SPECIFICATIONS

for the

GARRETT COLLEGE
MULTIPURPOSE FIELD
SITE PREPARATION

OWNER
GARRETT COLLEGE
687 Mosser Road
Mc Henry, Maryland 21541

Contract No. GC2306

PREPARED BY:

SPECS, Inc.
Consulting Engineers & Surveyors
105 South Centre Street, Suite 100
Cumberland, Maryland 21502
301-777-2510

December 7, 2022

GARRETT COMMUNITY COLLEGE
MULTIPURPOSE FIELD: SITE PREPARATION

SPECIFICATION & DRAWING INDEX

SPECIFICATION INDEX

DRAWING INDEXES

MULTI-PURPOSE FIELD SITE WORK

SPOIL PILE - Separate Set

DIVISION 0

CONDITIONS OF THE CONTRACT

SECTION 00 01 20

DIRECTORY

DIRECTORY

FURNISH AND INSTALL SYNTHETIC TURF
FOR
MULTIPURPOSE TURF FIELD
GARRETT COLLEGE

OWNER

GARRETT COLLETE
687 Mosser Road
McHenry, MD 21541

Contact: Chris Painter
Director of Facilities & Capital Projects
Email: chris.painter@garrettcollege.edu
Telephone: 301.387.3095

CIVIL ENGINEER

SPECS, Inc. Consulting Engineers & Surveyors
105 South Centre Street, Suite 100
Cumberland, MD 21502

Contact: Ray Rase
Email: ray@specseng.com
Telephone: 301.777.2510

LANDSCAPE ARCHITECTS

STEPHEN T. PARKS & ASSOCIATES
412 Allegheny Street
Hollidaysburg, PA 16648

Contact: Steve Parks
Email: STPLarch@aol.com
Telephone: 814.695.1800

SITE

Garrett College
Multipurpose Field
687 Mosser Road
McHenry, MD 21541

SECTION 00 10 00

INVITATION TO BIDDERS

GARRETT COLLEGE

EXPERIENCE. EXPLORE. EXCEL.

INVITATION TO BID
FOR GC-2306
GARRETT COLLEGE
MULTIPURPOSE FIELD:
SITE PREPARATION

GARRETT COLLEGE will receive sealed PROPOSALS for the MULTIPURPOSE FIELD: SITE PREPARATION. All associated proposal documents, including a detailed scope of work, specifications and drawings, and other information for the pre-proposal meeting are available at www.garrettcollege.edu/purchasing or by emailing Ms. Chris Jones at chris.jones@garrettcollege.edu. The most responsive low bidder will be selected. See proposal documents for details.

The installation of the Synthetic Turf surfacing will be by separate contract, and has been bid separately. The selected Contractor shall coordinate with the synthetic turf installer to complete the project within the stated time frame. The selected synthetic turf installer will be identified at the Pre-Proposal meeting.

Proposals must be received by 2:00 PM local time on January 6, 2023. Proposals must be in a sealed envelope, clearly marked "GC-2306 Multipurpose Field Site Preparation – Attn: Chris Jones". Unsealed proposals or proposals delivered via fax or email will not be accepted. Two (2) paper copies of the response to the Invitation to Bid signed by an officer of the proposing company is required.

Proposals will be received until 2:00 PM on January 6, 2023, at the Garrett College Facilities Office. Bidders can also mail proposals to the following address, but proposals must be received prior to 2:00 PM on January 6, 2023. Please note that overnight delivery rarely includes Garrett County in the winter.

Garrett College
687 Mosser Road
McHenry, MD
GC-2306 Multipurpose Field: Site Preparation
Attn: Ms. Chris Jones

Bids received by the designated time will be opened shortly thereafter at a designated location in the building and read aloud at that time and at that place. Bids received after that time will not be accepted. Interested parties are invited to attend.

No bidder may withdraw bid for a period of ninety (90) calendar days after the day of the bid opening.

The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and prospective bidders shall be required to furnish to the Architect evidence of performance of similar projects of this magnitude and complication and all such information and data for this purpose as may be requested. 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 obligation of the Contract and to complete the work contemplated therein.

Bona fide General Bidders must be licensed by the State of Maryland.

A Pre-Bid Meeting will be held at the project site, Garrett College in Building 750, Facilities Breakroom, on Friday, December 16, 2022 at 11:00 AM, all Contractors are encouraged to attend.

Garrett College reserves the right to reject any or all bids and to waive irregularity in the bids and in the bidding.

SECTION 00 10 50

GARRETT COLLEGE TERMS & CONDITIONS

SECTION 00 10 50 – GARRETT COLLEGE TERMS AND CONDITIONS

1. **ACCEPTANCE PERIOD:** Any proposal in response to this solicitation shall be valid for 90 days or as otherwise specified in the RFP document. At the end of the 90 days, the proposal may be withdrawn at the written request of the offeror. If the proposal is not withdrawn at that time, it remains in effect until an award is made or the solicitation is canceled.

2. **ADDENDA** The College reserves the right to amend or add to this RFP at any time prior to the RFP due date. If it becomes necessary to change or add to any part of this RFP, the College will post an addendum on the solicitation web page at: https://www.garrettcollege.edu/Purchasing. All addenda will be identified as such and will be posted at least 48 hours prior to the proposal due date. It is the sole responsibility of any prospective Offeror to monitor the web page to ensure receipt of all addenda, which shall be indicated on the acknowledgement of addenda form.

3. **ADDITIONAL ORDERS** Unless it is specifically stated to the contrary in the proposal response, the College reserves the option to place additional orders against a contract awarded as a result of this solicitation at the same terms and conditions, if it is mutually agreeable.

4. **APPLICABLE LAW** The contract shall be construed and interpreted according to Maryland law, with venue and jurisdiction in Garrett County, Maryland.

5. **ASSURANCE OF NON-CONVICTION OF BRIBERY** The Offeror hereby declares and affirms that, to its best knowledge, none of its officers, directors, or partners and none of its employees directly involved in obtaining contracts has been convicted of bribery, attempted bribery or conspiracy to bribe under the laws of any state or the Federal government.

6. **AUDIT** Offeror shall permit audit and fiscal and programmatic monitoring of the work performed under any contract issued from this solicitation. The College shall have access to and the right to examine and/or audit any records, books, documents, and papers of Offeror and any subcontractor involving transactions related to this agreement during the term of this agreement and for a period of three years after final payment under this agreement.

7. **BID AND PERFORMANCE SECURITY** If bid security is required, a bid bond, cashier's check, or bank money order in the amount indicated on the bid cover must accompany each proposal and be made payable to Garrett College. Corporate or certified checks are not acceptable. Bonds must be in a form satisfactory to the College and underwritten by a company licensed to issue bonds in the State of Maryland. If bid security fails to accompany the proposal, it shall be deemed unresponsive, unless the Director of Purchasing deems the failure to be non-substantial. Such bid bonds or checks will be returned, upon request, to all except the three lowest Offerors after the opening of price proposals, and the remaining checks or bid bonds will be returned, upon request, to all but successful Offeror(s) after award of contract. If a performance bond is required, the successful Offeror must submit an acceptable performance bond in the designated amount of the solicitation award, prior to award of contract. All bid bonds will be returned, upon request, to the successful Offeror after receipt of the performance bond.

8. **BILLING AND PAYMENT** Each invoice shall reference Garrett College's purchase order number. All invoices will be paid within sixty days unless otherwise specified in the RFP document or unless any item thereon is questioned, in which event payment will be withheld pending verification of the amount claimed and the validity of the claim.

9. **BRAND NAMES** Brand name materials used in these specifications are known and acceptable. Proposals to use alternate brands are invited as long as they are of equal type and equal or better quality. The burden of proof that alternate brands are in fact equal or better falls on the Offeror and proof must be provided to the College's satisfaction.

10. **CARE OF PREMISES** Precautions taken for safety and protection shall be in accordance with the mandatory requirements of the safety codes prevailing within the jurisdiction in which the work is to be performed. During the performance of the contract, the Contractor shall take the necessary precautions to protect all areas upon which or adjacent to which work is performed as a part of this contract. Any damage caused as a result of Contractor's neglect, directly or indirectly, shall be repaired to the College's satisfaction at the Contractor's expense.

11. **CANCELLATION** Garrett College reserves the right to cancel this solicitation or to reject all offers received, if the College's Purchasing Officer, in accordance with procedures approved by the College's Board of Trustees, determines that it is fiscally advantageous or in the best interest of the College to cancel the RFP.

12. **COMPLIANCE WITH THE IMMIGRATION REFORM AND CONTROL ACT OF 1986** The Offeror warrants that both the Offeror and/or any subcontractor of the Offeror do not and shall not hire, recruit or refer for a fee, for employment under this Agreement or any subcontract, an alien knowing the alien is an unauthorized alien and hire any individual without complying with the requirements of the Immigration Reform and Control Act of 1986 (hereinafter referred to as "IRCA"), including but not limited to any verification and record keeping requirements. The Offeror agrees to indemnify and save the College, its trustees, and/or employees harmless from any loss, costs, damages, or other expenses suffered or incurred by the College, its trustees and/or employees by reason of the Offeror's or any subcontractor of the Offeror's noncompliance with "IRCA." The Offeror agrees to defend the College, its trustees and/or employees in any proceeding, action or suit brought against the College, including but not limited to administrative and judicial proceedings, arising out of or alleging noncompliance of the Offeror with "IRCA". The Offeror recognizes that it is the Offeror's responsibility to ensure that all certifications and verifications as required by law are obtained and maintained for the applicable time period.

13. **COMPLIANCE WITH LAWS** Offeror agrees to comply, at no additional expense, with all applicable Executive orders, Federal, State, regional and local laws, ordinances, rules and regulations in effect as of the date of this agreement and as they may be amended from time to time, including but not limited to the equal employment opportunity clause set forth in 41 CFR 60-250.4.

14. **COMPLIANCE WITH GARRETT COLLEGE POLICIES** While on the College's campus, Offeror agrees to comply with all applicable Garrett College policies and procedures in effect as of the date of this agreement and as they may be amended from time to time during the term of this contract.

15. **CONFLICT OF INTEREST** As a condition of award of this contract, the Offeror represents and warrants that no employee, officer, or agent of the college has or would have a conflict of interest associated with the selection, award, or administration of this or any contract between the college and the Offeror. Such a conflict of interest would arise if an employee, officer or agent, or any member of his or her immediate family, his or her partner, or any entity, organization, or individual which employs or intents to employ any of the aforementioned individuals indicated herein, has a financial or other interest in or has or will receive a personal benefit from the vendor herein.

16. **CONTINGENT FEES** Offeror hereby declares and affirms that neither it nor any of its representatives has employed or retained any person, partnership, corporation, or other entity, other than a bona fide employee or agent working for the Offeror, to solicit or secure a contract, and that it has not paid or agreed to pay any person, partnership, corporation, or other entity, other than a bona fide employee or agent, any fee or any other consideration contingent on the making of a contract as a result of this solicitation.

17. **CONTRACT AMENDMENTS** The College, without invalidating the contract documents, may submit a written request to order extra work or to make changes to the agreement by altering, adding to, or deducting from the work, and the contract sum shall reflect such changes. Price adjustments must be accepted, in writing, by Garrett College before the supplier performs additional work on the project. The Contractor cannot accept purchase requests for products or services that are not covered in this contract or make changes to the scope of work unless a price for those products or services has been negotiated with the College.

18. **CONTRACT DEADLINES** The Contractor is contractually obligated to meet all agreed upon deadlines. Failure of the Contractor to meet any deadline is grounds for termination by default. If the Contractor defaults, the College reserves the right to assess liquidated damages and/or make an open market purchase.

19. **CONTRACT DOCUMENTS** The general conditions of this RFP, the Contractor's proposal, and the signed Agreement/Purchase Order form the contract. The documents shall have the following order of precedence: this RFP, the Agreement/PO, the Contractor's proposal.

20. **CONTRACT TERMINATION** The contract may be terminated for any of the following reasons: failure of the Contractor to meet the mandatory requirements as described in this solicitation; failure of the Contractor to meet required deadlines; failure of the Contractor to resolve problems in a timely manner; or lack of College funding.

21. **CONTRACTORS** This RFP is extended to individuals or firms as primary Contractors, and the Contractor will execute the work specified with bona fide employees. Subcontractors cannot assume the primary award of this contract on behalf of the primary Contractor, nor can the awarded Contractor be relieved of its obligation or responsibility to this contract. The College reserves the right to reject any subcontractor.

22. **COOPERATIVE PURCHASE** The College reserve the right to extend all of the terms, conditions, specifications, and unit or other prices of any contract resulting from a solicitation to any and all public bodies, subdivisions, school districts, community colleges, colleges, and universities. This is conditioned upon mutual agreement of all parties pursuant to special requirements, which may be appended thereto. The College assumes no authority, liability or obligation, on behalf of any other public entity that may use any contract resulting from this bid. All purchases and payment transactions will be made directly between the Contractor and the requesting entity. Any exceptions to this requirement must be specifically noted in the bid response.

23. **DELIVERY AND PACKING** Prices shall be FOB Destination freight prepaid to the delivery designated. Contractor shall retain title and control of all goods until they are delivered, and the contract of coverage has been completed. All risk of transportation and all related charges shall be the responsibility of the contractor. All claims for visible and concealed damage shall be filed by the Contractor. Unauthorized shipments are subject to rejection and return at Contractor's expense. All prices quoted must include delivery. All goods delivered under this contract shall be packed in accordance with accepted trade practices. No charges may be made over and above the bid price for packaging, or for deposits or containers unless specified in the bid. No charge will be allowed for cartage unless by prior written agreement. Complete deliveries must be made by the successful Offeror to the designated location as indicated on the Garrett College purchase order. A packing slip shall be included in each shipment. All deliveries must be prepaid and must be delivered to each location designated on purchase order at no additional cost. Deliveries must be made to the specified location. No collect shipments or sidewalk deliveries will be accepted.

24. **DELIVERY OF PROPOSALS** Sealed proposals must be received in the designated office by the date and time specified in the RFP in order to be considered. No late proposals will be accepted.

Late proposals will be returned to the Offeror unopened. Proposals submitted by mail must be addressed as specified in the RFP, and clearly marked to indicate the bid title. Hand delivered proposals will be accepted only at the designated office.

25. **ERRORS IN PROPOSALS** Offerors are assumed to be informed regarding conditions, requirements, and specifications prior to submitting proposals. Failure to do so will be at the Offeror's risk. Proposals already submitted may be withdrawn without penalty prior to proposal opening date. Errors discovered after proposal opening may not be corrected. In the case of an error in price extension, the unit price will govern. The intention of the Offeror must be evident on the face of the proposal.

26. **FAILURE TO DELIVER** If the Contractor fails to comply with any established delivery requirements, the College reserves the right to make an open market purchase of required items and to assess, as liquidated damages, the difference between the contract price and the actual cost incurred by the College and to invoice charges to the Contractor.

27. **FINANCIAL DISCLOSURE** The Contractor shall comply with the provisions of §13-221 of the State Finance and Procurement Article of the Annotated Code of Maryland, which requires that every business that enters into contracts, leases, or other agreements with the State of Maryland or its agencies during a calendar year under which the business is to receive in the aggregate $100,000 or more, shall, within 30 days of the time when the aggregate value of these contracts, leases or other agreements reaches $100,000, file with the Secretary of State of Maryland certain specified information to include disclosure of beneficial ownership of the business.

28. **FORCE MAJEURE** The performance of this agreement by either party is subject to actions of God, government authority, disaster, epidemic or other emergencies, fire, or riot, any of which make it illegal or impossible to provide the goods, facilities and/or services to be provide by a party under this contract. If one or more such circumstances occur, then performance under this agreement may be delayed or terminated for any one of more of such reasons by written noticed form one party to the other, in which case, neither party shall have any liability to the other, including any direct, consequential, compensatory, special, incidental, liquidated, or other damages of any nature whatsoever, by reason of such delay or termination.

29. **HAZARDOUS AND TOXIC SUBSTANCES** Offeror must comply with all applicable Federal, State, and County laws, ordinances and regulations relating to hazardous and toxic substances, including such laws, ordinances and regulations pertaining to access to information about hazardous and toxic substances, and as amended from time to time. Offeror shall provide the College with a "Material Safety Data Sheet" or in the case of a controlled hazardous waste substance, a hazardous waste manifest for all hazardous chemicals listed or subsequently added to the Chemical Information List in compliance with applicable laws, ordinances, and regulations.

30. **INDEMNIFICATION** The Contractor shall be responsible for any loss, personal injury, expense, death and/or any other damage which may occur by reason of Contractor's acts, negligence, willfulness, or failure to perform any of its obligations under this agreement. Any acts, negligence, willfulness, or failure to perform any of the Contractor's obligations under this agreement, on the part of any agent, director, partner, servant, or employee of Contractor are deemed to be the Contractor's acts. Contractor agrees to indemnify and hold harmless the College and its trustees, employees, agents and students from any claim, damage, liability, injury, expense, and/or loss, including defense costs and attorney's fees, arising directly or indirectly out of Contractor's performance under this agreement. Accordingly, the College shall notify Contractor promptly in writing of any claim or action brought against the College in connection with this agreement. Upon such notification, Contractor shall promptly take over and defend any such claim or action. The College shall have the right and option to be represented in any such claim or

action at its own expense. The College will not indemnify the Contractor. This indemnification provision shall survive the termination or completion of this agreement.

31. **INSPECTION OF PREMISES** If a site visit is recommended or required, each Offeror is responsible for visiting the site(s) prior to submitting a bid in order to observe the existing conditions affecting the work, and to obtain precise dimensions of the area(s) involved. No allowance will be made to the successful Offeror, at a later date for additional work required because of his or her failure to visit the site and/or to obtain the exact dimensions. Discrepancies, if any, must be reported to the College.

32. **INSURANCE** If a contract results from this bid, the Contractor shall maintain such insurance as will indemnify and hold harmless the College from Workmen's Compensation and Public Liability claims for property damage and personal injury, including death, which may arise from the Contractor's operations under this contract, or by anyone directly or indirectly employed by the Contractor.

33. **MARYLAND PUBLIC INFORMATION ACT** Offeror recognizes that the College is subject to the Maryland Public Information Act, Title 10, Subtitle 6 of the State Government Article of the Annotated Code of Maryland. Offeror agrees that it will provide any justification as to why any material, in whole or in part, is deemed to be confidential, proprietary information or trade secrets and provide any justification of why such materials should not be disclosed pursuant to the Maryland Public Information Act. Offerors are advised that, upon request for this information from a third party, the College will be required to make an independent determination whether the information will be disclosed.

34. **NON-ASSIGNMENT AND SUBCONTRACTING** Offeror shall not assign any contract or any rights or obligations hereunder without obtaining prior written consent of the College. No contract shall be made by Offeror with any other party for furnishing the services to be performed under a contract issued from this solicitation without the written approval of the College. These provisions will not be taken as requiring the approval of the contract of employment between Offeror and its personnel.

35. **NON-COLLUSION** Offeror certifies that it has neither agreed, conspired, connived, or colluded to produce a deceptive show of competition in the compilation of the bid or offer being submitted herewith; Offeror also certifies that it has not in any manner, directly or indirectly, entered into any agreement, participated in any collusion to fix the bid price or price proposal of the Offeror or offeror herein or any competitor, or otherwise taken any action in restraint of free competitive bidding in connection with the contract for which the bid or offer is submitted.

36. **NON-DISCRIMINATION** The Contractor agrees: (a) not to discriminate in any manner against an employee or applicant for employment because of race, color, religion, creed, age, sex, marital status, national origin, ancestry or disability of a qualified individual with a disability; (b) to include a provision similar to that contained in subsection (a), above, in any subcontract except a subcontract for standard commercial supplies or raw materials; and (c) to post and to cause subcontractors to post in conspicuous places available to employees and applicants for employment, notices setting forth the substance of this clause.

37. **NON-HIRING OF EMPLOYEES** No employee of the College or of the State of Maryland, or any department, commission, agency, or branch thereof whose duties as employees include matters relating to or affecting the subject matter of this bid shall, during the pendency and term of this contract and while an employee, become or be an employee of the contractor or any entity that is a subcontractor on this contract.

38. **NON-VISUAL ACCESS** The Offeror warrants that the information technology offered under this solicitation (1) provides equivalent access for effective use by both visual and nonvisual means; (2) will present information, including prompts used for interactive communications, in formats intended for both visual and nonvisual use; (3) if intended for use in a network, can be integrated into networks for obtaining, retrieving, and disseminating information used by individuals who are not blind or visually impaired; and (4) is available, whenever possible, without modification for compatibility with software and hardware for nonvisual access. The Offeror further warrants that the cost, if any, of modifying the information technology for compatibility with software and hardware used for nonvisual access will not increase the cost of the information technology by more than 5 percent. For purposes of this condition, the phrase 'equivalent access' means the ability to receive, use, and manipulate information and operate controls necessary to access and use information technology by nonvisual means. Examples of equivalent access include keyboard controls used for input and synthesized speech, Braille, or other audible or tactile means used for output.

39. **PATENTS** Offeror guarantees that the sale and/or use of the goods offered will not infringe upon any U.S. or foreign patent. Offeror will at his/her own expense, indemnify, protect, and save harmless the College, its trustees, employees, agents and students with respect to any claim, action, cost or judgment for patent infringement, arising out of the purchase or use of these goods.

40. **PERFORMANCE ACCEPTANCE PERIOD** The selected Contractor(s) must agree to an acceptance trial period of performance not to exceed ninety (90) consecutive calendar days. During the 90-day acceptance period, the Contractor's performance must be consistent with the specifications contained herein and the Contractors proposal. Failure to satisfy the "acceptance trial period of performance" may result in cancellation of the contract. In the event that the Contractor fails to meet all requirements, the College shall declare the Contractor's services unacceptable and the Contractor in default, and terminate all agreements, written or verbal, without penalty or obligation to the College. Further, should there be any dispute/discrepancy on acceptability of said service, decisions made by the College will prevail and be final.

41. **PREPARATION OF PROPOSAL** Proposals submitted must be hand signed by an authorized agent of the company submitting the proposal. Notification of award will be made by "Notice of Intent to Award" and/or purchase order. An Offeror may attach a letter of explanation to the proposal for clarification. Offerors will be required, if requested by Garrett College, to furnish satisfactory evidence that they are, in fact, bona fide manufacturers of or dealers in the items listed, and have a regularly established place of business. The College reserves the right to inspect any Offeror's place of business prior to award of contract to determine Offeror responsibility.

42. **PROPOSAL INSTRUMENTS** Proposal instruments include the RFP, addenda, terms and conditions, contract terms, and specifications. Proposals should be prepared simply and economically, and should provide a straightforward, concise description of the Offeror's capabilities to satisfy the requirements of the RFP. Emphasis should be on completeness and clarity of content. The Offeror will bear any, and all costs incurred in the preparation and submission of proposals.

43. **POLITICAL CONTRIBUTION DISCLOSURE** The Contractor shall comply with §§14-101-14-108, of the Election Law Article of the Annotated Code of Maryland, which requires that every person that enters into contracts, leases, or other agreements with the State, a county, or an incorporated municipality, or their agencies, during a calendar year in which the person receives in the aggregate $100,000 or more, shall file with the State Board of Elections a statement disclosing contributions in excess of $500 made during the reporting period to a candidate for elective office in any primary or general election.

44. **PRODUCT TESTING DURING TERM OF CONTRACT** Goods delivered under any contract resulting from this RFP may be tested for compliance with specifications stipulated herein. Any shipment failing to meet or comply fully with the specification requirements will be rejected. The cost of testing a representative sample of an order or shipment for acceptance shall be borne by the College unless the order is rejected for failure to meet specifications or purchase description. In such cases of rejection, the cost of testing will be charged back to the Contractor.

45. **PUBLICITY** The Contractor shall not in any way or in any form publicize or advertise in any manner the fact that it is providing services to the College without the express written approval of the College obtained in advance, for each item of advertising or publicity. However, nothing herein shall preclude the Contractor from listing the College on its routine client list for matters of references.

46. **RECORD RETENTION** If awarded a contract, Contractor shall maintain books and records relating to the subject matter of this agreement, including but not limited to all charges to the College, for a period of three years from the date of final payment under this agreement.

47. **REFERENCES** Offeror must provide at least three references from former or current clients who can confirm the Offeror's experience with projects that are similar in size or scope. All reference information must include the company's name and address and the contact's name and telephone number. The references provided must be able to confirm, without reservation, the Offeror's ability to provide the level of services requested in this solicitation. References from other higher education institutions or government agencies are preferred but not required.

48. **REGISTRATION OF CORPORATIONS NOT REGISTERED IN THE STATE OF MARYLAND** Pursuant to §7-202 et. seq. of the Corporation and Associations Article of the Annotated Code of Maryland, corporations not incorporated in the State of Maryland shall be registered with the State Department of Assessments and Taxation, 301 West Preston Street, Baltimore, Maryland 21201 before doing any interstate or foreign business in this State. A copy of the registration or application for registration may be requested by the College.

49. **REJECTIONS AND CANCELLATIONS** The College reserves the right to accept or reject any or all proposals in whole or in part for any reason. The College reserves the right to waive any informality and to make awards in the best interest of the College. The College also reserves the right to reject the proposal of any Offeror who has previously failed to perform adequately on a prior award for furnishing goods and/or services similar in nature to those requested in this RFP. The College may cancel this solicitation in whole or in part, at its sole discretion.

50. **RIGHT TO STOP WORK** If the College determines, either directly or indirectly, that the Contractor's performance is not within the specifications, terms or conditions of this RFP and/or that the quality of the job is unacceptable, the College has the right to stop the work. The stoppage of work shall continue until the default has been corrected and/or corrective steps have been taken to the satisfaction of the College. The College also reserves the right to re-solicit this contract if it is decided that performance is not within the specifications as set out.

51. **SAMPLES AND CATALOG CUTS** If samples are required, Offeror shall be responsible for delivery of samples to location indicated. Failure of the Offeror to clearly identify samples as indicated may result in rejection of the proposal. The College reserves the right to test any materials, equipment or supplies delivered to determine if the specifications have been met. Samples will not be returned.

52. **SIGNATURE** Each proposal must show the full business address and telephone number of the Offeror and be signed by the person or persons legally authorized to sign such contracts.

All correspondence concerning the RFP and contract, will be mailed, or delivered to the address shown on the proposal. No proposal will be accepted without original signature.

53. **SPECIFICATIONS AND SCOPE OF WORK** The specifications listed herein may or may not specify all technical requirements which are needed to achieve the end result. When accepting the award, the Contractor assumes the responsibility of accomplishing the task requested in this document. Any omission of parts, products, processes, etc. in the specifications are the responsibility of the Contractor and the College will not bear the responsibility of their omission. If omissions in the specifications are discovered and these omissions will impact the contract price then it is the responsibility of the Offeror to note these omissions, in writing, prior to accepting the award. If these omissions are not noted prior to award, then the Contractor's silence is deemed as full and complete acceptance and any additional costs will be borne by the Contractor.

54. **SUBCONTRACTORS** Offerors must submit the names and addresses of all subcontractors to be retained for this project. The College reserves the right to reject any subcontractors. Subcontractors shall conform in all respects to the applicable provisions specified for the prime contractor and shall be subject to approval by the College. If a subcontractor is determined to be unacceptable by the College, the firm shall substitute an acceptable subcontractor with no change in any Contract unit prices or overall Contract sum. If a firm fails, within a timely manner, to propose another subcontractor to whom the College has no objection, the College reserves the right to reject the proposal. The firm will use only those subcontractors approved by the College. All subcontractors shall comply with federal and state laws and regulations which are applicable to the services covered by the subcontractor and shall include all terms and conditions set forth herein which apply with equal force to the subcontractor, as if they were the Contractor referred to herein. The Contractor is responsible for the Contract performance, whether or not subcontractors are used.

55. **TAXES** The College is exempt from Federal and Maryland taxes. Exemption Certificates are available upon request. Offeror shall be responsible for the payment of any and all applicable taxes resulting from any award and/or any activities hereunder, including but not limited to any applicable amusement and/or sales taxes. For construction projects, in accordance with COMAR 03.06.01.22c(2)(b), the tax exemption certificate of otherwise exempt governmental entities may not be used for the purchase of materials to be incorporated into the real property on College construction projects.

56. **TERMINATION BASED ON LACK OF FUNDING** Any contract awarded as a result of this solicitation will be subject to funding and continued appropriation of sufficient funds for the contract. For purposes of this solicitation, the College's appropriating authority is deemed to be the Board of Trustees of Garrett College. Insufficient funds shall be grounds for immediate termination of the contract.

57. **TERMINATION OF CONTRACT** The College reserves the right to cancel the Contract awarded to the Contractor if, in the College's judgment, performance under the Contract is unsatisfactory. It is understood, however, that if at any time during the term of the Contract, performance there under is deemed to be unsatisfactory, the College shall so notify the Contractor in writing, and the Contractor shall correct such unsatisfactory conditions within thirty calendar days from the receipt of such notification. If such corrections are not made within the specified period, the College may terminate the Contract at that time.

58. **TERMINATION FOR DEFAULT** If an award results from this RFP, and the Contractor has not performed or has unsatisfactorily performed the contract, payment shall be withheld at the discretion of the College. Failure on the part of the contractor to fulfill contractual obligations shall be considered just cause for termination of the contract and the Contractor is not entitled to recover any costs incurred by the Contractor up to the date of termination.

59. **TERMINATION FOR THE CONVENIENCE OF THE COLLEGE** The performance of the work or services under a contract as a result of this solicitation may be terminated in whole or in part, whenever the President of Garrett College shall deem that termination is in the best interest of the College. Such determination shall be at the sole discretion of the President or his designee. In such event, the College shall be liable only for payment in accordance with the payment provisions of the contract for work or services performed or furnished prior to the effective date of termination. The Contractor shall not be reimbursed for anticipatory profits. Termination hereunder shall become effective by delivery to contractor of written notice of termination upon which date the termination shall become effective.

60. **USE OF CONTRACT BY OTHER PUBLIC ENTITIES** While this solicitation is prepared on behalf of the College, it is intended to apply to other Maryland educational institutions and public agencies in the State of Maryland. Unless the Offeror takes an exception, the resulting awarded items, terms and conditions will be available to other State and local public entities. Should a price adjustment be necessary to include any other public entity, the Offeror must so note on the Contractor Information Form. Purchase requests and funding from other agencies will be the responsibility of those agencies.

61. **WARRANTY** Offeror expressly warrants that all articles, material, and work offered shall conform to each and every specification, drawing, sample or other description which is furnished to or adopted by the College and that they will be fit and sufficient for the purpose intended, merchantable, of good material and workmanship, and free from defect. Such warranty shall survive a contract and shall not be deemed waived either by the College's acceptance of said materials or goods, in whole or in part, or by payment for them, in whole or in part. The Offeror further warrants all articles, material and work performed for a period of one year, unless otherwise stated, from date of acceptance of the items delivered and installed, or work completed. All repairs, replacements or adjustments during the warranty period shall be at Offeror's sole expense.

62. **WITHDRAWAL OF BIDS** A proposal shall be withdrawn by written request, confirmed immediately in writing, provided that such requests are received prior to the time of opening proposals. The College shall not be held responsible for the timely receipt of any requests for withdrawal, and the Offeror is cautioned to transmit any such request in ample time for delivery before the proposal opening. No proposal received can be withdrawn by any Offeror after the opening, as no claim for release due to mistakes or omissions in the proposal shall be considered. Each Offeror shall be held strictly responsible for its proposal.

SECTION 00 14 00

AIA DOCUMENT A701
INSTRUCTIONS TO BIDDERS

AIA® Document A701™ – 2018

Instructions to Bidders

for the following Project:
(Name, location, and detailed description)

Garrett College:
Multipurpose Field: Site Preparation

687 Mosser Road
McHenry, MD 21541

THE OWNER:
(Name, legal status, address, and other information)

Garrett College
687 Mosser Road
McHenry, MD 21541

THE ARCHITECT:
(Name, legal status, address, and other information)

SPECS, Inc. Consulting Engineers & Surveyors
105 South Centre Street
Suite 100
Cumberland, MD 21502

TABLE OF ARTICLES

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- **.1** the Bidder has read and understands the Bidding Documents;
- **.2** the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- **.3** the Bid complies with the Bidding Documents;
- **.4** the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- **.5** the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- **.6** the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, , if any, stated therein.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

Please visit the Garrett College Purchasing website @ https://www.garrettcollege.edu/purchasing.php.

(Paragraphs Deleted)

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Owner of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Owner at least Six (6) days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

Please submit all questions to Chris Jones @ chris.jones@garrettcollege.edu by 2:00 PM December 20, 2022.

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be posted to the college purchasing website for those Bidders known by the issuing office to have received complete Bidding Documents. It is the Bidders responsibility to check the website periodically for any addenda or other additional data pertaining to this bid.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than seven (7)days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:
(Insert the form and amount of bid security.)

5% of the total bid amount per Paragraph 4.2.3.

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:
(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

Provide two (2) paper copies with one (1) electronic copy on a flash drive in pdf. format to the location indicated on the proposal invitation.

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Owner of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Owner, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:
(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

After the proposal due date and time, submitted bids can not be amended.

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.1.1

The Owner reserves the right to contact any or all bidders to verify information included in the propsoal and to clarify any questions regarding information submitted in order to ascertain whether the proposal received is both responsive and responsible.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

.1 a designation of the Work to be performed with the Bidder's own forces;

.2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and

.3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.
(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to
(Paragraphs Deleted)

the Bidder. Please refer to document included under Garrett College's Purchasing Department website for Contract No. GC2306.

(Paragraphs Deleted)

(Table Deleted)

(Paragraph Deleted)

(Table Deleted)

(Paragraph Deleted)

(Table Deleted)

(Paragraphs Deleted)

(Table Deleted)

(Paragraph Deleted)

(Table Deleted)

SECTION 00 20 00

STANDARD FORM OF PROPOSAL

GARRETT COLLEGE

EXPERIENCE. EXPLORE. EXCEL.

TO: Garrett College
Purchasing Department
687 Mosser Road
McHenry, MD 21541

Proposal Due Date: January 6, 2023
Time: 2:00 PM EST

PROJECT: **GARRETT COLLEGE**
MULTIPURPOSE FIELD
SITE PREPARATION
CONTRACT NO. GC2306

Proposal of _____ (hereinafter called "Bidder"),

* a corporation, organized and existing under the laws of the State of _____*

a partnership, or and individual doing business as _____.

Bidders:

The bidder, in compliance with your invitation for bids for the referenced project, has examined the plans and specifications with related documents and the size of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplied, and to construct the project in accordance with the Contract Documents and Addenda within the time set forth therein, and at the prices stated below. These prices are to cover all expense incurred in performing the work required under the Contract Documents, of which this proposal is a part.

COMPLETION TIME:

To begin the performance at the time stated in the Notice to Proceed and to complete the work in accordance with the provisions of the Contract Documents.

The undersigned agrees to meet the following deadlines:
Field will be ready for turf on or before July 19, 2023
Field Turf installed and ready for play on August 14, 2023 (separate contract by other)

ACKNOWLEDGEMENT OF ADDENDA:

Bidder acknowledges receipt of the following Addenda:

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

_____

Signature of Acknowledgement

*Insert corporation, partnership or individual as applicable.

_____

Sign for Identification

A. BASE BID

To furnish labor, materials, equipment, and services necessary to properly complete the work required per BASE BID for the Multipurpose Field: Site Preparation in strict accordance with the aforesaid documents for the following sum:

_____(Dollars $_____).
(Written) (Figures)

Above prices to include all labor, materials, overhead, profit, insurance, etc., to cover the finished work required.

B. ALTERNATES

1. Alternate No. 1 – Barrier Net Systems

_____(Dollars $ _____)
(Written) (Figures)

2. Alternate No. 2 – North Fence Height Adjustment

_____(Dollars $ _____)
(Written) (Figures)

3. Alternate No. 3 – Field Light Conduits

_____(Dollars $ _____)
(Written) (Figures)

4. Alternate No. 4 – Field Light Bases

_____(Dollars $ _____)
(Written) (Figures)

5. Alternate No. 5 – Soccer Scoreboard

_____(Dollars $ _____)
(Written) (Figures)

6. Alternate No. 6 – Vinyl Coated Chain Link Fence (4 ft high)

_____(Dollars $ _____)
(Written) (Figures)

7. Alternate No. 7 – Vinyl Coated Chain Link Fence (8 ft high)

_____(Dollars $ _____)
(Written) (Figures)

Above prices to include all labor, materials, overhead, profit, insurance, etc., to cover the finished work required.

_____
Sign for Identification

C. UNIT PRICES

1. Unit Price No. 1 – Over-excavation of non-rippable rock at areas as directed by the Engineer, per cubic yard.

_____CY_ (Dollars $ _____/CY)
(Written) (Figures)

2. Unit Price No. 2 – Over-excavation of soil and rippable rock at areas as directed by the Engineer, per cubic yard.

_____CY_ (Dollars $ _____/CY)
(Written) (Figures)

3. Unit Price No. 3 – 8" perforated HDPE storm pipe, per linear foot.

_____LF_ (Dollars $ _____/LF)
(Written) (Figures)

4. Unit Price No. 4 – 12" perforated HDPE storm pipe, per linear foot.

_____LF_ (Dollars $ _____/LF)
(Written) (Figures)

5. Unit Price No. 5 – backfill with select structural material, per cubic yard.

_____CY_ (Dollars $ _____/CY)
(Written) (Figures)

6. Unit Price No. 6 – 4 feet high chain link fence, per linear feet.

_____LF_ (Dollars $ _____/LF)
(Written) (Figures)

7. Unit Price No. 7 – Furnish and install Shredded and compacted recycled rubber mulch, 4-inch thick per detail, per square yard.

_____SY_ (Dollars $ _____/SY)
(Written) (Figures)

8. Unit Price No. 8 – 18" Nyloplast basin up to 48" deep, with connectors and cover, each.

_____EA_ (Dollars $ _____/EA)
(Written) (Figures)

9. Unit Price No. 9 – 24" Nyloplast basin up to 48" deep, with connectors and cover, each.

_____EA_ (Dollars $ _____/EA)
(Written) (Figures)

Above prices to include all labor, materials, overhead, profit, insurance, etc., to cover the finished work required.

_____
Sign for Identification

SUBCONTRACTORS:

The undersigned proposed to use the following subcontractors for the trades indicated. The Owner reserves for right to reject a subcontractor who in its opinion has inadequate experience or has a history of poor performance in the trade, or who is financially unable to properly execute this project. The General Contractor will be prudent to list only those subcontractors that meet the criteria because no extra cost will be paid for changing to a responsible subcontractor. Subcontractors whose portions of work are $100,000 or more shall provide Performance/ Payment Bond for their portion of work in addition to the General Contractor. Before Award of Bids, a complete list of all subcontractors shall be submitted for review and approval by the Owner.

List of Proposed Subcontractors and Discipline:

_____

_____

_____

_____

_____

_____

_____

_____

_____

CONDITIONS:

Failure to properly and completely fill in all blanks may be cause for rejection of this proposal.

All alternates and unit prices called for in the Contract Document must be submitted herewith.

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The bidder agrees that this bid shall be good and may not be withdrawn for a period of 90 calendar days after the scheduled closing time for receiving bids. That if the undersigned by notification of acceptance of this proposal within this time period, the firm shall complete the total work within the time from previously stated from the date established for written “Notice to Proceed”. If this work is not completed within the time period specified, the contractor will be liable for Liquidated Damages of $1,000.00 per calendar day if not completed and available for use.

Bid Security Bonds shall be submitted with each proposal in the amount of 5% of the total of the Bid. Bid Bonds, except those of three low bidders will be returned after the bid opening. Other bid bonds will be returned after the related contract has been executed. If no bid has been accepted within ninety days after the bid opening, then any bond may be returned upon demand of the bidder. If multiple bids are submitted, security shall be based on the highest of the bids.

_____

Sign for Identification

Upon receipt of written notice of the acceptance of this bid, bidder will execute the formal contract within 10 days. The Bid Security attached in the sum of:

_____($_____)

is to become the property of the Owner in the event the Contract and Bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

Respectfully submitted,

By _____
(Company Name)

_____
(Authorized Signature)

_____
(Printed Name)

_____
(Title)

_____
(Business Address)

_____ _____
(Phone Number) (Fax Number)

_____
(Email)

(SEAL) If bid is by a corporation._____

_____
(Registered MD Contractor No.) (Place of Issuance) (Date Issued)

_____
(Federal ID No.)

*Enclose copy of current license to operate in State of Maryland.

The bidder represents, and it is a precedent to acceptance of this bid, that the bidder has not been a party to any agreement to bid a fixed or uniform price.

_____
Signature of Officer & Title (SEAL)

_____
Sign for Identification

SUBSCRIBED AND SWORN to before me, a Notary Public in the State of _____,

County of_____ City of _____

this _____day of _____, 20____.

Commission Expires: _____
(date)

CONFLICT OF INTEREST STATEMENT

The undersigned hereby affirms and attests that to the best of my knowledge, no trustee, employee, spouse, parent, child, brother or sister of the trustee or employee, own assets in this business, and as of this date are also employed by Garrett College.

Company Name _____ Name _____

Date _____ Authorized signature_____

Sign for Identification

SECTION 00 21 00

BID/ PROPOSAL AFFIDAVIT

GARRETT COLLEGE
EXPERIENCE. EXPLORE. EXCEL.

A. AUTHORIZED REPRESENTATIVE

I HEREBY AFFIRM THAT:

I _____ am the _____ (title) and the duly authorized

representative of _____ (business) and that I possess the legal authority to make this Affidavit on behalf of myself and the business for which I am acting.

