL TIGHT JOINTS, BACKFILLED WITH # 57 WASHED STONE UP TO MIN. 6" OVER THE TOP OF THE PIPE, 12" ON EACH SIDE OF THE PIPE, AND 8" BENEATH THE PIPE. HDPE PIPE USED FOR STORM DRAINAGE DETENTION SYSTEMS SHALL BE "HANCOR BLUE SEAL" OR APPROVED EQUAL, WITH WATER TIGHT JOINTS.
- WHERE SPECIFIED, ALL STORM DRAIN PIPE SHALL BE DUAL WALL HIGH DENSITY POLYPROPYLENE (HDPP), CORRUGATED EXTERIOR, SMOOTH WALL INTERIOR, WITH GASKETED JOINTS, BACKFILLED WITH #57 WASHED STONE UP TO THE SPRING LINE OF THE PIPE, WITH 12" STONE ON EACH SIDE OF THE PIPE, AND 8" BENEATH THE PIPE. PIPES OF A DIAMETER OF 30" OR GREATER SHALL BE TRIPLE WALL, CORRUGATED STRUCTURAL CORE, SMOOTH EXTERIOR, WITH DOUBLE GASKETED JOINTS.
- ALL CORRUGATED METAL STORM DRAIN PIPE (CMP) SHALL BE ALUMINIZED TYPE 2 CORRUGATED STEEL MANUFACTURED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO M-36. THE PIPE SHALL BE MANUFACTURED FROM ALUMINIZED STEEL TYPE 2 MATERIAL CONFORMING TO THE REQUIREMENTS OF AASHTO M-274. ALL PIPE SHALL BE FURNISHED WITH PREROLLED ENDS AND SHALL BE JOINED WITH HUGGER BANDS. THE USE OF DIMPLE BANDS WILL NOT BE ALLOWED. PIPE THROUGH 24" DIAMETER SHALL BE 16 GAUGE, PIPE THROUGH 42" DIAMETER SHALL BE 14 GAUGE, PIPE THROUGH 54" DIAMETER SHALL BE 12 GAUGE.
11. CONTRACTOR SHALL VERIFY THE APPROPRIATENESS OF ALL ELEVATIONS BEFORE INSTALLATION OF FACILITIES AND THAT THOSE ELEVATIONS CONTRIBUTE TO THE PROPER INTENDED PERFORMANCE OF THE INSTALLED FACILITIES.
12. CATCH BASINS CAST-IN-PLACE SHALL CONFORM TO THE REQUIREMENTS OF NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (LATEST EDITION) ARTICLES 840-1 THROUGH 840-3. CURB INLET CATCH BASIN SHALL CONFORM TO NCDOT STANDARD DETAILS 840.02 THROUGH 840.04. DROP INLETS SHALL CONFORM TO STANDARD DETAIL 840.14. JUNCTION BOXES SHALL CONFORM TO STANDARD DETAIL 840.31.
13. CURB INLET FRAME, GRATE AND HOOD SHALL BE NEENAH R-32330, PRODUCTS BY DEWEY BROS., U.S. FOUNDRY OR EQUAL. DROP INLET FRAME AND GRATE SHALL BE NEENAH R-3339A OR EQUAL. FIELD INLET COVER SHALL CONFORM TO NCDOT STANDARD DETAIL 840.04, OPENING FACING UPSTREAM.
14. CONCRETE AND MASONRY SHALL MEET THE REQUIREMENTS OF THE APPROPRIATE SECTION OF THE NCDOT STANDARD SPECIFICATIONS FOR ROAD AND STRUCTURES (LATEST EDITION). CONCRETE SHALL BE CLASS A OR B, 4000 PSI MINIMUM, MEETING THE REQUIREMENTS OF SECTION 1000. CONSTRUCTED IN ACCORDANCE WITH SECTION 825. MASONRY SHALL MEET THE REQUIREMENTS OF SECTION 1040, CONSTRUCTED IN ACCORDANCE WITH SECTION 830 AND/OR 834.
15. TOPS OF PROPOSED FRAMES AND GRATES SHALL BE FLUSH WITH FINISHED GRADE. ALL STORM DRAIN BOXES AND MANHOLES OVER 4' IN DEPTH SHALL HAVE STEPS DIRECTLY BENEATH THE OPENING.
16. TINDALL PRE CAST CONCRETE BOXES ARE ACCEPTABLE ALTERNATIVES FOR PROPOSED CATCH BASINS WHERE APPROVED BY THE ENGINEER.
17. CONTRACTOR SHALL PROVIDE THE OWNER AND THE LOCAL REGULATORY AGENCY WITH PROOF OF ACTIVE GRADING PERMITS FOR ANY BORROW OR WASTE SITES TO BE USED, PRIOR TO CONSTRUCTION.
18. THE CONTRACTOR SHALL ASSUME MAINTENANCE OF ALL EROSION CONTROL FACILITIES LEFT ON SITE BY PREVIOUS CONTRACTORS IN THE CASE OF PHASED PROJECTS WHEN SPECIFIED BY THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL MAINTAIN, ADD TO AND/OR ADJUST ALL FACILITIES TO ASSURE MAXIMUM PROTECTION OF THE SITE.