B. AFFIRMATION REGARDING BRIBERY CONDITIONS

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business (as is defined in Section 16-101 (b) of the State Finance and Procurement Article of the Annotated Code of Maryland), or any of its officers, director, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies (as is defined in Section 16-101(f) of the State Finance and Procurement Article of the Annotated Code of Maryland), has been convicted of, or has had probation before judgment imposed pursuant to Article 27, Section 641 of the Annotated Code of Maryland, or has pleaded nolo contendere to a charge of, bribery, attempted bribery, or conspiracy to bribe in violation of Maryland law, or of the law of any other state or federal law, except as follows (indicate the reasons why the affirmation cannot be given and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of persons(s) involved, and their current positions and responsibilities with the business) (use attachments as necessary):

C. AFFIRMATION REGARDING OTHER CONVICTION

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business, or any of its officers, director, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies has:

(a) Been convicted under state or federal statute of a criminal offense incident to obtaining, attempting to obtain, or performing a public or private contract, fraud, embezzlement, theft, forgery, falsification, or destruction of records, or receiving stolen property:
(b) Been convicted of any criminal violation of a state or federal antitrust statute
(c) Been convicted under the provisions of Title 18 of the United States Code for violation of the Racketeer Influenced and Corrupt Organization Act, 18 U.S.C. 1961, et. Seq., or the Mail Fraud Act, 18 U.S.C. 1341, et. Seq., for acts arising out of the submission of bids or proposals for a public or private contract:
(c) Been convicted of a violation of the State Minority Business Enterprise Law, Section 14-308 of the State Finance and Procurement Article of the Annotated Code of Maryland;
(d) Been found civilly liable under a state or federal antitrust for acts or omissions in connection with the submission of bids or proposals for a public or private contract;
(e) Admitted in writing or under oath, during the course of an official investigation or other proceedings, acts or omissions that would constitute grounds for conviction or liability

under any law or statue described above, except as follows (indicate reasons why the affirmations cannot be given, and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the names(s) of the person(s) involved and their current positions and responsibilities with the business, and the status of any debarment) (use attachment as necessary):

_____

D. AFFIRMATION REGARDING DEBARMENT

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business, or any of its officers, directors, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies, has ever been suspended or debarred (including being issued a limited denial of participation) by any public entity, except as follows (list each debarment or suspension providing the dates of the suspension or debarment, the name of the public entity and the status of the proceedings, the names(s) of the person(s) involved and their current positions and responsibilities with the business, the grounds of the debarment or suspension, and the details of each person's involvement in any activity that formed the fronds of the debarment or suspension) (use attachments as necessary).

E. AFFIRMATION REGARDING DEBARMENT OF RELATED ENTITIES

I FURTHER AFFIRM THAT:

The business was not established, and it does not operate in a manner designed to evade the application of or defeat the purpose of debarment pursuant to section Sections 16-101, et seq., of the State Finance and Procurement Article of the Annotated Codes of Maryland; and

The business is not a successor, assignee, subsidiary, of affiliate of a suspended or debarred business, except as follows (you must indicate the reasons why the affirmations cannot be given without qualification) (use attachments as necessary).

F. SUB-CONTRACT AFFIRMATION

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business, has knowingly entered into a contract with a public body under which a person debarred or suspended under Title 16 of the State finance and Procurement Article of the Annotated Code of Maryland will provide, directly or indirectly, supplies, services, architectural service, construction related service leases of real property, or construction.

G. AFFIRMATION REGARDING COLLUSION

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the above business has:

(a) Agreed, conspired, connived, or colluded to produce a deceptive show of competition in the compilation of the accompanying bid or offer that is being submitted;

(b) In any manner, directly or indirectly, entered into any agreement of any kind to fix the bid price or price proposal of the bidder or of any competitor, or otherwise taken any action in restraint of free competitive bidding in connection with the contract for which the accompanying bid or offer is submitted.

I. POLITICAL CONTRIBUTION DISCLOSURE AFFIRMATION

I FURTHER AFFIRM THAT:

I am aware of, and the above business will comply with, the provisions of Article 33, Sections 30-1 through 30-4 of the Annotated Code of Maryland, which requires that every person that enters into contracts, leases, or other agreements with the State of Maryland, including its agencies or a political subdivision of the State, during a calendar year in which the person receives in the aggregate $100,000 or more shall, file with the State Administrative Board of Election Laws a statement disclosing contributions in excess of $500 made during the reporting period to a candidate for elective office in any primary or general election.

J. DRUG AND ALCOHOL-FREE WORKPLACE

I CERTIFY THAT:

(1) Terms defined in COMAR 21.11.08 shall have the same meaning when used in this certification.

(2) By submission of its bid or offer, the business, if other than an individual, certifies and agrees that, with respect to its employees to be employed under a contact resulting from this solicitation, the business shall:

- (a) Maintain a workplace free of drug and alcohol abuse during the term of the contract:
- (b) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of drugs, and the abuse of drugs or alcohol is prohibited in the business' workplace and specifying the actions that will be taken against employees for violation of these prohibitions
- (c) Prohibit its employees from working under the influence of drugs or alcohol
- (d) Not hire or assign to work on the contract anyone whom the business knows, or in the exercise of due diligence should know, currently abuses drugs or alcohol, and is not actively engaged in a bona fide drug or alcohol abuse assistance or rehabilitation program
- (e) Promptly inform the appropriate law enforcement agency of every drug-related crime that occurs in its workplace if the business has observed the violation or otherwise has reliable information that a violation has occurred
- (f) Establish drug and alcohol abuse awareness programs to inform its employees about:
  - (i) The dangers of drug and alcohol abuse in the workplace
  - (ii) The business' policy of maintaining a drug and alcohol-free workplace
  - (iii) Any available drug and alcohol counseling, rehabilitation, and employee Assistance programs; and
  - (iv) The penalties that may be imposed upon employees who abuse drugs and alcohol in the workplace
  - (v) Provide all employees engaged in the performance of the contract with a copy of the statement required by J (2)(b), above
  - (vi) Notify its employees in the statement required by J (2)(b), above, that as a condition of continued employment on the contract, the employee shall:
  - (vii) Abide by the terms of the statement; and
  - (viii) Notify the employer of any criminal drug or alcohol abuse conviction for an offense occurring in the workplace not later than 5 days after a conviction:
- (g) Notify the procurement officer within 10 days after receiving notice under J(2)(h)(ii), above, or otherwise receiving actual notice of a conviction
- (h) Within 30 days after receiving notice under J (2)(h)(ii) above, or otherwise receiving actual notice of a conviction, impose either of the following sanctions or remedial measures on any employee who is convicted of a drug or alcohol abuse offense occurring in the workplace:

(i) Take appropriate personnel action against an employee, up to and including termination; or

(ii) Require an employee to satisfactorily participate in a bona fide drug or alcohol abuse assistance or rehabilitation program

(i) Make a good faith effort to maintain a drug and alcohol-free workplace through implementation of J (2)(a)-(j) above.

(3) If the business is an individual, the individual shall certify and agree as set forth in J (4), below, that the individual shall not engage in the unlawful manufacture, distribution, dispensing, possession, or use of drugs or the abuse of drugs or alcohol in the performance of the contract.

(4) I acknowledge and agree that:

(a) The award of the contract is conditional upon compliance with COMAR 21.11.08 and this certification:

(b) The violation of the provisions of COMAR 21.11.08 or this certification shall be cause to suspend payments under, or terminate the contract for default under COMAR 21.07.01.11 or 21.07.03.15, as applicable; and

(c) The violation of the provisions of COMAR 21.11.08 or this certification in connection with the contract may, in the exercise of the discretion of the Board of Public Works, result in suspension and debarment of the business under COMAR 21.08.06.

K. CERTIFICATION OF CORPORATION REGISTRATION AND TAX PAYMENT

I FURTHER AFFIRM THAT:

(1) Except as validly contested, the business had paid, or has arranged for payment of, all taxes due to the State of Maryland and had filed all required returns and reports with the Comptroller of the Treasury, the State Department of Assessments and Taxation, and the Employment Security Administration, as applicable, and will have paid all withholding taxes due the State of Maryland prior to final payment under any contract relating to this bid/proposal affidavit.

(2) The business named above is a___sole proprietorship,___partnership, or ___ corporation formed under the laws of the State of Maryland

(3) (For entities not formed under the laws of Maryland,) I further affirm that the business named above is registered in accordance with the Corporation and Associations Article, annotated Code of Maryland, and that it is in good standing and has filed all of its annual reports, together with filing fees, with the Maryland State Department of Assessments and Taxation, and that the name and address of its current resident agent filed with the State Department of assessments and Taxation is:

NAME: _____

ADDRESS: _____

_____

L. CONTINGENT FEES

I FURTHER AFFIRM THAT:

The business has not employed or retained any person, partnership, corporation, or other entity, other than a bona fide employee or agent working for the business, to solicit or secure the Contract, and that the business has not paid or agreed to pay any person, partnership, corporation, or other entity, other than a bona fide employee or agent, any fee or any other consideration contingent on the making of the contract.

M. ACKNOWLEDGEMENT

I ACKNOWLEDGE THAT this Affidavit is to be furnished to the Procurement Officer and may be distributed to units of: (1) the State of Maryland: (2) counties or other subdivisions of the State of Maryland: (3) other states: and (4) the federal government. I further acknowledge that this Affidavit is subject to applicable laws of the United States and the State of Maryland, both criminal and civil, and that nothing in this Affidavit or any contract resulting from the submission of the accompanying bid or proposal shall be construed to supersede, amend, modify or waive, on behalf of the State of Maryland, or any unit of the State of Maryland having jurisdiction, the exercise of any statutory right or remedy conferred by the Constitution and the laws of Maryland with respect to any misrepresentation made or any violation of the obligations, terms and covenants undertaken by the above business with respect to (1) the Affidavit, (2) the contract, and (3) other Affidavits comprising part of the contract.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER PENALTIES OF PERJURY THAT THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF.

Company Name _____ Name _____

Date _____ Authorized Signature _____

SECTION 00 24 00

ACKNOWLEDGEMENT FORM

ACKNOWLEDGEMENT OF RECEIPT FOR CONTRACT DOCUMENTS:

GARRETT COLLEGE
MULTIPURPOSE FIELD: SITE PREPARATION

We,_____, acknowledge that we have reviewed all documents posted to the Garrett College Purchasing website @ www.garrettcollege.edu/purchasing including specifications, drawings, addenda, and any other additional data for Contract No. GC2306.

RFP / SPECIFICATIONS: Pages 1 to 288

DRAWINGS: (2 sets - 25 sheets total)

MULTI-PURPOSE FIELD SITE WORK

C0.0 TITLE SHEET
C0.1 LIST OF SYMBOLS & ABBREVIATIONS
C0.2 MISCELLANEOUS SITE DETAILS & SCHEDULES
C0.3 MISCELLANEOUS SITE DETAILS
C0.4 MISCELLANEOUS WALL DETAILS
C0.5 SIDELINE NETTING SYSTEM DETAILS
C0.6 FIELD LIGHTING DETAILS
C0.7 SCOREBOARD DETAILS
C1.0 EXISTING / DEMOLITION SITE PLAN
C2.0 PROPOSED SITE PLAN
C2.0A PROPOSED TURF AND FIELD GRASS PLAN
C3.0 PROPOSED SITE GRADING PLAN
C4.0 SEDIMENT AND EROSION CONTROL PLAN
C4.1 SEDIMENT AND EROSION CONTROL DETAILS
C4.2 SEDIMENT AND EROSION CONTROL DETAILS
C4.3 SEDIMENT AND EROSION CONTROL DETAILS
C5.0 PROPOSED STORM WATER PROFILES
C5.1 PROPOSED STORM PROFILES
C5.2 PROPOSED STORM PROFILES
E-1 FIELD LIGHTING ELECTRICAL PLAN

SPOIL PILE - Separate set.

C0.0 TITLE PAGE
C4.0 EROSION & SEDIMENT CONTROL PLAN
C4.1 EROSION & SEDIMENT CONTROL DETAILS
C4.2 EROSION & SEDIMENT CONTROL DETAILS

_____
Contractor

_____
Name Title

_____
Signature

SECTION 00 30 00

AIA DOCUMENT A201
GENERAL CONDITIONS TO THE CONTRACT

AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

Garrett College:
Multipurpose Field: Site Preparation

687 Mosser Road
McHenry, MD 21541

THE OWNER:
(Name, legal status and address)

Garrett College
687 Mosser Road
McHenry, MD 21541

THE ARCHITECT:
(Name, legal status and address)

SPECS, Inc. Consulting Engineers & Surveyors
105 South Centre Street
Suite 100
Cumberland, MD 21502

TABLE OF ARTICLES

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

Init.
/

13 MISCELLANEOUS PROVISIONS

14 TERMINATION OR SUSPENSION OF THE CONTRACT

15 CLAIMS AND DISPUTES

INDEX
(Topics and numbers in bold are Section headings.)

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent

consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements,

assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- **.1** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- **.2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- **.3** whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the

Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work
The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights
The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification
§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT
§ 4.1 General
§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract
§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the

Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations

and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor,

prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work,

promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

.1 The change in the Work;
.2 The amount of the adjustment, if any, in the Contract Sum; and
.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
.2 Unit prices stated in the Contract Documents or subsequently agreed upon;
.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
.4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
.5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will

affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and

unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

.1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
.2 failure of the Work to comply with the requirements of the Contract Documents;
.3 terms of special warranties required by the Contract Documents; or
.4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

.1 employees on the Work and other persons who may be affected thereby;
.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to

the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

.2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;

.3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or

.4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

.2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;

.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance,

the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

.1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the

Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

SECTION 00 35 00

SUPPLEMENTAL CONDITIONS TO A201 GENERAL CONDITIONS

PART 1 – DESCRIPTION

1.1 Description

A. The "Supplemental Conditions to the General Conditions" contain changes and additions to the "General Conditions". Where no part of the General Conditions is modified as bound by the Supplemental Conditions, the unaltered provisions shall remain in effect.

PART 2 – ARTICLES

2.1 TABLE of ARTICLES (GENERAL CONDITIONS)

A. Articles in General Conditions: Article 1 through 15 (See AIA Document A201-2007).

2.2 ARTICLES - AMENDED IN SUPPLEMENTAL CONDITIONS

A. Specifications & Execution & Interpretation

B. Contractor

C. Administration of the Contract

D. Changes in the Work

E. Time

F. Payments and Completion

G. Insurance and Bonds

H. Uncovering and Correction of Work

PART 3 – AMENDMENTS

3.1 ARTICLE 1 of GENERAL CONDITIONS: GENERAL PROVISIONS

A. Paragraph 1.1.6 (The Specifications) – ADD the following subparagraphs:
1. 1.1.6.1 For convenience of reference and to facilitate letter of subcontracts, specifications are separated into titled sections: such separation shall not, however, make the Engineer an arbiter to establish limits to the contracts between General Contractor and Subcontractors.
2. 1.1.6.2 The General Contractor only shall be recognized as a part of this Contract and it shall be his responsibility to turn over to the Owner a project complete in all respects and in accordance with Contract Documents.
3. 1.1.6.3 The General Contractor shall be solely responsible for segregation of the work of various trades.
4. 1.1.6.4 The specifications are written in the form of a directive to the General Contractor, using imperative statements.
5. 1.1.6.7 For brevity and to avoid repetition, such phrases as "The Contractor shall" are intentionally omitted; omitted words or phrases shall be supplied in inference.
6. 1.1.6.8 Insert "conform to" before each reference to a standard specification number (such as ASTM); see Section 03 30 00.

B. Paragraph 1.1.6 (The Specifications) – Modify by Adding to the end of the paragraph:
1. " related services"…including performing all operations in connection with the fabrication and installation of all items, complete, as shown on the drawings

and/or specified, subject to the GENERAL CONDITIONS and SUPPLEMENTAL CONDITIONS (if any) and terms of the CONTRACT. Where SUPPLEMENTAL CONDITIONS or SPECIAL CONDITIONS conflict with GENERAL CONDITIONS, the former shall govern.

C. Paragraph 1.1.9 (Terminology) – ADD the following paragraph and subparagraphs:
   1. 1.1.9 Terminology – For the basis of this specification, the following vocabulary shall have the following interpretations as noted.
      a. 1.1.9.1 "Provide" means "furnish and install".
      b. 1.1.9.2 "Exposed" means "Showing in any or all parts at completion of work under this Contract".
      c. 1.1.9.3 "Where shown", "As shown", or "Where Indicated" refers to the drawings, details and schedules.
      d. 1.1.9.4 "Approval", "Approved", "Selected", "Directed" and "Authorized" means by the Engineer unless otherwise specified.
      e. 1.1.9.5 "Excludes" (Headings under SCOPE) means "from this section only".

D. Paragraph 1.2: Correlation and Intent of the Contract Documents: ADD the following paragraphs:
   1. 1.2.4 The Drawings and Specifications are intended to be used as a complete set. Any Work shown on any of the Drawings or Specifications is intended to be installed complete and operational, unless specifically noted otherwise.
   2. 1.2.5 The Contractor shall abide by and comply with the true intent of the Contract Documents and shall not take advantage of any unintentional error or omission, but shall fully complete every part as the true intent and meaning of the Work as described in the Contract Documents.
   3. 1.2.6 The Contract Document shall be given precedence in the following order in resolving errors, discrepancies or ambiguities: Change Orders, Addenda, Supplemental General Conditions, General Conditions, Specifications and Drawings.

E. Paragraph 1.4 Interpretation:
   1. 1.4.1 Adhere to dimensions though differing from scale measurements; in the absence of dimensions or in case of doubt as to the proper measurements, consult Engineer.
   2. 1.4.2 Detailed drawings take precedence over those of small scale and specifications take precedence over drawings.
   3. 1.4.3 In the event of conflict or inconsistency within the drawings or details, within the specifications, or between drawings and specifications, Engineer's decision as to intent of the Contract Documents shall be final.
   4. 1.4.4 If conflict or inconsistency is called to the Engineer's attention ten (10) days or more before bids are due, correction or clarification will be made by Addendum.
   5. 1.4.5 Decisions shall, however, not make the Engineer an arbiter to establish responsibilities of Subcontractors to the Contractor(s).
   6. 1.4.6 Anything shown on the drawings and not mentioned in the Specifications or vice versa, shall have the same effect as if shown or mentioned in both.
   7. 1.4.7 Notify Engineer of discrepancies before materials are fabricated or work performed.
   8. 1.4.8 Make plural and complete, that work which has been shown singularly or partially indicated, for the purpose of avoiding needless repetition.

9. 1.4.9 Provide such work and materials as may be necessary for proper and suitable base or support for work shown or specified, whether or not specifically mentioned in specifications or shown on drawings.

3.2 Amendment to Article 3 of the General Conditions: CONTRACTOR

A. Paragraph 3.10.4: Contractor's Construction Schedules - ADD the following:
1. 3.10.4 Acceptance of the construction schedule by the Owner and Engineer is advisory only and shall not relieve the Contractor of their responsibility for accomplishing the Work within the specified Contract Time. Errors or omissions in the construction schedule shall not excuse the Contractor for performance less than that required by the Contract. Acceptance by the Owner and Engineer shall in no way make the Engineer or Owner an insurer of the construction schedule's success, or liable for any time or cost overruns associated with it. The Owner hereby disclaims any obligation or liability for the construction schedule by reason of acceptance by its agents or representatives.

B. Paragraph 3.11: Documents and Samples at the Site - ADD the following:
1. 3.11.1 The Contractor shall show in red ink on a complete set of blue line prints, all changes from original plans made during installation of the work.
2. 3.11.2 It shall be the responsibility of the Contractor to obtain as-built drawings from mechanical, electrical and any other subcontractor during the progress of the Work and ensure that they indicate the correct location of piping, major conduits and equipment, the location of all valves, switches, panels, etc. and any other information of a pertinent or useful nature.
3. 3.11.3 All notations shall be made in a neat and legible manner, with any additional explanatory drawings or sketches necessary. During the course of construction, the as-built drawings shall be maintained in the Contractor's trailer.
4. 3.11.4 At the completion of Work, the Contractor shall submit one set of red-lined prints to the Engineer showing all notations of changes from original drawings made during installation of the Work. This submission shall form the record as-built drawings.

3.3 Amendment to Article 4 of the General Conditions: ENGINEER

A. Paragraph 4.2.6: Administration of the Contract - DELETE this paragraph in its entirety and substitute the following: to Engineer's Administration of the Contract:
1. 4.2.6 The Owner and Engineer will have authority to reject Work which does not conform to the Contract Documents. Whenever the Owner or Engineer considers it necessary or advisable for the implementation of the intent of the Contract Documents, the Owner or Engineer will have authority to require special inspection or testing of the Work, whether or not such Work be then fabricated, installed, or completed. However, neither this authority of the Owner or Engineer nor any decision made in good faith either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Owner or Engineer to the Contractor, any subcontractor, any of their agents or employees, or any other person performing any of the Work.

3.4 Amendment to Article 7 of General Conditions: CHANGES IN THE WORK

A. Add Paragraph 7.1.4: General – Add the following subparagraphs:
1. 7.1.4 Only the Owner shall authorize and approve the change. The change will be issued in the form of a written "Change Order Form", signed by the Owner and the Contractor, which authorizes the change in the work, indicates the

mutually agreed upon price which shall be added or deducted from the contract price, and the extent to which the contract time shall be increased or decreased.

2. 7.1.4.1 The Contractor shall furnish in duplicate to the Owner and the Engineer a fully itemized breakdown of the quantities and prices used in computing the value of any change that might be requested. All written requests for a change in the work must include the full explanation and justification for the change regardless of its nature. For all work to be performed by a subcontractor, the Contractor shall furnish the subcontractor's itemized proposal which shall contain original signature by an authorized representative of the subcontracting firm. If requested by the Owner or Engineer, proposals from suppliers or other supporting data to substantiate the contractor's or the subcontractor's cost shall be furnished. All proposals and breakdowns shall be submitted promptly.

B. Paragraph 7.2.2: Change Orders – Add the following paragraph and subparagraphs:

1. 7.2.2 When changes, alterations, deductions or additions are so ordered, the value of such work will be determined in the following ways:
   a. 7.2.2.1 When unit prices are stated in the contract or have been subsequently agreed upon, by application of these units' prices.
   b. 7.2.2.2 A lump sum price agreed to by both the Owner and the Contractor.
   c. 7.2.2.3 If job conditions or the extent of the change prohibit the use of either 7.2.2.1 or 7.2.2.2 a price arrived at by performing the work on a cost plus not to exceed basis.
   d. 7.2.2.4 If a change involves merely a credit, the contract price will be reduced by the amount it would have cost the contractor if the omitted item or work had not been eliminated; including overhead and profit, however, the Contractor and the subcontractor will be allowed to retain a sum not in excess of one percent (1%) for handling.
   e. 7.2.2.5 If a change involves both an extra and a credit, both sums shall be shown and the two sums balanced to determine the adjusted total cost or credit. No allowance to the Contractor shall be made or allowed for loss of anticipated profits on account of any changes in the work.
   f. 7.2.2.6 Unless otherwise specified, the allowable mark-up for combined overhead and profit for work performed by the contractor with his own forces will be based on the monetary value of the work in accordance with the following schedule:

Value of Work	Combined Overhead and Profit
$0 - $10,000	Negotiated, x ≤ 8 %
$10,001 and over	Negotiated, x ≤ 5 %

   g. 7.2.2.7 For work performed by a subcontractor with his own organization the percentages for combined overhead and profit will be as outlined in 7.2.2.6.
   h. 7.2.2.8 On work partly or solely performed by a subcontractor or on materials supplied by a supplier or middleman, the Contractor will be allowed five percent (5%) of the total cost of the subcontractor's or supplier's labor and material only. No markup shall be allowed on subcontractors or supplier's overhead and profit, taxes, equipment rental or other similar non-labor, non-material items.
2. 7.2.3. When the Contractor and the Owner shall fail to agree upon a lump sum price or method as outlined in 7.2.2. the Owner shall have the right to issue an order for the work to be accomplished on a time and material basis and a correct account shall be kept by the contractor and approved by the Owner and/or the Engineer of the actual cost of all labor and materials as directed by the Owner,

and/or the Engineer to which shall be added percentage allowances for overhead and profit as stated in Paragraph 7.2.2.6. Receipted invoices shall be submitted to the Owner to validate the cost of all shop fabricated material and cost of all other materials supplied. Certified payrolls shall be submitted for labor costs.

3. 7.2.5 On all work as defined in Article 1.2, no Contractor will be allowed any expenses, overhead or profit for employment of another subcontractor to perform work for him.
4. 7.2.6 Further on work covered by Change Order the Contractor will be reimbursed for his expenditures for Workmen's Compensation insurance, Social Security Taxes and Unemployment compensation covering men actually engaged upon the work and the actual increased cost of bond without any percentage added.
5. 7.2.6 The cost of foremen and superintendents may be added only when the Change Order makes necessary the hiring of additional supervisory personnel or makes their employment for time additional to that required by the basic contract.
6. 7.2.7 The Contractor shall be allowed the actual cost for rental or machine power tools or special equipment, including fuel and lubricants which are necessary to execute the work required on the change, but no percentages shall be added to this cost. The rental rate is to be agreed upon by the Owner and the Contractor; the rate generally to be the latest as filed by the Associated Equipment Distributors.
7. 7.2.8 If the Contractor and the Owner cannot agree as to the extent that the contract time shall be increased for extra work or the extent the contract time shall be reduced for work omitted by the Owner, the increase or decrease, as the case may be, shall be in the same proportion of the original contract as the cost of the additional work; including overhead and profit or the amount of the omitted work; including overhead.
8. 7.2.9 No order for change at any time or place shall in any manner or to any extent relieve the Contractor of any of his obligations under the contract.

C. Paragraph 7.4: Minor Changes in the Work: MODIFY and AMPLIFY the following to:

1. 7.4 The Engineer with the concurrence from the Owner shall have authority to make minor changes in the work not involving extra cost or extensions of contract time, and not inconsistent with the intent of the contract documents. Such minor changes will be affected by written order signed by the Engineer and shall be binding on the Owner and Contractor. Otherwise, except in any emergency endangering life or property, no extra work or change shall be made unless a written order from the Owner and/or the Engineer has been received by the Contractor. No claim for addition to the contract sum or time of completion shall be valid unless so ordered.

3.5 Amendment to Article 8 of General Conditions: TIME:

A. Paragraph 8: Delete Paragraph 8.3.1 Delays and Extension of Time in its entirety and substitute the following:

1. Article 8.3: “Delays and Extensions of Time:
   a. 8.3.1 It is hereby understood and mutually agreed, by and between the Contractor and the Owner, that the date of beginning and the time for completion as specified in the Contract of the work to be done hereunder are essential conditions of this contract. It is intended that the work shall commence within ten (10) days immediately after the date of Notice to Proceed and that the entire work shall be substantially complete so that the Owner may occupy the work or designated portion thereof for the use for which it is intended.

b. 8.3.1.1 Requests for extensions of completion time will be reviewed by the Owner, after written application is made for a time extension to the Engineer. Any request for an extension of time is to be made immediately upon occurrence of conditions which in the opinion of the Contractor warrant such an extension with reasons clearly stated and detailed proof given for all delays beyond the Contractor's control, these to be made in writing to the Engineer. No time extension will be allowed except after written concurrence of the Engineer and formal approval thereof by Owner."

c. 8.3.1.2 Final Completion shall be defined as 'completed in every respect' as follows:
   1) After the contractor notifies the Engineer in writing that work is ready for final inspection, and;
   2) A "punch list" of deficiencies is prepared at the time of the final inspection, and;
   3) Items on the "punch list" have been corrected by the contractor and their correction verified by the Engineer, and;
   4) The Owner & Engineer agreed work as required has been performed.

2. Add the following paragraphs to Article 8

a. 8.3.4. If required, in order to complete the work in the specified time, such necessary work shall be done after regular working hours or on holidays without additional cost to the Owner. If, for any reason a bidding contractor believes that the contract cannot be completed within the specified time, he shall notify the Engineer in writing before submitting his bid and state the total number of calendar days that he believes will be required to complete the contract. Upon receipt of such notice, the Engineer may issue an addendum to the specifications revising the time allow for complete of the contract. If no such addendum is issued, it is expressly understood and agreed, by and between the contractor and the owner, that the time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

b. 8.3.5. If the contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the owner, then the contractor does hereby agree, as part consideration for the awarding of this contract, to pay to the Owner $1,000.00 (amount as stated on the Proposal Form) per calendar day, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the contractor shall be in default after the time stipulated in the contract for completing the work. The said amount is fixed and agreed upon by and between the contractor and the owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the owner would sustain.

c. 8.3.5 It is further agreed that where under the contract, an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this contract; provided, that the contractor shall not be charged with liquidated damages when the owner. Determines that the contractor is without fault and the contractor's reasons for the time extensions are acceptable to the owner;

provided, further, that the contractor shall not be charged with liquidated damages when the delay in completion of the work is due:

1) To any preference, priority or allocation order duly issued by the Government.
2) To unforeseeable cause beyond the control and without the fault or negligence of the contractor, including but not restricted to changes ordered in the work, or by labor disputes, fire, unusual delay in transportation, unavoidable casualties, or any cause beyond the contractor's control, or by delay authorized by the owner pending determination, or by any other cause which the Engineer (with the Owner's approval) determines may justify the delay.

3.6 Amendment to Article 9 of General Conditions: PAYMENTS & COMPLETION

A. Paragraph 9.6.1: DELETE this paragraph in its entirety and substitute with the following for Progress Payments:

1. "9.6.1 The Owner shall make progress payments to the Contractor on the basis of a duly certified and approved Application for Payment for Work performed during the preceding calendar month and the Owner shall retain ten percent (10%) or the amount as allowed by regulation of the amount of each application until final completion and acceptance of all Work covered by this Contract. The Owner may elect, at any time after fifty percent (50%) of the Work has been completed, to reduce the percentage of retainage ($5\% \leq x \leq 10\%$) for the remaining progress payments if the Owner is satisfied with the quality and progress of the Work. Such action on the part of the Owner to reduce the retainage is strictly voluntary and at the sole discretion of the Owner." Retainage will be reduced at Substantial Completion to 5%. A complete reduction will not be considered until all punch list work is completed.

3.7 Amendment to Article 11 of General Conditions: INSURANCE AND BONDS:

A. MODIFY and AMPLIFY the following Paragraph – 11.1 Contractor's Liability Insurance:

1. 11.1.1.1 Worker's Compensation, including occupational disease and employer's liability insurance, disability benefit and other similar employer benefit acts that are applicable to the work being performed in the amount and coverage as required by Maryland Worker's Compensation law with limits not less than:
   a. Bodily injury by Accident: $500,000 each incident.
   b. Bodily injury by Disease: $500,000 policy limit.
   c. Bodily injury by Disease $500,000 per employee
2. 11.1.1.2 The limits of liability for the Commercial General Liability insurance including coverage for direct operations, sublet work, elevators, personnel injury, contractual liability and completed operations with limits not less than:
   a. Bodily Injury and Personal Injury:
      1) $1,000,000 each occurrence
      2) $1,000,000 aggregate completed operation, products.
   b. Property Damage
      1) $1,000,000 Each Occurrence
      2) $2,000,000 Aggregate Operations
      3) $1,000,000 Personal and advertising injury limit
      4) $2,000,000 Aggregate Independent Contractor Protective Liability

5) $2,000,000 Aggregate Owner's Protective Liability
6) $2,000,000 Aggregate Complete Operations Products
7) $2,000,000 Aggregate Contractual

c. The Owner shall be listed as additional insurer. Regarding property damages, included broad form property damage, remove "XCU" exclusions (explosion, collapse, underground property damage), regarding completed operations liability, continue coverage in force for one (1) year after completion of the Work.

3. 11.1.3 Comprehensive automobile liability insurance shall be acquired by the Contractor and maintained throughout the term of this contract, to cover all owned automobiles, automobiles under long term lease, hired automobiles, employers' non-ownership liability, medical payments and uninsured motorists. The limits of liability shall be no less than: $1,000,000.00 per accident per occurrence for bodily injury and property damage.
4. 11.1.1.4 Umbrella excess liability insurance shall be provided with a minimum limit of liability of five million dollars ($5,000,000) per occurrence which shall be in excess of the primary limits of insurance as required above.
5. 11.1.1.5 Each insurance policy shall contain a clause to the effect that no modification or change in the policy will be made, nor will such policy be canceled or non-renewed or expired without thirty (30) days written notice, as evidenced by return receipt of registered or certified mail (letter) to the Owner.
6. 11.1.1.6 If any of these policies are written on a "claims made" form, the "extended reporting endorsement" or 'tail' must be purchased with a copy of the endorsement provided to the Owner.
7. 11.1.1.7 Liability insurance may be arranged by Commercial General Liability and Comprehensive Automobile Liability policies for the full limits required, or by a combination of underlying Liability policies for lesser limits with the remaining limits provided by an Excess or Umbrella Liability Policy.
8. 11.1.1.8 All polices shall be issued by Insurance Carriers licensed to do business in the State of Maryland and having a rating in the latest edition of Best's Key Rating Guide, with a rating of an "A-VIII" or better. All of the policies of the Offeror, as addressed above, shall be primary to any insurance maintained by Garrett College and shall contain an endorsement acknowledging that any insurance maintained by Garrett College is excess. All policies shall include a Waiver of Subrogation in favor of the College.
9. 11.1.1.9 Each policy of insurance shall contain the following endorsement: "It is understood and agreed that the Insurance Company shall notify the College in writing 30 days in advance of the effective date of any reduction in the dollar amount of coverage, notice of non-renewal, termination or cancellation of this policy." Certificates of Insurance evidencing each of the above coverages shall be delivered to the College in writing 15 days following the date of notice of contract award. Such certificates shall also include:
   a. The College as additional insured.
   b. The requirement for advance notice of reduction in the dollar amount of insurance, non-renewal, termination, or cancellation of or change in coverage.
10. 11.1.1.10 The successful firm shall not allow any liens to be filed against Garrett College by a person or firm for any reason arising out of the furnishing or services or materials by the firm. Any lien filed against Garrett College, or its property shall be disposed of within 30 days of tis filing. Failure of the Contractor to dispose of such liens within the 30-day period shall constitute a default.

B. ADD or MODIFY the following Paragraph – 11.2 Owner's Insurance
   1. 11.2.1.1 Builder's risk and Owner protective liability naming the Owner, Engineer, and General Contractor, will be purchased by the Owner.

3.8 Amendments to Article 12: UNCOVERING AND CORRECTION OF WORK

A. Paragraph 12.2.1.2: Before or After Substantial Completion - MODIFY and AMPLIFY this subparagraph by ADDING the following:
   1. 12.2.1.2 The Contractor further warrants all Work shown on Contract Documents, with any approved modifications as follows:
      a. Against faulty or imperfect material or workmanship;
      b. That the Work shall be entirely watertight and leak proof;
      c. That the mechanical and electrical machines, devices, and equipment shall operate satisfactorily with ordinary care; and shall perform their specified and intended functions; and
      d. Against damage or undue deterioration resulting from normal use of the building.
      e. If at any time deficiencies in the Work are discovered which result from a deliberate attempt to defraud the Owner, the Contractor will be held liable for replacement or correction, regardless of the time limit on the guarantee.

3.9 Amendments to Article 15: Claims and Disputes:

A. Paragraph 15.1.2: Notice of Claims - ADD the following after the last sentence: "An additional claim made after the initial claim has been implemented by Change Order will not be considered."

END OF
SUPPLEMENTAL CONDITIONS
TO THE GENERAL CONDITIONS OF THE
CONTRACT FOR CONSTRUCTION

SECTION 00 37 50

MINORITY BUSINESS ENTERPRISE FORMS

GARRETT COLLEGE

EXPERIENCE. EXPLORE. EXCEL.

RESOLUTION

Resolution No: **2020-1**

Date: **October 30, 2019**

Subject: **Local Labor/MBE CEPAC project participation**

A Resolution by the Board of Trustees of Garrett Community College (the "College").

Whereas, the College construction of a Community Education and Performing Arts Center on its McHenry Campus is only possible through the joint financial participation of the State of Maryland and Garrett County Government; and

Whereas, the College is currently going through a bidding process to select the firm that will be awarded the construction bid for this project; and

Whereas, the College is committed to promoting the economic development of Garrett County through the construction of the CEPAC; and

Whereas, the College is equally committed to promoting the use of Minority Business Enterprises to this extent possible on this project;

Therefore, be it resolved that the College, through its Board of Trustees, hereby encourages bidders on the CEPAC project to employ local (Garrett County) labor on this project and to use Minority Business Enterprises to make up 10 percent of the total project.

Don Morin, Chair
Garrett College Board of Trustees

GARRETT COLLEGE

EXPERIENCE. EXPLORE. EXCEL.

FORM OF MBE UTILIZATION AFFIDAVIT

The undersigned as General Contractor does hereby make the following affidavit.

I acknowledge the Minority Business Enterprise participation goal of 10% of the total contract dollar value directly or indirectly from Certified minority business enterprise. I am committed to making a good faith effort to achieve this goal for this contract for Garrett College.

In the solicitation of subcontract quotations or offers all Minority Business Enterprise (MBE) subcontractors were provided not less than the same information and amount of time to respond to the solicitations.

The solicitation process was conducted in such a manner so as to otherwise not place MBE subcontractors at a competitive disadvantage to non-MBE subcontractors.

I do solemnly declare and affirm under the penalty of perjury that the contents of the foregoing document are true and correct to the best of my knowledge, information and belief.

Signature of Applicant: _____

Printed Name: _____

Representing: _____

Date: _____

Sworn and subscribed before me this_____day of_____, 20___.

WHEREAS, I hereunto set my hand and Notary Seal.

_____

My Commission Expires:

_____

SECTION 00 40 00

AIA DOCUMENT A101
FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

DRAFT

AIA® Document A101® – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

«Garrett College»« »
«687 Mosser Road
McHenry, MD 21541»
« »
« »

and the Contractor:
(Name, legal status, address and other information)

« »« »
« »
« »
« »

for the following Project:
(Name, location and detailed description)

«Garrett College:
Multipurpose Field: Site Preparation
»
«687 Mosser Road
McHenry, MD 21541»
« »

The Architect: (Engineer)
(Name, legal status, address and other information)

«SPECS, Inc. Consulting Engineers & Surveyors»« »
«105 South Centre Street
Suite 100
Cumberland, MD 21502»
« »

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101®–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

ELECTRONIC COPYING of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

TABLE OF ARTICLES

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[«»] The date of this Agreement.

[«»] A date set forth in a notice to proceed issued by the Owner.

[«X»] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

«Approximately May 15, 2023»

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check one of the following boxes and complete the necessary information.)

[«»] Not later than «» («») calendar days from the date of commencement of the Work.

[«X»] By the following date: «August 14, 2023»

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
« »	

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » ($ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
« »	

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
« »		

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price
1. Unit Price No. 1:	

:

a. Qty: 1 cubic yard

2. Unit Price No. 2: Over-excavation of soil and rippable rock at areas as directed by the Engineer.

a. Qty: 1 cubic yard

3. Unit Price No. 3: 8” perforated HDPE storm pipe.

a. Qty: 1 Lineal Foot.

4. Unit Price No. 4: 12” perforated HDPE storm pipe.

a. Qty: 1 Lineal Foot.

5. Unit Price No. 5: Backfill with select structural material.

a. 1 cubic yard.

6. Unit Price No. 6: 4 feet high chain link fence including all posts, bracing, etc...

a. 1 linear foot.

7. Unit Price No. 7: Furnish and install Shredded and compacted recycled rubber mulch, 4-inch thick per detail.

a. 1 square yard.

8. Unit Price No. 8: 18” Nyloplast basin up to 48” deep, with connectors and cover.

a. Each.

9. Unit Price No. 9: 24” Nyloplast basin up to 48” deep, with connectors and cover.

a. Each.

§ 4.4 Unit prices, if any:

(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)
No. 1: Over-excation of non-rippable rock of non-rippable rock at areas as directed by the Engineer	CY	
No. 2: Over-excavation of soil and rippable rock at areas as directed by Engineer	CY	
No. 3: 8" perforated HDPE storm pipe	LF	
No. 4: 12" perforated HDPE storm pipe	LF	
No. 5: Backfill with select strutural material	CY	
No. 6: 4 feet high chain link fence including all posts, bracing, etc...	LF	
No. 7: Furnish and install shredded and compacted recycled rubber mulch, 4" thick per detail	SY	
No. 8: 18" Nyloplast basin up to 48" deep, with connectors and cover	EA	
No. 9": 24" Nyloplast basin up to 48" deep, with connectors and cover	EA	

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

«$1,000.00 per calendar day »

§ 4.6 Other:
(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

« »

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the « » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than « » (« ») days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- **.1** That portion of the Contract Sum properly allocable to completed Work;
- **.2** That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- **.3** That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- **.1** The aggregate of any amounts previously paid by the Owner;
- **.2** The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- **.3** Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;

.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and

.5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

«10% - After 50% completion of the work at the Owner's discretion, retainage could be reduced. Retainage shall be reduced to 5% at Substantial Completion. Retainage will not be reduced further until all punch list items have been completed. »

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

« »

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

« »

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

« »

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

« »

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

« » % « »

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

SPECS, Inc.
Contact: Ray Rase
«105 South Centre Street, Suite 100 »
«Cumberland, MD 21501 »
«Telephone: 301.777.2510 »

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[« »] Arbitration pursuant to Section 15.4 of AIA Document A201–2017

[« »] Litigation in a court of competent jurisdiction

[« »] Other *(Specify)*

« »

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

« »

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)

«Mr. Chris Painter, Director of Facilities & Capital Projects»
«Garrett College »
«687 Mosser Road »
«McHenry, MD 21514 »

«Email: chris.painter@garrettcollege.edu»
« »

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

« »
« »
« »
« »
« »
« »

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds
§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

« »

§ 8.7 Other provisions:

« »

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
.2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
.3 AIA Document A201™–2017, General Conditions of the Contract for Construction
.4

»

.5 Drawings

Number	Title	Date
« »		

.6 Specifications

Section	Title	Date	Pages
« »			

.7 Addenda, if any:

Number	Date	Pages
« »		

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

« »

[« »] The Sustainability Plan:

Title	Date	Pages
« »		

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
« »			

.9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

« »

This Agreement entered into as of the day and year first written above.

« »	« »
OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
«Richard Midcap»«, Garrett College President»	« »« »
(Printed name and title)	*(Printed name and title)*

SECTION 00 60 00

AIA DOCUMENT A312
CONSTRUCTION BONDS FORMS

AIA® Document A312™ – 2010

Performance Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
Garrett College
687 Mosser Road
McHenry, MD 21541

CONSTRUCTION CONTRACT
Date:
Amount: $ 0.00
Description:
(Name and location)
Garrett College:
Multipurpose Field: Site Preparation
687 Mosser Road
McHenry, MD 21541

BOND
Date:
(Notearlier than Construction Contract Date)

Amount: $
Modifications to this Bond: None See Section 16

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER:**

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

.1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

.2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

.3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

.2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and

.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

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

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

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

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	
Address:		Address:	

AIA® Document A312™ – 2010

Payment Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
Garrett College
687 Mosser Road
McHenry, MD 21541

CONSTRUCTION CONTRACT
Date:
Amount: $ 0.00
Description:
(Name and location)
Garrett College:
Multipurpose Field: Site Preparation
687 Mosser Road
McHenry, MD 21541

BOND
Date:
(Notearlier than Construction Contract Date)

Amount: $
Modifications to this Bond: None See Section 18

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)
AGENT or **BROKER:**

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- **.1** have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- **.2** have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

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

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- **.1** the name of the Claimant;
- **.2** the name of the person for whom the labor was done, or materials or equipment furnished;
- **.3** a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- **.4** a brief description of the labor, materials or equipment furnished;
- **.5** the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- **.6** the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- **.7** the total amount of previous payments received by the Claimant; and
- **.8** the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	
Address:		Address:	

SECTION 00 70 00

WAGE RATES

STATE OF MARYLAND

DEPARTMENT OF LABOR
DIVISION OF LABOR AND INDUSTRY
PREVAILING WAGE SECTION
1100 N. Eutaw Street, Room 607
Baltimore, MD 21201
(410) 767-2342

09/02/2022

REQUEST FOR ADVERTISEMENT AND NOTICE TO PROCEED

Kathleen Meagher - Procurement Officer
Garrett College
687 Mosser Rd
McHenry, MD 21541

Re: Garrett College - Ballfield Reconstruction

Project No: 329

Enclosed please find the Prevailing Wage Determination and Instructions for Contractors for the project referenced above.

Upon advertisement for bid or proposal of this project, you are requested to submit to this office the date and name of publication in which such advertisement appeared.

Once awarded, you are further directed to submit to this office, the NOTICE TO PROCEED for the project, complete with the date of notice, the name of the general contractor, and the dollar amount of the project. In addition, we ask that a representative of the prevailing wage Unit be invited to attend the Pre-Construction Conference.

Any questions concerning this matter may be referred to PrevailingWage@dllr.state.md.us

Sincerely,

Enclosures
Wage Determination
Instruction for the Contractor

Prevailing Wage Unit

PREVAILING WAGE INSTRUCTIONS FOR THE CONTRACTOR & SUBCONTRACTOR

The contractor shall electronically submit completed copies of certified payroll records to the Commissioner of Labor & Industry, Prevailing Wage Unit by going on-line to https://www.dllr.state.md.us/prevwage and following the instructions for submitting payroll information (NOTE: A contractor must register prior to submitting on-line certified payroll information).

If you have technical questions regarding electronic submittal, contact the Department at dldliprevailingwage-dllr@maryland.gov.

All certified payroll records shall have an accurate week beginning and ending date. The contractor shall be responsible for certifying and submitting to the Commissioner of Labor and Industry, Prevailing Wage Unit all of their subcontractors' payroll records covering work performed directly at the work site. By certifying the payroll records, the contractor is attesting to the fact that the wage rates contained in the payroll records are not less than those established by the Commissioner as set forth in the contract, the classification set forth for each worker or apprentice conforms with the work performed, and the contractor or subcontractor has complied with the provisions of the law.

A contractor or subcontractor may make deductions that are (1) required by law; (2) required by a collective bargaining agreement between a bona fide labor organization and the contractor or subcontractor; or (3) contained in a written agreement between an employee and an employer undertaken at the beginning of employment, if the agreement is submitted by the employer to the public body awarding the public work and is approved by the public body as fair and reasonable.

A contractor or subcontractor is required to submit information on-line on their fringe benefit packages including a list of fringe benefits for each craft employed by the contractor or subcontractor, by benefit and hourly amount. Where fringe benefits are paid in cash to the employee or to an approved plan, fund, or program, the contribution is required to be indicated.

Payroll records must be electronically submitted and received within 14 calendar days after the end of each payroll period. If the contractor is delinquent in submitting payroll records, processing of partial payment estimates may be held in abeyance pending receipt of the records. In addition, if the contractor is delinquent in submitting the payroll records, the contractor shall be liable to the contracting public body for liquidated damages. The liquidated damages are $10.00 for each calendar day the records are late.

Only apprentices registered with the Maryland Apprenticeship and Training Council shall be employed on prevailing wage projects. Apprentices shall be paid a percentage of the determined journey person 's wage for the specific craft.

Overtime rates shall be paid by the contractor and any subcontractors under its contracts and agreements with their employees which in no event shall be less than time and one-half the prevailing hourly rate of wages for all hours worked in excess of ten (10) hours in any one calendar day; in excess of forty (40) hours per workweek; and work performed on Sundays and legal holidays.

Contractors and subcontractors employing a classification of worker for which a wage rate was not issued SHALL notify the Commissioner of Labor & Industry, Prevailing Wage Unit, for the purpose of obtaining the wage rate for said classification PRIOR TO BEING EMPLOYED on the project. To obtain a prevailing wage rate which was NOT listed on the Wage Determination, a contractor or subcontractor can look on the LABOR webpage under prevailing wage.

Contractors and subcontractors shall maintain a valid copy of proper State and county licenses that permit the contractor and a subcontractor to perform construction work in the State of Maryland. These licenses must be retained at the worksite and available for review upon request by the Commissioner of Labor and Industry’s designee.

**Each contractor under a public work contract subject to Section 17-219 shall:

1. Post a clearly legible statement of each prevailing wage rate to be paid under the public work contract; and
2. Keep the statement posted during the full time that any employee is employed on the public work contract.
3. The statement of prevailing wage rates shall be posted in a prominent and easily accessible place at the site of the public work.

****Penalty - Subject to Section 10-1001 of the State Goverment Article, the Commissioner may impose on a**

person that violates this section a civil penalty of up to $50.00 per violation.

Under the Maryland Apprenticeship and Training Council requirements, consistent with proper supervision, training and continuity of employment and applicable provisions in collective bargaining agreements, a ratio of one journey person regularly employed to one apprentice shall be allowed. No deviation from this ratio shall be permitted without prior written approval from the Maryland Apprenticeship and Training Council.

Laborers may NOT assist mechanics in the performance of the mechanic's work, NOR USE TOOLS peculiar to established trades.

ALL contractors and subcontractors shall employ only competent workers and apprentices and may NOT employ any individual classified as a HELPER or TRAINEE on a prevailing wage project.

The State Apprenticeship and Training Fund (Fund) law provides that contractors and certain subcontractors performing work on certain public work contracts are required to make contributions toward apprenticeship. See §17-601 through 17-606, State Finance and Procurement, Annotated Code of Maryland. Contractors and subcontractors have three options where they can choose to make their contributions: (1) participate in a registered apprenticeship training program; (2) contribute to an organization that has a registered apprenticeship training program; or (3) contribute to the State Apprenticeship and Training Fund.

The Department of Labor (LABOR) is moving forward with final adoption of regulations. The regulations were published in the December 14, 2012 edition of the Maryland Register.

IMPORTANT: Please note that the obligations under this law will become effective on JULY 1, 2013. This law will require that contractors and certain subcontractors make contributions toward apprenticeship and report those contributions on their certified payroll records that they submit pursuant to the prevailing wage law.

The Department is offering outreach seminars to any interested parties including contractors, trade associations, and any other stakeholders. Please contact the Department at dldliprevailingwage-dllr@maryland.gov or (410) 767-2968 for seminar times and locations. In addition, information regarding this law will be provided at pre-construction meetings for projects covered by the Prevailing Wage law.

For additional information, contact:
Division of Labor and Industry
Maryland Apprenticeship and Traning
1100 North Eutaw Street, Room 606
Baltimore, Maryland 21201
(410) 767-2246
E-Mail Address: matp@dllr.state.md.us.

STATE OF MARYLAND

DEPARTMENT OF LABOR
DIVISION OF LABOR AND INDUSTRY
PREVAILING WAGE SECTION
1100 N. Eutaw Street, Room 607
Baltimore, MD 21201
(410) 767-2342

The wage rates to be paid laborers and mechanics for the locality described below is announced by order of Commissioner of Labor and Industry.

It is mandatory upon the successful bidder and any subcontractor under him, to pay not less than the specific rates to all workers employed by them in executing contracts in this locality. Reference: Annotated Code of Maryland State Finance and Procurement, Section 17-201 thru 17-226.

These wage rates were taken from the locality survey of 2021 for Garrett County, issued pursuant to the Commissioner's authority under State Finance and Procurement Article Section 17-209, Annotated Code of Maryland or subsequent modification.

**Note: If additional Prevailing Wage Rates are needed for this project beyond those listed below, contact the Prevailing Wage Unit. Phone: (410) 767-2342, email: prevailingwage@dllr.state.md.us.

Name and Title of Requesting Officer: Kathleen Meagher - Procurement Officer

Department, Agency or Bureau: Garrett College
687 Mosser Rd McHenry, MD 21541

Project Number
329

Determination Number
50819

Location and Description of work:

Garrett County: Upgrade existing baseball field to become multipurpose athletic field with synthetic turf.

Date of Issue: Sep 02, 2022

BUILDING CONSTRUCTION

CLASSIFICATION	MODIFICATION REASON	BASIC HOURLY RATE	BORROWED FROM	FRINGE BENEFIT PAYMENT
BALANCING TECHNICIAN	AD	$33.75		$10.24
BRICKLAYER	AD	$28.65		$23.65
CARPENTER	AD	$29.00		$19.75
CEMENT MASON	AD	$19.88	043	$6.14
DRYWALL - SPACKLING, TAPING, & FINISHING	AD	$29.00	001	$19.75
ELECTRICIAN	AD	$34.90		$18.55
ELEVATOR MECHANIC	AD	$50.04		$36.36
GLAZIER	AD	$38.01	043	$17.62
INSULATION WORKER	AD	$38.20		$27.86
IRONWORKER - ORNAMENTAL	AD	$31.17	043	$24.38
IRONWORKER - STRUCTURAL	AD	$28.66		$21.74

MILLWRIGHT	AD	$31.25	001	$19.45
PAINTER	AD	$26.25	043	$11.25
PLASTERER	AD	$20.71		$19.80
PLUMBER	AD	$34.53		$17.03
POWER EQUIPMENT OPERATOR - BACKHOE	AD	$42.61		$5.11
POWER EQUIPMENT OPERATOR - BOOM TRUCK	AD	$36.39	001	$22.69
POWER EQUIPMENT OPERATOR - BULLDOZER	AD	$34.32	001	$14.90
POWER EQUIPMENT OPERATOR - CONCRETE PUMP	AD	$34.32		$14.90
POWER EQUIPMENT OPERATOR - CRANE	AD	$34.92		$14.90
POWER EQUIPMENT OPERATOR - DRILL - RIG	AD	$34.32	001	$14.90
POWER EQUIPMENT OPERATOR - EXCAVATOR	AD	$33.77		$14.90
POWER EQUIPMENT OPERATOR - FORKLIFT	AD	$34.05		$14.90
POWER EQUIPMENT OPERATOR - LOADER	AD	$33.77		$14.90
POWER EQUIPMENT OPERATOR - MECHANIC	AD	$34.05		$14.90
POWER EQUIPMENT OPERATOR - OILER	AD	$34.32		$14.90
POWER EQUIPMENT OPERATOR - PAVER	AD	$22.83		$4.25
POWER EQUIPMENT OPERATOR - ROLLER - ASPHALT	AD	$17.68		$3.73
POWER EQUIPMENT OPERATOR - ROLLER - EARTH	AD	$34.32	001	$14.90
POWER EQUIPMENT OPERATOR - SKID STEER (BOBCAT)	AD	$18.80		$9.50
POWER EQUIPMENT OPERATOR - SKIDDER	AD	$33.12	043	$14.60
RESILIENT FLOOR	AD	$28.25	043	$19.00
ROOFER/WATERPROOFER	AD	$29.50		$14.71
SHEETMETAL WORKER (INCLUDING METAL ROOFING)	AD	$42.67		$22.75
SPRINKLERFITTER	AD	$23.65		$6.60
STEAMFITTER/PIPEFITTER	AD	$34.53		$17.03
TILE & TERRAZZO FINISHER	AD	$39.45	001	$2.13
TILE & TERRAZZO MECHANIC	AD	$34.45	001	$0.00
TRUCK DRIVER - DUMP	AD	$21.50		$4.53
TRUCK DRIVER - TACK/TAR TRUCK	AD	$18.00		$4.06
LABORER GROUP II				
LABORER - ASPHALT RAKER	AD	$21.54		$21.65
LABORER - COMMON	AD	$21.54		$21.65
LABORER - CONCRETE PUDDLER	AD	$21.54		$21.65
LABORER - CONCRETE TENDER	AD	$21.54		$21.65
LABORER - CONCRETE VIBRATOR	AD	$21.54		$21.65
LABORER - DENSITY GAUGE	AD	$21.54		$21.65
LABORER - FIREPROOFER - MIXER	AD	$21.54		$21.65
LABORER - FLAGGER	AD	$21.54		$21.65
LABORER - GRADE CHECKER	AD	$21.54		$21.65
LABORER - HAND ROLLER	AD	$21.54		$21.65
LABORER - JACKHAMMER	AD	$21.54		$21.65
LABORER - LANDSCAPING	AD	$21.54		$21.65
LABORER - LAYOUT	AD	$21.54		$21.65
LABORER - LUTEMAN	AD	$21.54		$21.65
LABORER - MORTAR MIXER	AD	$21.54		$21.65
LABORER - PLASTERER - HANDLER	AD	$21.54		$21.65

LABORER - TAMPER	AD	$21.54	$21.65
LABORERS GROUP I			
LABORER - AIR TOOL OPERATOR	AD	$21.54	$21.65
LABORER - ASPHALT PAVER	AD	$21.54	$21.65
LABORER - BLASTER - DYNAMITE	AD	$21.54	$21.65
LABORER - BURNER	AD	$21.54	$21.65
LABORER - CONCRETE SURFACER	AD	$21.54	$21.65
LABORER - HAZARDOUS MATERIAL HANDLER	AD	$21.54	$21.65
LABORER - MASON TENDER	AD	$21.54	$21.65
LABORER - PIPELAYER	AD	$21.54	$21.65
LABORER - SCAFFOLD BUILDER	AD	$21.54	$21.65

Incidental Craft Data: Caulker, Man Lift Operator, Rigger, Scaffold Builder, and Welderreceive the wage and fringe rates prescribed for the craft performing the operation to which welding, scaffold building, rigging, operating a Man Lift, or caulking is incidental.

These **Informational Prevailing Wage Rates** may not be substituted for the requirements of pre-advertisement or onsite job posting for a public work contract that exceeds $250,000 in value and either of the following criteria are met: (1) the contracting body is a unit of State government or an instrumentality of the State and there is any State funding for the project; or (2) the contracting body is a political subdivision, agency, person or entity (such as a county) and the State funds 25% or more of the project.

Modification Codes:

(AD) 17-209 Annual Determination from Survey Wage Data Received
(CH) 17-211 Commissioners' Hearing
(CR) 17-208 Commissioners' Review
(SR) 17-208 Survey Review by Staff

Each "Borrowed From" county is identified with the FIPS 3-digit county code unique for the specific jurisdiction in Maryland.

For additional information on the FIPS (Federal Information Processing Standard) code, see http://www.census.gov/datamap/fipslist/AllSt.txt

The Prevailing Wage rates appearing on this form were originally derived from Maryland's annual Wage Survey. The Commissioner of Labor & Industry encourages all contractors and interested groups to participate in the voluntary Wage Survey, detailing wage rates paid to workers on various types of construction throughout Maryland.

A mail list of both street and email addresses is maintained by the Prevailing Wage Unit to enable up-to-date prevailing wage information, including Wage Survey notices to be sent to contractors and other interested parties. If you would like to be included in the mailing list, please forward (1) your Name, (2) the name of your company (if applicable), (3) your complete postal mailing address, (4) your email address and (5) your telephone number to PWMAILINGLIST@dllr.state.md.us. Requests for inclusion can also be mailed to: Prevailing Wage, 1100 N. Eutaw Street - Room 607, Baltimore MD 21201-2201.

SECTION 00 90 00

SITE SIGN

96 in

72 in

Adrienne A. Jones, Speaker of the House

William C. "Bill" Ferguson IV, President of the Senate

Dereck E. Davis, Treasurer

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor

Building Bright Futures in Maryland

The State of Maryland and the Garrett County Government are

constructing the new

Multipurpose Turf Field

Architect:

Contractor: Leonard S. Fiore, Inc.

The Maryland General Assembly

Adrienne A. Jones, Speaker of the House

William C. "Bill" Ferguson IV, President of the Senate

Board of Public Works

Larry Hogan, Governor

Peter Franchot, Comptroller

Dereck E. Davis, Treasurer

Garrett County Commissioners

Paul Edwards

James Hinebaugh

Larry Tichnell

Garrett College Board of Trustees

Updated Sign to be provided once new State Administration takes office.

DIVISION 1

GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Contract description.

B. Work by Owner.

C. Owner supplied products to be installed by Contractor.

D. Contractor's use of site and premises.

E. Work sequence.

F. Owner Occupancy.

G. Specification Conventions.

H. Description of Base Bid.

I. Subcontractor Bond

J. Wage Rates.

K. Liquidated Damages

L. Project Manager, Superintendent and Assistant Superintendent.

M. Documents.

1.2 CONTRACT DESCRIPTION

A. Work for this Project shall prepare the Multipurpose Field to receive the synthetic turf as provided and installed by separate contract, as identified within the Contract Drawings and Specifications. The Contractor shall provide all materials, labor, equipment, and services necessary for a complete installation of the field substrate surface.

B. Perform Work under a stipulated fee contract with Owner in accordance with the General Conditions of Contract for Construction.

C. Preparation of base field shall be prepared by separate contract.

1.3 WORK BY OWNER

A. Items noted NIC (Not in Contract), will be furnished and installed by Owner or under other contracts unless noted otherwise.

1.4 OWNER SUPPLIED PRODUCTS TO BE INSTALLED BY CONTRACTOR

A. Owner's Responsibilities:
   1. Arrange for and deliver Owner-reviewed Shop Drawings, Product Data, and Samples, to Contractor and Engineer.
   2. Arrange and pay for delivery to site.
   3. On delivery, inspect products jointly with Contractor.
   4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
   5. Arrange for manufacturers' warranties, inspections, and service

B. Contractor's Responsibilities:
   1. Review and coordination of Owner-reviewed Shop Drawings, Product Data, and Samples.

2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
   a.
3. Handle, store, install and finish products as required.
4. Repair or replace items damaged after receipt.

C. Products furnished to site and installed by Owner:
   1. None at this time.

D. Items furnished by Owner for installation by Contractor:
   1. None at this time.

1.5 CONTRACTOR'S USE OF SITE AND PREMISE

A. Limit use of site and premises to allow:
   1. Owner occupancy.
   2. Work by Others and Work by Owner.

B. Access to Site: Limited to 7:00 A.M. to 10:00 P.M.

C. Construction Operations: Limited to areas noted on Drawings.

D. Utility Outages and Shutdown: Provide 72 hour written notice prior to shutdown.

E. Use or possession of alcohol, drugs, tobacco, and firearms on site is strictly prohibited.

F. Wearing of “statement clothing” which can be determined to be offensive is strictly prohibited.

G. All persons engaged in the construction of the project, including employees of the general contractor, subcontractors, suppliers and delivery companies working for any of the above, while on the job site, shall conduct themselves in a courteous manner with respect to and when in the presence of staff and students of the School System. Disrespectful, abusive and/or profane language and/or gestures, and/or harassment of students and staff will not be tolerated and shall represent cause for the Owner to direct the Contractor to remove persons committing such acts from the project.

1.6 WORK SEQUENCE

A. All work shall be performed in accordance with the construction schedule to be prepared by the separate contract (field preparation contractor) which shall reflect milestone completion dates established elsewhere in the specifications.

1.7 OWNER OCCUPANCY

A. Multi-Purpose Field will be ready for turf on or before July 19, 2023.

B. Multi-Purpose Field Turf shall be installed and ready for games on August 14, 2023.

C. Final completion date for the project shall be within 30 days of the Substantial Completion.

D. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations. The Owner will occupy the facility during the course of the project.

E. Schedule the Work to accommodate Owner occupancy.

F. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations.

G. Schedule the Work to accommodate Owner occupancy.

1.8 SPECIFICATION CONVENTIONS

A. These specifications are written in imperative mode and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words “shall be” are included by inference where a colon (:) is used within sentences or phrases.

1.9 DESCRIPTION OF BASE BIDS

A. General: It is the intent of Garrett College to award one contract to the Site Contractor to prepare the base to install the synthetic turf surface as indicated within the contract drawings, specifications, and addenda. Site preparation is the focus of this contract with oversight of the synthetic turf surface. Synthetic turf field surface shall be installed by separate contract. Both contracts will run concurrently and will require close coordination by both to meet the Owner’s completion date.

1.10 SUBCONTRACTOR BOND

A. Owner retains the right to request a subcontractor to submit a performance and payment bond in the amount of his Contract to the Contractor.

B. Owner shall reimburse the subcontractor in the amount of the direct cost of the bond without subcontractor or Contractor markup for overhead, profit, or any other associated cost.

1.11 LIQUIDATED DAMAGES

A. In case of failure on the part of the Contractor to complete the work within the time fixed in the contract or any extensions thereof, the Contract shall pay the Owner, as fixed and agreed, liquidated damages in the sum of one thousand ($1,000.00) dollars for each calendar day of delay.

1.12 PROJECT MANAGER, SUPERINTENDENT AND ASST. SUPERINTENDENT

A. The Project Manager, Superintendent and Assistant Superintendent shall be satisfactory to the Owner in all respects, and the Owner shall have the right to require Contractor to dismiss from the project any Project Manager and/or Superintendent with personnel satisfactory to Owner, at no additional cost. The Contractor shall not replace the Project Manager and/or Superintendent without the consent of the Owner except with personnel satisfactory to the Owner in all respects.

1.13 WARRANTY

A. Upon project completion and Owner acceptance, effective upon complete payment, the Contract shall issue a guarantee against defective workmanship and materials for a period of two (2) years.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submission procedures.

B. Documentation of changes to Contract Sum/Price and Contract Time Schedule of Values.

1.02 RELATED SECTIONS

A. Documents Owner/Contractor Agreement Form: Incorporating monetary value of accepted Alternates.

B. Section 00 15 00 - Instructions to Bidders: Requirements for Alternates.

C. Section 00 22 00 - Form of Proposal: Cost of Alternates.

D. Section 01 10 00 - Summary.

E. Section 01 60 00 - Product Requirements: Product options and substitutions.

1.03 REQUIREMENTS

A. Submit Alternates with full description of the proposed Alternate and the affect on adjacent or related components.

B. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.

C. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.04 SELECTION AND AWARD OF ALTERNATIVES

A. Indicate variation of Bid Price for Alternates described below and list in Bid Form Document or any supplement to it, which requests a "difference" in Bid Price by adding to the base bid price.

B. Bid will be evaluated on base bid and accepted alternates determined by the Owner. Alternates could be taken in any order that maximizes the Owner's budget.

1.05 SCHEDULE OF ALTERNATES

A. ADD Alternate No. 1 – Barrier Net System
   1. Description: Design, furnish and install barrier netting system as described in Section 11 68 00 and as shown on plans.

B. ADD Alternate No. 2 – North Fence Height Adjustment
   1. Description: Change north fence from 4 feet high to 8 feet high. Install 8 feet high chain link fence along the north side of field.

C. ADD Alternate No. 3 – Field Lights Conduit
1. Description: Install conduits for field lighting as shown on plans. Provide pull string.

CI. ADD Alternate No. 4 – Field Light Bases.
1. Description: Install field lighting foundations per details on plans.

CII. ADD Alternate No. 5 – Soccer Scoreboard
1. Description: Furnish and install soccer scoreboard including conduit, conductors, and modifications to existing electrical service drop.
Section 11 68 43

CIII. ADD Alternate No. 6 – Vinyl Coated Chain Link Fence (4 ft high)
1. Description: Change all proposed chain link fence and gates to vinyl coated per Section 32 31 13.16 for the Base Bid height of 4 ft.

CIV. ADD Alternate No. 7 – Vinyl Coated Chain Link Fence (8 ft high)
1. Description: Change all proposed chain link fence and gates to vinyl coated per Section 32 31 13.16 for the Base Bid height of 8 ft fence if Alternate No. 2 is accepted.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Schedule of Values.

1.02 RELATED SECTIONS

A. Section 00 20 00 - Standard Form of Proposal: Contract sum/price including alternates and unit prices.

B. Section 01 33 00 - Submittal Procedures: Schedule of Values.

C. Section 01 06 00 - Material and Equipment: Product substitutions.

1.03 SCHEDULE OF VALUES

A. Submit typed schedule on AIA Form G702 - Standard Monthly Contractor's Requisition for Payment. Contractor's electronic media printout will be considered.

B. Submit Schedule of Values via electronic file (pdf. format in smallest file size possible) within 15 days after date established in Notice to Proceed. Submit to Owner and Engineer.

C. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the major specification Section. Identify site mobilization, bonds, and insurance.

D. Revise schedule to list approved Change Orders, with each Application for Payment.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. The types of minimum requirements for procedures and performance or control work of a general nature include but are not necessarily limited to the following categories:
   1. Surveys and layout.
   2. Trades people and workmanship standards.
   3. General installation provisions.
   4. Cleaning and protection.

1.3 SURVEYS AND LAYOUT

A. General: The Contractor shall be solely responsible for properly laying out the work and for all lines and measurements for all of the work executed under the Contract Documents. The Owner nor his representative will in no case assume the responsibility for laying out the work.

B. All dimensions and grades shown on Drawings are believed to be correct, but the Contractor shall verify them at the site and notify the Engineer in writing of any discrepancies found before proceeding with the work; similarly, as to final lines and grades established by official surveys, the Contractor shall check the Drawings against such established lines and grades and notify the Engineer in writing of any discrepancies found. In the absence of such notifications, extra work caused by discrepancies shall not entitle the Contractor to additional compensation.

C. Working from lines and levels established by property survey, and as shown in relation to the work, establish and maintain two benchmarks near the building and other dependable markers to set lines and levels for the work at each story of construction and elsewhere on site as needed to properly locate each element of entire project. Calculate and measure required dimensions as shown (within recognized tolerances if not otherwise indicated); do not scale drawings to determine dimensions. The Contractor shall be solely responsible for the proper location and level of all the work and for the maintenance of the reference lines and benchmarks.

1.4 TRADES PERSONS AND WORKMANSHIP STANDARDS

A. General: Instigate and maintain procedures to ensure that persons performing work at site are skilled and knowledgeable in methods and craftsmanship needed to produce required quality-levels for workmanship in completed work. Remove and replace work which does not comply with workmanship standards as specified and as recognized in the construction industry for applications indicated. Remove and replace other work damaged or deteriorated by faulty workmanship or its replacement.

1.5 GENERAL INSTALLATION PROVISIONS

A. Installer's Inspection of Conditions: Require Installer of each major unit of work to inspect substrate to receive work, and conditions under which work will be performed, and to report, in writing to Contractor, unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

B. Manufacturer's Instructions: Where installations include manufacture products, comply with manufacturer's applicable instructions and recommendations for installation, to extent these are more explicit or more stringent than requirements indicated in Contract Documents.

C. Inspect each item of materials or equipment immediately prior to installation and reject damaged and defective items.

D. Provide attachment and connection devices and methods for securing work properly as it is installed, true to line and level, and within recognized industry tolerances if not otherwise indicted. Allow for expansions and building movements. Provide uniform joint widths in exposed work, organized for best possible visual effect. Refer questionable visual-effect choices to the Engineer for final decision.

E. Recheck measurements and dimensions of the work, as an integral step of starting each installation.

F. Install work during conditions of temperature, humidity, exposure, forecasted weather, and status of project completion which will ensure best possible results for each unit of work, in coordination with entire work. Isolate each unit of work from non-compatible work, as required to prevent deterioration.

G. Concealed Work: Coordinate enclosure of work, including backfilling, placing concrete or other work which will conceal mechanical and electrical lines, reinforcing and other items with the Engineer and with required inspections and tests, so as to minimize necessity of uncovering work for that purpose. Record exact locations of mechanical, electrical and site utility work on Record Drawings.

H. Mounting Heights: Where mounting heights are not indicated, mount individual units of work at industry-recognized standard mounting heights, or at heights specified by applicable codes, for applications indicated. Refer questionable mounting height choices to the Engineer for final decision.

1.6 COORDINATION - MECHANICAL AND ELECTRICAL

A. Enclose and conceal from view wiring, conduit, ducts, heat piping, sprinkler piping, water piping and other utility lines in habitable rooms and spaces, unless otherwise shown or specified. Do not leave wiring, conduits, pipes, etc., exposed in a habitable space so as to interfere with occupancy of that room.
   1. Where not otherwise shown or approved, use adjacent masonry, lath and plaster, gypsum board or other finish construction to form the enclosing chase or furring.
   2. Enclose all such utilities with furring, chases or other enclosures as required, whether or not an enclosure is specifically shown.

B. Locate sprinkler heads, ceiling diffusers, lighting fixtures, grilles, speakers and other similar items occurring in exposed grid suspended ceiling systems centered in lay-in panels in both directions or to fill a full ceiling grid module.

C. Coordination: Do not fabricate or install ductwork, electric conduit, pull boxes, piping and other mechanical items above suspended ceilings until the Contractor has verified that there will be no interference between trades and that the design requirements shown and specified for room construction, equipment, fixtures and finishes can be maintained. Prior to installation, promptly report to the Engineer apparent interference or difficulties anticipated.

1.7 CLEANING AND PROTECTION

A. General: During handling and installation of work at project site, clean and protect work in progress and adjoining work on a basis of perpetual maintenance. Apply suitable protective covering on newly installed work where reasonably required to ensure freedom from damage or deterioration at time of substantial completion; otherwise, clean and perform maintenance on newly installed work as frequently as necessary through remainder of construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

B. Limiting Exposure of Work: To extent possible through reasonable control and protection methods, supervise performance of work in a manner and by means which will ensure that none of the work, whether completed or in progress, will be subjected to harmful, dangerous, damaging, or otherwise deleterious exposures during construction period. Such exposures include where applicable (but not by way of limitation) static loading, dynamic loading, internal pressures, external pressures, high or low temperatures, thermal shock, high or low humidity, air contamination or pollution, water, ice, solvents, chemicals, light, radiation, puncture, abrasion, heavy traffic, soiling, bacteria, insect infestation, combustion, electrical current, high speed operation, improper lubrication, unusual wear, misuse, incompatible interface, destructive testing, misalignment, excessive weathering, unprotected storage, improper shipping/handling, theft and vandalism.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Procedures for preparation and submittal of Applications for Payment.

1.2 RELATED SECTIONS

A. Section 00 30 00 - General Conditions: Progress Payments and Final Payment.

B. Section 00 40 00 - Owner/Contractor Agreement: Contract Sum/Price and unit prices amounts of Progress Payments and Retainages time schedule for submittals.

C. Section 01 19 00 - Contract Considerations: Schedule of Values.

D. Section 01 28 00 - Change Order Procedures: Procedures for changes to the Work.

E. Section 01 33 00 - Submittal procedures.

F. Section 01 73 00 – Execution Requirements: Close-out procedures.

1.3 FORMAT

A. AIA Form G702 – Application and Certification for Payment and G703 – Continuation Sheet.

B. For each item, provide a column for listing: Item Number; Description of work; Scheduled Value, Previous Applications: Work in Place and Site Stored Materials under this Application: Authorized Change Orders; Total Completed and Stored to Date of Application; Percentage of Completion; Balance to Finish; and Retainage.

C. Utilize Table of Contents to identify each line item with number and title of the major specification section.

1.4 PREPARATION OF APPLICATIONS

A. Present required information in typewritten form or on approved electronic media printout.

B. Execute certification by signature of authorized officer.

C. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for site stored products.

D. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of Work.

E. Prepare Application for Final Payment as specified in Section 01 73 00.

1.5 SUBMITTAL PROCEDURES

A. Submit each Application for Payment fully executed, signed, sealed, and notarized by

electronic means in .pdf format to the Owner / Engineer via email.

B. Submit an updated construction schedule with each Application for Payment.

C. Payment Period: Submit at intervals stipulated in the Agreement.

D. Submit under transmittal letter specified in Section 01 33 00.

E. Submit pencil copy electronically in pdf. format for review by Owner and Engineer.

1.6 SUBSTANTIATING DATA

A. When Engineer requires substantiating information, submit data justifying dollar amounts in question.

B. Provide one copy of data with cover letter for each copy of submittal. Show Application number and date, and line item by number and description.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submittals.

B. Documentation of change in Contract Sum/Price and Contract Time.

C. Change procedures.

D. Construction Change Authorization Directive.

E. Stipulated Sum change order.

F. Unit price change order.

G. Time and material change order.

H. Execution of change orders.

I. Correlation of Contractor submittals.

1.2 RELATED SECTIONS

A. Section 00 30 00 - General Conditions: Governing requirements for changes in the Work, in Contract Sum/Price, and Contract Time.

B. Section 00 35 00 - Supplementary Conditions: Percentage Allowances for Contractor's overhead and profit.

C. Section 00 40 00 Owner/Contractor Agreement Forms: Monetary values of established Unit Prices and percentage allowances for Contractor's overhead and profit.

D. Section 01 19 00 - Contract Considerations: Schedule of Values.

E. Section 01 27 00 - Applications for Payment: Payment applications.

F. Section 01 60 00 - Material and Equipment: Product options and substitutions.

G. Section 01 73 00 - Execution Requirements: Project Record Documents.

1.3 SUBMITTALS

A. Submit name of the individual authorized to receive change documents and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. Change Order Forms: A.I.A. Form G701 - Change Order.

C. Submit all request with supporting data in .pdf format via email to Owner / Engineer.

D. Provide completed form per Section 01 29 00 for all proposed requests.

1.4 DOCUMENTATION OF CHANGE IN CONTRACT SUM/PRICE AND CONTRACT TIME

A. Maintain detailed records of work done on a time and material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work.

B. Document each quotation for a change in cost or time with sufficient data to allow evaluation of the quotation.

C. On request, provide additional data to support computations:
   1. Quantities of products, labor, and equipment.

2. Taxes, insurance, and bonds.
3. Overhead and profit.
4. Justification for any change in Contract Time.
5. Credit for deletions from Contract, similarly documented.

D. Support each claim for additional costs, and for work done on a time and material basis, with additional information:
1. Origin and date of claim.
2. Dates and times work was performed, and by whom.
3. Time records and wage rates paid.
4. Invoices and receipts for products, equipment, and subcontracts, similarly documented.

1.5 CHANGE PROCEDURES

A. The Engineer will advise of minor changes in the Work not involving an adjustment to Contract Sum/Price or Contract Time as authorized by AIA A201, 1997 Edition, Paragraph 7.4 by issuing supplemental instructions on AIA Form G710.

B. The Engineer may issue a Proposal Request which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor will prepare and submit an estimate within fourteen (14) working days.

C. The Contractor may propose a change by submitting a request for change to the Engineer, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum/Price and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01 60 00.

1.6 CONSTRUCTION CHANGE AUTHORIZATION

A. Engineer may issue a document, signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

B. The document will describe changes in the work and will designate method of determining any change in Contract Sum/Price or Contract Time.

C. Promptly execute the change in Work.

1.7 STIPULATED SUM CHANGE ORDER

A. Based on Proposal Request and Contractor's fixed price quotation or Contractor's request for a Change Order as approved by Engineer.

1.8 UNIT PRICE CHANGE ORDER

A. For predetermined unit prices and quantities, the Change Order will be executed on a fixed unit price basis.

B. For unit costs or quantities of units of work which are not predetermined, execute Work under a Construction Change Authorization.

C. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.

1.9 TIME AND MATERIAL CHANGE ORDER

A. Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

B. Engineer will determine the change allowable in Contract Sum/Price and Contract Time as provided in the Contract Documents.

C. Maintain detailed records of work done on Time and Material basis.

D. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

1.10 EXECUTION OF CHANGE ORDERS

A. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

1.11 CORRELATION OF CONTRACTOR SUBMITTALS

A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum/Price.

B. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust time for other items of work affected by the change and resubmit.

C. Promptly enter changes in Project Record Documents.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Schedule of values.

B. Applications for payment.

C. Change procedures.

D. Defect assessment.

E. Unit Prices.

1.2 SCHEDULE OF VALUES

A. Submit printed schedule on IAC/PSCP Form 306.4 Standard Monthly Contractor's Requisition for Payment and AIA Form G702 - Application and Certifications for Payment with AIA Form G703 - Continuation Sheet.

B. Submit a copy of the Schedule of Values electronically in pdf. format (smallest file size) within ten (10) days after date established in Notice to Proceed.

C. Format: Utilize Table of Contents of this Project Manual. Identify each line item with number and title of major specification Section. Identify bonds as a separate cost.

D. Include, as a separate line item, the amount for each Allowance included in the Contract. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by unit cost to achieve total for each item.

E. Revise schedule to list approved Change Orders, with each Application for Payment.

1.3 APPLICATIONS FOR PAYMENT

A. Submit each application on AIA G702 with continuation sheet with original signatures and notarized. Provide updated schedule with each submittal. Submit electronically in .pdf format to Owner / Engineer via email.

B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

C. Payment Period: Submit at intervals stipulated in the Agreement.

D. Substantiating Data: When Engineer requires substantiating information, submit data justifying dollar amounts in question.

E. Submit pencil copy for approval in pdf. format before formal submittal. Provide all MBE form as required.

1.4 CHANGE PROCEDURES

A. Submittals: Submit the name of individual authorized to receive change documents and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. The Engineer will advise of minor changes in the Work by either responding to the Contractor's Request for Information (RFI) or by the issuance of an Architectural (Engineering) Supplemental Instructions (ASI) on AIA Form G710.

C. The Engineer may issue a Request for Proposal (RFP) including a detailed description of proposed change with supplementary or revised Drawings and specifications. Contractor will prepare and submit estimate within fifteen calendar (15) days.

D. Contractor may propose changes by submitting a Change Order Request (COR) to Owner/Engineer describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on Work by separate or other Contractors. Document requested substitutions in accordance with Section 01 60 00.

E. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed price quotation or Contractor's request for Change Order as approved by Engineer.

F. Unit Price Change Order: For contract unit prices and quantities, the Change Order will be executed on fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under Field Directive. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.

G. Field Directive: Engineer may issue directive, signed by Owner, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.

H. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract. Engineer will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.

I. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

J. Document each quotation for change in cost or time with sufficient data to allow evaluation of quotation.

K. Change Order Forms: Change Order Request Proposal attached at the end of this section.

L. Execution of Change Orders: The Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

M. Correlation of Contractor Submittals:
   1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
   2. Promptly enter changes in Project Record Documents.

1.5 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. If, in the opinion of the Owner/Engineer, it is not practical to remove and replace the Work, the Owner/Engineer will direct appropriate remedy or adjust payment.

C. The defective * Work may remain, but unit sum/price will be adjusted to new sum/price at discretion of Owner/Engineer. (*At the Owner’s Option)

D. Defective * Work will be partially repaired to instructions of Engineer, and unit sum/price will be adjusted to new sum/price at discretion of Owner/Engineer. (*At the Owner’s Option)

E. Individual specification sections may modify these options or may identify specific formula or percentage sum/price reduction.

F. Authority of Owner/Engineer to assess defects and identify payment adjustments, is final.

G. Non-Payment for Rejected Products: Payment will not be made for rejected products for any of the following:
   1. Products wasted or disposed of in a manner that is not acceptable.

2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond lines and levels of required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

1.6 UNIT PRICES

A. Unit Prices shall be used for "Extra Work" and for "Credit" work and shall be identified on the Bid Proposal Form (Refer to Section 00 20 00).

B. Authority: Measurement methods are delineated in individual specification sections.

C. Measurement methods delineated in individual specification sections complement criteria of this section. In event of conflict, requirements of individual specification section govern.

D. Take measurements and compute quantities. The owner's field representative will verify measurements and quantities.

E. Unit Quantities: Actual quantities supplied or placed in the Work shall determine payment.

F. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services, and incidentals; erection, application or installation of item of the Work; overhead and profit.

G. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by Engineer multiplied by unit sum/price for Work incorporated in or made necessary by the Work.

H. Measurement of Quantities:
1. Weigh Scales: Inspected, tested and certified by applicable State department. Weights and Measures department within past year.
2. Platform Scales: Of sufficient size and capacity to accommodate conveying vehicle.
3. Metering Devices: Inspected, tested and certified by applicable State department.
4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
5. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
6. Measurement by Area: Measured by square dimension using mean length and width or radius.
7. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.
8. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.
9. Costs shall be quoted utilizing both prevailing wage and without prevailing wage.

I. Schedule of Unit Prices
1. Unit Price No. 1: Over-excavation of non-rippable rock at areas as directed by the Engineer:
   a. Qty: 1 cubic yard
2. Unit Price No. 2: Over-excavation of soil and rippable rock at areas as directed by the Engineer.
   a. Qty: 1 cubic yard
3. Unit Price No. 3: 8" perforated HDPE storm pipe.
   a. Qty: 1 Lineal Foot.
4. Unit Price No. 4: 12" perforated HDPE storm pipe.
   a. Qty: 1 Lineal Foot.

5. Unit Price No. 5: Backfill with select structural material.
   a. 1 cubic yard.
6. Unit Price No. 6: 4 feet high chain link fence including all posts, bracing, etc...
   a. 1 linear foot.
7. Unit Price No. 7: Furnish and install Shredded and compacted recycled rubber mulch, 4-inch thick per detail.
   a. 1 square yard.
8. Unit Price No. 8: 18” Nyloplast basin up to 48” deep, with connectors and cover.
   a. Each.
9. Unit Price No. 9: 24” Nyloplast basin up to 48” deep, with connectors and cover.
   a. Each.