NOTE-2

SEEDING NOTES

PERMANENT SEEDING

LAWN SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
KENTUCKY BLUEGRASS (20%)	260 LBS.
REBEL FESCUE (80%)	

SEEDING DATES

MOUNTAINS	MARCH 15 - MAY 15 AUGUST 15 - OCTOBER 15
-----------	---

SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

MULCH

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE

RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

TEMPORARY SEEDING FOR SUMMER

SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
GERMAN MILLET	40 LBS.

SEEDING DATES

MOUNTAINS	MAY 15 - AUGUST 15
PIEDMONT	MAY 1 - AUGUST 15
COASTAL PLAIN	APRIL 15 - AUGUST 15

SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

MULCH

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE

RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

NOTE-14

GENERAL CONSTRUCTION NOTES CONT'D.

19. SEED AND MULCH DENuded AREA WITHIN 14 DAYS ON DISTURBED FLAT AREAS AND 7 DAYS ON ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. GROUND COVER SHALL BE REQUIRED AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 (OR 7) CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
20. THE LOCATIONS OF ALL UTILITIES SHOWN ON THESE PLANS ARE BASED ON THE AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UTILITIES WITH THE UTILITY OWNERS PRIOR TO CONSTRUCTION.
21. ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH RESPECTIVE UTILITY.
22. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY EXISTING ITEM AND/OR MATERIAL INSIDE OR OUTSIDE THE CONTRACT LIMITS DUE TO CONSTRUCTION OPERATIONS.
23. THE GENERAL CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
24. DO NOT SCALE THESE DRAWINGS AS THEY ARE REPRODUCTIONS AND SUBJECT TO DISTORTION.
25. THE CONTRACTOR SHALL VERIFY ALL LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON THE PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE, OTHER OBSTRUCTIONS OR FROM ANY DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NON-SUBSCRIBING UTILITIES. THE CONTRACTOR(S) SHALL CONTACT NC "ONE CALL" AT (800) 632-4949 FOR ASSISTANCE IN LOCATING EXISTING UTILITIES. CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
26. THE CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
27. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL REVIEW ALL PLANS AND SPECIFICATIONS AND THE JOB SITE. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER WHO PREPARED THE PLANS OF ANY DISCREPANCIES THAT MAY REQUIRE MODIFICATIONS TO THESE PLANS OR OF ANY FIELD CONFLICTS.
28. ALL PERMITS RELATIVE TO THE PROJECT MUST BE OBTAINED, PRIOR TO CONSTRUCTION. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PERMITS ISSUED AND APPLICABLE STATE, COUNTY AND LOCAL CODES.
29. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL BUILDING DIMENSIONS.
30. CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR SHALL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THE REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY, AND HOLD THE OWNER AND DESIGN PROFESSIONAL HARMLESS OF ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, ACCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR DESIGN PROFESSIONAL.
31. ALL RECOMMENDATIONS/REQUIREMENTS OUTLINED IN THE SOILS REPORT AND ADDENDUMS TO THE SOILS REPORT CONTAINED IN THE CONTRACT DOCUMENTS SHALL BE INCORPORATED INTO THE EARTHWORK AND RELATED SPECIFICATIONS FOR THIS PROJECT.
32. IF BORROWED OR WASTE FILL MATERIAL IS GENERATED, AN APPROVED GRADING PERMIT MUST BE SECURED FOR THE BORROW OR WASTE MATERIAL SITE PRIOR TO INITIATION OF ANY LAND DISTURBING ACTIVITY.
33. UNLESS A PERMIT FROM NCDOT - DIVISION OF WASTE MANAGEMENT TO OPERATE A LANDFILL IS ON FILE FOR THE OFFICIAL SITE, ACCEPTABLE FILL MATERIAL SHALL BE FREE OF ORGANIC OR OTHER DEGRADABLE MATERIALS, MASONRY, CONCRETE AND BRICK IN SIZES EXCEEDING 12 INCHES, AND ANY MATERIALS WHICH WOULD CAUSE THE SITE TO BE REGULATED AS A LANDFILL BY THE STATE OF NORTH CAROLINA.
34. ALL CONSTRUCTED SEVERE SLOPES GREATER THAN 2:1 AND GREATER THAN FIVE (5) FEET IN HEIGHT, AN INSPECTION AND A STABILITY CERTIFICATE ARE REQUIRED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER WITH GEOTECHNICAL EXPERTISE SUFFICIENT TO PERFORM THE INSPECTION AND STABILITY ANALYSIS. FOR ALL CONSTRUCTED SEVERE SLOPES WITHIN PROPOSED OR EXISTING PUBLIC RIGHTS-OF-WAY, PERIODIC INSPECTIONS AND COMPACTION REPORTS ARE REQUIRED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER WITH GEOTECHNICAL EXPERTISE.