1.7 ALLOWANCES

A. Selection and Purchase
   1. At the earliest practical date after award of the Contract, advise the Engineer of the date when the final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the work.
   2. At the Engineer’s request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the work.
   3. Purchase products and systems selected by the Engineer from the designated supplier.

B. Submittals
   1. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
   2. Submit invoices or delivery slips to show the actual quantities of materials delivered to the site for use in fulfillment of each allowance.

C. Examination
   1. covered by an allowance promptly upon delivery for damage or defects.

D. Preparation
   1. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

E. Schedule of Allowances (TBD)

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Coordination and project conditions.

B. Field engineering.

C. Preconstruction meeting.

D. Site mobilization meeting.

E. Progress meetings.

F. Preinstallation meetings.

1.2 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of various sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, operating equipment.

C. Coordinate space requirements, supports, and installation of mechanical and electrical Work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.

E. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Owner's partial occupancy.

F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.3 FIELD ENGINEERING

A. The Contractor shall employ a Land Surveyor registered in the State of Maryland and acceptable to Owner/Engineer.

B. Locate and protect survey control and reference points. Promptly notify Engineer of discrepancies discovered.

C. Control datum for survey is that shown on Drawings.

D. Verify setbacks and easements; confirm drawing dimensions and elevations.

E. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.

F. Submit copy of site drawing and certificate signed by Land Surveyor certifying elevations and locations of the Work are in conformance with Contract Documents.

G. Maintain complete and accurate log of control and survey work as Work progresses.

H. On completion of foundation walls and major site improvements, prepare certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.

I. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

J. Promptly report to General Contractor loss or destruction of reference point or relocation required because of changes in grades or other reasons.

K. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Engineer.

1.4 PRECONSTRUCTION MEETING

A. The Owner/Engineer will schedule meeting after Notice of Award.

B. Attendance Required: Owner, Engineer, and Contractor.

C. Agenda:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of Subcontractors, list of products, schedule of values, and progress schedule.
5. Designation of personnel representing parties in Contract, and Engineer.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
7. Scheduling.
8. Scheduling activities of Geotechnical Engineer.

D. The Engineer will record minutes and distribute copies within seven (7) days after meeting to major participants.

1.5 SITE MOBILIZATION MEETING

A. Owner/Engineer will schedule meeting at Project site prior to Contractor occupancy.

B. Attendance Required: Owner, Engineer, Special Consultants, and Contractor, Contractor's Superintendent, and major Subcontractors.

C. Agenda:
1. Use of premises by Owner and Contractor.
2. Owner's requirements and partial occupancy.

3. Construction facilities and controls provided by Owner.
4. Temporary utilities provided by Contractor.
5. Survey and building layout.
6. Security and housekeeping procedures.
7. Schedules.
8. Application for payment procedures.
9. Procedures for testing.
10. Procedures for maintaining record documents.
11. Requirements for start-up of equipment.
12. Inspection and acceptance of equipment put into service during construction period.

D. The Engineer will record minutes and distribute copies within seven (7) days after meeting to participants.

1.6 PROGRESS MEETINGS

A. The Owner/Engineer will schedule and administer meetings throughout progress of the Work at maximum two (2) week intervals.

B. The General Contractor will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required: Contractor, major subcontractors and suppliers, Owner, Engineer, as appropriate to agenda topics for each meeting.

D. Agenda:
1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems impeding planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

E. The Engineer will record minutes and distribute copies within seven (7) days after meeting to participants.

1.7 PREINSTALLATION MEETING

A. When required in individual specification sections, convene pre-installation meeting at Project site prior to commencing work of specific section.

B. Require attendance of parties directly affecting, or affected by, Work of specific section.

C. Notify Owner/Engineer seven (7) days in advance of meeting date.

D. Prepare agenda and preside at meeting:
   1. Review conditions of installation, preparation, and installation procedures.
   2. Review coordination with related work.

E. The Contractor will record minutes and distribute copies within seven (7) days after meeting to participants.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

PART 1 GENERAL

1.1 DESCRIPTION

A. Work Included: To assure adequate planning and execution of the Work so that the Work is completed within the number of calendar days allowed in the Contract, and to assist the Engineer in appraising the reasonableness of the proposed schedule and in evaluating progress of the Work, prepare and maintain the schedules and reports described in Section.

B. Related Work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   2. Requirements for Progress Schedule: General Conditions.
   3. Construction Period: Form of Agreement.

C. Definitions:
   1. “Day,” as used throughout the Contract unless otherwise stated, means “calendar day”.

1.2 QUALITY ASSURANCE

A. Employ a scheduler who is thoroughly trained and experienced in compiling construction schedule data, and in preparing and issuing periodic reports as required below.

B. Perform data preparation, analysis, charting, and updating in accordance with standards approved by the Engineer.

C. Reliance upon the approved schedule:
   1. The construction schedule as approved by the Engineer will be an integral part of the Contract and will establish interim completion dates for the various activities under the Contract.
   2. Should any activity not be completed within 10 days after the stated scheduled date, the Owner shall have the right to require the Contractor to expedite completion of the activity by whatever means the Owner deems appropriate and necessary, without additional compensation to the Contractor
   3. Should any activity be 15 days or more behind schedule, the Owner shall have the right to perform the activity or have the activity performed by whatever method the Owner deems appropriated.
   4. Costs incurred by the Owner and by the Engineer in connection with expediting construction activity under this Article shall be reimbursed by the Contractor.
   5. It is expressly understood and agreed that failure by the Owner to exercise the option either to order the Contractor to expedite an activity or to expedite the activity by other means shall not be considered to set a precedent for any other activities.

1.3 SUBMITTALS

A. Comply with pertinent provisions of Section 01 33 00.

B. Preliminary Analysis: Within ten (10) calendar days after Contractor has received the Owner’s Notice to Proceed, submit one reproducible copy and four prints of a preliminary construction schedule prepared in accordance with Part 3 of this Section.

C. Construction Schedule: Within ten (10) calendar days after the Contractor has received the Owner's Notice to Proceed, submit one reproducible copy and four prints of a preliminary construction schedule prepared in accordance with Part 3 of this Section.

D. Periodic Reports: On the first working day of each month following the submittal described in Paragraph 1.3-C above, submit four prints of the construction schedule updated as described in Part 3 of this Section.

PART 2 PRODUCTS

2.1 CONSTRUCTION ANALYSIS

A. Graphically show by bar-chart the order and interdependence of all activities necessary to complete the Work, and the sequence in which each activity is to be accomplished, as planned by the Contractor and his project field superintendent in coordination with all subcontractors whose work is shown on the diagram.

B. Include, but do not necessarily limit indicated activities to:
1. Project mobilization;
2. Submittal and approval of Shop Drawings and Samples;
3. Procurement of equipment and critical materials;
4. Fabrication of special material and equipment, and its installation and testing;
5. Final cleanup;
6. Final inspecting and testing; and
7. All activities by the Engineer that affect progress, required dates for completion, or both, for all and each part of the Work.

PART 3 EXECUTION

3.1 PRELIMINARY ANALYSIS

A. Contents:
1. Show all activities of the Contractor under this Work for the period between receipt of Notice to Proceed and submittal of construction schedule required under Paragraph 1.3-C above;
2. Show the Contractor's general approach to remainder of the Work;
3. Show cost of all activities scheduled for performance before submittal and approval of the construction schedule.

B. Submit in accordance with Paragraph 1.3-B above.

3.2 CONSTRUCTION SCHEDULE

A. As soon as practicable after receipt of Notice to Proceed, complete the construction analysis in preliminary form, meet with the Engineer, review contents of the proposed construction schedule, and make revisions agreed upon.

B. Submit in accordance with Paragraph 1.3-C above.

3.3 PERIODIC REPORTS

A. As required under Paragraph 1.3-D above, update the approved construction schedule.
   1. Indicate “actual” progress in percent completion for each activity;
   2. Provide written narrative summary of revisions causing delay in the program, and an explanation of corrective actions taken or proposed.

3.4 REVISIONS

A. Make only those revisions to approved construction schedule as are approved in advance by the Engineer.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Shop Drawings
   2. Product Data
   3. Samples
   4. Color/Pattern Selection
   5. Maintenance/Operation Manuals
   6. Warranties/Bonds
   7. Other submittals required by the Contract Documents, and re-submittals necessary to establish compliance with the specified requirements.
   8. Submittal cover sheet.

B. Related Sections:
   1. All Bid Documents, including, but not limited to: Drawings and general provisions of the Contract, including Instructions to Bidders, Supplemental Instructions to bidders, General Conditions, Supplementary Conditions, Addenda and Division 1 of these Specifications Sections, apply to this section.
   2. Individual requirements for submittals also may be described in pertinent Sections of these Specifications.
   3. The following sections contain requirements that relate to this section.
      a. Section 01 29 00 - Price and Payment Procedures
      b. Section 01 40 00 - Quality Requirements
      c. Various Sections - Warranties

1.2 DEFINITIONS

A. General: Work-related submittals of this section are categorized for convenience as follows, but not limited to:
   1. Shop Drawings: Include specially prepared technical data for this Project, including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements, and similar information not in standard print for general application to a range of similar projects.
   2. Product Data: Includes standard printed information on materials, products, and systems; not specially prepared for this project, other than the designation of selections from among available choices printed therein.
   3. Samples: Includes both fabricated and un-fabricated physical examples of materials, products, and units of work; both as complete units and as smaller portions of units of work; either for limited visual inspection or (where indicated) for more detailed testing and analysis.

1.3 QUALITY ASSURANCE

A. Coordination of Submittals:
   1. Prior to each transmittal of a submittal, carefully review, verify, and coordinate all aspects of each item being submitted.
   2. Verify that each item and the submittal for it conform in all respects with the specified requirements.

3. Each submittal shall bear the required Contractor's Certification Stamp indicating that his review, verification, and coordination has been performed.
4. Any submittals not bearing said stamp will be returned to the Contractor for re-submission without further consideration, in such event, it will be deemed that the Contractor has not complied with this requirement and that the Contractor shall bear the risk of all delays to the same extent as if no submittal had been made.
5. Identification of Submittals: Place a submittal cover sheet on all submittal for identification. On the cover sheet indicate the:
    a. Project name
    b. Date
    c. The name of the Contractor that prepared the submittal
    d. Specification Section Number, Title and item reference within, if applicable
    e. Drawing sheet number and detail reference(s), designation(s)
    f. Any submittals that do not include the required cover sheet shall be returned to the Contractor for resubmission.
6. Submittal Transmittal Requirements:
    a. Submit original
    b. Identify items from only one Division of the Contract Documents on each transmittal (i.e. do not list items from Division 8 and 9 on the same transmittal).
7. Resubmittals:
    a. Reference the original submittal number on your new transmittal, eg. Resubmittal of "23 00 00-001" or "23 00 00-001R".

1.5 CONTRACTORS RESPONSIBILITIES

A. Contractors responsibilities for compliance with the requirements of Contract Documents is not relieved by Engineers/Consulting Engineer's review of submittals

B. Notify Engineer, in writing at time of submittal, of any deviations from requirements of Contract Documents.

C. Begin no work which requires submittals until return of submittals with Consulting Engineer's stamp and initials or signature indicating review.

D. After Consulting Engineer's review, the General Contractor will distribute submittal copies to involved Contractors. Contractors shall ascertain that they have received all submittal information to properly execute and coordinate their work.

E. When a shop drawing or other submittal must be resubmitted by the Contractor, no changes other than those required as a result of the previous submission shall be made without the Consulting Engineer being made aware of the change. If such changes are made without so advising the Engineer/Consulting Engineer, the Contractor will assume all responsibility for the possible consequences.

F. No portion of the work requiring a shop drawing, sample, or catalog data shall be started nor shall any materials be fabricated or installed prior to the review of such item.

1.6 PROCESSING OF SUBMITTALS

A. Shop Drawings, Product Data and Samples:
    1. The Contractor shall, within fifteen (15) calendar days (or sooner, if required elsewhere in the Contract Documents) after receiving the Owner's signed Contract,

Notice to Proceed, or "Letter of Intent", forward all submittals to the Engineer for review and/or approval.

2. Transmittal of Submittals:
   a. Transmit each submittal from Contractor to Engineer using a transmittal form.
   b. Record on transmittal form deviations from Contract Documents requirements, including minor variations and limitations. Include the Contractor's Certificate that the information complies with the Contract Document's requirements.

1.7 CONTRACTORS "SUBMITTAL STAMP"

A. Representation: By his submittal of any shop drawings, samples, and product data, the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials dimensions, catalog numbers and similar data, or will do so; and that he has checked and coordinated each item with other applicable approved shop drawings and the Contract Documents requirements.

B. The Contractor shall stamp all shop drawings, samples, and product date with the following certification:

"I certify that the specification requirements have been met and all dimensions, conditions and quantities are verified as shown and/or corrected on this submittal."

Signed:
(For) Contractor

Date:

C. Submittals received without the above certification will be returned, not reviewed.

1.8 SUBSTITUTION REJECTION

A. If a non approved substitution is submitted, it will be returned "Submit Specified Item". Only previously approved substitutions will be reviewed. Refer to Section 01 60 00 for substitution request procedures.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION

3.1 SHOP DRAWINGS

A. Before submitting shop drawings for the Engineer's review, the Contractor shall check them for accuracy, shall ascertain that all work contiguous with and having bearing on other work shown on shop drawings is accurately drawn and that the work is in conformity with the Contract Document requirements.
   1. The submission of shop drawings or re-submission of corrected shop drawings constitutes evidence that the Contractor accepts and is willing to perform the work as shown, in a workmanlike manner, and in accordance with the best standard practice.

2. Verify:
   a. Field measurements
   b. Field construction criteria
   c. Catalog numbers and similar data

B. Types of prints and copies required:
   1. Submit electronic (PDF) files of each required Shop Drawings indicating accurately and in scale sufficiently large enough to show all pertinent aspects of the item and its method of connection to the work.
   2. Review comments of the Engineer or his Consultant Engineer will be shown on the returned files. The General Contractor will print copies from the electronic for his needs.
   3. The Engineer/Consulting Engineers distribute the shop drawings for the Owner and their use.
   4. Electronic files shall be labeled to match the submittal number.

C. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

D. Copies of approved shop drawings shall be maintained on site.

3.2 PRODUCT DATA

A. Before submitting product data for Engineer's review the Contractor shall assemble the Product Data into a single electronic submittal for each element of construction or system, including printed formation such as manufacturer's installation instructions, catalog cuts, color charts, letter of certification, roughing-in diagrams and templates, standard wiring diagrams, performance curves, maintenance data, calculations and schedules.
   1. Provide three (3) original copies of color charts in addition to electronic copy.

B. Mark copy to show applicable choices and options. Where printed Product Data includes information on several products, mark copies to indicate those items being submitted.

C. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

3.3 SAMPLES

A. Before submitting samples to the Engineer for approval, the Contractor shall assure himself that material represented thereby conforms to Contract Requirements and is readily available in the quantity required.

B. Provide samples identical to the precise article proposed to be provided.
   1. Identify as described in "Identification of Submittals".
   2. Provide samples of the size required when a specific sample size is noted.

C. Number of samples required:
   1. Unless otherwise specified, submit two (2) sets of each sample.
   2. By prearrangement in specific cases, a single sample may be submitted for review and, when approved, be installed in the work at a location agreed upon by the Engineer.

D. Field samples/mock-ups: Of sufficient size to clearly illustrate functional characteristics of product or material unless otherwise indicated by the projects Engineer.
   1. Construct each complete, including work of all trades required in finished work.

3.4 COLORS, FINISH AND/OR PATTERN SELECTION

A. Submit the precise color and pattern that is specifically called out in the Contract Documents unless a choice of colors or patterns are requested.

B. Number of Copies Required:
   1. Submit three (3) color or pattern samples of each specified item requiring color and/or pattern selection.

3.5 ELECTRONIC BACKGROUNDS

A. If the Contractor and/or subcontractors require an electronic file of the construction documents, only plan backgrounds will be provided at a cost of $35.00 per drawing plus $15.00 handling fee. Total $50.00 per drawing.
   1. Backgrounds will be released with no title blocks.
   2. Engineer's drawings that are resubmitted as a shop drawing will be rejected.

B. Request must be made in writing to the Engineer by the General Contractor.

C. Electronic files will not be released until a check is submitted made to the order of SPECS Engineers.

3.6 CONSULTANT REVIEWS

A. A maximum of two (2) reviews will be provided by the A/E consultants.

B. If a third or more consultant reviews are required, the Contractor will be invoiced on a time and material basis.
   1. The cost of additional reviews will be invoiced to the General Contractor with payment due in thirty (30) calendar days from the date of the invoice.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Coordination.

B. Pre-construction conference.

C. Site mobilization conference.

D. Progress meetings.

E. Pre-installation conferences.

1.2 RELATED SECTIONS

A. Section 01 41 00 - Project Coordination.

B. Section 01 45 00 - Cutting and Patching.

1.3 COORDINATION

A. Coordinate scheduling, submittals, and Work of the various Sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

C. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

E. Coordinate completion and clean up of Work of separate Sections in preparation for Substantial Completion and for portions of Work designated for Owners partial occupancy.

F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.4 CUTTING AND PATCHING

A. Refer to Section 01 45 00.

B. Identify any hazardous substance or condition exposed during the Work to the Engineer/ Engineer for decision or remedy.

1.5 PRE-CONSTRUCTION CONFERENCE

A. Engineer will schedule a conference after Notice of Award.

B. Attendance Required: Owner, Engineer, and Contractor.

C. Agenda:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of Subcontractors, list of products, Schedule of Values, and progress schedule.
5. Designation of personnel representing the parties in Contract, and in field, and the Engineer.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders and Contract closeout procedures.
7. Scheduling.

1.6 SITE MOBILIZATION CONFERENCE

A. Engineer will schedule a conference at the Project site prior to Contractor occupancy.

B. Attendance Required: Owner, Engineer, and Contractor, Contractor's Superintendent, and major Subcontractors.

C. Agenda:
1. Use of premises by Owner and Contractor.
2. Owner's requirements and partial occupancy.
3. Construction facilities and controls provided by Owner.
4. Temporary utilities provided by Owner.
5. Survey and building layout.
6. Security and housekeeping procedures.
7. Schedules.
8. Procedures for testing.
9. Procedures for maintaining record documents.
10. Requirements for start-up of equipment.
11. Inspection and acceptance of equipment put into service during construction period.

1.7 PROGRESS MEETINGS

A. Engineer will schedule and administer meetings throughout progress of the Work at maximum twice monthly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.
1. Engineer will record minutes and distribute within seven (7) working days after the progress meeting to the Owner, Consultants, and General Contractor.

C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Engineer, as appropriate to agenda topics for each meeting.

D. Agenda:
   1. Review minutes of previous meetings.
   2. Review of Work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems which impede planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Review of off-site fabrication and delivery schedules.
   7. Maintenance of progress schedule.
   8. Corrective measures to regain projected schedules.
   9. Planned progress during succeeding work period.
   10. Coordination of projected progress.
   11. Maintenance of quality and work standards.
   12. Effect of proposed changes on progress schedule and coordination.
   13. Other business relating to Work.

1.8 PRE-INSTALLATION CONFERENCES

A. When required in individual specification Section, convene a pre-installation conference at work site prior to commencing work of the Section.

B. Require attendance of parties directly affecting, or affected by, work of the specific Section.

C. Notify Engineer seven (7) days in advance of meeting date.

D. Prepare agenda, preside at conference, record minutes, and distribute copies within seven (7) working days after conference to participants, with two (2) copies to Engineer and two (2) copies to the Owner.

E. Review conditions of installation, preparation and installation procedures, and coordination with related work.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Quality control and control of installation.

B. Tolerances

C. References.

D. Mock-up requirements.

E. Manufacturers' field services.

F. Examination.

G. Preparation.

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. When manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform Work by persons qualified to produce required and specified quality.

F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.3 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES

A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date for receiving bids, except where specific date is established by code.

C. Obtain copies of standards where required by product specification sections.

D. When specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

E. Neither contractual relationships, duties, nor responsibilities of parties in Contract nor those of Engineer shall be altered from Contract Documents by mention or inference otherwise in reference documents.

1.5 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.

B. Submit qualifications of observer to Owner/General Contractor/Engineer 30 days in advance of required observations. Observer subject to approval of Owner.

C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Refer to Section 01 33 00 - Submittal Procedures, Manufacturers' Field Reports article.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Verify utility services are available, of correct characteristics, and in correct locations.

3.2 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Project coordination administrator.

B. Construction mobilization.

C. Schedules.

D. Submittals.

E. Coordination drawings.

F. Closeout procedures.

1.2 RELATED SECTIONS

A. Section 01 39 00 - Coordination and Meetings: Project meetings, Preconstruction conferences, Progress meetings.

B. Section 01 73 00 - Execution Requirements: Contract closeout procedures.

1.3 PROJECT COORDINATION ADMINISTRATOR

A. Project Coordination Administrator: Owner.

1.4 CONSTRUCTION MOBILIZATION

A. Cooperate with the Administrator in allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.

B. During construction, coordinate use of site and facilities through the Administrator.

C. Comply with Administrator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.

D. Comply with instructions of the Administrator for use of temporary utilities and construction facilities.

E. Coordinate filed engineering and layout work under instructions of the Administrator.

1.5 SCHEDULES

A. Submit bar chart preliminary progress schedule.

B. After review, revise and resubmit schedule to comply with revised Project schedule.

C. During progress of Work, revise and resubmit with Applications for Payment.

1.6 SUBMITTALS

A. Submit preliminary shop drawings, product data and samples in accordance with Section 01 33 00 for review and compliance with Contract Documents, for field dimensions and clearances, for relation to available space, and for relation to work of separate contracts. Revise and resubmit as required.

B. Submit Applications for Payment on A.I.A. Form G702 and G703 for review, and for transmittal to Engineer.

C. Submit requests for interpretation of Contract Documents, and obtain instructions through Engineer.

D. Process requests for substitutions, and change orders, through Administrator.

E. Deliver closeout submittals for review and preliminary inspection reports, for transmittal to Engineer.

1.7 COORDINATION DRAWINGS

A. Provide information required by technical sections for preparation of coordination drawings.

B. Review drawings prior to submission to Engineer.

1.8 CLOSEOUT PROCEDURES

A. Notify Administrator when Work is considered ready for Substantial Completion. Accompany Administrator on preliminary inspection to determine items to be listed for completion or correction in Contractor's notice of Substantial Completion.

B. Comply with Administrator's instructions to correct items of Work listed in executed Certificates of Substantial Completion and for access to Owner occupied areas.

C. Notify Administrator when Work is considered finally complete.

D. Comply with Administrator's instructions for completion of items of Work determined by the Engineer's final inspection.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Requirements and limitations for cutting and patching of Work.

1.2 RELATED SECTIONS

A. Section 01 10 00 - Summary of Work: Work by Owner or by separate contractors.

B. Section 01 33 00 - Submittals Procedures.

C. Section 01 60 00 - Materials and Equipment: Product Options and Substitutions.

D. Individual Product Specification Sections:
1. Cutting and patching incidental to work of the Section.
2. Advance notification to other Sections of openings required in work of those Sections.
3. Limitations on cutting structural members.
4. Each specification section of the Work shall be responsible for their own cutting and patching as it relates to their work. It shall be noted that this statement is a revised clarification to the statement made at the Pre-Bid Conference.

1.3 SUBMITTALS

A. Submit written request in advance of cutting or alteration which affects:
1. Structural integrity of any element of Project.
2. Integrity of weather-exposed or moisture-resistant element.
3. Efficiency, maintenance, or safety of any operational element.
4. Visual qualities of sight exposed elements.
5. Work of Owner or separate contractor.

B. Include in request:
1. Identification of Project.
2. Location and description of affected work.
3. Necessity for cutting or alteration.
4. Description of proposed work, and products to be used.
5. Alternatives to cutting and patching.
6. Effect on work of Owner or separate contractor.
7. Written permission of affected separate contractor.
8. Date and time work will be executed.

PART 2 PRODUCTS

2.1 MATERIALS

A. Primary Products: Those required for original installation.

B. Product Substitution: For any proposed change in materials, submit request for substitution under provisions of Section 01 60 00.

PART 3 EXECUTION

3.1 EXAMINATION

A. Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.

B. After uncovering existing work, inspect conditions affecting performance of work.

C. Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

A. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.

B. Provide protection from elements for areas which may be exposed by uncovering work.

C. Maintain construction free of water.

3.3 CUTTING AND PATCHING

A. Execute cutting, fitting, and patching including excavation and fill to complete work.

B. Fit products together, to integrate with other work.

C. Uncover work to install ill-timed work.

D. Remove and replace defective or non-conforming work.

E. Remove samples of installed work for testing when requested.

F. Provide openings in the work for penetration of mechanical and electrical work.

3.4 PERFORMANCE

A. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.

B. Employ original installer to perform cutting and patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.

C. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

D. Restore work with new products in accordance with requirements of Contract Documents.

E. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

F. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material to full thickness of the penetrated element.

G. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Temporary Utilities:
   1. Temporary electricity.
   2. Temporary lighting for construction purposes.
   3. Temporary ventilation.
   4. Communications.
   5. Temporary water service.
   6. Temporary sanitary facilities.

B. Construction Facilities:
   1. Field offices and sheds.
   2. Parking.
   3. Progress cleaning and waste removal.
   4. Project identification.
   5. Fire prevention facilities.

C. Temporary Controls:
   1. Barriers.
   2. Enclosures and fencing.
   3. Security.
   4. Dust control.
   5. Noise control.
   6. Pest control.
   7. Pollution control.
   8. Rodent control.

D. Removal of utilities, facilities, and controls.

1.2 TEMPORARY ELECTRICITY

A. Contractor shall provide a portable electric generator to provide electricity.

B. Provide power outlets, with branch wiring and distribution boxes located as required for construction operations. Provide flexible power cords as required for portable construction tools and equipment.

1.3 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. Not Required.

1.4 TEMPORARY VENTILATION

A. Not Required.

1.5 COMMUNICATIONS

A. Provide, maintain, and pay for cell phone service for Contractor’s project manager and field superintendent at time of project mobilization.

B. Provide, maintain, and install high speed internet service to allow email communications to site and superintendent at project mobilization.

1.6 TEMPORARY WATER SERVICE

A. Connect to existing water service as needed to maintain specified conditions for construction operations.

B. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

C. Conserve water use. Owner reserves the right to charge for excessive use.

1.7 TEMPORARY SANITARY FACILITIES

A. Contractor shall provide and maintain required facilities enclosures.

1.8 FIELD OFFICES AND SHEDS

A. Not Required for this Project.

1.9 PARKING

A. Park in spaces as designated by Owner.

B. Coordinate heavy vehicles or construction equipment in parking areas. Patch and repair any damage created due to construction operations.

C. Maintenance:
1. Maintain traffic and parking areas in sound condition free of excavated material, construction equipment, products, mud, snow, and ice.
2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

D. Removal, Repair:
1. Remove temporary materials and construction when permanent paving is usable before at Substantial Completion.
2. Remove underground work and compacted materials to depth of 2 feet; fill and grade site as specified.
3. Repair permanent facilities damaged by use, to specified condition.

1.10 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing spaces.

C. Broom and vacuum clean interior areas prior to start of surface finishing and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and rubbish from site weekly and dispose off-site.

E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

F. Clean all roadways as required.

1.11 PROJECT IDENTIFICATION

A. Refer to Section 00 90 00 for graphic of sign.

B. Project Identification Sign:
   1. One painted sign, 32 sq ft area, bottom 6 feet above ground.
   2. Content:
      a. Project number, title, logo and name of Owner as indicated on Contract Documents.
      b. Names and titles of authorities.
      c. Names and titles of Engineer and Consultants.
      d. Name of Prime Contractor.
   3. Graphic Design, Colors, Style of Lettering: Designated by Engineer.

C. Project Informational Signs:
   1. Painted informational signs of same colors and lettering as Project Identification sign, or standard products; size lettering for legibility at 100 feet distance.
   2. Provide sign at each field office, storage shed, and directional signs to direct traffic into and within site. Relocate as Work progress requires.
   3. Provide municipal traffic agency directional traffic signs to and within site.
   4. No other signs are allowed without Owner permission except those required by law.

D. Design sign and structure to withstand 60 miles/hr wind velocity.

E. Sign Painter: Experienced as professional sign painter for minimum three years.

F. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

G. Show content, layout, lettering, color, foundation, structure, sizes, and grades of members.

H. Sign Materials:
   1. Structure and Framing: New wood structurally adequate.
   2. Sign Surfaces: Exterior grade plywood with medium density overlay, minimum 3/4 inches thick, standard large sizes to minimize joints.
   3. Rough Hardware: Galvanized.
   4. Paint and Primers: Exterior quality, two coats; sign background of color as selected.
   5. Lettering: Pre-cut vinyl self-adhesive products, white.

I. Installation:
   1. Install project identification sign within 15 days after date fixed by Notice to Proceed.

2. Erect at designated location. Erect supports and framing on secure foundation, rigidly braced, and framed to resist wind loadings.
3. Install sign surface plumb and level, with butt joints. Anchor securely.
4. Paint exposed surfaces of sign, supports, and framing.

J. Maintenance: Maintain signs and supports clean, repair deterioration and damage.

K. Removal: Remove signs, framing, supports, and foundations at completion of Project and restore area.

1.12 FIRE PREVENTION FACILITIES

A. Smoking is prohibited on school property. Violation is reason to dismiss construction personnel permanently from site.

B. Establish fire watch for cutting and welding and other hazardous operations capable of starting fires. Maintain fire watch before, during, and after hazardous operations until threat of fire does not exist.

C. Portable Fire Extinguishers: NFPA 10; 10 pound capacity, 4A-60B: C UL rating.
1. Provide one fire extinguisher at each stair on each floor of buildings under construction and demolition.
2. Provide minimum one fire extinguisher in every construction trailer and storage shed.

1.13 BARRIERS

A. Provide weatherproof barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and walkways required by authorities having jurisdiction for public rights-of-way.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.14 ENCLOSURES AND FENCING

A. Construction: Commercial grade chain link fence.

B. Provide 8 feet high fence around construction site; equip with vehicular and pedestrian gates with locks. Relocate fence sections and supports as required by Owner or authority having jurisdiction for duration of construction activities.

C. Exterior Enclosures:
1. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.15 SECURITY

A. Security Program:
1. Protect Work from theft, vandalism, and unauthorized entry.
2. Initiate program at project mobilization.
3. Maintain program throughout construction period until Owner acceptance precludes need for Contractor security.

B. Entry Control:
1. Restrict entrance of persons and vehicles into Project site and existing facilities.
2. Allow entrance only to authorized persons with proper identification.
3. Maintain log of workers and visitors, make available to Owner on request.

C. Restrictions:
1. Do not allow cameras on site or photographs taken except by written approval of Owner.

1.16 DUST CONTROL

A. Execute Work by methods to minimize raising dust from construction operations.

B. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

1.17 NOISE CONTROL

A. Provide methods, means, and facilities to minimize noise produced by construction operations.

1.18 PEST CONTROL

A. Provide methods, means, and facilities to prevent pests and insects from damaging the Work and entering facility.

1.19 POLLUTION CONTROL

A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

B. Comply with pollution and environmental control requirements of authorities having jurisdiction.

1.20 RODENT CONTROL

A. Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

1.21 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, and prior to Substantial Completion inspection.

B. Remove underground installations to minimum depth of 2 feet or as indicated on Drawings.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

PART 1 GENERAL

1.1 WORK COVERED BY THIS SECTION

A. This section is applicable to all work.

B. A Site-Specific Safety and Health Plan is to be developed by the Contractor and shall be adhered to in the execution of the work. The Plan shall include an overview of procedures, reports and samples of forms and documents for the plan. The contractor shall provide a copy of his safety plan to the Construction Manager.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.3 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

B. Code of Federal Regulations (CFR):
1. OSHA General Industry Safety and Health Standards (29 CFR 1910), Publication V2206; OSHA Construction Industry Standards (29 CFR 1926).
2. National Emission Standards for Hazardous Air Pollutants (40 CFR, Part 61).
3. Environmental Protection Agency (EPA) Final Rule (40 CFR Part 761) dated July 17, 1985.

C. Federal Standard (Fed. Std):
1. 313A Material Safety Data Sheets, Preparation, and the Submission of.

D. Maryland Standards:
1. Maryland Occupational Safety and Health (MOSH) Supplement to OSHA.

1.4 DEFINITION OF HAZARDOUS MATERIALS

A. Refer to hazardous and toxic materials/substances included in Subparts H and Z of 29 CFR 1910; and to others as additionally defined in Fed. Std. 313. Those most commonly encountered include asbestos, polychlorinated biphenyls (PCB's), explosives, and radioactive material, but many include others. The most likely products to contain asbestos are sprayed-on fireproofing, insulation, boiler lagging, pipe covering and likely products to contain PCB's are transformers, capacitors, voltage regulators, and oil switches.

1.5 QUALITY ASSURANCE

A. Safety Meeting: Representatives of the Contractor shall meet with the Owner and his/her representative(s) prior to the start of work under this contract for the purpose or reviewing the Contractor's safety and health programs and discussing implementation of all safety and health provisions pertinent to the work to be performed under the contract. The Contractor shall be prepared to discuss in detail, the measures he/she intends to take in order to control any unsafe or unhealthy conditions associated with the work to be

performed under the contract. If directed by the Owner, this meeting may be held in conjunction with other meetings which are scheduled to take place prior to start of work under this contract. The level of detail for the safety meeting is dependent upon the nature of the work and the potential inherent hazards. The Contractor's principal on-site representative(s), the general superintendent and his/her safety representative(s) shall attend this meeting.

B. Compliance with Regulations: All work, including contact with and handling of hazardous materials, the disturbance or dismantling of structures containing hazardous materials and/or the disposal of hazardous materials shall comply with the applicable requirements of 29 CFR 1926/1910 and 40 CFR 761. All work shall comply with applicable state and municipal safety and health requirements. Where there is a conflict between applicable regulations, the most stringent shall apply.

C. Contractor Responsibility: The Contractor shall assume full responsibility and liability for compliance with all applicable regulations pertaining to the health and safety of personnel during the execution of work and shall hold the Owner harmless for any action on his/her part or that of his/her employees or subcontractors, which results in illness, injury, or death.

1.6 SUBMITTAL

A. Site-Specific Safety and Health Plan: The Contractor's Safety and Health Plan is to be submitted for approval during the initial submittals for the project.

B. Accident Reporting: A copy of each accident report, which the Contractors or subcontractors submit to their insurance carriers, shall be forwarded to the Owner as soon as possible, but in no event later than seven (7) calendar days after the day the accident occurred.

C. Permits: If hazardous materials are disposed of off-site, submit copies of permits from applicable, Federal, state, or municipal authorities and necessary certificates that the material has been disposed of as per regulations.

D. Other Submittals: If agreed to in writing at the safety meeting, other submittals shall be required. One such submittal which may be included is a plan of action for handling hazardous materials, which shall contain the following:
   1. Number, type, and experience of employees to be used for the work
   2. Description of how applicable safety and health regulations and standards are to be met.
   3. Type of protective equipment and work procedures to be used
   4. Emergency procedures for accidental spills or exposures
   5. Procedures for disposing of or storing the toxic/hazardous materials
   6. Identification of possible hazards, problems, and proposed control mechanisms
   7. Protection of public or others not related to the operation
   8. Interfacing and control of subcontractors, if any
   9. Identifications of any required analyses, test demonstrations, and validation requirements.
   10. Method of certification for compliance

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Special facilities, devices, equipment, clothing, and similar items used by the Contractor in the execution of work shall comply with the applicable regulations.

PART 3 EXECUTION

3.1 GENERAL

A. Material Safety Data Sheets: Material Safety Data Sheets (MSDS) shall be kept on file in the Contractor's Field Office and made available for review when required.

3.2 SAFETY AND HEALTH PLAN

A. Site-Specific Safety and Health Plan: Post copies of the plan in conspicuous location so that all personnel may be made aware of the safety procedures at all times.

3.3 STOP WORK ORDERS

A. When the Contractors or his/her subcontractors are notified by the Owner/Engineer of any noncompliance with the provisions of the contract and the action(s) to be taken, the Contractor shall immediately, if so directed, or within 48 hours after receipt of a notice of violation correct the unsafe or unhealthy condition. If the Contractor fails to comply promptly, all or any part of the work being performed may be stopped by the Owner/ Engineer with a "Stop Work Order". When, in the opinion of the Owner/Engineer, satisfactory corrective action has been taken to correct the unsafe and unhealthy condition, a start order will be given immediately. The Contractor shall not be allowed any extension of time or compensation for damages by reason of or in connection with such work stoppage.

3.4 PROTECTION

A. The Contractor shall take all necessary precautions to prevent injury to the public, or damage to property of others. For the purposes of this contract, the public shall include all persons not employed by the Prime Contractor's or a subcontractor working under his/her direction.

B. Storing, positioning or use of equipment, tools, materials, scraps, and trash in a manner likely to present a hazard to the public by its accidental shifting, ignition, or other hazardous qualities is prohibited.

C. Public Thoroughfare: When work is to be performed over a public thoroughfare such as a sidewalk, the thoroughfare shall be closed, if possible, or other precautions taken such as the installation of screen or barricades. When the exposure to heavy falling objects exists, as during the erection of building walls, special protection of the type detailed in 29 CFR 1910/1926 shall be provided.

D. Fences and barricades shall be removed upon completion of the project, in accordance with local ordinance and to the satisfaction of the General Contractor.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product storage and handling requirements.

D. Product options.

E. Product substitution procedures.

1.2 PRODUCTS

A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.

1.3 PRODUCT DELIVERY REQUIREMENTS

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect products in accordance with manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

D. For exterior storage of fabricated products, place on sloped supports above ground.

E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection. Off-site storage must be located within the State of Maryland.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.

H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: products of one of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article.

1.6 PRODUCT SUBSTITUTION PROCEDURES

A. If the specification has listed three (3) or more product lines, substitutions will not be considered. Where less than three (3) manufacturers or products are listed in the Specifications, or the specification lists “Approved Equal” as an acceptable product, the burden of proof of equivalency rests with the Contractor and evidence shall be submitted to the Engineer and approved by Engineer with final approval to be determined by the Owner. Criteria includes but is not limited to performance, materials, craftsmanship, quality control, certification procedures or requirements, warranty, installation procedures, etc.

B. Any proposed substitution, or proposed equal product, must be submitted to the Engineer for review, 10 days prior to the bid date. After the receipt of bids and award of the Contract, the Owner and Engineer are under no obligation to review or approve requests for substitution or equal products that were not specifically mentioned in the Specifications. The Owner reserves the right to request a substitution at any time in the project.

C. Substitutions may be considered during construction when a product becomes unavailable through no fault of Contractor at no additional cost to the Owner.

D. During construction, substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without prior separate written request, or approval, or when acceptance will require revision to Contract Documents.

E. Substitution Submittal Procedure:
   1. Submit request for Substitution for consideration electronically in pdf. format. Limit each request to one proposed Substitution.
   2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
   3. Engineer will notify Contractor in writing of decision to accept or reject request.
   4. If a substitution is found acceptable, the Contractor shall be responsible for coordination among the trades. Any redesign by the Engineer required by the accepted substitution, will be completed on a time and material basis with the cost submitted to the Owner and credited to the Owner-Contractor contract sum.

F. If a substitution is requested during construction, and the original specified product is available, the Owner/Engineer may request the Contractor to submit substantiating purchase cost data for review.

1. If it is found that the Contractor is in receipt of a savings to his contract by the substituted product, the Owner/Engineer may request that the credit be passed through to the Owner and credited to the Owner-Contractor contract sum.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

REQUEST FOR SUBSTITUTION

DATE OF REQUEST: _____

PROJECT: Garrett College: Multipurpose Field: Site Preparation

CONTRACTOR: _____

TELEPHONE NO: _____

FACSIMILE NO: _____

CONTACT: _____

CONTRACT PACKAGE: _____

1. Item for which substitution is being requested: _____

   _____

2. Reference Specification Section: _____

3. Reference Drawing: _____

4. Reason for Substitution Request: _____

   _____

5. Product Comparison:

   Submit three copies of shop drawing, product data, color samples, utility requirements and certified test results attesting to the proposed product equivalence.

   a. _____ Data substantiating compliance of proposed substitution with contract documents.
   b. _____ Product identification, manufacturer's name, address and telephone number.
   c. _____ Manufacturer's literature, warranty.
   d. _____ Full color selection, showing colors Engineer may select without additional cost.
   e. _____ Samples
   f. _____ Warranty
   g. _____ References of product use.
   h. _____ Itemized comparison of proposed substitution with product or method specified. Highlight all differences from specified item.
   i. _____ All items listed Section 01 60 00-1.6.
   j. _____ Cover letter stating benefits or equality of substitution and reason for substitution request.

6. If request is being submitted after the receipt of bids, attach price quotations of specified product and substituted products.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Closeout procedures.

B. Final cleaning.

C. Demonstration and instructions.

D. Protecting installed construction.

E. Project record documents.

F. Operation and maintenance data.

G. Manual for materials and finishes.

H. Spare parts and maintenance products.

I. Product warranties and product bonds.

1.2 CLOSEOUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, Work has been inspected by the Contractor and governing agencies, and that Work is complete in accordance with Contract Documents and ready for Engineer's review.
   1. The contractor shall then request in writing a “closeout inspection” by the Owner/Engineer and Consultants.
   2. Prior to the start of the closeout inspection, the Contractor shall have performed final cleaning of the area in accordance with Article 1.3 of this section.
   3. Upon completion of the closeout inspection, the Owner/Engineer shall compile their findings and comments into one (1) document and submit it to the Contractor for corrective work.
      a. If all parties are in agreement, this closeout inspection shall constitute “substantial completion” to that portion of building or site inspected.
      b. If the area inspected is found unacceptable by the Owner/ Engineer, reinspection fees will be charged to the Contractor on a time and material basis.

B. Provide submittals to Owner/Engineer required by authorities having jurisdiction.

C. Submit Final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
   1. Final application shall only include the outstanding retainage amount. Prior application shall have been submitted for completion of the work at 100% for all identified line items.

1.3 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains, and foreign substances, polish transparent and glossy surfaces remove dust from all surfaces, vacuum carpeted and soft surfaces.

C. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.

D. Replace filters of operating equipment.

E. Clean debris from roofs, gutters, downspouts, and drainage systems.

F. Clean site; sweep paved areas, rake clean landscaped surfaces.

G. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.4 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.

B. Demonstrate Project equipment and instruct in classroom environment located at site and instructed by qualified manufacturer's representative who is knowledgeable about the Project.

C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six (6) months.

D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

E. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at equipment designated location.

F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

G. Required instruction time for each item of equipment and system is specified in individual sections.

H. Each demonstration shall be digitally filmed by a professional camera crew.
   1. The filmed demonstration shall be professionally edited with titles, subtitles and sound in a manner that clearly illustrates the operation and maintenance of the equipment or systems being demonstrated.
   2. Each piece of equipment or systems that has been filmed shall be submitted on a DVD format that can be operated by the Owner’s standard equipment.
   3. Separate DVD’s shall be provided for each piece of equipment or system demonstrated with title of demonstration, date of demonstration, name of facility, name of Owner, General Contractor, Subcontractor, Equipment or System Manufacturer, Model Number of Equipment or System, Name of Consultant and Engineer.
   4. Provide six (6) copies of each DVD in a case or in an indexed “D” ring binder labeled in accordance with Article 1.7.
   5. Listing of Demonstrations:

1.5 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

F. Prohibit traffic from landscaped areas.

1.6 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Reviewed Shop Drawings, Product Data, and Samples.
6. Manufacturer's instruction for assembly, installation, and adjusting.
7. Contractor Request for Information (RFI).

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress, not less than weekly.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
1. Measured depths of foundations in relation to finish first floor datum.
2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
4. Field changes of dimension and detail.
5. Details not on original Contract drawings.

G. Submit documents to Engineer with claim for final Application for Payment.

1.7 OPERATION AND MAINTENANCE DATA

A. Submit data bound in 8-1/2 x 11 inch text pages, three D side ring, 3 inch binders with durable clear view plastic cloth covers. All binders shall be the same color. Provide copy in electronic format (pdf.) on flash/ thumb drive.

B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.

C. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

D. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

E. Contents: Prepare Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
   1. Part 1: Directory, listing names, addresses, and telephone numbers of Engineer, Contractor, Subcontractors, and major equipment suppliers.
   2. Part 2: Operation and maintenance instructions arranged by specification division and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
      a. Significant design criteria.
      b. List of equipment.
      c. Parts list for each component.
      d. Operating instructions.
      e. Maintenance instructions for equipment and systems.
      f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
   3. Part 3: Project documents and certificates, including the following:
      a. Shop drawings and product data.
      b. Air and water balance reports.
      c. Certificates.
      d. Originals of warranties and bonds

F. Submit one (1) copy for Engineer review prior to closeout inspection.
   1. Upon completion of review by the Engineer, the copy shall be returned to the Contractor for corrections.

G. Upon completion of corrections, the Contractor shall submit three (3) final copies of the Operation and Maintenance Data to the Engineer.

1.8 MANUAL FOR MATERIALS AND FINISHES

A. Submit preliminary draft or proposed formats and outlines of contents before start of Work. Engineer will review draft and return with comments.

B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

C. Submit of completed volumes 15 calendar days prior to substantial inspection. Draft copy be reviewed and returned after inspection, with Engineer comments. Revise content of document sets as required prior to final submission.

D. Submit three (3) sets of revised final volumes in final form within 10 days after final completion with electronic version on flash/ thumb drive.

E. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Include information for re-ordering custom manufactured products.

F. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

G. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.

H. Additional Requirements: As specified in individual product specification sections.

I. Include listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.9 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance, and extra products in quantities specified in individual specification sections.

B. Deliver to and place in location as directed by Owner; obtain receipt prior to final payment.

1.10 PRODUCT WARRANTIES AND PRODUCT BONDS

A. Per Section 01 74 00 – Warranties and Bonds.

B. Obtain warranties and bonds executed in triplicate by responsible subcontractors, suppliers, and manufacturers, within ten (10) calendar days after completion of applicable item of work.

C. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.

D. Verify documents are in proper form, contain full information, and are notarized.

E. Submit prior to final Application for Payment.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Preparation and submittal.

B. Time and schedule of submittals.

1.2 RELATED SECTIONS

A. Section 00 02 00 - Invitation to Bid - Instructions to Bidders: Bid Bonds.

B. Section 00 30 00 - General Conditions: Performance Bond and Labor and Material Payment Bonds, Warranty, and Correction of Work.

C. Section 01 73 00 - Execution Requirements: Contract closeout procedures.

D. Individual Specifications Sections: Warranties required for specific products or Work.

1.3 FORM OF SUBMITTALS

A. Bind in commercial quality, 8-1/2 x 11 inch three “D”-ring ‘clear-vue’ binders with hardback, cleanable, and transparent plastic covers and side binder. Provide electronic version in pdf. format on USB formatted flash/ thumb drive.

B. Label cover and side of each binder with typed or printed title WARRANTIES AND BONDS, with title and date of Project; name, project number; address and telephone number of Contractor; and name of Engineer.

C. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification Section in which specified, and the name of the product or work item.

D. Directory: Provide a directory which indicates names, addresses and telephone/fax numbers of Owners, Consultants, General Contractors, Subcontractors, and Major Suppliers. Include name of contact person for each entry.

E. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Sub-contractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal. Include information regarding maintenance and operations of equipment and or materials as may be required by the specifications or manufacturer.

1.4 PREPARATION OF SUBMITTALS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item or work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

1.5 TIME OF SUBMITTALS

A. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten (10) days after acceptance.

B. Provide draft copy of warranties and bonds for review by consultant no later then time of 50% project completion.

C. Make other submittals within ten (10) days prior to closeout inspection and prior to final Application for Payment.

D. For items of Work when acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

DIVISION 2

EXISTING CONDITIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submission procedures.

B. Documentation of changes to Contract Sum/Price and Contract Time Schedule of Values.

1.2 RELATED SECTIONS

A. Documents Owner/Contractor Agreement Form: Incorporating monetary value of accepted Alternates.

1.3 SECTION INCLUDES

A. Building and site improvement demolition as indicated on the drawings, excluding removal of hazardous materials and toxic substances.

B. Abandonment and removal of existing utilities and utility structures or remove as indicated on the drawings.

1.4 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.

C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed, and salvaged, or removed and reinstalled.

D. Demolish: Tearing down, destruction, breakup, razing or removal of the whole or part of a building or structure, or free-standing machinery or equipment that is directly related to the function of the structure.

E. Recycle: Recovery of demolition waste for subsequent processing in preparation for reuse.

1.5 OWNERSHIP OF REMOVED MATERIALS

A. Prior to demolition operations, the Owner reserves the right to salvage any items that otherwise would be part of the demolition; the Owner will remove equipment, material, and fixtures they wish to retain.

B. After demolition operations begin, equipment, material and fixtures indicated for demolition become the property of the Contractor to be removed, salvaged, or disposed of by the Contractor.

1.6 RELATED REQUIREMENTS

A. Section 01 10 00 - Summary: Limitations on Contractor's use of site and premises.

B. Section 01 50 00 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

C. Section 01 70 00 - Execution and Closeout Requirements: Project conditions; protection of benchmarks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

D. Section 01 74 19 - Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.

1.7 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Pre-demolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations.

C. Site Plan: Showing:
1. Areas for temporary construction and field offices.

D. Schedule of Selective Demolition Activities: Indicate the following:
1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

E. Informational Submittals:
1. Submit shop drawings showing shoring, bracing, and temporary supports for the existing and re-installed structure as appropriate.
2. Design of Bracing and Support: Submit engineering calculations of shoring and bracing designs.
    a. Shoring, bracing and support shall be designed to maintain existing lines and surfaces without deflection during work; design shall be in accordance with gravity dead, live and wind load resistance requirements of the jurisdiction.
    b. Design shall be sufficient for existing and new material loads and anticipated construction loads.
    c. Stresses on supporting structure shall not exceed safe, commonly allowable stresses for the materials in consideration of their age and conditions.
3. Provide certification of professional engineer responsible for the preparation or review of the shop drawings and design calculations.
4. Construct shoring, bracing and support in accordance with design submittal and proper and standard construction practice.

F. Closeout Submittals:
1. Inventory: Submit a list of items that have been removed and salvaged.
2. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
3. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.8 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI A10.6 and NFPA 241.

C. Pre-demolition Conference: Conduct conference at Project site to comply with requirements in the Contract Documents.
1. Inspect and discuss condition of construction to be selectively demolished.
2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
4. Review areas where existing construction is to remain and requires protection.

1.9 PROJECT CONDITIONS

A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. Storage or sale of removed items or materials on-site is not permitted.

D. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
1. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 PRODUCTS

2.1 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

C. The following items shall be salvaged and returned to Owner:
   1. As indicated on drawings.

PART 3 EXECUTION

3.1 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Provide, erect, and maintain temporary barriers and security devices.
   4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   5. Do not close or obstruct roadways or sidewalks without permit.
   6. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
   7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.

B. Do not begin removal until receipt of notification to proceed from Owner.

C. Protect existing structures and other elements that are not to be removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

3.2 EXISTING UTILITIES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.3 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Remove from site all materials not to be reused on site.

C. Leave site in clean condition, ready for subsequent work.

D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

DIVISION 11

EQUIPMENT

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

A. General Conditions and Division 01 Specifications are a part of and govern work under this section.

1.02 SUBMITTALS

A. Shop Drawings: Submit to the Engineer for approval. Drawings shall show the jointing and bonding, connections with other work, typical and special anchoring of the sections, dimensions, and other necessary information. All equipment specified shall be permanently anchored in concrete as per the manufacturer's instruction.

B. Product Data: Submit manufacturer's technical data and installation instruction.

1.03 GUARANTEE

A. Contractor shall also guarantee the work of this section against defective materials and/or workmanship for a period of one (1) year from the date of acceptance by the Owner.

PART 2 PRODUCTS

2.01 FOUL BALL POLES

A. Furnish and install two-20' tall foul ball poles at the locations indicated on the plans.

B. Poles to have removable sleeved base.

C. Poles shall be semi-permanent one- piece welded steel designed to withstand 150mph wind gusts. Steel to be powder coated over zinc and minimum sch 40.

D. Manufacturer: SportsEdge (SEBBFP-20) or approved equal.

2.02 BALL STOP NETTING SYSTEM

A. Design, furnish and install 20' ball stop netting system along first base line as shown on the plans. Netting extends from west end of dugout, over first base dugout and down the first base line as shown on the plans.

B. Basis of Design: Powerhouse In-Line Sideline Netting System by SportsEdge.
   1. Provide six (6) - 8.625" dia. steel upright poles w/ STRYK coating (black).
   2. Poles require an estimated 24" dia. x 114" deep footing (2,500 psi concrete backfill required).
      a. Concrete footing estimate: 0.96 cy per pole (5.78 cy total, waste not included).
   3. Provide two (2) gallons of black STRYK pole touch up paint.
   4. Netting: #42 twisted knotted nylon net w/ 5/16" rope border (black).

a. Netting produced in (5) panels for ease of installation & replacement. Netting panels are produced after pole/hardware installation to ensure proper fit.
b. Netting shall tension-type, minimum #42 twisted nylon with 5/16” rope border

PART 3 EXECUTION

3.01 ERECTION

A. All athletic equipment, and related items, shall be furnished and installed in accordance with the manufacturer's printed instructions, the specifications and as detailed. A letter to this effect shall be submitted by the Contractor to the Owner upon completion of the work.

B. Upon completion, clean all exposed surfaces and repair all defective joints as required; leave all work clean and free from surface dirt or imperfections. Protect all work of this section from all construction damage, during and after installation until acceptance by the Owner.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. General Conditions and Division 01 Specifications are a part of and govern work under this section.

1.2 SUBMITTALS

A. Shop Drawings: Submit to the Engineer for approval. Drawings shall show the jointing and bonding, connections with other work, typical and special anchoring of the sections, dimensions, and other necessary information. All equipment specified shall be permanently anchored in concrete as per manufacturer's instruction.

B. Product Data: Submit manufacturer's technical data and installation instruction.

1.3 GUARANTEE

A. Contractor shall also guarantee the work of this section against defective materials and/or workmanship for a period of five (5) years from date of acceptance by the Owner.

PART 2 PRODUCTS

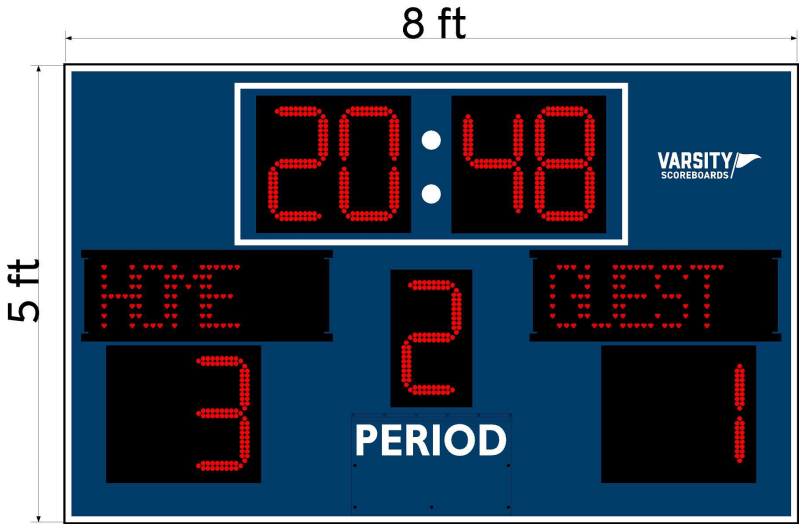
2.1 SOCCER SCOREBOARD

A. Furnish and install 8x5 ft LED scoreboard with wireless LCD Controller.

B. Design furnish and install electrical connection to existing panel box. All wiring to be in PVC conduits.
1. One (1) 20-amp, 120-volt circuit required. Estimate power consumption is 72 watts.
2. Provide marking tape over conduit.

C. Basis of Design: Varsity Sports Model number 3450ETN8-6.

MODEL - 3450ETN8-6



2.2 EXISTING BASEBALL SCOREBOARD

A. Contractor shall remove and salvage existing baseball scoreboard. Contractor will be responsible for storing the scoreboard until it can be reinstalled.

B. Install new concrete footings as shown on the plans. Modify the existing steel supports as necessary.

C. Install new conduit and conductors from sign to electrical cabinet. Re-use existing breaker.

PART 3 EXECUTION

3.1 ERECTION

A. All scoreboards shall be furnished and installed in accordance with the manufacturer's printed instructions, the specifications and as detailed.

B. Upon completion, clean all exposed surfaces and repair all defective joints as required; leave all work clean and free from surface dirt or imperfections. Protect all work of this section from all construction damage, during and after installation until acceptance by the Owner.

END OF SECTION

DIVISION 26

ELECTRICAL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submission procedures.

B. Documentation of changes to Contract Sum/Price and Contract Time Schedule of Values.

1.2 RELATED SECTIONS

A. Documents Owner/Contractor Agreement Form: Incorporating monetary value of accepted Alternates.

1.3 SECTION INCLUDES

A. Conduit and fittings.

B. Electrical boxes and service fittings.

PART 2 PRODUCTS

2.1 CONDUIT AND FITTINGS

A. Conduit:
1. Metal Conduit and Tubing: Galvanized steel.
2. Flexible Conduit: PVC plastic.
3. Liquidtight Flexible Conduit: Flexible conduit with PVC jacket.
4. Plastic Conduit and Tubing: NEMA TC 2; PVC, Schedule 40.

B. Conduit Fittings:
1. Metal Fittings and Conduit Bodies: NEMA FB 1.
2. Plastic Fittings and Conduit Bodies: NEMA TC 3.

2.2 WIREWAY AND AUXILIARY GUTTERS

A. Wireway: General purpose type.
1. Length as required.
2. Cover: Screw cover with full gasketing.
3. Finish: Rust inhibiting primer coating with gray enamel finish.

2.3 ELECTRICAL BOXES

A. Boxes:
1. Sheet Metal: NEMA OS 1; galvanized steel.
2. Cast Metal: Cast feralloy, deep type, gasketed cover, threaded hubs.
3. Nonmetallic: NEMA OS 2.

B. Hinged Cover Enclosures: NEMA 250; Type 1, steel enclosure with manufacturer's standard enamel finish and continuous hinge cover, held closed by flush latch operable by screwdriver.

C. Large Pull Boxes as Scheduled on Drawings.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Examine supporting surfaces to determine that surfaces are ready to receive work.

B. Electrical boxes shown on Contract Drawings are approximate locations unless dimensioned.

3.2 INSTALLATION

A. Use conduit and tubing for raceways in the following locations:
   1. Underground Installations buried at least 24 inches using Schedule 40 PVC conduit.
   2. Exposed Outdoor Locations: Galvanized Rigid Threaded Steel. Use threaded or raintight fittings.
   3. Concealed Dry Interior Locations: Electrical Metallic Tubing with steel compression fittings.
   4. Exposed Dry Interior Locations: Intermediate metal conduit.

B. Size raceways for conductor type installed
   1. Minimum Size Conduit, electrical: 2 inch, unless specified otherwise.

C. Arrange conduit and tubing to maintain headroom and to present neat mechanical appearance.
   1. Terminate conduit stubs with insulated bushings.
   2. Use suitable caps to protect installed raceway against entrance of dirt and moisture.
   3. Provide No. 12 AWG insulated conductor or suitable pull string in empty raceways, except sleeves and nipples.
   4. Install plastic conduit and tubing in accordance with manufacturer's instructions.
   5. Install exterior underground conduits not less than 24” below finished grade with approved continuous, red plastic, electric service warning sheet, approximately one foot below finished grade.

D. Install electrical pull boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and regulatory requirements.
   1. Boxes shall be installed on a well tamped base.
   2. Boxes should be set so that covers will be flush with finished grade.

E. Penetrations.
   1. Provide and install as required all chases and openings in walls, floors, and partitions for conduit hangers, supports, and other equipment.
   2. Obtain Engineer’s approval in writing for all openings in concrete or special construction.
   3. Neatly drill, bore, or cut all openings; punching or chipping is not permitted.
   4. Patching: Division 01001, Article 1.14.

END OF SECTION

DIVISION 31

EARTHWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Remove surface debris within the property.

B. Remove designated paving, curbs, and sidewalk.

C. Clear site of vegetation and grass.

D. Remove trees and shrubs.

E. Remove root system of trees and shrubs.

F. Topsoil excavation.

1.02 RELATED SECTIONS

A. Section 02 41 00 - Demolition

B. Section 31 22 13 - Rough Grading

1.03 REGULATORY REQUIREMENTS

A. Conform to applicable code for disposal of debris, and use of herbicides

B. Coordinate clearing Work with utility companies.

1.04 SUBMITTALS

A. LEED Submittals
   1. Product data for Credit MR 5: For on-site reclaimed concrete, documentation indicating the replacement cost if the reclaimed concrete had been virgin material.

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

3.01 PREPARATION

A. Verify that existing vegetation designated to remain is tagged, or identified.

3.02 PROTECTION

A. Locate, identify, and protect utilities that remain, from damage.

B. Protect trees, shrubs, and features designated to remain, as final landscaping.

C. Protect benchmarks and property corners and existing structures from damage or displacement.

3.03 CLEARING

A. Clear areas required for access to site and execution of Work.

B. Remove paving, curbs, and sidewalks as indicated on the plans and as necessary to complete the project.

C. Remove trees and shrubs within marked areas indicated or as necessary for construction. Remove stumps or main root mass.

D. Clear undergrowth and deadwood, without disturbing subsoil.

3.04 REMOVAL

A. Remove debris, rock, and extracted vegetation from site.

3.05 TOPSOIL EXCAVATION

A. Excavate topsoil from areas to be further excavated, re-landscaped, or re-graded.

B. Stockpile in area designated on site to depth not exceeding 10 feet. Protect from erosion.

C. Do not excavate wet topsoil.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Removal of topsoil and subsoil.

B. Cutting, grading, filling, and rough contouring the site.

C. Crushing on-site concrete

1.02 RELATED SECTIONS

A. Section 01 33 00 – Submittal Procedures

B. Section 01 40 00 - Quality Requirements

C. Section 01 73 00 – Execution Requirements

D. Section 02 41 00 – Demolition

E. Section 31 10 00 - Site Clearing

F. Section 31 23 16 – Excavation

G. Section 31 23 17 – Trenching

H. Section 31 23 23.23 – Backfilling

I. Section 31 25 00 – Sediment and Erosion Control

J. Section 31 50 00 - Excavation Support

K. Section 32 92 00 – Soil Work Sod and Turf Establishment

1.03 REFERENCES

A. ANSI/ASTM D-698 - Testing for Maximum Dry Density.

1.04 SUBMITTALS

A. Submit under provisions of Section 01 33 00

B. Samples: Submit 40-50 lb. sample of each type of fill to testing laboratory, in air-tight containers at least fourteen (14) days prior to start of construction.

1.05 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 01 73 00.

B. Accurately record actual locations of utilities remaining, by horizontal dimensions, elevations or inverts, and slope gradients.

PART 2 PRODUCTS

2.01 MATERIALS

A. Topsoil: Excavated material, graded, free of roots, rocks larger than 1 inch, subsoil, debris, and large weed.

B. Screened Topsoil: Excavated or imported material that has been processed to remove roots, rocks, debris, and other deleterious material larger than 2 inch.

C. Subsoil: Excavated material, graded, free of lumps larger than 6 inches, rocks larger than 3 inches, and debris.

D. Granular Fill: specified in Section 31 23 23.23.

E. Structural Fill: Fill required to attain design grades should be placed as controlled, compacted fill. Satisfactory fill includes approved on-site excavated materials, off-site borrow material (residual soils, soil/rock mixtures, and soft weathered rock), or well-graded commercial stone such as MDOT GA base aggregate. The fill should be free of trash, wood, coal, topsoil, organics, pyritic material with greater than 0.5 percent by weight of pyritic sulfur, frozen material, and pieces of rock greater than 4 inches in any dimension. Materials classified as MH, CH, OH, OL and Pt based on the Unified Soil Classification System (USCS) are not considered suitable for use as new fill. All fill should be tested and approved prior to placement and compaction.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify site conditions.

B. Verify that survey benchmark and intended elevations for the Work are as indicated.

3.02 PREPARATION

A. Identify required lines, levels, contours, and datum.

B. Identify known underground, above ground, and aerial utilities. Stake and flag locations.

C. Notify utility company to remove and relocate utilities.

D. Protect above and below grade utilities which are to remain.

E. Protect plant life, lawns, rock outcropping and other features remaining as a portion of final landscaping.

F. Protect bench marks, property corners, existing structures, fences, sidewalks, paving, and curbs from excavation equipment and vehicular traffic.

G. Utility notification shall be the responsibility of the Contractor to assure themselves that no hazard exists, or damage will occur to utilities. It is required that the Contractor contact "Miss Utility", 72 hours prior to the start of site work at 1-800-257-7777.

H. Before initiating fill placement, the subgrade surface should be proof-rolled with appropriate rubber-tired construction equipment and/or visually evaluated to locate any soft spots or areas of excessive "pumping." Any such areas should be over-excavated to a firm subgrade and replaced with new controlled fill material.

3.03 SUBSOIL EXCAVATION

A. Excavate subsoil from areas to be further excavated, re-landscaped, or re-graded.

B. Stockpile in area designated on site. Remove excess sub-soil not being reused, from site at no expense to the Owner.

C. Do not excavate wet subsoil.

D. When excavation through roots is necessary, perform work by hand and cut roots with sharp axe.

3.04 FILLING

A. Fill areas to contours and elevations with unfrozen materials.

B. Granular Fill: Place and compact materials in continuous layers not exceeding 9-inch loose lifts when compacted by heavy compaction requirement and maximum 4-inch loose lifts when compacted by hand-operated tampers or light compaction equipment, compacted to 100 percent of maximum dry density as determined by ASTM D-698.

C. Subsoil and Topsoil Fill: Place and compact material in continuous layers not exceeding 10-inch loose lifts when compacted by heavy compaction requirement and maximum 4-inch loose lifts when compacted by hand-operated tampers or light compaction equipment, compacted to 100 percent of maximum dry density as determined by ASTM D-698.

D. Maintain optimum moisture content of fill materials to within ± 2% of the optimum moisture content to attain required compaction density.

E. Slope grade away from building minimum 1 inch in 1 ft, for 12-foot distance unless noted otherwise.

F. Make grade changes gradual. Blend slope into level areas.

G. Remove surplus fill materials from site at no expense to Owner.

H. During placement, moisten or aerate each layer of fill, as necessary, to obtain the required compaction. Fill should not be placed on surfaces that are muddy or frozen or have not been approved by prior testing and/or proof-rolling. Free water should be prevented from appearing on the surface during or subsequent to compaction operations. Fill placed on sloping areas should be properly benched or “notched” into the slope face such that a smooth transition between the new fill and existing slope face is not present.

I. Soil material which is removed because it is too wet to permit proper compaction may be stockpiled or spread and allowed to dry. Drying can be facilitated by discing, harrowing, or by pulverizing until the moisture content is reduced to an acceptable level. When the

soil is too dry, water may be uniformly applied to the subgrade surface or to the layer to be compacted.

J. Fill material compacted by heavy compaction equipment should be placed in loose layers having a 9-inch maximum thickness. Fill compacted with lightweight equipment, such as hand-operated tampers or walk-behind rollers, should be placed in loose layers not exceeding 4 inches in thickness. The compaction equipment utilized should be suitable for the type of material being compacted. Vibratory rollers are best suited to coarse-grained soils, while pad (often called sheepsfoot) rollers are appropriate for fine grained materials.

K. All new fill placed within the structure footprints, top one (1) foot of new pavement subgrade, controlled fill slopes and extending at least five (5) feet beyond their perimeters should be compacted to at least 98 percent of the laboratory maximum dry density as determined by the Standard Proctor method (ASTM D 698). Fill placed outside of these areas should be compacted to at least 95 percent of the maximum dry density as determined by the same standard. The placement moisture content of all fill should be within ±3 percentage points of the optimum moisture content as determined by ASTM D 698. Granular materials, such as clean sand or aggregate, should be compacted to 85 percent of its relative density, as determined by ASTM D 4253 and D 4254 test methods.

3.05 TOLERANCES

A. Top Surface of Subgrade: Plus or minus 1/10 foot.

3.06 FIELD QUALITY CONTROL

A. Tests and analysis of fill material will be performed in accordance with standard Proctor Moisture - Density Relationship Test and with Section 01400.

B. Compaction testing will be performed in accordance with ANSI/ASTM D1556 with Section 01 40 00.

C. If tests indicate Work does not meet specified requirements, remove Work, replace, and retest at no cost to Owner.

D. Frequency of Tests: as specified in Section 31 23 16 – Excavation and Section 31 23 23.23 - Backfilling

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Excavation for building foundations.

B. Excavation for slabs-on-grade, landscaping.

C. Use of Explosives for Bulk Excavation

1.02 RELATED SECTIONS

A. Section 01 29 00 – Price and Payment Procedures

B. Section 01 33 00 – Submittal Procedures

C. Section 01 40 00 - Quality Requirements

D. Section 01 73 00 – Execution Requirements

E. Section 02 41 00 – Demolition

F. Section 31 10 00 - Site Clearing

G. Section 31 22 13 – Rough Grading

H. Section 31 23 17 – Trenching

I. Section 31 23 23.23 – Backfilling

J. Section 31 25 00 – Sediment and Erosion Control

K. Section 31 50 00 - Excavation Support

L. Section 31 92 00 – Soil Work Sod and Turf Establishment

1.03 FIELD MEASUREMENTS

A. Verify that survey benchmark and intended elevations for the Work are as indicated.

1.04 CLASSIFICATION OF EXCAVATION

A. All excavation required shall be **UNCLASSIFIED**, that is, the bid price shall be taken to include and cover all materials required to be excavated whether wet or dry and regardless of the character of the materials.

1. If rock or unsuitable materials are encountered during excavation of footings, trenching, and paving, it shall be the Contractor's responsibility, at no additional cost to the Owner, to remove up to 12 inches of the rock and/or unsuitable soils and backfill with compacted structural fill as specified. Any work below the "threshold work" or "take line" shall be handled on a unit cost basis.

B. Any soil or excavation, including but not limited to rock, which is not required for the finished work, shall be removed from the site as part of the contract sum.

C. Refer to Section 01 22 11 - Unit Prices for the identification of unit cost for removal of soils and rock beyond the scope of work identified in the contract documents.

1.5 EXPLOSIVES

A. Explosives and Blasting: Use and store explosives in accordance with requirements of Federal, State and local laws and regulations. Additionally comply with the following:
   1. The Contractor is solely responsible for injury to persons or property as a result of his use of explosives.
   2. Provide competent, licensed Master to supervise blasting.
   3. Do not use methods of blasting which will result in breakage beyond excavations, or which is dangerous to the public or destructive to property.
   4. Schedule blasting in the proximity of proposed new concrete work prior to placement of concrete.
   5. Notify utility owners having structures or other installations above or below ground in proximity to the site of the work prior to use of explosives. Such notice must be given sufficiently in advance to enable the utility owners to take such steps as they may deem necessary to protect their property from injury. Such notice shall not relieve the Contractor of responsibility for damage resulting from his use of explosives. A utility owner has the right not to allow blasting near the utility. In such cases, other acceptable removal methods shall be used at no additional cost to the Owner or utility.
   6. The Contractor shall employ an independent testing laboratory, acceptable to the Engineer, to conduct seismographic tests in conjunction with blasting operations. These tests shall be made to establish acceptable blast patterns and procedures and as often thereafter as the Engineer may deem necessary.
   7. The Contractor shall, prior to starting work, furnish to the Engineer and Owner t data concerning his proposed blasting operations. Such data shall include the location, depth, and area of blast; diameter, spacing, depth, pattern, and inclination of blast holes; the type, strength, amount, column load, and distribution of explosives to be used per hole, per delay, and per blast; the sequence and pattern of delays; and the description and purpose of any special methods to be adopted by the Contractor. The Engineer reserves the right to limit the maximum size of explosive charge.
   8. Acceptance by the Engineer of blasting data and techniques will not relieve the Contractor of his responsibilities to exercise proper supervision and field judgment and to produce the results called for in this specification.
   9. Blasting will be permitted only after the proper precautions have been taken for the protection of all persons, work, and property. The Contractor shall control fly rock and material so as to prevent damage to persons or structures. When directed by the Engineer, use blasting mats in areas where overburden has been removed prior to blasting. Equipment used for drilling of holes shall have a positive means of dust control subject to the Engineer's approval.
   10. The Contractor shall provide video and photographic documentation of the condition of basement walls and structures within a minimum of a 1,000-foot radius of the blast site property boundary before and after blasting activities.
   11. Before blasting within 50 feet of cured concrete, submit and obtain approval of a plan showing the relative positions of the concrete, the area to be blasted, and the blasting technique to be employed.

12. The Contractor shall use controlled blasting techniques. He shall modify the blasting round as necessary to achieve the best obtainable results and to keep the air blast over pressure, vibrations and noise within the limits herein specified. He shall exercise all possible care in drilling and blasting operations to minimize overbreak and blast damage of adjacent unexcavated ground. It shall be the Contractor's responsibility to produce a satisfactory excavated surface by determining the proper relationships of the factors of burden, spacing, depth of charge, amount and type of explosive, hole size and delay pattern, and other necessary considerations to achieve the required results.
13. The Contractor shall only perform blasting operations during normal working hours 8:00 a.m. to 6:00 p.m. prevailing time, In the event an emergency such as a thunderstorm prevents a blast from being made before 6:00 p.m., and the holes are loaded, the blast shall be set *off* as *soon* as safety allows. In the event blasting is found necessary during restricted hours, the Contractor shall inform the Owner and local residents, within hearing and vibration range, prior to firing. In addition, the Contractor shall report in writing the following day to the Engineer, the conditions which required him to blast during the restricted hours. Impact or impulsive noise from blasting operations shall not exceed 130 db peak sound pressure level measured at the nearest structure or property line. Blasting materials shall not be left in the hole for extended periods of time.
14. The Contractor shall conduct a public meeting a minimum of 30 days prior to conducting inspections. Contractor will be responsible for coordinating, advertising and notification. The following, at a minimum, shall be invited to the meeting: Garrett County Engineering personnel, State Fire Marshal, Architect and Civil Engineer, Utility owners within 1000 feet of site, and all residents within 1000 feet of site.
15. The Contractor shall notify all residents within hearing and vibration range, on the morning of the blasting, as well as, 72 hours in advance.
16. The Contractor shall store explosives on the site only during the blasting hours specified in the preceding paragraph. All explosives must be trucked to the site at the start of each workday from a magazine located outside the limits of the work site and surplus explosives shall be returned to the magazine at the close of each workday. The locations of magazines on the site and parking for explosives trucks will be determined by the Engineer.
17. Vibrations will be monitored by measuring the Peak Particle Velocity (PPV) in the vicinity of the Mast. Data from such measurements will be used in controlling the Contractor's blasting operations. The PPV, as measured on or at any structure in the vicinity of blasting operations, including the Environmental Laboratory, shall not exceed two inches per second. Limitations *on* PPV do not relieve the Contractor of his responsibility in assuring the Integrity and safety of adjacent structures. PPV is defined as the maximum of the three velocity components of a vibration measured at any point in three mutually perpendicular directions by a seismograph approved by the Engineer, capable of producing a permanent record and capable of internal dynamic calibration. Air blast overpressure shall be recorded with a peak impact recording instrument having linear frequency response.
18. The Contractor shall furnish, install, and operate at the site, an approved commercially available thunderstorm monitor and automatic lightning warning device. Adequate provisions shall be made for transmitting alarms from the device to all locations where electric blasting or preparation for electric blasting is in progress. The system shall be located and installed according to the manufacturer's recommendations. The entire monitoring and alarm system shall

be operated by qualified personnel and periodically tested by the Contractor for satisfactory operation and any defects discovered shall be promptly corrected. The Contractor shall provide for the repair or replacement of facilities damaged by blasting operations at no cost to the Owner.

19. Distances and measurements contained within this section shall be considered a minimum. Contractor shall use his own judgment and may increase the minimums if in his expert opinion is warranted.

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

3.01 PREPARATION

A. Identify required lines, levels, contours, and datum.

B. Identify known underground, above ground, and aerial utilities. Stake and flag locations.

C. Notify utility company to remove and relocate utilities.

D. Protect above and below grade utilities which are to remain.

E. Protect plant life, lawns, and other features remaining as a portion of final landscaping.

F. Protect benchmarks, existing structures, sidewalks, paving, and curbs from excavation equipment and vehicular traffic.

3.02 EXCAVATION

A. Underpin adjacent structures which may be damaged by excavation work, including utilities and pipe chases.

B. Excavate subsoil required to accommodate building foundations, slabs-on-grade paving and site structures, and Construction operations.

C. Machine slope banks to angle of repose or less, until shored.

D. Excavation cut not to interfere with normal 30 degree bearing splay of foundation.

E. Grade top perimeter of excavation to prevent surface water from draining into excavation.

F. Hand trim excavation. Remove loose matter.

G. Remove lumped subsoil, boulders, and rock.

H. Notify Architect/Engineer of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.

I. Correct unauthorized excavation at no extra cost to Owner.

J. Correct areas over-excavated by error.

K. Stockpile excavated material in area designated on site and remove excess material not being reused, from site at no expense to Owner.

3.03 FIELD QUALITY CONTROL

A. Field inspection will be performed under the provisions of Section 01 40 00.

B. Provide for visual and instrument inspection of bearing surfaces.

C. Bearing surfaces shall be tested by Dynamic Cone Penetrometer per ASTM Special Technical Publication STP-399 - Dynamic Cone for in-situ penetration testing at a minimum rate of one (1) test per ten lineal feet of spread footing and three (3) tests per column footing.

3.04 PROTECTION

A. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.

B. Protect bottom of excavations and soil adjacent to and beneath foundation, from freezing.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Excavate trenches for utilities as indicated on the plans from building to municipal utilities.

B. Compacted bedding under fill over utilities to subgrade elevations.

C. Backfilling and compaction requirements.

D. Compliance with utility specifications.

1.02 RELATED SECTIONS

A. Section 01 33 00 – Submittal Procedures

B. Section 01 40 00 - Quality Requirements

C. Section 01 73 00 – Execution Requirements

D. Section 31 25 00 – Sediment and Erosion Control

E. Section 31 50 00 - Excavation Support

F. Section 32 92 00 – Soil Work Sod and Turf Establishment

1.03 REFERENCES

A. ANSI/ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.

B. ANSI/ASTM D1556 - Test Method for Density of Soil in Place by the Sand-Cone Method.

C. ANSI/ASTM D 698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures.

1.04 SUBMITTALS

A. Submit under provision of Section 01 33 00.

B. Samples: Submit 40-50 lb sample of each type of fill to testing laboratory, in air-tight containers at least fourteen (14) days prior to the start of construction.

1.05 FIELD MEASUREMENTS

A. Verify that survey benchmark and intended elevations for the Work are as shown on Drawings.

1.06 PROTECTION

A. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation.

B. Underpin adjacent structures which may be damaged by excavation work, including service utilities and pipe chases.

C. Notify Architect/Engineer of unexpected subsurface conditions and discontinue work in affected area until notification to resume work.

D. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.

E. Grade excavation top perimeter to prevent surface water run-off into excavation.

PART 2 PRODUCTS

2.01 CLASSIFICATION OF EXCAVATION

A. All excavation required shall be UNCLASSIFIED as defined in Section 31 23 16 – Excavation.

2.02 FILL MATERIALS

A. Types A, B, C, Subsoil and Concrete materials as specified in Section 31 23 16 – Excavation.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify fill materials to be reused, is acceptable.

3.02 PREPARATION

A. Identify required lines, levels, contours, and datum.

B. Maintain and protect existing utilities remaining, which pass through work area.

C. Protect plant life, lawns, and other features remaining as a portion of final landscaping.

D. Protect benchmarks, existing structures, fences, sidewalks, paving, and curbs from excavation equipment and vehicular traffic.

E. Protect above and below grade utilities which are to remain.

F. Cut out soft areas of subgrade not capable of insitu compaction in their natural and present state. Backfill with Type C fill as specified in Section 31 23 16 and compact to density equal to or greater than requirements for subsequent backfill material.

3.03 EXCAVATION

A. Excavate subsoil required for utility piping to municipal utilities requirements or as detailed.

B. Cut trenches sufficiently wide to enable installation of utilities and allow inspection. Minimum clearance shall be 6 inches on each side of pipe or conduit.

C. Excavation shall not interfere with normal 30 degree bearing splay of foundations.

D. Hand trim excavation. Hand trim for bell and spigot pipe joints, if required. Remove loose matter.

E. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd, measured by volume.

F. Correct unauthorized excavation at no cost to Owner.

G. Correct areas over-excavated by error in accordance with Section 31 23 23.23 at no additional cost to the Owner.

H. Stockpile excavated material in area designated on site and remove excess material not being re-used from site at no expense to the Owner.

3.04 BEDDING

A. Support pipe or conduit during placement and compaction of bedding fill.

3.05 BACKFILLING

A. Backfill trenches to contours and elevations with unfrozen materials.

B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.

C. Bedding Fill: Place and compact materials in continuous layers not exceeding 4 inches loose lifts when compacted by hand-operated or light compaction equipment.

D. Approved Subsoil Fill: Place and compact material in continuous layers not exceeding 4 inches loose lifts when compacted by hand-operated or light compaction equipment.

E. Employ a placement method that does not disturb or damage foundation perimeter drainage or conduit in trench.

F. Maintain optimum moisture content of backfill materials to attain required compaction density.

G. Remove surplus backfill materials from site at no additional cost to Owner.

H. Leave fill material stockpile areas completely free of excess fill materials.

3.06 TOLERANCES

A. Top Surface of Backfilling: Under Paved Areas Plus or minus one inch from required elevations.

B. Top Surface of General Backfilling: Plus or minus one inch from required elevations.

3.07 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 01 45 16.

B. Tests and analysis of fill material will be performed in accordance with ANSI/ASTM D2487 and with Section 01 40 00.

C. Compaction testing will be performed in accordance with ANSI/ASTM D1556 and ANSI/ASTM D1557 and Section 01 40 00.

D. If tests indicate Work does not meet specified requirements, remove Work, replace, and retest at no cost to Owner.

E. Frequency of Tests: Minimum one (1) test every 25 lineal feet of trench, each layer, or as may be determined by Owner.

3.08 PROTECTION OF FINISHED WORK

A. Protect finished Work under provisions of Section 01 73 00.

B. Recompact fills subjected to vehicular traffic.

3.09 SCHEDULE

A. Water, Gas, and Sanitary Piping:
1. Bedding Fill: Type B (Structural Fill) or as required by the local authorities Construction Specifications and all addenda, compacted to 95 percent. Minimum depth 6 inches above top of pipe.
2. Cover with Type B (Structural Fill), in 8-inch lifts, compacted to 100 percent.

B. Power Ducts
1. Bedding fill of Type C (Select Fill), in 8-inch lifts, compacted to 100 percent.
2. Remaining fill of Type C (Select Fill), to subgrade elevation, compacted to 100 percent.

C. Storm Drain
1. Wherever rock is encountered, it shall be removed and replaced with a minimum 8 in. (200 mm) of select backfill to provide a constant cushion under the pipe or bell. When unsuitable foundation material is encountered, it shall be removed and replaced with selected backfill for the full width of the trench, as directed by the Engineer.
2. Culverts 48 in. (1220 mm) or more in nominal horizontal diameter shall be bedded in an approved foundation shaped by means of a template which will support the pipe for at least 10 percent of its overall height.

D. General Utility Information
1. All underground utility trenches shall be backfilled as specified and shall have a warning tape at depth as detailed or as by the Owner.
2. All plastic underground utilities shall in addition have a detection wire installed at trench depth indicated or as directed by the Owner.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Building perimeter and site structure backfilling subgrade elevations.