NOTE-2A

SEEDING NOTES

TEMPORARY SEEDING FOR FALL

SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	260 LBS.

SEEDING DATES

MOUNTAINS	AUGUST 15 - DECEMBER 15
PIEDMONT	AUGUST 15 - DECEMBER 15
COASTAL PLAIN	AUGUST 15 - DECEMBER 30

SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.

MULCH

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE

REPAIR AND RE-FERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/ACRE SWITCHGRASS (PANICUM VIRGATUM) IN LATE FEBRUARY OR EARLY MARCH.

TEMPORARY SEEDING FOR WINTER & EARLY SPRING

SEEDING MIXTURE

SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	120 LBS.
SWITCHGRASS (PANICUM VIRGATUM)	50 LBS.

SEEDING DATES

MOUNTAINS (ABOVE 2,500')	FEBRUARY 15 - MAY 15
MOUNTAINS (BELOW 2,500')	FEBRUARY 1 - MAY 1
PIEDMONT	JANUARY 1 - MAY 1
COASTAL PLAIN	DECEMBER 1 - APRIL 15

SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

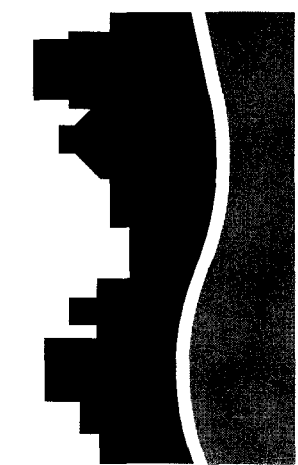
MULCH

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE

RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

NOTE-15



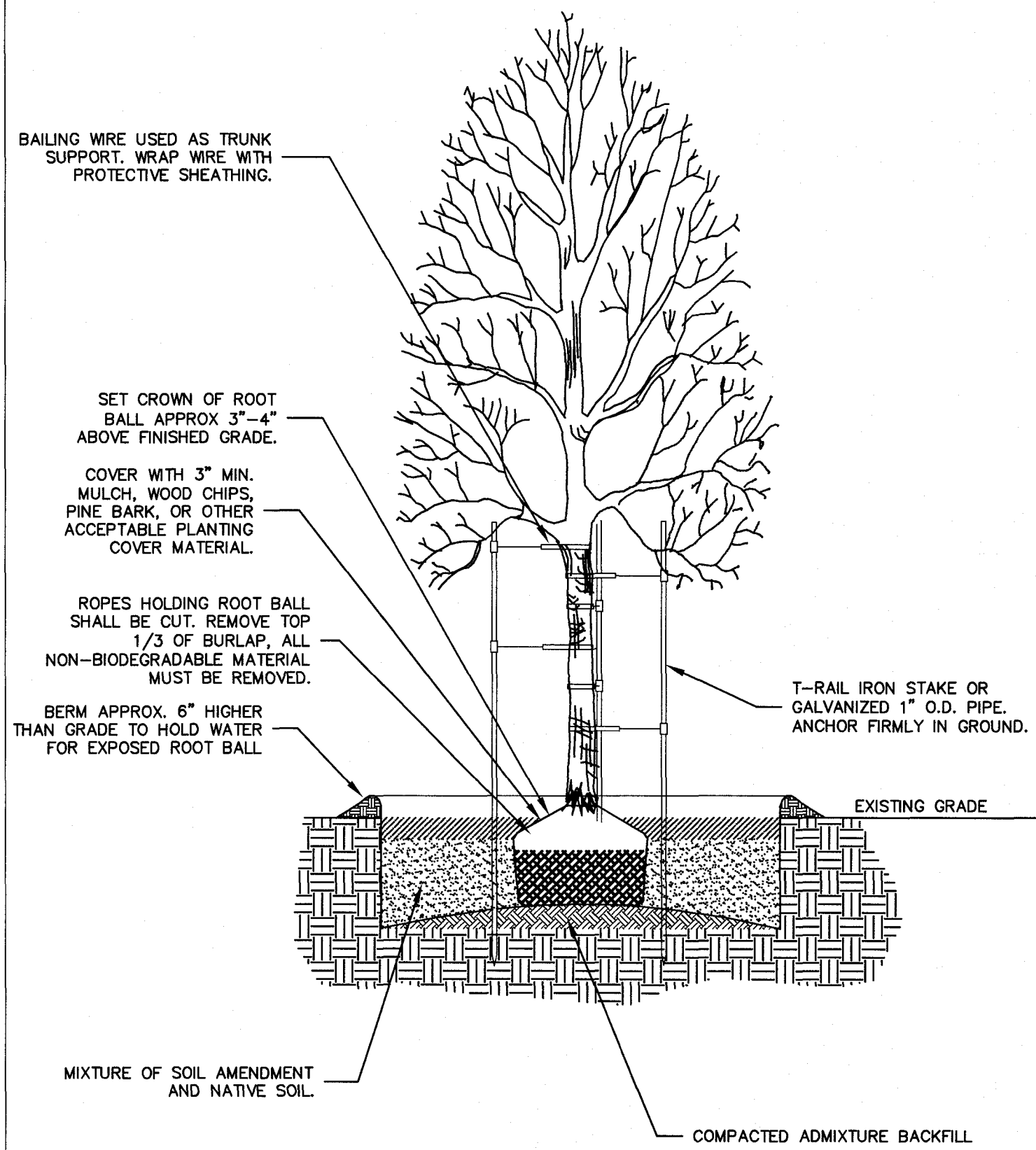
THIS DOCUMENT AND THE INFORMATION CONTAINED HEREIN ARE THE CONFIDENTIAL MATERIAL AND IS THE PROPERTY OF DAVIS CIVILSOLUTIONS, P.A. PROVIDED AS AN INSTRUMENT OF SERVICE, THIS DOCUMENT MAY NOT BE COPIED, REPRODUCED, ALTERED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN CONSENT OF DAVIS CIVILSOLUTIONS, P.A.

COPYRIGHT 2023
DAVIS CIVILSOLUTIONS, P.A.
ALL RIGHTS RESERVED



Job No.: 21109
Date: April 13, 2023
Scale: NTS
Revision:

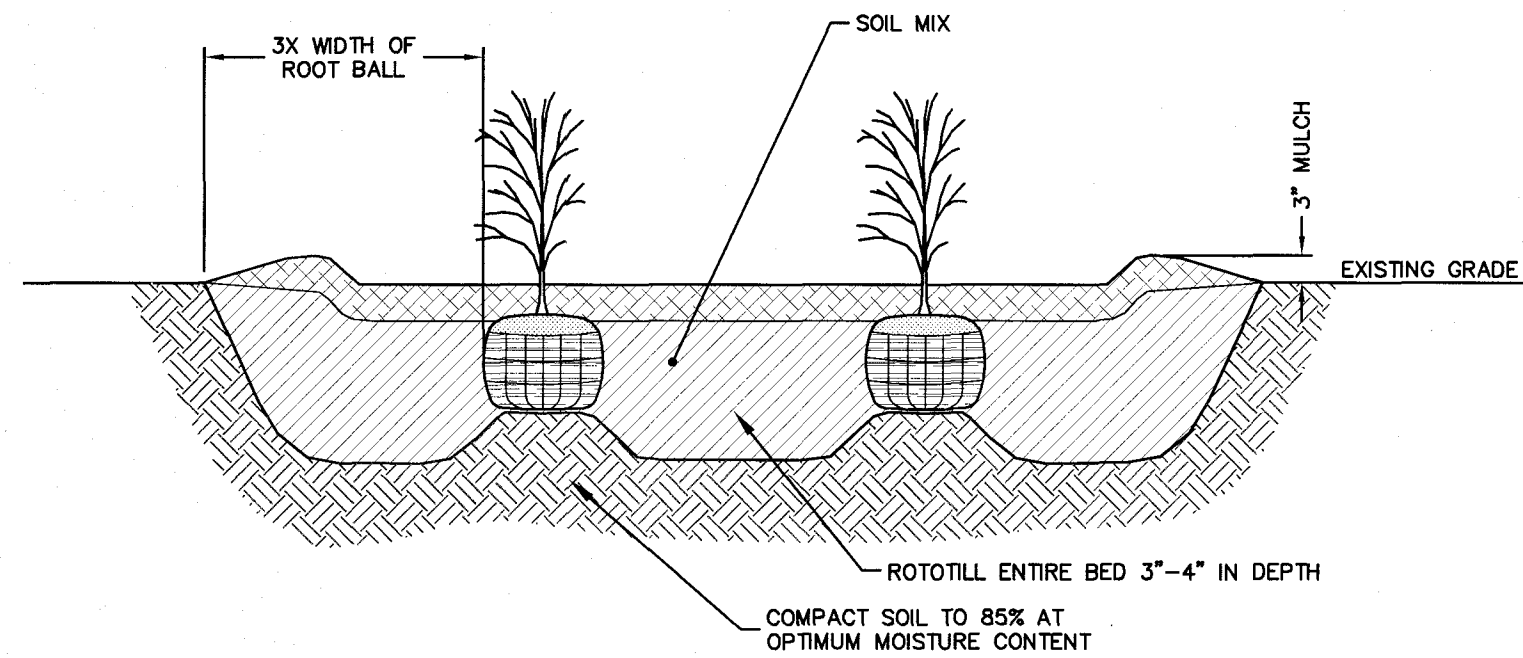
Details



STANDARD TREE PLANTING

NOT TO SCALE

ST-78



NOTES:

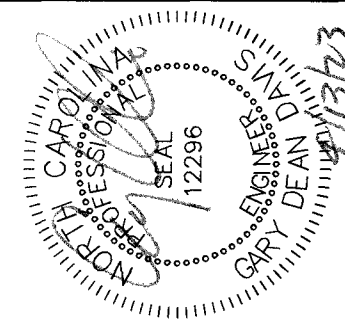
1. BEDS SHALL BE CONTOURED SMOOTHLY AND HAVE DEFINED EDGES.
2. PROPOSED BEDS SHALL BE LAID OUT AND APPROVED BY OWNER OR OWNERS REPRESENTATIVE PRIOR TO CONSTRUCTION.
3. REMOVE TOP 1/3 OF ALL BURLAP FABRIC AROUND ROOT BALL. REMOVE ALL WIRE, ROPE, ETC.
4. COMPLETELY REMOVE ALL STRINGS, RIBBONS, AND TAGS FROM PLANT.
5. TEASE OUT ROOTS ON POT BOUND PLANTS.
6. SEE PLANS FOR PLANT SPACING.
7. ALL SHRUBS SHALL BE PLANTED IN BEDS USING MULCH, WOOD CHIPS, PINE BARK OR OTHER ACCEPTABLE COVER.
8. PRUNE ALL BROKEN, DISEASED, AND WEAK LIMBS, BRANCHES, ETC. IN ACCORDANCE WITH STANDARD PRACTICE.

SHRUB PLANTING DETAIL

NOT TO SCALE

ST-78A

THIS DOCUMENT AND THE INFORMATION PROVIDED HEREIN IS CONFIDENTIAL MATERIAL AND IS THE PROPERTY OF DAVIS CIVILSOLUTIONS, P.A. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE EXPRESS WRITTEN CONSENT OF DAVIS CIVILSOLUTIONS, P.A. ALL RIGHTS RESERVED.



Site Improvements For
Asheville High
ASHEVILLE, NORTH CAROLINA

Tab No: 31109
Date: April 13, 2023
Scale: NTS
Revision:

Details

Sheet
D3