B. Site filling and backfilling.

C. Fill under slabs-on-grade and paving.

D. Consolidation and compaction.

E. Fill for over-excavation.

1.2 RELATED SECTIONS

A. Section 01 29 00 - Price and Payment Procedures

B. Section 01 33 00 – Submittal Procedures

C. Section 01 40 00 - Quality Requirements

D. Section 31 22 13 – Rough Grading

E. Section 31 23 16 – Excavation

F. Section 31 23 17 – Trenching

G. Section 31 25 00 – Sediment and Erosion Control

H. Section 31 50 00 - Excavation Support

I. Section 32 12 17 - Hot Mix Asphalt

J. Section 32 13 13 - Cement Concrete Paving

K. Section 32 92 00 – Soil Work Sod and Turf Establishment

L. Section 33 40 00 - Storm

1.3 REFERENCES

A. ANSI/ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.

B. ANSI/ASTM D698 - Test Methods for Moisture - Density Relations of Soils and Soil - Aggregate Mixtures.

C. ANSI/ASTM D1556 - Test Method for Density of Soil in Place by the Sand-Cone Method.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00.

B. Samples: Submit 40 lb. dry density sample of each type of fill to testing laboratory, in air-tight containers at least fourteen (14) days prior to the start of construction.

C. Source of Origin: Submit source of origin for all tested samples.

D. LEED Submittals

PART 2 PRODUCTS

2.1 FILL MATERIALS

A. Type A - Coarse Stone: No. 57 Stone Angular, washed natural stone; free of shale, clay, friable material, sand, debris; graded in accordance with ANSI/ASTM C136 within the following limits:

Sieve Size	Percent Passing
1 1/2 inch	100
1 inch	95 to 100
1/2 inch	25 to 60
No. 4	0 to 10

B. Type B - Structural Fill: Suitable materials as outlined in the Geotechnical Report.

C. Type C - Select Fill: MDOT Graded Aggregate Base or CR-6 per details.

D. Subsoil: Reused, Imported, free of gravel larger than 3-inch size, and debris.

E. Fill required to attain design grades should be placed as controlled, compacted fill. Satisfactory fill includes approved on-site excavated materials, off-site borrow material (residual soils, soil/rock mixtures, and soft weathered rock), or well-graded commercial stone such as MDOT GA base aggregate. The fill should be free of trash, wood, coal, topsoil, organics, pyritic material with greater than 0.5 percent by weight of pyritic sulfur, frozen material, and pieces of rock greater than 4 inches in any dimension. Materials classified as MH, CH, OH, OL and Pt based on the Unified Soil Classification System (USCS) are not considered suitable for use as new fill. All fill should be tested and approved prior to placement and compaction.

F. Reclaimed concrete stored on-site and asphalt removed from site during grading operations can be used for fill but may need to be manipulated as per recommendations in the geotechnical report. The following restrictions are to be observed:
1. These materials shall not be used within structural fill areas.
2. The asphalt will need to be broken down to suitable size fragments that meet the criteria for maximum rock particle size. This is necessary to avoid nesting and incorporation of large slabs of asphalt that could preclude proper compaction. Rock size shall have D_{100} minus 3 inches.
3. Maintain a minimum of 5 feet clearance from all utility lines.
4. The recycled asphalt and reclaimed concrete should be blended with other soils, as practical, so that there are sufficient fines present in the fill matrix to serve as a binder.
5. Minimum cover shall be three feet under lawn or play fields, two feet elsewhere.

G. Recycled Content of Backfill: Provide documentation showing re-use of reclaimed concrete as fill material.

H. Regional Materials: Provide aggregate manufactured and of primary raw materials extracted or recovered within 500 mile radius of Project Site.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify fill materials to be reused are acceptable.

B. Verify foundation perimeter drainage installation has been inspected.

C. Verify underground tanks are anchored to their own foundation to avoid flotation after backfilling.

3.2 PREPARATION

A. Generally, compact subgrade to density requirements for subsequent backfill materials.

B. Cut out soft areas of subgrade not capable of insitu compaction. Backfill with Type B fill and compact to density equal to or greater than requirements for subsequent backfill material.

C. Prior to placement of aggregate base course material at paved areas, compact subsoil to 100 percent of its maximum dry density in accordance with the Geo-Technical Engineer's recommendations.

3.3 BACKFILLING

A. Backfill areas to contours and elevations with unfrozen materials.

B. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.

C. Soil Fill: Place and compact material in continuous layers not exceeding 10 inches loose depth if compacted with heavy equipment and 4 inches when compacted by hand operated or light compaction equipment.

D. Maintain optimum moisture content of backfill materials to attain required compaction density.

E. Backfill against supported foundation walls. Do not back-fill against unsupported foundation walls.

F. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.

G. Slope grade away from building minimum 1 unit vertical in 20 units horizontal for a minimum distance of 10 feet, unless noted otherwise.

H. Make grade changes gradual. Blend slope into level areas.

I. Remove surplus backfill materials from site.

J. Leave required fill material stockpile areas completely free of excess fill materials which are to be removed from the site.

K. Additional requirements as outlined in section 02 30 00 Subsurface Drilling and Sampling Information

3.4 TOLERANCES

A. Top Surface of Backfilling Under Paved Areas: Plus or minus one inch from required elevations.

3.5 FIELD QUALITY CONTROL

A. Tests and analysis of fill material will be performed in accordance with ANSI/ASTM D2487 and with Section 01 40 00.

B. Compaction testing will be performed in accordance with ANSI/ASTM D1557 and with Section 01 40 00.

C. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.

D. Frequency of Tests: Provide a minimum of one test per lift for each 500 square feet of backfill or a minimum of four (4) tests per layer of fill or at Owner's requests.

E. Proof roll compacted fill surfaces under slabs-on-grade pavers and paving.

3.6 PROTECTION OF FINISHED WORK

A. Protect finished Work under provisions of Section 01 73 00

B. Recompact fills subjected to vehicular traffic.

3.7 SCHEDULE OF COMPACTION

A. Unless detailed elsewhere in the plans, the following compaction criteria (using Standard Protor) shall be followed for each case. In the event of conflict, the stricter of the plans, this section, or geotechnical report shall prevail.

B. Interior Slab-On-Grade:
1. Type A fill, 6 inches thick, compacted with plate compactor.

C. Exterior Side of Foundation Walls, Retaining Walls and Over Granular Filter Material and Foundation Perimeter Drainage:
1. Type A fill, to subgrade elevation, each lift, compacted to 95 percent standard proctor.

D. Fill Under Grass Areas:
1. Subsoil fill, to 6 inches below finish grade, compacted to 90 percent.

E. Fill Under Landscaped Areas:
1. Subsoil fill, to 12 inches below finish grade, compacted to 90 percent.

G. Fill under Structure and Pavements, below aggregate base course and any fill required to Correct Over-excavation:
1. Type B (Structural fill) fill, flush to required elevation, compacted to 100 percent at structure and 98% at common areas.

H. Sidewalks, concrete walkways, trenches and stoops:
1. 4 inches of Type C (Select fill) fill, to 4 inches below finish paving elevation, compacted to 98 percent.

I. Trench Work (Under landscaped areas)
1. Type C fill to 12 inches below finish grade, compacted to 95 percent.

J. Trench Work (under Asphalt Concrete Paving)
1. 12 inches of Type C fill compacted to 97 percent.

K. Manhole, inlet, underground structure bedding.
1. Type C fill 12 inches deep compacted at 100 percent.

L. Under athletic play areas
1. Subsoil fill compacted at 95 percent to a depth of 6 feet. Subsoil fill compacted at 90 percent beyond 6 feet.

M. In the event that multiple conditions exist, the more stringent criteria shall apply.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

A. Furnish all labor, materials, equipment, and incidentals required and perform all soil erosion and sedimentation control work as shown on the Drawings and as specified herein. The work is more fully described and detailed in the Sediment and Erosion Control Plan (SEC) prepared for this project as indicated on the Drawings.

B. Dust control is addressed for demolition and crushing of Reclaimed concrete Material

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.3 SUBMITTALS

A. Furnish certificates from the manufacturers of matting for erosion control and fabric for silt barrier fencing that their products meet the requirements of these Specifications.

B. Erosion Control Matting

C. Sediment and Erosion Control aggregates

D. Submit Plan for Dust Control to local Soil Conservation District for review and approval prior to beginning demolition of the building envelope or site items. Narrative shall describe methods to be used to prevent dust from wind erosion as well as demolition and crushing processes.

1.4 QUALITY ASSURANCE

A. Reference Publications:
   1. Maryland Department of the Environment, Water Management Administration, Soil Conservation Service, 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control. (2011 SSSESC)
   2. Maryland Department of Transportation Standard Specifications for Construction and Materials, latest edition.
   3. USDA - Soil Conservation Service Technical Release Bulletin No. 55.

B. Reference Standards:
   1. American Society for Testing and Materials:
      a. ASTM C97; Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone.
      b. ASTM D751; Standard Test Methods for Coated Fabrics.
      c. ASTM D1682; Standard Test Methods for Breaking Load and Elongation of Textile Fabrics.
      d. ASTM D1117; Nonwoven Fabrics, Methods of Testing.
   2. Asphalt Institute: Specification designations.
   3. Maryland Department of the Environment, 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control. (2011 SSSESC)

PART 2 - PRODUCTS

2.1 All Products shall be in accordance with the 2011 SSSESC.

PART 3 - EXECUTION

3.1 INSTALLATION

A. All installation shall be conducted in accordance with the 2011 SSSESC.

3.2 MAINTENANCE

A. Maintenance operations shall begin immediately and shall continue throughout the construction period until the Contract has been completed. The sediment control structures shall be inspected and repaired after each storm.

B. Should the MDE Inspector, Owner or Engineer direct the contractor to modify, add or replace any temporary measures for erosion and sediment control, it shall be at the sole cost to the Contractor.

C. Any fines or penalties resulting from the improper installation or maintenance of temporary measures shall be borne solely by the Contractor.

3.3 SOIL EROSION AND SEDIMENTATION PLAN

A. An approved Erosion and Sedimentation Control Plan is shown on the Drawings. Should the Contractor desire to modify any part of the Plan, he shall be responsible for obtaining all necessary approvals therefore, prior to implementing any provisions thereof, all at no additional cost to the Owner.

B. The Contractor will assume all responsibility and liability for Erosion and Sediment Control at the start of the project. The Owner will transfer the MDE Notice of Intent and associated permitting with all of its requirements to the Contractor.

C. After project is complete, the Contractor will transfer NPDES and associated permitting to the Owner.

3.4 DUST CONTROL

A. Refer to Maryland Department of the Environment, 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control. (2011 SSSESC), Section H-5 Standards and Specifications for Dust Control.

B. Mulches: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3

C. Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.

D. Vegetative Cover: See Section B-4-4 Temporary Stabilization.

E. Tillage: Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.

F. Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be irrigated to the point that runoff occurs.

G. Barriers: Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing.

H. Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

I. After completion of demolition, Contractor shall stabilize stockpiles so that dust is not produced. Duration of stabilization is expected to be 18 months after contract is substantially complete.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Related Sections include the following:
1. Section 31 22 13 - Rough Grading
2. Section 31 23 16 - Excavation
3. Section 31 23 17 - Trenching
4. Section 31 23 23.23 - Backfilling
5. Section 31 25 00 - Sediment and Erosion Control
6. Section 33 40 00 - Storm

1.2 SUMMARY

A. This Section includes temporary excavation support and protection systems.

1.3 PERFORMANCE REQUIREMENTS

A. Design, furnish, install, monitor, and maintain excavation support and protection system capable of supporting excavation sidewalls and of resisting soil and hydrostatic pressure and superimposed and construction loads.
1. Provide professional engineering services needed to assume engineering responsibility, including preparation of Shop Drawings and a comprehensive engineering analysis by a qualified professional engineer.
2. Prevent surface water from entering excavations by grading, dikes, or other means.
3. Install excavation support and protection systems without damaging existing buildings, pavements, and other improvements adjacent to excavation.

1.4 SUBMITTALS

A. Shop Drawings for Information: Prepared by or under the supervision of a qualified professional engineer for excavation support and protection systems.
1. Include Shop Drawings signed and sealed by the qualified professional engineer responsible for their preparation.

B. Qualification Data: For Installer and professional engineer.

C. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by the absence of, the installation of, or the performance of excavation support and protection systems.

1.5 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated.

B. Project-Site Information: A geotechnical report has been prepared for this Project and is available for information only. The opinions expressed in this report are those of geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by geotechnical engineer. Owner will not be responsible for interpretations or conclusions drawn from this data.
1. The geotechnical report is included elsewhere in the Project Manual.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that could develop during excavation support and protection system operations.
1. Shore, support, and protect utilities encountered.

B. Install excavation support and protection systems to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Contractor shall present to the Owner a maintenance-of-traffic plan and shall provide periodic updates as necessary. In the event that access roads or other entries are closed or otherwise blocked, then the Contractor shall also notify the Local Fire Department and Civil Defense.

C. Locate excavation support and protection systems clear of permanent construction so that forming and finishing of concrete surfaces is not impeded.

D. Monitor excavation support and protection systems daily during excavation progress and for as long as excavation remains open. Promptly correct bulges, breakage, or other evidence of movement to ensure that excavation support and protection systems remain stable.
1. Promptly repair damages to adjacent facilities caused by installing excavation support and protection systems. tic pressures.

3.2 REMOVAL AND REPAIRS

A. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and bear soil and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils or damaging structures, pavements, facilities, and utilities.
1. Remove excavation support and protection systems to a minimum depth of 60 inches below overlying construction and abandon remainder.
2. Repair or replace, as approved by Engineer, adjacent work damaged or displaced by removing excavation support and protection systems.

END OF SECTION

DIVISION 32

EXTERIOR IMPROVEMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Maryland State Highway Administration "Standard Specifications for Construction and Materials" current edition.

C. Supplemental Specifications and Special Provision Inserts to Maryland State Highway Administration "Standard Specifications for Construction and Materials" current addition. as available on the State Highway Administration's website, http://www.sha.state.md.us/

1.2 SUMMARY

A. This Section includes the following:
1. Hot mix asphalt paving.
2. Pavement marking paint.

1.3 QUALITY CONTROL

A. Quality control per MDOT Specifications.

1.4 PAVEMENT MARKINGS

A. General Line Striping
1. NONTOXIC LEAD-FREE WATERBORNE PAVEMENT MARKINGS: Materials shall be a ready-mixed, pigmented binder emulsified in water and capable of anchoring reflective beads that are applied separately. The paint shall not contain any hazardous material listed in the Environmental Protection Agency Code of Federal Regulations (CFR) 40, Section 261.24, Table 1.
2. Viscosity. Viscosity shall be 80 ± 10 KU when tested in conformance with D 562 at 77 F.
3. Directional Reflectance. Directional reflectance when determined without beads, shall be a minimum of 80 percent for white and 50 percent for yellow when tested in conformance with E 97.
4. Color.
a. Production. The color of the dry paint film of the production sample shall essentially match Federal Standard 595, color chips Nos. 37886 (white) or 33538 (yellow), when compared instrumentally.

B. Directional Arrows and Cross Walks
1. HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING MATERIAL. The material shall be highly durable retroreflective polymeric materials designed for use as transverse lines, numbers, legends, symbols and arrow markings subjected to high traffic volumes and severe wear conditions such as shear action from crossover or encroachment.
2. The applied material shall adhere to hot mix asphalt (HMA), open-grade friction courses (OGFC), stone matrix asphalt (SMA), Portland cement concrete (PCC), and any existing pavement markings when applied using normal heat from a

propane fueled heat gun in conformance with manufacturer's recommendations.

3. The applied material shall be capable of conforming to pavement contours, breaks and faults, shall not be affected by weather conditions, and shall remain in place on pavement surfaces without being displaced by traffic.
4. The material shall have a minimum shelf life of one year.
5. The material shall conform to the requirements of the MUTCD and the following:
   a. Composition. The material shall consist of polymeric materials, pigments, binders, and glass beads distributed throughout the entire cross-sectional area. The thermoplastic material shall conform to M 249 with the exception of the relevant differences for the material being supplied in the preformed state.
   b. Restrictions. The combined total of lead, cadmium, mercury and hexavalent chromium shall not exceed 100 ppm when tested by X-ray diffraction, ICP, or comparable method capable of this level of detection. Non-leachable lead based pigments will not be permitted. Diarylide type pigments shall only be used when the manufacture or pavement marking material application temperature does not exceed 392 F.
   c. Color. Preformed markings shall consist of film with pigments selected and blended to match Federal Standard 595 color chip Nos. 17778 and 13538 for white and yellow respectively.
   d. Frictional Resistance. The surface of the applied material shall provide a minimum average skid resistance value of 50 BPN when tested in conformance with E 303.
   e. Patchability. The material shall be capable of use for patching worn areas of the same type in conformance with manufacturer's recommendations.
   f. Thickness. The minimum thickness, without adhesive, shall be 120 mils.
   g. Adhesion. The material shall retain a minimum of 65 percent adhesive bond after 100 cycles of freeze-thaw when tested in conformance with C 666, Method B.

PART 2 - EXECUTION

2.1 AGGREGATE BASE COURSE

A. At least 30 days prior to the start of constructing the base course, the Contractor shall submit the proposed plants, equipment, and material sources to the Engineer for approval. The Contractor shall protect the subgrade and base against damage from all causes. Any part of the subgrade or base that is damaged shall be repaired or replaced by the Contractor in a manner acceptable to the Engineer at no additional cost to the Owner.

B. Weather Restrictions
   1. Temperature and Surface Conditions. Graded aggregate stabilized with Portland cement shall be placed only when the ambient air and surface temperature is at least 40 F and rising.
   2. Graded aggregate, bank run gravel and sand aggregate base shall be placed only when the ambient air and surface temperature is at least 32 F and rising. Placing material on a frozen subgrade is prohibited.
   3. Cold Weather Protection. The plant mixed graded aggregate stabilized base shall be protected from freezing during the seven-day curing period.
   4. Precipitation. Construction during precipitation is prohibited.

5. When precipitation has occurred during the previous 24 hours, the Engineer will determine if the subgrade is sufficiently dry. Any material enroute from the plant to the job site may be placed at the Contractor's risk.

C. Subgrade Preparation. The approved subgrade set to final line and grade shall be completed at least 500 ft ahead of the base course or as directed by the Engineer before the base course construction begins. The foundation shall be constructed as specified in Maryland State Highway Administration Sections 204 and 208, the Contract Documents, and as approved by the Engineer. If traffic, including construction equipment, is allowed to use the subgrade foundation or preceding layer, it shall be distributed over the entire width of the course to aid in obtaining uniform and thorough compaction. If ruts are formed, they shall be removed by reshaping and recompacting the affected area as specified in Section 204.

D. Spreading. The base material shall be uniformly spread without segregating the coarse and fine particles, in layers of approximately equal thickness, to provide the specified planned depth. Shoulders or berms not less than 2 ft wide shall be built up on each side of the base to the top elevation of each uncompacted layer unless the base is placed against concrete curbs or gutters.

E. Grade or Finished Surface Control. The surface of the base material shall be shaped to the required lines, grades and cross section specified in the Contract Documents. Grades shall be set longitudinally and transversely with fixed controls having a maximum spacing of 25 ft. The surface material shall be compacted and smoothed over its full width using a smooth faced steel wheeled roller or, if rolling is not feasible, by mechanical tampers and vibratory compactors as approved by the Engineer. The finished grade shall not deviate more than 1/2 in. from the established grade.

F. Compaction. Immediately after placement, the base material shall be compacted to the required density. During compaction operations, the moisture content of the material shall be maintained within 2 percent of the material’s optimum moisture. The optimum moisture content and maximum dry density shall be determined as follows:
1. Graded Aggregate Base and Graded Stabilized Aggregate Base: MSMT 321
2. Graded aggregate for base shall be compacted to a minimum density of 97 percent of the maximum dry density.
3. Compaction operations, except on superelevated curves, shall begin at the sides of the course, overlap the shoulder or berm at least 1 ft and progress toward the center parallel to the center line of the roadway. Superelevated curve compaction shall begin at the low side of the superelevation and progress toward the high side. The compaction operation shall continue until all compaction marks are eliminated.

G. Moisture and Dust Control Agents. When specified in the Contract Documents or as directed by the Engineer, calcium or magnesium chloride shall be added at the plant or applied to the surface of the graded aggregate, bank run gravel, or sand aggregate base at the project site. Calcium chloride shall be applied at the rate of 1 lb/yd2. Magnesium chloride shall be applied at the rate of 1 lb/yd2 or as a solution at the rate of 1/2 gal/yd2. 501.03.13 Maintenance.

H. During construction and after completion of the base course, the base shall be maintained by the Contractor until the surface course is placed. Unacceptable work that cannot be repaired shall be replaced for the full depth of the base at no additional cost to the Owner.

2.2 HOT MIX ASPHALT

A. Equipment. All equipment, including the production plant and paving equipment, shall be subject to approval by the Engineer. The plant shall be ready for inspection by the Engineer at least 48 hours prior to the start of construction operations.

1. Hauling Units. Refer to 915.02(f). Due regard shall be given to the safety and convenience of the public while applying and maintaining the tack coat. Provisions shall be made to minimize hauling trucks from tracking tack coat onto the adjacent pavement.
2. Pavers. Pavers will be inspected and approved by the Engineer based upon the manufacturer's specification manual (copy to be provided by the Contractor). The paver shall be a self-contained, self-propelled unit capable of spreading the mixture true to line, grade, and cross slope. The paver shall be equipped with a screed or strike off assembly that will produce a finished surface of the required smoothness and texture without tearing, shoving, or gouging the mixture. The paver shall have automatic controls for transverse slope and grade. Controls shall be capable of sensing grade from an outside reference line or ski and sensing the transverse slope of the screed to maintain the required grade and transverse slope within plus or minus 0.1 of the required slope percentage. Manual operation will be permitted in the construction of irregularly shaped and minor areas, or where directed by the Engineer. Whenever a breakdown or malfunction of any automatic control occurs, the equipment may be operated manually for the remainder of the workday as directed by the Engineer. Reference lines or other suitable markings to control the horizontal alignment shall be provided by the Contractor, subject to the approval of the Engineer.
3. Rollers. Rollers shall be self-propelled, reversible, and steel wheeled or pneumatic tired. Rollers may be vibratory or nonvibratory, and they may be operated in the vibratory mode as long as the Engineer determines that the roller is not cracking or damaging the aggregate in the mix. Rollers shall not be used in the vibratory mode on bridge decks. Pneumatic tire rollers shall have multiple tires of equal size with smooth tread. Wheels shall be arranged to oscillate in pairs, or they may be individually sprung. Tires shall be uniformly inflated at the operating pressure approved by the Engineer. The Contractor shall furnish the Engineer a manufacturer's table showing this data. The difference in tire pressure between any two tires shall not be greater than 5 psi. The Contractor shall provide a means for checking the tire pressure on the job at all times.

B. Weather Restrictions. HMA material shall only be placed on roadway surfaces when the ambient air and surface temperature is at least 40 F and rising for surface mixes and at least 32 F and rising for base mixes. The pavement surfaces shall be clean and dry and approved by the Engineer before HMA paving begins. Placing HMA material on a frozen graded aggregate base is prohibited. When weather conditions differ from these limits, material enroute from the plant to the job site may be used at the Contractor's risk. If placement of the material is stopped by the Engineer, all material enroute shall be wasted at no additional cost to the Owner.

C. Foundation Preparation. Prior to placement of paving material, the foundation shall be constructed as specified in the Contract Documents and approved by the Engineer. When paving over existing pavement, all excess crack filling or patch material shall be removed and all spalls and potholes shall be cleaned, tack coated, filled, and tamped with HMA before placement. Manholes, valve boxes, inlets, and other appurtenances within the area to be paved shall be adjusted to grade as directed by the Engineer.

D. Tack Coat. Prior to application of the tack coat, the surface shall be cleaned of all loose and foreign materials. The tack coat shall be uniformly applied to the surface by full circulation spray bars that are laterally and vertically adjustable and provide triple fanning and overlapping action so that the resulting coating shall be residual asphalt applied at a rate of 0.01 to 0.05 gal/yd2 as directed by the Engineer.

E. Hot Mix Asphalt Placement. HMA shall be placed by the paver. Delivery of the mixture by the hauling units and placement shall be continuous. The temperature of the mixture shall be a minimum of 225 F at the time of placement. Broadcasting of loose mixture over the new surface is prohibited.

F. Immediately following placement of the HMA mixture, the mixture shall be compacted by rolling to an in place density as specified in 504.03.10. The in place compaction shall be completed before the mixture cools below 185 F, as determined by a probe type surface thermometer, supplied by the Contractor and approved by the Engineer. Price adjustment due to noncompliance with the required density will be as specified in 504.04.02. The probe type surface thermometer shall remain the property of the Contractor at the completion of the project.
   1. Rolling shall consist of six separate operations in the following sequence:
      a. Transverse joint.
      b. Longitudinal joint.
      c. Edges.
      d. Initial breakdown rolling.
      e. Second or intermediate rolling.
      f. Finish rolling.
   2. Steel wheel rollers shall be used for the first rolling of all joints and edges, the initial breakdown rolling, and the finish rolling.
   3. Rollers shall start at the sides and proceed longitudinally toward the center of the pavement, except on superelevated curves. The rolling shall begin at the low side and progress toward the high side. Successive trips of the roller shall overlap by at least half the width of the roller, and alternate trips shall not end at the same point. When base widening is too narrow to permit the use of conventional rollers, a power driven trench roller shall be used. When the trench must be excavated wider than the proposed width of the widening, an earth berm or shoulder shall be formed against the loose HMA as soon as it is placed. The two materials shall be rolled and compacted simultaneously. Roller marks shall not be visible after rolling operations.

G. Both longitudinal and transverse joints in successive courses shall be staggered so that one is not above the other. Transverse joints shall be staggered by the length of the paver. Longitudinal joints shall be staggered a minimum of 6 in. and shall be arranged so that the longitudinal joint in the top course shall be within 6 in. of the line dividing the traffic lanes. Joints shall be constructed to provide a continuous bond between the old and new surfaces. Joints shall be coated with tack coat as directed by the Engineer. When placing a surface course, the edge of the existing pavement shall be cut back for its full depth at transverse joints to expose a fresh surface which shall be coated with tack coat material as directed by the Engineer. Before placing the mixture against curbs, gutters, headers, manholes, etc., all contact surfaces shall be coated with tack coat. Where HMA paving is being applied to highways carrying traffic, all pavement courses exceeding 2-1/2 in. in depth shall be matched with the abutting lane or shoulder on the same working day. Where pavement courses of 2-1/2 in. or less are placed, the Contractor shall have the option of paving the abutting lane or shoulder on alternate days. The abutting lane or shoulder shall be paved regardless of the depth of pavement course prior to weekends and

temporary shutdowns. When uneven pavement joints exist, the Contractor shall provide advance warning traffic control devices in conformance with the Contract Documents.

H. Where HMA paving is being applied to the traveled way carrying traffic, the Contractor shall construct a temporary tie-in a minimum of 4 ft in length for each 1 in. of pavement depth before traffic is allowed to cross the transverse joint. The final tie-in shall include the removal of a transverse portion of the existing pavement to a depth so the design thickness of the final surface course is maintained. The length of the final tie-in shall be equal to the posted speed per 1 in. depth of the design thickness of the final course with a minimum length of 25 ft per 1 in. depth and a maximum length of 50 ft per 1 in. depth.

I. Where permanent curbs, gutters, edges, and other supports are planned, they shall be constructed and backfilled prior to placing the HMA, which shall then be placed and compacted against them.

2.3 LINE STRIPING

A. Cleaning Pavement Surfaces. Pavement surfaces shall be dry and free of oil, dirt, grease, and other contaminants prior to application of pavement markings. Surfaces not in conformance shall be cleaned by the Contractor to a width 4 to 6 in. wider than the marking to be applied. Existing pavement markings that conflict with new or altered traffic patterns shall be completely removed by the Contractor. The method used by the Contractor for removal shall not damage the pavement surface and shall be approved by the Engineer. Any pavement damaged shall be repaired or replaced as determined by the Engineer at no additional cost to the Owner.

B. Application. Before any pavement marking work is begun, a schedule of operations shall be submitted to and approved by the Engineer. All pavement markings shall be applied in conformance with the manufacturer's recommendations. When permanent pavement markings are applied under traffic, the Contractor shall provide all traffic control necessary to maintain and protect traffic in conformance with the MUTCD and the Contract Documents. The Contractor shall secure the pavement marking operations and protect the markings until they are thoroughly set. All longitudinal pavement markings shall be applied in the direction of traffic. Placing pavement marking material over longitudinal joints is prohibited.

C. Widths. The traveled way lane widths and the width of longitudinal lines shall be as specified in the Contract Documents. Lane widths shall be measured from the center of the line to the center of the line once a control line is established for the lane configuration of the roadway. When measurements are taken from existing longitudinal lines, the point of reference shall be the center of the single line or the center of the space between dual lines. The traveled way lane widths shall be in compliance when they have an acceptable appearance and do not deviate more than 2 in. from the proposed lane width.

D. Alignment. Markings shall be placed in a straight and uniform manner. Lane lines shall be in compliance when they have an acceptable appearance, and are visually in alignment, with no more than a 3/8 in. variation in any 40 ft section of traveled way. Longitudinal alignment shall be maintained through all intersections and breaks, even though the lines themselves may discontinue.

E. Layout Markings. Any layout markings that detract from the overall appearance or function of the final markings as determined by the Engineer shall be removed at no additional cost to the Owner.

F. Although this specification incorporates MD SHA guidelines for the installation of asphalt, it does not transfer nor imply any relationship with Measurement and Payment. The Owner will not accept requests for additional costs based on Asphalt Index.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Related Sections: The following sections contain requirements that relate to this section:
1. Section 01 31 00 – Administrative Requirements
2. Section 01 40 00 - Quality Requirements
3. Section 01 73 00 – Execution Requirements
4. Section 31 23 23.23 – Backfilling
5. Section 31 25 00 – Sediment and Erosion Control

1.2 SUMMARY

A. This Section includes exterior cement concrete pavement for the following:
1. Driveways.
2. Curbs and gutters.
3. Walkways.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, expansive hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

1.4 SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.

B. LEED Submittals
1. Product data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of pre-consumer and post-consumer recycled content. Include statement indicating cost of each product with recycled content.
2. Product data for Credit MR 5: For products having regional material content, documentation indicating location of manufacture and location of extraction, recovery or harvest of primary raw materials. Include statement indicating cost of each product with regional material content.

C. Design Mixes: For each concrete pavement mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

D. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:

E. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements:
1. Cementitious materials and aggregates.

2. Steel reinforcement and reinforcement accessories.
3. Fiber reinforcement.
4. Admixtures.
5. Curing compounds.
6. Applied finish materials.
7. Bonding agent or adhesive.
8. Joint fillers.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed pavement work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
1. Manufacturer must be certified according to the Maryland State Highway Administration.

C. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by the requirements of the Contract Documents.

D. Concrete Testing Service: Contractor shall engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixes.

E. Mockups: Cast mockups of full-size sections of concrete pavement to demonstrate typical joints, surface finish, texture, color, and standard of workmanship.
1. Build mockups in the location and of the size indicated or, if not indicated, as directed by Engineer.
2. Notify Engineer seven days in advance of dates and times when mockups will be constructed.
3. Obtain Engineer's approval of mockups before starting construction.
4. Maintain approved mockups during construction in an undisturbed condition as a standard for judging the completed pavement.
5. Demolish and remove approved mockups from the site when directed by Engineer.
6. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 - PRODUCTS

2.1 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
1. Use flexible or curved forms for curves of a radius 100 feet (30.5 m) or less.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

A. Recycled Content: Provide steel with minimum 90 percent total recycled content, including at least 60 percent post-consumer recycled content.

B. Regional Materials: Provide steel manufactured and of primary raw materials extracted or recovered within 500 mile radius of Project Site.

C. Deformed-Steel Welded Wire Fabric: ASTM A 497, flat sheet.

D. Reinforcement Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

E. Joint Dowel Bars: Plain steel bars, ASTM A 615/A 615M, Grade 60 (Grade 420). Cut bars true to length with ends square and free of burrs.

F. Hook Bolts: ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6), internally and externally threaded. Design hook-bolt joint assembly to hold coupling against pavement form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.

G. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcement bars, welded wire fabric, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:
   1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 CONCRETE MATERIALS

A. General: Use the same brand and type of cementitious material from the same manufacturer throughout the Project. Mix shall be in accordance with current Maryland State Highway Administration standards.

2.4 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) dry.

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

2.5 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

2.6 CONCRETE MIXES

A. Use Maryland State Highway Administration approved mix designs.

B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the trial batch method.
   1. Do not use Owner's field quality-control testing agency as the independent testing agency.

2.7 CONCRETE MIXING

A. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94 and ASTM C 1116.
   1. When air temperature is between 85 deg F (30 deg C) and 90 deg F (32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 PREPARATION

A. Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction. Proceed with pavement only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.

B. Remove loose material from compacted subbase surface immediately before placing concrete.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form release agent to ensure separation from concrete without damage.

3.3 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating reinforcement and with recommendations in CRSI's "Placing Reinforcing Bars" for placing and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

D. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

E. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch (50-mm) overlap to adjacent mats.

3.4 JOINTS

A. General: Construct construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.
   1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour, unless pavement terminates at isolation joints.
   1. Provide preformed galvanized steel or plastic keyway-section forms or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
   2. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.
   3. Provide tie bars at sides of pavement strips where indicated.
   4. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
   5. Use epoxy bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
   1. Locate expansion joints at intervals of 25 feet, unless otherwise indicated.
   2. Extend joint fillers full width and depth of joint.
   3. Terminate joint filler less than 1/2 inch (12 mm) or more than 1 inch (25 mm) below finished surface if joint sealant is indicated.
   4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
   5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
   6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

E. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:
   1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with groover tool to the following radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
      a. Radius: 1/4 inch (6 mm).
   2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

F. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to the following radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.
   1. Radius: 1/4 inch (6 mm).

3.5 CONCRETE PLACEMENT

A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcement steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.

B. Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.

D. Comply with requirements and with recommendations in ACI 304R for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery, at Project site, or during placement.

F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

G. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete according to recommendations in ACI 309R.
   1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.

H. Screed pavement surfaces with a straightedge and strike off. Commence initial floating using bull floats or darbies to form an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading dry-shake surface treatments.

I. Curbs and Gutters: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.

J. Slip-Form Pavers: When automatic machine placement is used for pavement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce pavement to required thickness, lines, grades, finish, and jointing as required for formed pavement.
1. Compact subbase and prepare subgrade of sufficient width to prevent displacement of paver machine during operations.

K. When adjoining pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained 85 percent of its 28-day compressive strength.

L. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When air temperature has fallen to or is expected to fall below 40 deg F (4.4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.

M. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows when hot-weather conditions exist:
1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg F (32 deg C). Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover reinforcement steel with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, reinforcement steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.6 CONCRETE FINISHING

A. General: Wetting of concrete surfaces during screeding, initial floating, or finishing operations is prohibited.

B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared, and the concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
1. Burlap Finish: Drag a seamless strip of damp burlap across float-finished concrete, perpendicular to line of traffic, to provide a uniform, gritty texture.

2. Medium-to-Fine-Textured Broom Finish: Draw a soft bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.
3. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch (1.6 to 3 mm) deep with a stiff-bristled broom, perpendicular to line of traffic.

3.7 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and follow recommendations in ACI 305R for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Begin curing after finishing concrete, but not before free water has disappeared from concrete surface.

D. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:
1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.
2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.8 PAVEMENT TOLERANCES

A. Comply with tolerances of ACI 117 and as follows:
1. Elevation: 1/4 inch (6 mm).
2. Thickness: Plus 3/8 inch (9 mm), minus 1/4 inch (6 mm).
3. Surface: Gap below 10-foot- (3-m-) long, unleveled straightedge not to exceed 1/4 inch (6 mm).
4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch (25 mm).
5. Vertical Alignment of Tie Bars and Dowels: 1/4 inch (6 mm).
6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2 inch (13 mm).

7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches (6 mm per 300 mm).
8. Joint Spacing: 3 inches (75 mm).
9. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
10. Joint Width: Plus 1/8 inch (3 mm), no minus.

3.9 PAVEMENT MARKING

A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Engineer.

B. Allow concrete pavement to cure for 28 days and be dry before starting pavement marking.

C. Sweep and clean surface to eliminate loose material and dust.

D. Apply paint with mechanical equipment to produce pavement markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils (0.4 mm).
1. Broadcast glass spheres uniformly into wet pavement markings at a rate of 6 lb/gal. (0.72 kg/L).

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include those specified in this Article.

B. Testing Services: Testing shall be performed according to the following requirements:
1. Sampling Fresh Concrete: Representative samples of fresh concrete shall be obtained according to ASTM C 172, except modified for slump to comply with ASTM C 94.
2. Slump: ASTM C 143; one test at point of placement for each compressive-strength test, but not less than one test for each day's pour of each type of concrete. Additional tests will be required when concrete consistency changes.
3. Air Content: ASTM C 231, pressure method; one test for each compressive-strength test, but not less than one test for each day's pour of each type of air-entrained concrete.
4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each set of compressive-strength specimens.
5. Compression Test Specimens: ASTM C 31/C 31M; one set of four standard cylinders for each compressive-strength test, unless otherwise indicated. Cylinders shall be molded and stored for laboratory-cured test specimens unless field-cured test specimens are required.
6. Compressive-Strength Tests: ASTM C 39; one set for each day's pour of each concrete class exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m). One specimen shall be tested at 7 days and two specimens at 28 days; one specimen shall be retained in reserve for later testing if required.

7. When frequency of testing will provide fewer than five compressive-strength tests for a given class of concrete, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
8. When total quantity of a given class of concrete is less than 50 cu. yd. (38 cu. m), Engineer may waive compressive-strength testing if adequate evidence of satisfactory strength is provided.
9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, current operations shall be evaluated, and corrective procedures shall be provided for protecting and curing in-place concrete.
10. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive compressive-strength test results equal or exceed specified compressive strength and no individual compressive-strength test result falls below specified compressive strength by more than 500 psi (3.4 MPa).

C. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 24 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing agency, concrete type and class, location of concrete batch in pavement, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

D. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as the sole basis for approval or rejection.

E. Additional Tests: Testing agency shall make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Engineer. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

3.11 REPAIRS AND PROTECTION

A. Remove and replace concrete pavement that is broken, damaged, or defective, or does not meet requirements in this Section.

B. Drill test cores where directed by Engineer when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with Portland cement concrete bonded to pavement with epoxy adhesive.

C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The contractor shall provide all labor, materials and appurtenances necessary for installation of Rubber Mulch.

1.2 RELATED WORK

A. Site preparation and maintenance.

1.3 QUALITY ASSURANCE

A. The contractor shall provide laborers and supervisors who are thoroughly familiar with the installation of rubber mulch products including familiarity with current ASTM standards, CPSC Playground

B. Safety Handbooks and all applicable codes and ordinances.

1.4 REFERENCES

A. ASTM 1292-13 Standard Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment

B. ASTM F1951-99/F1951-14 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment

C. ASTM F1487-11 Standard Consumer Safety Performance Specification for Playground Equipment for Public Use

PART 2 - MATERIALS

2.1 RUBBER MULCH

A. DESCRIPTION - Colored loose fill, recycled rubber playground safety surface material. Basis of Design: Ground Smart 3410 Midcourt Rd., Suite 108 Carrollton, TX 75006

B. MATERIAL - The core substrate used in Rubber Mulch is recycled auto and truck tires.

C. SIZE RANGE - The particle size range for Rubber Mulch is 5/16” to 7/8”. Rubber nuggets are irregular in shape and size.

D. METAL CONTENT - Rubber Mulch is 99.99% metal free. This is based on the number of pieces of rubber with exposed metal and includes both ferrous and non-ferrous metals.

E. COATING - USDA bio-based certified, non-toxic, polyurethane coating bonded to the rubber and pigmented with iron or titanium oxides. Coating reduces potential zinc leaching versus uncoated or water-base acrylic coated products by up to an additional 69%.

2.2 GEOTEXTILE FABRIC (LANDSCAPE FABRIC)

A. Install non-woven landscape factory under mulch.

B. Material: 3 0z. non-woven

C. Secure with 6-inch-long minimum landscape staples every 4-6 feet.

PART 3 - EXECUTION

3.1 PRE-INSTALLATION

A. Ground Preparation
1. The area where Rubber Mulch will be installed must be free of debris, foreign materials and other surface materials including wood mulch.
2. The area where Rubber Mulch will be installed must be graded for proper drainage with a substrate that is compacted to provide a firm, even base.
3. When installing over asphalt or concrete, follow the November 2010 Consumer Product Safety Commission Publication 325 Public Playground Safety Handbook section 2.4.2.3

B. Application of geotextile fabric
1. Installation of a commercial grade geotextile fabric is recommended.
2. Seam overlap needs to be a minimum of three inches and all seams need to be properly secured to prevent dirt or other substrate material from mixing with the safety surfacing.
3. Geotextile fabric needs to be properly secured at the perimeter and around all installed equipment posts and polls.

3.2 INSTALLATION OF RUBBER MULCH

A. Install Rubber Mulch at a uniform level throughout the planting beds. This can be accomplished through a variety of methods, including blowing, shoveling, and raking.

B. The amount of Rubber Mulch used per square foot is as follows:
1. 4” of Rubber Mulch should be compacted to a 3” depth.

C. Once loosely installed and roughly leveled, the product must be compacted
1. A lawn roller used in a crisscross pattern should be sufficient to compact the surface
2. High spots and low spots should be raked and filled and re-compacted

3.3 MAINTENANCE

A. Maintenance as per manufacturer recommendations.

3.4 WARRANTY

A. RUBBER MULCH WARRANTY
1. Provide a limited warranty that covers product defects in the rubber and warrants that the product is 99.99% wire free as measured by volume and will retain a minimum of 50% of its color for 12 years.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. General conditions, special conditions, and Section "Scope of Work" are a part of and govern this section.

B. Excavation and Subgrade Compaction, see Section 31 22 13 and 31 23 23.23

C. Fields Perimeter Curbing, see Section 32 13 13

D. Site Storm Drainage, see Section 33 41 00

1.2 SCOPE OF WORK

A. Furnish and install a new vertically-drained stone base layer utilizing a stable subgrade, aggregate drainage layer and drainage network.

B. The design requirements contained in this subsection cover the general minimum considerations in geometric layout and materials. For specific requirements referencing technical testing societies, organizations, associations, etc. see the subsection on Technical Requirements.

C. The work of this Section includes, but is not necessarily to be limited to:
1. Engineering layout.
2. Erosion and sediment controls.
3. Excavation and grading.
4. Removal of excess earth and topsoil from the site.
5. Construction of a stable subgrade.
6. Construction of the permeable aggregate base layer and underdrain system.
    a. Verification of drainage (permeability).
    b. Verification of finished surface slope and planarity.
    c. Cleanup.
7. Guarantee.
8. Maintenance.

1.3 CONTRACTOR QUALIFICATIONS

A. The Contractor shall have been actively and directly engaged in constructing stadium athletic fields for a period of five (5) years or more, and provide evidence of similar projects for Owner’s review.

B. In addition, 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 contract and to complete the work specified herein.

1.4 WORK BY OTHERS

A. This Contractor shall afford other Contractor’s reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work and shall properly connect and coordinate his work with theirs.

B. Where any part of the Contractor's work depends for proper execution or results upon the work of any other separate Contractor, the Contractor shall inspect and promptly report to the Engineer any apparent discrepancies or defects in such work that render it unsuitable for such proper execution and results. Failure of the Contractor to inspect and report shall constitute an acceptance of the other Contractor's work as fit and proper to receive his work, except as to defects which may develop in the other separate Contractor's work after the execution of the Contractor's work.

C. Should the Contractor cause damage to the work or property of any separate Contractor on the project, the Contractor shall, upon due notice, settle with such other Contractor by agreement or arbitration.

1.5 CONDITIONS

A. All the conditions, shown and/or specified, and the incidental conditions in or about the project site and structure, shall be considered mandatory parts of the Contract Documents.

1.6 SUBCONTRACTORS

A. The Contractor shall furnish, within five (5) days after notification, a list of subcontractors he proposes to employ in the work. The approval of subcontractors shall be a condition precedent to award of the contract. All subcontractors shall be subject to the approval of the Engineer and/or the Owner.

1.8 MATERIAL SAMPLES AND INSPECTIONS

A. Submit samples of all dry materials and labels of liquids or wettable powders to be used in construction ten (10) days or more before beginning work.

1.9 ENGINEERING LAYOUT

A. The Contractor shall employ a registered engineer, landscape architect or surveyor to lay out all lines, grades, and construction staking. Periodically throughout this project, the Engineer may request the Contractor to verify the required construction elevations.

1.10 SITE PREPARATION - GENERAL

A. Keep excavation, stored materials, and other areas, free from excess rain or subsurface water at all times.

B. Excess material excavated, including suitable fill material and topsoil shall be removed.

C. Any piping, conduits or wiring encountered that are not required to be removed or otherwise encountered shall be temporarily supported and maintained until permanent support has been restored.

D. Utilize Geotechnical Consultant or Site Engineer for on-site work, inspecting during entire excavation, subgrade stabilization, underdrain system and porous aggregate base layer construction, utilizing a competent Testing Laboratory to evaluate soil conditions and drainage properties. Submit test results, as required, indicating compliance.

E. Backfill and compact around structures, walls, trenches and where concrete curbs are installed.

F. Rutting in the subgrade created by offloading and placement of the aggregate material shall be thoroughly repaired, by filling with competent material and compacting and rolling, in accordance with procedures specified herein.

G. Utilizing laser-guided equipment perform rough and precision grading in areas required, to the lines and grades required for the permeable aggregate base, and in accordance with recommended tolerances.

H. Keep excavations and the remainder of site free from dirt and debris at all times during the progress of the work, and in accordance with other applicable sections of the specifications.

1.11 CONSTRUCTION OF PERMEABLE AGGREGATE BASE LAYER, AND UNDERDRAIN SYSTEM

A. EXCAVATION

1. The site shall be excavated to a depth that the subgrade becomes stable. Topsoil shall be stripped and removed from the site. All other excavated soil shall be removed from the site.
2. When the proper sub-grade elevation is established, the entire area shall be proof-rolled with a ten ton (static weight) smooth-wheeled roller, to delineate localized loose, or soft zones. All such material shall be undercut to competent material.
3. The Site/Geotechnical Engineer will determine whether the materials in the excavated areas are suitable for use as backfill. All unsuitable material shall be removed, and all new materials shall be approved before use.
4. The sub-grade shall be constructed using the approved backfill material. This material shall be placed in lifts not greater than 6" (15.24 cm) in depth. Each lift (layer) shall be compacted separately. The moisture in the soil, at the time of compaction, shall be uniformly distributed and should be within 90 and 120 percent range of the optimum. Within these limits, the Site Engineer will determine the proper moisture level to be used.
5. The backfill material in the first layer shall be rolled until the course has been uniformly compacted to over 95 percent of the maximum dry density. The second and succeeding courses shall be placed and mixed and then compacted as specified in the first course.
6. The finished surface of the sub-grade shall have a finished grade as shown. Sub-grade shall be established to within the tolerance of +0.0' or -0.02' of the design sub-grade elevation.

7. After establishment of subgrade, further proof rolling shall be performed using a loaded tri-axle dump truck fully-loaded with a total load of 20 tons. This operation must be performed in the presence of the Soils Engineer. Any soft or yielding areas shall be re-compacted or removed and replaced with competent material to meet compaction requirements.
8. Excavate collector trenches, width and depth as required for the collector drain plus a minimum of 6 inches on each side of the pipe. Trenches shall be excavated and sloped for drainage. The trenches shall be excavated with the indicated percent slope starting from the high point of the drainage system extending toward the storm drain connection points.
9. All loose debris shall be removed from the tops, edges and inside trenches. The trenches shall then be compacted by tamping or other approved means to 95 percent of the maximum dry density.

B. UNDERDRAIN SYSTEM

1. GEOTEXTILE
   a. Verify that surface elevations of finished sub-grade conform to elevations shown on drawings prior to under drain system construction and that the sub-grade surface is uniform and free of depressions, voids, and irregularities. Provide nonwoven needle punched, MDOT Class SD fabric over the entire field as shown on the plans.
   b. Additionally, overlap joints a minimum of 8". All laps shall be overlapped in the direction the stone aggregate is to be spread. Place a suitable amount of ballast on the fabric to prevent movement by the wind. Ballast shall be in a form which will not damage fabrics. Direct loading on fabric by traffic will not be permitted. Fabric must completely cover perimeter trenches.
2. FIELD COMPOSITE DRAINS
   a. Install perforated under drain conduits at 16 feet on-center as a 45-degree angle on top of the geotextile, securing to fabric every 10-15 linear feet with duct tape, or other suitable material. These conduits shall be a composite drainage system as J-Drain 12 as manufactured by JDR Enterprises, Inc., (800) 843-7569, or acceptable equivalent. Connect ends of these composite drains into the perimeter collector drainpipe, or otherwise direct downward into 50% of the trench depth.
3. COLLECTOR DRAINS
   a. Place perforated under drainpipes in the collector trenches, size per plan. Centerline of the pipe shall coincide with centerline of trench. The pipes shall be capable of withstanding the anticipated loading without deformation. Pipe meeting ASTM standard F-405 (stiffness at 5 percent deflection if 40 psi (2.8 kg/cm^2) minimum and the stretch resistance is 10 percent maximum) are suitable for use as under drain. Collector drains must be connected as shown on plans.
   b. A minimum of 2" of clean, drainable crushed stone aggregate (AASHTO #57) shall be placed in the bottom of the collector trenches, on top of the non-porous geotextile. Compact to 95 percent.
   c. Place a minimum of 6" of the clean, crushed aggregate on the sides of the under drainpipes and headers, and 6" minimum of the aggregate on top of the pipe network. Compact suitably.

d. Prior to placement of the aggregate layer, verify the planarity of the subgrade to tolerance specified, and remove all “lipping” at both sides of all collector drain trenches, to ensure no impediment of surface flow of water into the trenches.

C. AGGREGATE LAYER

1. A uniformly mixed aggregate shall be placed over the entire sub-base which has been covered with the geotextile filter fabric. The aggregate shall comprise a minimum of 6" of compacted, stable, permeable crushed limestone aggregate. Care shall be taken to maintain the grade designed for the sub-base. The capability of the aggregate drainage layer to meet the stability and permeability requirement must be determined by a certified laboratory or Contractor prior to construction of the course. It is recommended that the aggregate layer be consolidated to a density of 90 percent. A nuclear density gauge should be used during aggregate placement and rolling to ensure adequate compaction.
2. Material shall be a minimum of 75 percent fractured with at least one fractured face by mechanical means on each individual particle larger than 1/4". Material shall be clean of mineral fines.
3. Typical aggregate or aggregate blends found acceptable as an aggregate drainage course conform to the following gradation:

Sieve	Sieve -Metric (mm)	Percent Passing by Weight
1-1/2"	38.1	100
1"	25.4	95 - 100
3/4"	19.0	80 - 100
1/2"	12.7	60 - 80
3/8"	9.52	30 - 50
No. 4	4.75	20 - 40
No. 8	2.38	10 - 30
No. 40	0.42	5 - 17
No. 200	75 mm	1 – 4

D. PLACEMENT OF PERMEABLE AGGREGATE BASE

1. Install permeable aggregate base to the lines and grades indicated.
2. The Contractor shall shape the complete surface of the aggregate base to receive the overlying shock pad and continue until the deviation from the required elevation does not exceed a compensating maximum deviation from grade of 1/8" in 10'.
3. The surface of the aggregate base course shall be well drained at all times. The permeability of the aggregate shall be checked by using 10" diameter cylinder and five (5) gallons of water to drain in less than one (1) minute. Test samples shall be taken (at a minimum of) one sample per every 5,000 square feet or as otherwise directed.
4. All test results will be logged and documented by the Contractor or Site Engineer. If, at any time, the aggregate base does not meet specifications, it shall be the Contractor's responsibility to restore, at his expense, the aggregate base to the required grade, cross section, density, and permeability.
5. Moisture Content: Aggregate must contain 3.5 percent to 4.0 percent moisture content to ensure that fines do not migrate and to facilitate proper compaction. This is critical. Contractor shall ensure that aggregate leaving the source plant meets this requirement and is required to apply water to aggregate on site to attain and maintain this minimum moisture content.
6. Placement:

a. Prior to aggregate placement, remove any excess or contaminated backfill from the drainage trenches.
b. The sub-grade surface must be free of standing water prior to aggregate placement.
c. Ruts in the subgrade created by offloading and placement of the aggregate material shall be thoroughly repaired, by filling with competent material and compacting and rolling, in accordance with procedures specified herein.
d. The aggregate should be placed in one lift.
e. The aggregate layer must be spread uniformly with equipment that will not cause perceptible separation in gradation (segregation of the aggregates), preferably a self-propelled paving machine.
f. Should this occur, during any stage of the spreading or stockpiling (a separation of the materials or particles), the contractor must immediately remove and dispose of segregated material and correct or change handling procedures to prevent any further separation.
g. The Contractor shall utilize dual-plane laser-guided slope and grade equipment control systems for the grading of the permeable aggregate to ensure accuracy in the grade tolerances.

7. Compaction and Planarity:
   a. The aggregate layer shall be compacted (consolidated) to a density of 90 percent of maximum dry density, utilizing a static, tandem drum-type roller, and as determined by ASTM 0698 and measured using a nuclear method, and to where it is stable.
   b. Proof roll wherever possible and mark “soft spots” for additional compaction. Use static tandem drum-type roller of not less than five (5) tons weight (non-vibratory roller), to consolidate. Excess rolling will produce segregation of fines and shall be avoided.
   c. The finished surface shall not deviate (tolerance-to-grade) from designated compacted grade. This means that the surface shall not deviate more than 1/8” in 10’ (any direction) when placed under a 10’ long straight edge. This tolerance is required over the entire field.
   d. Provide survey elevation (600 shots minimum) of finish graded aggregate base layer for verification of field slope and planarity.
   e. Areas that deviate should be marked with spray paint and corrected with material and rolled tight. Such remedial actions should be done by hand.
8. Contractor shall provide written certification that the sub-grade and aggregate base have been properly constructed, tested for drainage, slope and planarity and meet the requirements of the specifications.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. DIVISION 01 - GENERAL REQUIREMENTS: Drawings, quality, product and performance requirements, general and supplemental conditions apply as applicable to the project and project documents.

1.2 SUMMARY

A. This Section includes industrial/commercial chain link fence and gates specifications:
   1. Aluminum coated steel chain link fabric
   2. Galvanized steel framework and fittings
   3. Gates: swing and cantilever slide
   4. Installation

1.3 REFERENCES

A. ASTM A491 Specification for Aluminum-Coated Steel Chain-Link Fabric

B. ASTM A780 Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings

C. ASTM F552 Standard Terminology Relating to Chain Link Fencing

D. ASTM F567 Standard Practice for Installation of Chain Link Fence

E. ASTM F626 Specification for Fence Fitting

F. ASTM F900 Specification for Industrial and Commercial Swing Gates

G. ASTM F1043 Specification for Strength and Protective Coatings of Steel Industrial Chain Link Fence Framework

H. ASTM F1083 Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures

I. ASTM F1184 Specification for Industrial and Commercial Horizontal Slide Gates

J. ASTM F2200 Specification for Automated Vehicular Gate Construction

K. UL325 Automatic operators: Door, Drapery, Gate, Louver and Window

1.4 SUBMITTALS

A. Shop drawings: Site plan showing layout of fence location with dimensions, location of gates and opening size, cleared area, elevation of fence, gates, footings, and details of attachments.

B. Material samples: 12”x12” fabric sample with selvage.

C. Specification Changes: May not be made after the date of bid.

PART 2 - PRODUCTS

2.1 CHAIN LINK FABRIC

A. Aluminum–Coated Steel Fabric (Aluminized): ASTM A491.

B. Size and Height: Chain link fabric 2 in. mesh, 6 gauge, 0.192 in. diameter, steel core wire having a break load of 2170 lbf, 6 ft. height

C. Selvage of fabric knuckled at top and at the bottom.

2.2 ROUND STEEL PIPE FENCE FRAMEWORK

A. Round steel pipe and rail: Cold-rolled electric-resistance welded pipe in accordance with ASTM F1043 Materials Design Group IC **(LG-40)**, minimum steel yield strength 50,000 psi (344 MPa). Type B external coating, hot dip galvanized zinc 0.9 oz/ ft² (305 g/m²) with a clear polymeric overcoat, Type D interior 90% zinc-rich coating having a minimum thickness of 0.30 mils (0.0076 mm).

B. Pipe End and Corner Post 4.0 in. OD 9.11 lbs/ft

C. Pipe Line Post 2.375 in. OD 3.65 lbs/ft

D. Pipe Rail and Braces, 1.660 in. OD

2.3 TENSION WIRE

A. Metallic Coated Steel Marcelled Tension Wire: 7 gauge core (0.177 in.) (4.50 mm) marcelled wire complying with ASTM A824 [Match coating type to that of the chain link fabric] <Insert metallic coating Type and class when applicable>
1. Type I Aluminum–Coated Aluminized 0.40 oz/ft² (122 g/m²)

2.4 FITTINGS

A. Post caps: ASTM F626 galvanized pressed steel, malleable iron, or aluminum alloy weather tight closure cap for tubular posts. Provide one cap for each post. “C” shaped line post without top rail do not require post caps. When top rail is specified provide line post loop tops to secure top rail.

B. Rail ends: Galvanized pressed steel per ASTM F626, for connection of rails to post using a brace band.

C. Top rail sleeves: 7” (178 mm) galvanized steel sleeve per ASTM F626

D. Wire ties: 9 gauge (0.148”) (3.76 mm) galvanized steel wire for attachment of fabric to line posts and rails. Pre-formed hog ring ties to be 9 gauge (0.148”) (3.76 mm) galvanized steel or aluminum for attachment of fabric to tension wire. Tie wire and hog rings PVC coated and in compliance with ASTM F626. Color to match fabric color.

E. Brace and tension (stretcher bar) bands: ASTM F626 galvanized 12 gauge (0.105”) (2.67mm) pressed steel by 3/4” (19mm) formed to a minimum 300 degree profile

curvature for post attachment. Secure bands using minimum 5/16" (7.94 mm) galvanized carriage bolt and nut.

F. Tension (stretcher) galvanized steel bars: One piece lengths equal to 2 inches (50 mm) less than full height of fabric with a minimum cross-section of 3/16" x 3/4" (4.76 mm x 19 mm) per ASTM F626. Provide tension (stretcher) bars where chain link fabric is secured to the terminal post.

G. Truss rod assembly: Galvanized steel minimum 5/16" (7.9mm) diameter truss rod with pressed steel tightener, in accordance with ASTM F626

H. Carriage bolts and nuts: Galvanized of commercial quality

2.5 TIE WIRE and HOG RINGS

A. 9 gauge core aluminum alloy ties and hog rings per ASTM F626

2.6 SWING GATES

A. Swing Gates: Galvanized steel pipe welded fabrication in compliance with ASTM F900. Gate frame members 1.900 in. OD (48.3 mm) ASTM F 1083 schedule 40 galvanized steel pipe. Frame members spaced no greater than 8 ft. (2440 mm) apart vertically and horizontally. Welded joints protected by applying zinc-rich paint in accordance with ASTM Practice A780. Positive locking gate latch, pressed steel galvanized after fabrication. Galvanized malleable iron or heavy gauge pressed steel post and frame hinges. Provide lockable drop bar and gate holdbacks with double gates. Match gate fabric to that of the fence system. Gateposts per ASTM F1083 schedule 40 galvanized steel pipe.

B. Gateposts: Regular Grade ASTM F1083 Schedule 40 pipe per the table below:

Gate fabric height up to and including 6 ft. (1.2m)		
Gate leaf width	**Post Outside Diameter**	**Weight**
up to 4 ft. (1.2 m)	2.375 in. (60.3 mm)	3.65 lb/ft (5.4 kg/m)
over 4 ft. to 10 ft. (1.2 to 3.05 m)	2.875 in. (73.0 mm)	5.79 lb/ft (8.6 kg/m)
over 10 ft. to 18 ft. (3.05 to 5.5 m)	4.000 in. (101.6 mm)	9.11 lb/ft (13.6 kg/m)
Gate fabric height over 6 ft. to 12 ft. (1.2 to 2.4m)		
Gate leaf width		
up to 6 ft. (1.8 m)	2.875 in. (73.0 mm)	5.79 lb/ft (8.6 kg/m)
over 6 ft. to 12 ft. (1.8 to 3.7 m)	4.000 in. (101.6 mm)	9.11 lb/ft (13.6 kg/m)
over 12 ft. to 18 ft. (2.4 to 5.5 m)	6.625 in. (168.3 mm)	18.97 lb/ft (28.2 kg/m)
over 18 ft. to 24 ft. (5.5 to 7.3 m)	8.625 in. (219.1 mm)	28.58 lb/ft (42.5 kg/m)

C. Keeper to secure open leafs: Provide galvanized gate hold back keeper for each gate leaf over 5' (1524 mm) wide. Gate keeper shall consist of mechanical device for securing free end of gate when in full open position.

2.7 CONCRETE

A. Concrete for post footings shall have a 28-day compressive strength of 2,500 psi. (17.2 MPa).

PART 3 - EXECUTION

3.1 CLEARING FENCE LINE

A. Clearing: Surveying, clearing, grubbing, grading and removal of debris for the fence line or any required clear areas adjacent to the fence <Insert project requirement> [is included in the earthwork contractor's contract under the provisions of Division 31 - Earthwork.] [is not included in the earthwork contractor's contract and is the responsibility of the fence contractor in accordance with the provisions of Division 31 - Earthwork.] The contract drawings indicate the extent of the area to be cleared and grubbed.

3.2 FRAMEWORK INSTALLATION

A. Posts: Posts shall be set plumb in concrete footings in accordance with ASTM F567. Minimum footing depth, 24 in. (609.6 mm) plus an additional 3 in. (76.2 mm) depth for each 1 ft. (305 mm) increase in the fence height over 4 ft. (1220 mm). Minimum footing diameter four times the largest cross section of the post up to a 4.00" (101.6 mm) dimension and three times the largest cross section of post greater than a 4.00" (101.6 mm) dimension. Fence is mounted in concrete curb.

B. Top rail: When specified, install 21 ft. (6.4 m) lengths of rail continuous thru the line post or barb arm loop top. Splice rail using top rail sleeves minimum 6 in. (152 mm) long. Rail shall be secured to the terminal post by a brace band and rail end. Bottom rail or intermediate rail shall be field cut and secured to the line posts using boulevard clamps or brace band with rail end. <Fences 12 feet (3.66 m) high or higher require mid rail>

C. Terminal posts: End, corner, pull and gate posts shall be braced and trussed for fence 6 ft. (1.8 m) and higher and for fences 5 ft. (1.5 m) in height not having a top rail. The horizontal brace rail and diagonal truss rod shall be installed in accordance with ASTM F567.

D. Tension wire: Shall be installed 4 in. (101.6 mm) up from the bottom of the fabric. Fences without top rail shall have a tension wire installed 4 in. (101.6 mm) down from the top of the fabric. Tension wire to be stretched taut, independently and prior to the fabric, between the terminal posts and secured to the terminal post using a brace band. Secure the tension wire to each line post with a tie wire'

3.3 CHAIN LINK FABRIC INSTALLATION

A. Chain Link Fabric: Install fabric to [outside or inside] of the framework maintaining a ground clearance of no more than 2 inches (50 mm). Attach fabric to the terminal post by threading the tension bar through the fabric; secure the tension bar to the terminal post with tension bands and 5/16 in. (7.94 mm) carriage bolts spaced no greater than 12 inches (304.8mm) on center. Small mesh fabric less than 1 in. (25 mm), attach to terminal post by sandwiching the mesh between the post and a vertical 2 in. wide (50mm) by 3/16 in. (4.76 mm) galvanized steel strap using carriage bolts, bolted thru the bar, mesh and post spaced 15 in. (381 mm) on center. Chain link fabric to be stretched taut free of sag. Fabric to be secured to the line post with tie wires spaced no greater than 12 inches (304.8 mm) on center and to horizontal rail spaced no greater than18 inches (457.2 mm) on center. [Aluminum alloy tie wire shall be installed following ASTM F567: Wrap the tie around the post or rail and attached to a fabric wire picket on each side of the post or rail by twisting the tie wire around the fabric wire picket two full turns, cut off excess wire and bend over to prevent injury.] [Preformed 9 gauge power-fastened wire ties shall

be installed following ASTM F626: Wrap the tie a full 360° around the post or rail and fabric wire picket, using a variable speed drill, twist the two ends together three full turns, cut off any excess wire and bend over to prevent injury.] Secure the fabric to the tension wire by crimping hogs rings around a fabric wire picket and tension wire.

3.4 GATE INSTALLATION

A. Swing Gates: Installation of swing gates and gate posts shall be per ASTM F567. Direction of swing shall be as shown on drawings Gates shall be hung plumb in the closed position with minimal space from grade to bottom of gate leaf. Double gate drop bar receiver shall be set in a minimum concrete footing 6” (152 mm) diameter by 24” (610 mm) deep. Gate leaf holdbacks shall be installed on all double gates and all gate leafs greater than 5’ (1524 mm) in width.

3.5 NUTS AND BOLTS

A. Bolts: Carriage bolts used for fittings shall be installed with the head on the secure side of the fence. All bolts shall be peened over to prevent removal of the nut.

3.6 CLEAN UP

A. Clean Up: The area of the fence line shall be left neat and free of any debris caused by the installation of the fence.

END OF SECTION

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Poly Vinyl Chloride (PVC) coated chain link fabric with PVC color coated galvanized steel framework and accessories for commercial or industrial applications.

1.02 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.03 REFERENCES

A. ASTM A36 Standard Specification for Carbon Structural Steel

B. ASTM A780 Standard Practice for Repair of Damaged and Uncoated Areas of Hot-dip Galvanized Coatings

C. ASTM B221 Standard Specification for Aluminum and Aluminum Alloy Bars, Rods, Wire Profiles and Tubes

D. ASTM F552 Standard Terminology Relating to Chain Link Fencing

E. ASTM F567 Standard Practice for Installation of Chain Link Fence

F. ASTM F626 Standard Specification for Fence Fittings

G. ASTM F668 Standard Specification for Polyvinyl Chloride (PVC) and Other Organic Polymer-Coated Steel Chain Link Fence Fabric

H. ASTM F900 Standard Specification for Industrial and Commercial Swing Gates

I. ASTM F934 Standard Specification for Standard Colors for Polymer-Coated Chain Link Fence Materials

J. ASTM F1043 Standard Specification for Strength and Protective Coatings on Steel Industrial Chain Link Fence Framework

K. ASTM F1083 Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures

L. ASTM F1184 Standard Specification for Industrial and Commercial Horizontal Slide Gates

M. ASTM F1664 Standard Specification for Polyvinyl Chloride (PVC) and Other Conforming Organic Polymer-Coated Steel Tension Wire Used with Chain Link Fence

N. ASTM F1665 Standard Specification for Polyvinyl Chloride (PVC) and Other Conforming Organic Polymer-Coated Steel Barbed Wire Used with Chain Link Fence

O. WLG2445 Chain Link Fence Manufacturers Institute, Chain Link Fence Wind Load Guide for the Selection of Line Posts and Line Post Spacing

1.04 SUBMITTALS

A. Changes in specifications may not be made after the bid date.

B. Shop drawings: Layout of fences and gates with dimensions, details, and finishes of components, accessories, and post foundations.

C. Product data: Manufacturer's catalog cuts indicating material compliance and specified options.

D. Samples: If requested, samples of materials (e.g., fabric, wires, color, and accessories).

1.05 QUALITY ASSURANCE

A. Manufacturer: Company having manufacturing facilities in the United States with 5 years experience specializing in manufacturing of chain link fence products.

B. Fence contractor: Contractor having 5 years experience installing similar projects in accordance with ASTM F567.

C. Tolerances: ASTM current specification and tolerances apply and supersede any conflicting tolerance.

D. Substitutions: Alternate chain link products may be acceptable by the architect as equal if approved in writing ten days prior to bidding provided that the items submitted meet the specifications contained in this document.

E. Single source: To ensure system integrity obtain the chain link system, framework, fabric, fittings, gates, and accessories from a single source.

PART 2 - PRODUCTS

2.01 CHAIN LINK FENCE FABRIC

A. Poly Vinyl Chloride (PVC) color coated steel chain link fabric per ASTM F668 Class Class 2b Fused and adhered to metallic coated steel wire.

B. Size and Height: Chain link fabric 2 in. mesh, 6-gauge, 0.192 in. diameter, steel core wire having a break load of 2170 lbf, 6 ft. height.

C. Selvage of fabric knuckled at top and at the bottom.

D. Color of chain link fabric per ASTM F934 Black

2.03 PVC COLOR COATED STEEL FENCE FRAMEWORK BLACK

A. Steel pipe Type I: ASTM F1043 Group IA, ASTM F1083 standard weight schedule 40 hot-dip galvanized pipe having a zinc coating of 1.8 oz/ft² (550 g/m²) on the outside and 1.8 oz/ft² (550 g/m²) on the inside surface. Exterior of pipe to have F1043 PVC thermally fused color coating, minimum thickness 10 mils (0.254 mm). Regular Grade: Minimum steel yield strength of 30,000 psi (205 MPa).

B. Steel pipe Type II: Cold formed electric resistance welded steel pipe complying with ASTM F1043 Group IC having minimum steel yield strength of 50,000 psi (344 MPa). External protective coating F1043 Type B, 0.9 oz/ft² (270 g/m²) minimum hot-dip zinc coating plus a chromate conversion and a clear polymer coating. Internal coating F1043 Type D, 81% nominal zinc pigmented coating minimum 3 mils (0.0076 mm) thick or Type B, minimum 0.9 oz/ft² (275 g/m²) zinc.

C. Formed steel "C" sections: Roll formed steel shapes complying with ASTM F1043, Group II, 50,000 psi (344 MPa) minimum steel yield strength. External coating, ASTM F1043 Type A, minimum average zinc coating of 2.0 oz/ft² (610 g/m²) in accordance with ASTM A 123.

D. Pipe End and Corner Post 4.0 in. OD 9.11 lbs/ft

E. Pipe Line Post 2.375 in. OD 3.65 lbs/ft

F. Pipe Rail and Braces, 1.660 in. OD

2.04 FITTINGS

A. All fittings to be PVC thermally fused color coated having a minimum thickness of 0.006" (0.152 mm) per ASTM F626. PVC color to match fabric and framework. Moveable parts, nuts, and bolts to be field coated with PVC liquid touch up after installation.

B. Post caps: ASTM F626 galvanized pressed steel, malleable iron, or aluminum alloy weather tight closure cap for tubular posts. Provide one cap for each post. "C" shaped line post without top rail do not require post caps. When top rail is specified provide line post loop tops to secure top rail.

C. Rail ends: Galvanized pressed steel per ASTM F626, for connection of rails to post using a brace band.

D. Top rail sleeves: 7" (178 mm) galvanized steel sleeve per ASTM F626

E. Wire ties: 9 gauge (0.148") (3.76 mm) galvanized steel wire for attachment of fabric to line posts and rails. Pre-formed hog ring ties to be 9 gauge (0.148") (3.76 mm) galvanized steel or aluminum for attachment of fabric to tension wire. Tie wire and hog rings PVC coated and in compliance with ASTM F626. Color to match fabric color.

F. Brace and tension (stretcher bar) bands: ASTM F626 galvanized 12 gauge (0.105") (2.67mm) pressed steel by 3/4" (19mm) formed to a minimum 300-degree profile curvature for post attachment. Secure bands using minimum 5/16" (7.94 mm) galvanized carriage bolt and nut.

G. Tension (stretcher) galvanized steel bars: One-piece lengths equal to 2 inches (50 mm) less than full height of fabric with a minimum cross-section of 3/16" x 3/4" (4.76 mm x 19 mm) per ASTM F626. Provide tension (stretcher) bars where chain link fabric is secured to the terminal post.

H. Truss rod assembly: Galvanized steel minimum 5/16" (7.9mm) diameter truss rod with pressed steel tightener, in accordance with ASTM F626.

I. Carriage bolts and nuts: Galvanized of commercial quality

2.05 TENSION WIRE

A. Tension wire: Poly Vinyl Chloride (PVC) coated metallic coated steel tension wire per ASTM F 1664 7 gauge steel core wire, 0.177" PVC coating class and color to match chain link fabric

2.06 CHAIN LINK SWING GATES

A. Swing gates refer to plan for location and sizes. Fabricate chain link swing gates in accordance with ASTM F900. Gate frame to be of welded construction. Weld areas to be protected with zinc-rich paint per ASTM A780 then over coated with liquid PVC to match frame. The gate frame members are to be spaced no greater than 8' 0" (2.44 m) apart horizontally or vertically. Exterior members to be 1.900" (48.3 mm) OD pipe, interior members when required shall be 1.660" (42.2 mm) OD pipe. PVC coated pipe to be Grade 1 ASTM F1083 per section 2.03. Chain link fabric to match specification of fence system. Fabric to be stretched tightly and secured to vertical outer frame members using tension bar and tension bands spaced 12" (304.8 mm) on center and tied to the horizontal and interior members 12" (304.8 mm) on center using 9 gauge galvanized steel ties per section 2.04.

B. Hinges, hot dip galvanized pressed steel or malleable iron, structurally capable of supporting gate leaf and allow opening and closing without binding. Non-lift-off type hinge design shall permit gate to swing 180° (3.14 rad)

C. Latch: Galvanized forked type capable of retaining gate in closed position and have provision for padlock. Latch shall permit operation from either side of gate.

D. Double gates: Provide galvanized drop rod with center gate stop pipe or receiver to secure inactive leaf in the closed position. Provide galvanized pressed steel locking latch, requiring one padlock for locking both gate leaves, accessible from either side.

E. Keeper to secure open leafs: Provide galvanized gate hold back keeper for each gate leaf over 5' (1524 mm) wide. Gate keeper shall consist of mechanical device for securing free end of gate when in full open position.

F. Latch, hinges, moveable parts may be field coated with liquid PVC.

G. Gate posts: PVC color coated Grade 1 pipe ASTM F1083 per section 2.03, select gate post from table below

Gate fabric height up to and including 6 ft. (1.2m)

Gate leaf width		Outside Diameter
up to 4 ft.	(1.2 m)	2.375 in. (60.3 mm)
over 4 ft. to 10 ft.	(1.2 to 3.05 m)	2.875 in. (73.0 mm)
over 10 ft. to 18 ft.	(3.05 to 5.5 m)	4.000 in. (101.6 mm)

Gate fabric height over 6 ft. to 12 ft. (1.2 to 2.4m)

Gate leaf width		
up to 6 ft.	(1.8 m)	2.875 in. (73.0 mm)

over 6 ft. to 12 ft. (1.8 to 3.7 m)	4.000 in. (101.6 mm)
over 12 ft. to 18 ft. (2.4 to 5.5 m)	6.625 in. (168.3 mm)
over 18 ft. to 24 ft. (5.5 to 7.3 m)	8.625 in. (219.1 mm)

2.08 POST SETTING MATERIALS

A. Concrete: Minimum 28 day compressive strength of 3,000 psi (20 MPa).

PART 3 EXECUTION

3.01 SITE EXAMINATION

A. Ensure property lines and legal boundaries of work are clearly established.

B. Survey of fence location to be provided by general contractor

C. Verify areas to receive fencing are completed to final grade.

3.02 CHAIN LINK FRAMEWORK INSTALLATION

A. Install chain link fence system in accordance with ASTM F567 and manufacturer's instructions.

B. Locate terminal post at each fence termination and change in horizontal or vertical direction of 30° or more.

C. Space line posts uniformly 8' (2438 mm) on center

D. Concrete set posts: Dig holes in firm, undisturbed or compacted soil. Holes shall have diameter 4 times greater than outside dimension of post, and depths approximately 6" (152 mm) deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36" (914 mm) below surface when in firm, undisturbed soil. Place concrete around posts in a continuous pour. Trowel finish around post and slope to direct water away from posts.

Drive Anchor set line posts: With protective cap, drive post 36" (914 mm) into ground. Excavate a 6" (152.4 mm) diameter by 6" (152.4 mm) deep section around post to accommodate the drive anchor shoe clamp. Drive the 2 diagonal drive anchor angle blades into the soil and securely tighten the angle blades to the post using the shoe clamp, bury the shoe clamp.

E. Check each post for vertical and top alignment and maintain in position during placement and finishing operations.

F. Bracing: Install horizontal brace and truss assembly at mid-height or above for fences 6' (1829 mm) and over at each fabric connection to the terminal post. The diagonal truss rod is installed at the point where the brace rail is attached to the terminal post and diagonally down to the bottom of the adjacent line post. Place the truss rod in tension by adjusting the turnbuckle.

G. Tension wire: Install tension wires so that it will be located 4” (101.6 m) up from bottom the fabric. If top rail is not specified, install the tension wire so that it will be located 4” (101.6 mm) down from the top of the fabric. Stretch and Install tension wire before installing the chain link fabric and attach it to each post using wire ties.

H. Top rail: Install in lengths of 21’ (6.400 m). Connect ends with sleeves forming a rigid connection, allow for expansion and contraction.

I. Center Rails: Install mid rails between line posts and attach to post using rail end or line rail clamps.

J. Bottom Rails: Install bottom rails between posts and attach to post using rail end or line rail clamps.

K. Touch up any nicks or scratches of the PVC color coating with liquid PVC paint.

3.03 CHAIN LINK FABRIC INSTALLATION

A. Fabric: Install fabric on security side, pull fabric taut; thread the tension bar through fabric and attach to terminal posts with tension bands spaced maximum of 15” (381 mm) on center and attach so that fabric remains in tension after pulling force is released. Install fabric so that it is 2” (50 mm) +/- 1” (25 mm) above finish grade.

B. Secure fabric using wire ties to line posts at 15” (381 mm) on center and to rails and braces 24” (610 mm) on center, and to the tension wire using hog rings 24” (610 mm) on center. Tie wire shall be secured to the fabric by wrapping it two 360 degree turns around the chain link wire pickets. Cut off any excess wire and bend back so as not to protrude so as to avoid injury if a pedestrian may come in contact with the fence.

3.04 CHAIN LINK GATE INSTALLATION

A. Swing gates: Installation of swing gates and gate posts shall be per ASTM F567. Direction of swing shall be as shown on drawings Gates shall be hung plumb in the closed position with minimal space from grade to bottom of gate leaf. Double gate drop bar receiver shall be set in a minimum concrete footing 6” (152 mm) diameter by 24” (610 mm) deep. Gate leaf holdbacks shall be installed on all double gates and all gate leafs greater than 5’ (1524 mm) in width.

3.05 SITE CLEAN UP

A. Clean up area adjacent to fence line from debris and unused material created by fence installation.

END OF SECTION

PART 1 − GENERAL

1.01 SECTION INCLUDES

A. Concrete segmental retaining wall units

B. Geosynthetic reinforcement

C. Leveling pad base

D. Drainage aggregate

E. Reinforced backfill

F. Drainage pipe

G. Prefabricated drainage composite

H. Geotextile filter

I. Impervious materials

J. Construction adhesive

1.02 RELATED SECTIONS

A. Section 31 22 13 – Rough Grading

B. Section 31 23 23.23 – Backfilling

C. Section 31 50 00 – Excavation Support

1.03 REFERENCES

A. American Association of State Highway Transportation Officials (AASHTO)
   1. AASHTO M288 Geotextile Specification for Highway Applications
   2. AASHTO Standard Specifications for Highway Bridges

B. American Society for Testing and Materials (ASTM)
   1. ASTM C140 Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
   2. ASTM C1262 Standard Test Method for Evaluating the Freeze-Thaw Durability of Manufactured Concrete Masonry Units and Related Concrete Units
   3. ASTM C1372 Standard Specification for Segmental Retaining Wall Units
   4. ASTM D448 Standard Classification for Sizes of Aggregate for Road and Bridge Construction
   5. ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/f^3)(600 kN-m/m^3)
   6. ASTM D1556 Standard Test Method for Density and Unit Weight of Soil in Place by the Sand Cone Method

7. ASTM D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/f^3)(2700 kN-m/m^3)
8. ASTM D2487 Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
9. ASTM D2922 Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
10. ASTM D3034 Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
11. ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
12. ASTM D4491 Standard Test Method for Water Permeability of Geotextiles by the Permittivity Method
13. ASTM D4595 Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method
14. ASTM D4873 Standard Guide for Identification, Storage and Handling of Geosynthetics
15. ASTM D5084 Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter
16. ASTM D5262 Standard Test Method for Evaluating the Unconfined Tension Creep Behavior of Geosynthetics
17. ASTM D5321 Standard Test Method for Determining the Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method
18. ASTM D5818 Standard Practice for Obtaining Samples of Geosynthetics from a Test Section for Assessment of Installation Damage
19. ASTM D6637 Standard Test Method for Determining Tensile Properties of Geogrids by the Single- or Multi-Rib Tensile Method
20. ASTM D6638 Standard Test Method for Determining Connection Strength Between Geosynthetic Reinforcement and Segmental Concrete Units
21. ASTM D6916 Standard Test Method for Determining the Shear Strength Between Segmental Concrete Units
22. ASTM D6706 Standard Test Method for Measuring Geosynthetic Pullout Resistance in Soil
23. ASTM F405 Standard Specification for Corrugated Polyethylene (PE) Tubings and Fittings
24. ASTM G51 Standard Test Method for Measuring pH of Soil for Use in Corrosion Testing

C. Federal Highway Administration
1. Elias, V., Christopher, B., and Berg, R., "Mechanically Stabilized Earth Walls and Reinforced Soil Slopes Design and Construction Guidelines," Federal Highway Administration Report No. FHWA-NHI-00-043, March 2001.
2. Elias, V., Christopher, B., and Berg, R., "Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Soil Slopes," Federal Highway Administration Report No. FHWA-NHI-00-044, March 2001.

D. National Concrete Masonry Association (NCMA)
1. NCMA *Design Manual for Segmental Retaining Walls*, Second Edition, Second Printing (1997) or *Design Manual for Segmental Retaining Walls,* Third Edition (2010).

1.04 DEFINITIONS

A. Concrete Segmental Retaining Wall (SRW) Units: Dry-stacked masonry units used as the retaining wall fascia.

B. Reinforced Backfill: Soil which is used as fill behind the SRW unit, and within the reinforced soil mass (if applicable).

C. Drainage Aggregate: Material used (if applicable) within, between, and directly behind the concrete retaining wall units.

D. Geotextile Filter: Material used for separation and filtration of dissimilar soil types.

E. Foundation Soil: Soil mass supporting the leveling pad and reinforced soil zone of the retaining wall system.

F. Geosynthetic Reinforcement: Polymeric material designed specifically to reinforce the soil mass.

G. Prefabricated Drainage Composite: three-dimensional geosynthetic drainage medium encapsulated in a geotextile filter, used to transport water.

H. Impervious Materials: Clay soil or low permeability geosynthetic used to prevent water percolation into the drainage zone and reinforced backfill behind the wall.

I. Global Stability: The general mass movement of a soil reinforced segmental retaining wall structure and adjacent soil mass.

J. Project Geotechnical Engineer: A registered engineer who provides site observations, recommendations for foundation support, and verifies soil shear strength parameters.

1.05 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00:
   1. Product Data: Material description and installation instructions for each manufactured product specified.
   2. Shop Drawings: Retaining wall system design, including wall elevation views, geosynthetic reinforcement layout, pertinent details, and drainage provisions. The shop drawings shall be signed by a registered professional engineer licensed in the state of wall installation.
   3. Design Calculations: Engineering design calculations prepared in accordance with the NCMA *Design Manual for Segmental Retaining Walls,* or the AASHTO *Standard Specifications for Highway Bridges,* Section 5.8 (whichever is applicable). Analysis of global stability must be addressed and incorporated into the shop drawings.
   4. Samples
      a. Furnish and construct enough blocks for a 6’x’6 sample wall to be built onsite one unit in the color and face pattern specified, if requested.
      b. Furnish 12-inch square or larger piece of the geosynthetic reinforcement specified.

5. Test Reports: Independent laboratory reports stating moisture absorption and compressive strength properties of the concrete retaining wall units meet the Project Specifications when tested in accordance with ASTM C140, Sections 6, 8 and 9.

1.06 DELIVERY, STORAGE AND HANDLING

A. Concrete Retaining Wall Units and Accessories: Deliver, store, and handle materials in accordance with manufacturer's recommendations, in such a manner as to prevent damage. Check the materials upon delivery to assure that proper material has been received. Store above ground on wood pallets or blocking. Remove damaged or otherwise unsuitable material, when so determined, from the site.
   1. Exposed faces of concrete wall units shall be free of chips, cracks, stains, and other imperfections detracting from their appearance, when viewed from a distance of 10 feet.
   2. Prevent mud, wet cement, adhesives, and similar materials that may harm appearance of units, from coming in contact with system components.

B. Geosynthetics (including geosynthetic reinforcement, geotextile filter, prefabricated drainage composite) shall be delivered, stored, and handled in accordance with ASTM D4873.

1.07 EXTRA MATERIALS

A. Furnish Owner with two hundred replacement units identical to those installed on the Project in the same proportions as installed. Also, include a minimum of fifty cap blocks.

1.08 QUALIFICATIONS

A. Installer must provide documentation of installing more than 1,000,000 square feet of the selected walls system.

PART 2 − PRODUCTS

2.01 MATERIALS

A. Concrete Retaining Wall Units:
   1. Physical Requirements
      a. Meet requirements of ASTM C1372, except the maximum water absorption shall be limited to 7 percent, and unit height dimensions shall not vary more than plus or minus 1/16 inch from that specified in the ASTM reference, not including textured face.
      b. Unit Face Area: Not less than 0.37 square feet.
      c. Color: Selected by the Architect from manufacturer's full range of standard colors. A minimum of two colors will be selected. Color selection is to be blended during installation.
      d. Face Pattern Geometry: Straight Face
      e. Texture: - hard split in straight face, intermixed with hard split straight face units with a vertical score configuration. Other face finishes will not be allowed without written approval of Owner.

f. Include an integral concrete shear connection flange/locator or external pin system.
g. Block Height: nominal 8 inches.
h. Block Width of 16 to 18 inches.
i. Minimum compressive strength: 3000 psi.

2. Basis of Design:
a. Keystone Compac III Regency
b. Other equal manufacturer's products approved during the bid phase which conform to all aspects of the project Specifications.

B. Geosynthetic Reinforcement:

1. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn or high density polyethylene. Polyester geogrid shall be made from high tenacity polyester filament yarn with a molecular weight exceeding 25,000 g/m and a carboxyl end group values less than 30. Polyester geogrid shall be coated with an impregnated PVC coating that resists peeling, cracking, and stripping.

2. Ta, Long Term Allowable Tensile Design Load, of the geogrid material shall be determined as follows:

Ta = Tult / (RFcr*RFd*RFid*FS)

Ta shall be evaluated based on a 75-year design life.

a. Tult, Short Term Ultimate Tensile Strength shall be determined in accordance with ASTM D4595 or ASTM D6637.
b. Tult is based on the minimum average roll values (MARV).
c. RFcr, Reduction Factor for Long Term Tension Creep
d. RFcr shall be determined from 10,000-hour creep testing performed in accordance with ASTM D5262. Reduction value = 1.45 minimum.
e. RFd, Reduction Factor for Durability
f. RFd shall be determined from polymer specific durability testing covering the range of expected soil environments. RFd = 1.10 minimum.
g. RFid, Reduction Factor for Installation Damage
h. RFid shall be determined from product specific construction damage testing performed in accordance with ASTM D5818. Test results shall be provided for each product to be used with project specific or more severe soil type. RFid = 1.05 minimum.
i. FS, Overall Design Factor of Safety
j. FS shall be 1.5 unless otherwise noted for the maximum allowable working stress calculation.

3. The maximum design tensile load of the geogrid shall not exceed the laboratory tested ultimate strength of the geogrid/facing unit connection divided by a factor of safety of 1.5. The connection strength testing and computation procedures shall be in accordance with ASTM D6638 Connection Strength between Geosynthetic Reinforcement and Segmental Concrete Units (NCMA SRWU-1).

4. Soil Interaction Coefficient, Ci

Ci values shall be determined per ASTM D6706 at a maximum 0.75-inch (19 mm) displacement.

5. Manufacturing Quality Control

The geogrid manufacturer shall have a manufacturing quality control program that includes QC testing by an independent laboratory.

The QC testing shall include:

Tensile Strength Testing

Melt Flow Index (HDPE)

Molecular Weight (Polyester)

C. Leveling Pad Base

1. Aggregate Base: Crushed stone or granular fill meeting the following gradation as determined in accordance with ASTM D448:

Sieve Size	Percent Passing
1 inch	100
No. 4	35 to 70
No. 40	10 to 35
No. 200	3 to 10

   a. Base Thickness: 6 inches (minimum compacted thickness).

2. Concrete Base: Nonreinforced lean concrete base.
   a. Compressive Strength: 3,000 psi (minimum).
   b. Base Thickness: At least 2 inches

D. Drainage Aggregate: Clean crushed stone or granular fill meeting the following gradation as determined in accordance with ASTM D448:

Sieve Size	Percent Passing
1 inch	100
3/4 inch	75 to 100
No. 4	0 to 60
No. 40	0 to 50
No. 200	0 to 5

E. Backfill: Soil free of organics and debris and consisting of either GP, GW, SP, SW, or SM type, classified in accordance with ASTM D2487 and the USCS classification system.

1. Soils classified as SC, ML and CL are considered suitable soils for segmental retaining walls with a total height of less than 10 feet unless the Plasticity Index (PI) is 20 or more.
2. Maximum particle size for backfill is 4 inches.
3. Unsuitable soils are organic soils and those soils classified as CH, OH, MH, OL, or PT.

F. Impervious Material: Clayey soil or other similar material which will prevent percolation into the drainage zone behind the wall.

G. Drainage Pipe: Perforated or slotted PVC or corrugated HDPE pipe manufactured in accordance with D3034 and/or ASTM F405. The pipe may be covered with a geotextile filter fabric to function as a filter.

H. Construction Adhesive: Exterior grade adhesive as recommended by the retaining wall unit manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine the areas and conditions under which the retaining wall system is to be erected and notify the Architect in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

B. Promptly notify the wall design engineer of site conditions which may affect wall performance, soil conditions observed other than those assumed, or other conditions that may require a reevaluation of the wall design.

C. Verify the location of existing structures and utilities prior to excavation.

3.02 PREPARATION

A. Ensure surrounding structures are protected from the effects of wall excavation.

B. Excavation support, if required, is the responsibility of the Contractor, including the stability of the excavation and its influence on adjacent properties and structures.

3.03 EXCAVATION

A. Excavate to the lines and grades shown on the Drawings. Over-excavation not approved by the Architect will not be paid for by the Owner. Replacement of these soils with compacted fill and/or wall system components will be required at the Contractor's expense. Use care in excavating to prevent disturbance of the base beyond the lines shown.

3.04 FOUNDATION PREPARATION

A. Excavate foundation soil as required for footing or base dimension shown on the Drawings, or as directed by the Project geotechnical engineer.

B. The Project geotechnical engineer will examine foundation soil to ensure that the actual foundation soil strength meets or exceeds that indicated on the Drawings. Remove soil not meeting the required strength. Oversize resulting space sufficiently from the front of the block to the back of the reinforcement and backfill with suitable compacted backfill soils.

C. The Project geotechnical engineer will determine if the foundation soils will require special treatment or correction to control total and differential settlement.

D. Fill over-excavated areas with suitable compacted backfill, as recommended by the Project geotechnical engineer.

3.05 BASE COURSE PREPARATION

A. Place base materials to the depths and widths shown on the Drawings, upon undisturbed soils, or foundation soils prepared in accordance with Article 3.04.

1. Extend the leveling pad laterally at least 6 inches in front and behind the lowermost concrete retaining wall unit.

2. Provide aggregate base compacted to 6 inches thick (minimum).
3. The Contractor may at their option, provide a concrete leveling pad as specified in Subparagraph 2.01.C.2, in lieu of the aggregate base.
4. Where a reinforced footing is required by local code official, place footing below frost depth.

B. Compact aggregate base material to provide a level, hard surface on which to place the first course of units.

C. Prepare base materials to ensure complete contact with retaining wall units. Gaps are not allowed.

3.06 ERECTION

A. General: Erect units in accordance with manufacturer's instructions and recommendations, and as specified herein.

B. Place first course of concrete wall units on the prepared base material. Check units for level and alignment. Maintain the same elevation at the top of each unit within each section of the base course.

C. Ensure that foundation units are in full contact with natural or compacted soil base.

D. Place concrete wall units side-by-side for full length of wall alignment. Alignment may be done by using a string line measured from the back of the block. Gaps are not allowed between the foundation concrete wall units.

E. Place 12 inches (minimum) of drainage aggregate between, and directly behind, the concrete wall units. Fill voids in retaining wall units with drainage aggregate. Provide a drainage zone behind the wall units to within 9 inches of the final grade. Cap the backfill and drainage aggregate zone with 9 inches of impervious material.

F. Install drainage pipe at the lowest elevation possible, to maintain gravity flow of water to outside of the reinforced zone. Slope the main collection drainage pipe, located just behind the concrete retaining wall units, 2 percent (minimum) to provide gravity flow to the daylighted areas. Daylight the main collection drainage pipe through the face of the wall, and/or to an appropriate location away from the wall system at each low point or at 50-foot (maximum) intervals along the wall. Alternately, the drainage pipe can be connected to a storm sewer system at 50-foot (maximum) intervals.

G. Remove excess fill from top of units and install next course. Ensure drainage aggregate and backfill are compacted before installation of next course.

H. Check each course for level and alignment. Adjust units as necessary to maintain level and alignment prior to proceeding with each additional course.

I. Install each succeeding course. Backfill as each course is completed. Pull the units forward until the locating surface of the unit contacts the locating surface of the units in the preceding course. Interlock wall segments that meet at corners by overlapping successive courses. Attach concrete retaining wall units at exterior corners with adhesive specified.

J. Install geosynthetic reinforcement in accordance with geosynthetic manufacturer's recommendations and the shop drawings.
   1. Orient geosynthetic reinforcement with the highest-strength axis perpendicular to the wall face.
   2. Prior to geosynthetic reinforcement placement, place the backfill and compact to the elevation of the top of the wall units at the elevation of the geosynthetic reinforcement.
   3. Place geosynthetic reinforcement at the elevations and to the lengths shown on the Drawings.
   4. Lay geosynthetic reinforcement horizontally on top of the concrete retaining wall units and the compacted backfill soils. Place the geosynthetic reinforcement within one inch of the face of the concrete retaining wall units. Place the next course of concrete retaining wall units on top of the geosynthetic reinforcement.
   5. The geosynthetic reinforcement shall be in tension and free from wrinkles prior to placement of the backfill soils. Pull geosynthetic reinforcement hand-taut and secure in place with staples, stakes, or by hand-tensioning until the geosynthetic reinforcement is covered by 6 inches of loose fill.
   6. The geosynthetic reinforcements shall be continuous throughout their embedment lengths. Splices in the geosynthetic reinforcement strength direction are not allowed.
   7. Do not operate tracked construction equipment directly on the geosynthetic reinforcement. At least 6 inches of compacted backfill soil is required prior to operation of tracked vehicles over the geosynthetic reinforcement. Keep turning of tracked construction equipment to a minimum.
   8. Rubber-tired equipment may pass over the geosynthetic reinforcement at speeds of less than 5 miles per hour. Turning of rubber-tired equipment is not allowed on the geosynthetic reinforcement.

3.07 BACKFILL PLACEMENT

A. Place reinforced backfill, spread and compact in a manner that will minimize slack in the reinforcement.

B. Place fill within the reinforced zone and compact in lifts not exceeding 6 to 8 inches (loose thickness) where hand-operated compaction equipment is used, and not exceeding 12 inches (loose thickness) where heavy, self-propelled compaction equipment is used.
   1. Only lightweight hand-operated compaction equipment is allowed within 4 feet of the back of the retaining wall units. If the specified compaction cannot be achieved within 4 feet of the back of the retaining wall units, replace the reinforced soil in this zone with drainage aggregate material.

C. Compaction testing shall be done in accordance with ASTM D1556 or ASTM D2922.

D. Minimum Compaction Requirements for Fill Placed in the Reinforced Zone
   1. The minimum compaction requirement shall be determined by the project geotechnical engineer testing the compaction. At no time shall the soil compaction requirements be less than 95 percent of the soil's standard Proctor maximum dry density (ASTM D698) for the entire wall height
   2. Utility Trench Backfill: Compact utility trench backfill in or below the reinforced soil zone to 98 percent of the soil's standard Proctor maximum dry density (ASTM D698), or as recommended by the Project geotechnical engineer. If the

height from the utility to finish grade is higher than 30 feet, increase compaction to 100 percent of the standard Proctor density.

a. Utilities must be properly designed (by others) to withstand all forces from the retaining wall units, reinforced soil mass, and surcharge loads, if any.

3. Moisture Content: Within 2 percentage points of the optimum moisture content for all wall heights.
4. These specifications may be changed based on recommendations by the Project geotechnical engineer.
   a. If changes are required, the Contract Sum will be adjusted by written Change Order.

E. At the end of each day's operation, slope the last level of compacted backfill away from the interior (concealed) face of the wall to direct surface water runoff away from the wall face.
1. The General Contractor is responsible for ensuring that the finished site drainage is directed away from the retaining wall system.
2. In addition, the General Contractor is responsible for ensuring that surface water runoff from adjacent construction areas is not allowed to enter the retaining wall area of the construction site.

F. Refer to Article 3.10 for compaction testing.

3.08 CAP UNIT INSTALLATION

A. Apply adhesive to the top surface of the unit below and place the cap unit into desired position.

B. Cut cap units as necessary to obtain the proper fit.

C. Backfill and compact to top of cap unit.

3.09 SITE CONSTRUCTION TOLERANCES

A. Site Construction Tolerances
1. Vertical Alignment: Plus or minus 1-1/2 inches over any 10-foot distance, with a maximum differential of 3 inches over the length of the wall.
2. Horizontal Location Control from Grading Plan
   a. Straight Lines: Plus or minus 1-1/2 inches over any 10-foot distance.
   b. Corner and Radius Locations: Plus or minus 12 inches.
   c. Curves and Serpentine Radii: Plus or minus 2 feet.
3. Immediate Post Construction Wall Batter: Within 2 degrees of the design batter of the concrete retaining wall units.
4. Bulging: Plus or minus 1-1/4 inches over any 10-foot distance.

3.10 FIELD QUALITY CONTROL

A. Installer is responsible for quality control of installation of system components.

B. The Owner will retain a qualified professional to perform quality assurance checks of the installer's work.

C. Correct work which does not meet these specifications, or the requirements shown on the Drawings at the installer's expense.

D. Perform compaction testing of the reinforced backfill placed and compacted in the reinforced backfill zone.
   1. Testing Frequency
      a. One test for every 2 feet (vertical) of fill placed and compacted, for every 50 lineal feet of retaining wall.
      b. Vary compaction test locations to cover the entire area of the reinforced soil zone, including the area compacted by the hand-operated compaction equipment.

3.11 ADJUSTING AND CLEANING

A. Replace damaged units with new units as the work progresses.

B. Remove debris caused by wall construction and leave adjacent paved areas broom clean.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the following:
   1. Planting specifications
   2. Soil Works.
   3. Sod.
   4. Turf.

1.02 SUBMITTALS

A. Submit field records from the sod grower indicating growers name, species and blend of grass, field location from which sod is to be cut, seeding date, maintenance records and invoice for all sod stating point of origin and Engineer's inspection dates and approval signature.

B. Submit labeled samples of fertilizers and other applications showing mixture and composition of each specified.

C. Location of topsoil source.

D. Location and supplier of sod.

1.03 SITE CONDITIONS

A. Utilities: All underground utility work shall be installed, inspected and approved before operations are started.

1.04 GUARANTEE

A. The Contractor shall, after testing and acceptance, and for a period of one (1) year from the date of substantial completion, rebuild, repair, or replace any and all items, which have proven defective due to unsatisfactory material and/or workmanship.

PART 2 PRODUCT

2.01 SOD WORK

A. Sod the entire grass surfaces where indicated. All sod shall be standard roll cut native soil sod. All sod shall be nursery cultivated, well rooted, reasonably free from weeds and meeting the following minimum requirements:

B. Grown in accordance with The Department of Agriculture rules and regulations for "Certified Turfgrass Sod". Sod shall be free of quackgrass, annual bluegrass, bindweed, Canada Thistle, wild garlic, wild onion, Muhlenbergia, bentgrass, bermuda grass, clover, common broadleaf weeds, and plants of varieties other than those specified.

C. Blend: The sod blend will consist of a blend of 3 Hybrid Bluegrass varieties and improved Perennial Ryegrass-in an approximate blend of 80% Bluegrass/20% Ryegrass. Sod shall be of a uniform color, density and thickness and of the species, variety (ies) and/or blend specified. Substitutions or variations will be accepted with the approval of the Engineer.

D. Sod shall be delivered and placed within forty-eight (48) hours after being harvested.

E. The Contractor shall, after test and acceptance, and for a period of one (1) year from the date of installation, rebuild, repair, or replace any sod (except for excessive wear or vandalism), which is proven defective due to unsatisfactory material and/or workmanship.

F. Furnish starter, and complete slow-release fertilizers, and lime in accordance with soil test obtained from topsoil utilized. Use existing stripped topsoil, supplementing with additional approved to provide a minimum of a 6" topsoil planting bed under all areas to receive sod.

2.02 HYDRO-SEEDING / HYDRO-MULCHING

A. Seed mixes shall be specified by each species.

B. An approved hydro-mulch company shall apply hydro-seed in a form of a slurry consisting of wood cellulose fiber, seed, chemical additives, commercial fertilizer, and water.

C. Hydro-seeder shall have a built-in agitation system to suspend and homogeneously mix the slurry. The slurry mix shall be green, either by dying or from hydraulic mulch / wood cellulose fiber. The equipment must have a pump and various sprayers capable of applying slurry uniformly.

2.03 TURF ESTABLISHMENT, SEEDING & SLOPED AREAS

A. Steep slopes to have 2" of screened topsoil installed.

B. Entire area shall be hand graded to match proposed finished grade.

C. Steep sloped area only to be seeded with the following seed mix:
1. 75% Creeping Red Fescue
2. 5% Kentucky Blue Grass
3. 20% Perennial Rye grass
4. @ 4lbs / 1,000 sq.ft. or 175lb / ac.
5. Fertilizer and Application Rate: 20-16-12
6. 200lb. / acre, or .04lb. / sq. yard

D. Lime: Lime shall be standard ground agricultural limestone not less than 50% lime oxides (calcium oxide & magnesium oxide), 98% of which will pass a twenty (20) mesh sieve: 40% of which will pass a one hundred (100) mesh sieve.

E. Fertilizers: All fertilizers shall be uniform in composition, free flowing and suitable for application with approved equipment, delivered to the site in original bags or cartons and fully labeled in conformance with applicable state fertilizer laws bearing the name, trade name or trademark and warranty of the producer.

PART 3 EXECUTION

3.01 PLANTING PREPARATION

A. The contractor shall examine all field conditions for exact locations of utilities, existing lighting features, and drainage systems prior to planting. The contractor shall notify project manager of any conflicts found between intended planting location(s) and utilities / utility

lines. The contractor will notify the owner / project manager of all soil or drainage conditions which the contractor considers detrimental to the growth of plant material.

3.02 SOIL PREPARATION

A. Conversion of all asphalt and gravel areas to landscaped or turf grass areas shall be done in the following manner:
   1. Remove all asphalt, gravel and compacted earth to a depth of 6 – 18” depending on the depth of the subbase and dispose of off-site.
   2. Replace excavated material with good, medium textured planting soil to a minimum of 2” above top of curb and sidewalk, or proposed finished grade to account for earth settling, unless otherwise noted on the landscape plan

B. Soil shall be graded to a smooth and even surface conforming to required finish grade. Finish grade adjacent to walks, paved areas, curbs, manholes, clean outs, valve boxes and similar features shall be 1” below the surface in turf, ground cover and shrub areas

3.03 TOPSOIL WORK & SPECIFICATION

A. Mounding Topsoil: Screened topsoil shall be installed in designated planting bed (see quantities on plan). Mound areas to enhance landscaping in these areas. Topo lines shown are suggestive and should complement size, habit and layout of plant material. Mounding shall not exceed a 1:3 slope and/or a 12" height higher than surrounding grade adjacent to planting bed. Topsoil shall be tapered / hand graded down to edge of planting bed. Planting bed shall be machine edged and finished with mulch, where necessary.

B. Screened topsoil shall be spread and hand-graded at a minimum depth of 4” in all areas to be seeded and sodded to allow for proper root development and establishment. Areas with a steep slope of 4:1 shall have a minimum of 2” depth of topsoil installed and graded.

C. Topsoil shall consist of a natural, fertile, friable soil and shall be screened free from noxious weeds or grasses, subsoil, refuse, heavy roots, clay lumps, stones, debris and/or organic materials larger than 1” in any dimension. Any stones larger than 1” inches in any dimension shall be removed from the top 3" utilizing a mechanical rock rake / picker.

D. Regrade, re-firm and rake the soil surface by hand. This is a smoothing and leveling operation to establish the final crown contours and elevations prior to seeding or sod installation.
   1. After the topsoil is prepared and graded to the proper elevations, the following materials shall be applied and tilled (mixed) into the full depth of the topsoil.
      a. Lime shall be evenly broadcast @ 50 lbs/1,000 sq.ft. (or as per soil test).
      b. Soil Conditioner shall be evenly broadcast @ 50 lbs/1,000 sq.ft.
      c. 0-26-26 Basic Fertilizer shall be evenly broadcast at the rate of 10 lbs/1,000 sq.ft. (or as per soil test).
   2. Cultivate and restructure the topsoil to a depth of 4-6". Grade tolerance shall be held to 1/4" per foot for the field area.
   3. Regrade, re-firm and rake the soil surface. This is a smoothing and leveling operation to establish the final crown contours and elevations.
   4. Final stone pick the surface of any stones larger than ¾” in any dimension.
   5. Laser level the surface and maintain existing overall grade.
   6. Re-vibratory aerate to loosen sod-bed.

3.04 SOD INSTALLATION

A. SODDING WILL NOT BE PERMITTED UNTIL FINISH GRADE IS APPROVED BY THE OWNER.

B. Remove or kill existing turf. Loosen and grade subgrade by tillage as dictated by the condition of the subgrade to a depth of 6" for all areas. Rake subgrade and remove all stones over 1-1/2", grade stakes, rubbish and general debris. The topsoil shall be spread to final grade elevations to a minimum depth of 6”. Any undulations or irregularities resulting from applications and soil structuring shall be corrected, to provide absolute positive drainage without "bird baths".

C. Cultivate and restructure the topsoil to a depth of 3-4". Grade tolerance shall be 1/2"in 10’.

D. Regrade, re-firm and rake the soil surface. This is a smoothing and leveling operation to establish the final crown contours and elevations to remove “bird baths” and minimize puddling of water.

E. Final stone-pick and power-rake the surface of any stones larger than 1" in any dimension.

F. Dry sod beds shall be watered lightly prior to laying sod to prevent rapid desiccation.

G. The first row of sod should be laid in a straight line with subsequent rows placed parallel and tightly against one another. Lateral joints shall be staggered to promote more uniform growth and strength. Care shall be exercised to insure that the sod is not stretched or overlapped and that all joints are butted in order to prevent voids, which would permit air-drying of the roots.

H. During periods of high temperature the sod shall be lightly watered to prevent wilting during the progress of the work. Contractor shall return to the site four weeks later and after an irrigation or rainfall of one half inch, and reroll the sodded areas. Sod will be cut in to the level of the surrounding grades to make a smooth even transition.

I. Mowing and Watering: The Contractor shall make arrangements with the Owner for appropriate mowing and watering. All newly installed sod must be lightly saturated for the first two weeks after installation , and weekly, thereafter, unless sufficient rainfall will prevent sod from drying.

J. Mow all areas a minimum of 3 times at a height of 2 to 2-1/2" and be responsible for establishing an acceptable stand of grass.

K. Abundant water is required for the first two weeks to maintain adequate moisture in the upper 5 inches of soil. In the absence of rainfall, the field shall be watered to frequencies dictated by need.

3.05 MAINTENANCE

A. Final acceptance of landscape improvements shall be done via a walk through with project manager at time of completion. All planting / seeding duties shall be completed in proper placement as shown on approved plans.

B. A plant and planting bed maintenance period shall be established to ensure that all plants are in healthy condition, and planting beds are not over-run with weeds within the first year of landscape installation.

C. Control weed growth as required and apply approved pre-emergent herbicide to all ground cover areas in accordance to manufacturer's instructions.

D. During the maintenance period the contractor shall provide any necessary watering, weeding, fertilizing, spraying, and pruning necessary to keep all plants, planting beds and turf in a healthy weed-free growing condition and to keep the planted areas neat, and attractive. This shall not include routine mowing, edging beds or trash pick-up or removal and shall not be the responsibility of the landscape contractor. Time, schedule, and frequency of maintaining the landscape enhancements shall be the responsibility of the landscape contractor. The purpose of the plant and planting bed maintenance period is to simply maintain a general attractive appearance over a one year period form original landscape installation.

E. All maintenance responsibilities of the landscape contractor shall conclude after one year of original landscape installation, assuming any dead plant material has been replaced and planting beds are in good general condition aesthetically.

END OF SECTION

DIVISION 33

UTILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes storm drainage outside the building and stormwater structures.

1.3 DEFINITIONS

A. PE: Polyethylene plastic.

B. PVC: Polyvinyl chloride plastic.

C. RCCP: Reinforced circular concrete pipe.

D. HDPE: High Density Polyethylene pipe.

1.4 SUBMITTALS

A. Shop Drawings: Include plans, elevations, details, and attachments for the following:
   1. Precast concrete manholes stormwater basins, and other structures, including frames, covers, and grates.
   2. Cast-in-place concrete manholes and other structures, including frames, covers, and grates.
   3. Polyethylene manholes and drains, including frames covers and grates.
   4. Trench Drains including sectional layout and grates.
   5. Piping.

B. Coordination Drawings: Show manholes and other structures, pipe sizes, locations, and elevations. Include details of underground structures and connections. Show other piping in same trench and clearances from sewerage system piping. Indicate interface and spatial relationship between piping and proximate structures.

C. Design Mix Reports and Calculations: For each class of cast-in-place concrete.

D. Field Test Reports: Indicate and interpret test results for compliance with performance requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Do not store plastic structures, pipe, and fittings in direct sunlight.

B. Protect pipe, pipe fittings, and seals from dirt and damage.

C. Handle precast concrete manholes and other structures according to manufacturer's written rigging instructions.

1.6 PROJECT CONDITIONS

A. Site Information: Perform site survey, research public utility records, and verify existing utility locations.

B. Locate existing structures and piping to be closed and abandoned.

C. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify Engineer not less than two days in advance of proposed utility interruptions.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

A. Refer to Part 3 "Piping Applications" Article for applications of pipe and fitting materials.

2.2 PIPES AND FITTINGS

A. Corrugated PE Drainage Tubing and Fittings: AASHTO M 252, Type S, with smooth waterway for coupling joints.
1. Silttight Couplings: PE sleeve with ASTM D 1056, Type 2, Class A, Grade 2 gasket material that mates with tube and fittings to form silttight joints.

B. Corrugated PE Pipe and Fittings: AASHTO M 294, Type S, with smooth waterway for coupling joints.
1. Silttight Couplings: PE sleeve with ASTM D 1056, Type 2, Class A, Grade 2 gasket material that mates with pipe and fittings to form silttight joints.

C. PVC Sewer Pipe and Fittings: According to the following:
1. PVC Sewer Pipe and Fittings, NPS 15 (DN375) and Smaller: ASTM D 3034, SDR 35, for solvent-cemented or gasketed joints.
a. Gaskets: ASTM F 477, elastomeric seals.

D. Reinforced-Concrete Sewer Pipe and Fittings: ASTM C 76 (ASTM C 76M), Class IV, Wall B, for gasketed joints.
1. Gaskets: ASTM C 443 (ASTM C 443M), rubber.

E. Reinforced Concrete Low-head Pressure Pipe for Principle Spillway
1. Pipe: ASTM C361 with watertight joints in size indicated on the plans.
2. Joints: Push-on with rubber gasket seal.

2.3 MANHOLES

A. Manholes, both precast and cast-in-place concrete, shall be constructed as per current Maryland State Highway Administration standards.

B. Manhole Frames and Covers: ASTM A 536, Grade 60-40-18, ductile-iron castings designed for heavy-duty service. Include indented top design with lettering "STORM SEWER" cast into cover.

2.4 CATCH BASINS

A. Catch Basins, both precast and cast-in-place concrete, shall be constructed as per current Maryland State Highway Administration standards.

B. Frames and Grates: constructed as per current Maryland State Highway Administration standards.

2.5 STORMWATER INLETS

A. Curb Inlets: Made with vertical curb opening, of materials and dimensions according to current Maryland State Highway Administration standards.

B. Gutter Inlets: Made with horizontal gutter opening, of materials and according to current Maryland State Highway Administration standards. Include heavy-duty frames and grates.

C. Combination Inlets: Made with vertical curb and horizontal gutter openings, of materials and dimensions according to current Maryland State Highway Administration standards. Include heavy-duty frames and grates.

D. Frames and Grates: Heavy-duty frames and grates according to current Maryland State Highway Administration standards.

2.6 CONCRETE

A. General: Cast-in-place sitework concrete according to current Maryland State Highway Administration standards.

2.7 PVC INLINE DRAINS AND DRAINAGE BASINS

A. PVC surface drainage inlets shall be of the inline drain type as indicated on the contract drawing and referenced within the contract specifications. The ductile iron grates (12” and 15” frames are cast iron) for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer.

B. The inline drain required for this contract shall be manufactured from PVC pipe stock, utilizing a thermo-molding process to reform the pipe stock to the furnished configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The pipe bell spigot shall be joined to the inline drain body by use of a swage mechanical joint. The pipe stock used to manufacture the inline drain body and pipe bell spigot of the surface drainage inlets shallmeet the mechanical property requirements for fabricated fittings as described by ASTM D3034, Standard for Sewer PVC Pipe and Fittings; ASTM F1336, Standard for PVC Gasketed Sewer Fittings.

C. The grates furnished for all surface drainage inlets shall be ductile iron grates for sizes 8", 10", 12", 15", 18", 24" and 30" (12" and 15" frames are cast iron) shall be made specifically for each fitting so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for inline drains shall be capable of supporting H-25 wheel loading for heavy-duty traffic or H-10 loading for pedestrian traffic. 12" and 15" will be hinged to the frame using pins. Metal used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05 for ductile iron and ASTM A-48-83 Class 30B for 12" and 15" cast iron frames. Grates shall be provided painted black.

2.8 STORMWATER CELL BARRIER

A. Geomembrane - 0.080" (2.03 mm) thick
1. Material: 100% post-consumer high density polyethylene (HDPE)
2. Dimensions: 0.080" (2.03 mm) thick.

B. Products specified as standard of quality are manufactured by DeepRoot Green Infrastructure, LLC. (DeepRoot), 530 Washington Street, San Francisco, CA 94111; 800.458.7668; fax 800.277.7668; www.deeproot.com

C. Products meeting standards listed within this specification may be acceptable for use subject to approval of product list and samples.

PART 3 - EXECUTION

3.1 EARTHWORK

A. Excavating, trenching, and backfilling are specified in Division 31.

3.2 PIPING APPLICATIONS

A. General: Include watertight, silttight, or soiltight joints, unless watertight or silttight joints are indicated.

B. Refer to Part 2 of this Section for detailed specifications for pipe and fitting products listed below. Use pipe, fittings, and joining methods according to applications indicated.

C. Gravity-Flow Piping: Use the following:
1. NPS 3 (DN80): ABS, SDR 35, sewer pipe and fittings; solvent-cemented joints; or gaskets and gasketed joints.
2. NPS 4 and NPS 6 (DN100 and DN150): Corrugated PE drainage tubing and fittings, soiltight couplings, and coupled joints.
3. NPS 4 and NPS 6 (DN100 and DN150): Corrugated PE drainage tubing and fittings, silttight couplings, and coupled joints.
4. NPS 4 and NPS 6 (DN100 and DN150): Cellular-core PVC pipe, PVC sewer pipe fittings, and solvent-cemented joints.
5. NPS 4 and NPS 6 (DN100 and DN150): PVC sewer pipe and fittings, solvent-cemented joints, or gaskets and gasketed joints.
6. NPS 8 to NPS 15 (DN200 to DN375): Corrugated PE drainage tubing and fittings, soiltight couplings, and coupled joints in NPS 8 and NPS 10 (DN200 and DN250). Use corrugated PE pipe and fittings, soiltight couplings, and coupled joints in NPS 12 and NPS 15 (DN300 and DN375).

7. NPS 8 to NPS 15 (DN200 to DN375): Corrugated PE drainage tubing and fittings, silttight couplings, and coupled joints in NPS 8 and NPS 10 (DN200 and DN250). Use corrugated PE pipe and fittings, silttight couplings, and coupled joints in NPS 12 and NPS 15 (DN300 and DN375).
8. NPS 8 to NPS 15 (DN200 to DN375): PVC sewer pipe and fittings, solvent-cemented joints, or gaskets and gasketed joints.
9. NPS 8 to NPS 15 (DN200 to DN375): NPS 12 and NPS 15 (DN300 and DN375) reinforced-concrete sewer pipe and fittings, gaskets, and gasketed joints. Do not use nonreinforced pipe instead of reinforced concrete pipe in NPS 8 and NPS 10 (DN200 and DN250).

3.3 INSTALLATION, GENERAL

A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take design considerations into account. Install piping as indicated, to extent practical.

B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line, and pull past each joint as it is completed.

C. Use manholes for changes in direction, unless fittings are indicated. Use fittings for branch connections, unless direct tap into existing sewer is indicated.

D. Use proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.

E. Install gravity-flow piping and connect to building's storm drains, of sizes and in locations indicated. Terminate piping as indicated.
1. Install piping pitched down in direction of flow, at minimum slope of 1 percent, unless otherwise indicated.

F. Extend storm drainage piping and connect to building's storm drains, of sizes and in locations indicated. Terminate piping as indicated.

G. Tunneling: Install pipe under streets or other obstructions that cannot be disturbed by tunneling, jacking, or a combination of both.

3.4 PIPE JOINT CONSTRUCTION AND INSTALLATION

A. General: Join and install pipe and fittings according to installations indicated.

B. PE Pipe and Fittings: As follows:
1. Join pipe, tubing, and fittings with couplings for soiltight joints according to manufacturer's written instructions.
2. Install according to ASTM D 2321 and manufacturer's written instructions.
3. Install corrugated piping according to the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings."

C. PVC Sewer Pipe and Fittings: As follows:
1. Join pipe and gasketed fittings with gaskets according to ASTM D 2321.
2. Install according to ASTM D 2321.

D. Concrete Pipe and Fittings: Install according to ACPA's "Concrete Pipe Installation Manual." Use the following seals:
1. Round Pipe and Fittings: ASTM C 443 (ASTM C 443M), rubber gaskets.

E. System Piping Joints: Make joints using system manufacturer's couplings, unless otherwise indicated.

F. Join piping made of different materials or dimensions with couplings made for this application. Use couplings that are compatible with and that fit both systems' materials and dimensions.

3.5 MANHOLE INSTALLATION

A. General: As per current Maryland State Highway Administration standards.

3.6 CATCH-BASIN INSTALLATION

A. Construct catch basins to sizes and shapes indicated.

B. Set frames and grates to elevations indicated.

C. Frames shall be set on brick and grout. For pre-cast concrete structures, top of precast shall be low enough to allow for field adjustment of frames.

3.7 STORM DRAINAGE INLET AND OUTLET INSTALLATION

A. Construct inlet head walls, aprons, and sides of reinforced concrete, as indicated.

B. Install outlets that spill onto grade, anchored with concrete, where indicated.

C. Install outlets that spill onto grade, with flared end sections that match pipe, where indicated.

D. Construct energy dissipators at outlets, as indicated.

3.8 CONCRETE PLACEMENT

A. Place cast-in-place concrete according to ACI 318 and ACI 350R.

3.9 CLEANOUT INSTALLATION

A. Install cleanouts and riser extension from sewer pipe to cleanout at grade. Use cast-iron soil pipe fittings in sewer pipes at branches for cleanouts and cast-iron soil pipe for riser extensions to cleanouts. Install piping so cleanouts open in direction of flow in sewer pipe.

B. Set cleanout frames and covers in earth in cast-in-place concrete block, 18 by 18 by 12 inches (450 by 450 by 300 mm) deep. Set with tops 1 inch (25 mm) above surrounding earth grade.

C. Set cleanout frames and covers in concrete pavement with tops flush with pavement surface.

3.10 DRAIN INSTALLATION

A. Install type of drains in locations indicated.

B. Embed drains in 4-inch (100-mm) minimum depth of concrete around bottom and sides.

C. Fasten grates to drains if indicated.

D. Set drain frames and covers with tops flush with pavement surface.

3.11 PVC Inline Drains and Drainage Basins

A. The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1 or 2 material as defined in ASTM D2321. The surface drainage inlets shall be bedded and back-filled uniformly in accordance with ASTM D2321. For H-25 Load rated installations, an 8” to 10” thick concrete ring will be poured under the grate and frame as recommended by details provided to the manufacturer.

3.12 TAP CONNECTIONS

A. Make connections to existing piping and underground structures so finished Work complies as nearly as practical with requirements specified for new Work.

B. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe; install wye fitting into existing piping; and encase entire wye fitting, plus 6-inch (150-mm) overlap, with not less than 6 inches (150 mm) of concrete with 28-day compressive strength of 3000 psi (20.7 MPa).

C. Make branch connections from side into existing piping, NPS 4 to NPS 20 (DN100 to DN500). Remove section of existing pipe; install wye fitting into existing piping; and encase entire wye with not less than 6 inches (150 mm) of concrete with 28-day compressive strength of 3000 psi (20.7 MPa).

D. Make branch connections from side into existing piping, NPS 21 (DN525) or larger, or to underground structures by cutting opening into existing unit large enough to allow 3 inches (76 mm) of concrete to be packed around entering connection. Cut end of connection pipe passing through pipe or structure wall to conform to shape of and be flush with inside wall, unless otherwise indicated. On outside of pipe or structure wall, encase entering connection in 6 inches (150 mm) of concrete for minimum length of 12 inches (300 mm) to provide additional support of collar from connection to undisturbed ground.
   1. Use concrete that will attain minimum 28-day compressive strength of 3000 psi (20.7 MPa), unless otherwise indicated.
   2. Use epoxy-bonding compound as interface between new and existing concrete and piping materials.

E. Protect existing piping and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

3.13 CLOSING ABANDONED STORM DRAINAGE SYSTEMS

A. Abandoned Piping: Close open ends of abandoned underground piping indicated to remain in place. Include closures strong enough to withstand hydrostatic and earth pressures that may result after ends of abandoned piping have been closed. Use either procedure below:
   1. Close open ends of piping with at least 8-inch- (200-mm-) thick, brick masonry bulkheads.
   2. Close open ends of piping with threaded metal caps, plastic plugs, or other acceptable methods suitable for size and type of material being closed. Do not use wood plugs.

B. Abandoned Structures: Excavate around structure as required and use one procedure below:
   1. Remove structure and close open ends of remaining piping.
   2. Remove top of structure down to at least 36 inches (1000 mm) below final grade. Fill to within 12 inches (300 mm) of top with stone, rubble, gravel, or compacted dirt. Fill to top with concrete.
   3. Backfill to grade according to Division 2 Section "Earthwork."

3.14 FIELD QUALITY CONTROL

A. Clear interior of piping and structures of dirt and superfluous material as work progresses. Maintain swab or drag in piping, and pull past each joint as it is completed.
   1. In large, accessible piping, brushes and brooms may be used for cleaning.
   2. Place plug in end of incomplete piping at end of day and when work stops.
   3. Flush piping between manholes and other structures to remove collected debris, if required by authorities having jurisdiction.

B. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches (600 mm) of backfill is in place, and again at completion of Project.
   1. Submit separate reports for each system inspection.
   2. Defects requiring correction include the following:
      a. Alignment: Less than full diameter of inside of pipe is visible between structures.
      b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
      c. Crushed, broken, cracked, or otherwise damaged piping.
      d. Infiltration: Water leakage into piping.
      e. Exfiltration: Water leakage from or around piping.
   3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
   4. Re-inspect and repeat the procedure until the results are satisfactory.

3.15 STORMWATER CELL BARRIER INSTALLATION

A. General
   1. Install as indicated on shop drawings in accordance with manufacturer’s installation instructions.
   2. Use specified material widths required for project conditions.
   3. Where applicable, seal to hardscape surfaces with specified sealant.

4. Install geomembrane vertically. Excavate minimum 12” below lowest adjacent stone layer. Backfill to bottom stone layer with onsite-clay. Support membrane as required while placing stone.
5. Top of membrane shall be level with free-draining stone base.

B. Seaming
1. Where material requires seaming at the end of the roll, overlap geomembrane at minimum two widths of sealing tape, approximately 6” (150mm), using manufacturer’s standard sealing tape.
2. Where material requires seaming to create a larger sheet-like material, overlap geomembrane at minimum two widths of sealing tape, approximately 6”(150mm).
3. Ensure consistent seal across entire seam.
4. Seal to risers with silicone sealant.

END OF SECTION