

**PROJECT MANUAL  
FOR  
South Island Landing Parking Lot  
Improvements**

**No. 20-058**



**GEORGETOWN COUNTY,  
SOUTH CAROLINA**

**VOLUME I  
DIVISION 0 – BIDDING AND CONTRACT DOCUMENTS  
DIVISION 1 – GENERAL REQUIREMENTS  
VOLUME II  
DIVISION 2 TECHNICAL SPECIFICATIONS**

**PREPARED BY:  
GEORGETOWN COUNTY  
DEPARTMENT OF PUBLIC SERVICES  
CAPITAL PROJECTS DIVISION**

**&**

**STANTEC CONSULTING SERVICES, INC.**  
4969 Centre Pointe Drive, Suite 200, North Charleston, South Carolina 29418  
PHONE: 843-470-7700 | WEBSITE: Stantec.com

DATE: 9/23/2020

# PROJECT MANUAL

DATE: 9/23/2020

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**SECTION 00010**

**INVITATION FOR BIDS**

**Time Line: IFB #20-058**

<b>Item</b>	<b>Date</b>	<b>Time</b>	<b>Location*</b>
<b>Advertised Date of Issue:</b>	Wednesday, September 23, 2020	n/a	n/a
<b>Pre-Bid Site Inspection:</b>	INDEPENDENT – On Own	n/a	On Site†
<b>Inquiry Cut-Off Time:</b>	Wednesday, October 7, 2020	3:00PM ET	n/a
<b>Bids Must be Received on/or Before:</b>	Wednesday, October 21, 2020	3:00PM ET	Electronic
<b>*Bid Opening and Tabulation:</b>	Wednesday, October 21, 2020	3:00PM ET	Virtual
<b>County Council Consideration</b>	Tuesday, November 10, 2020	5:30PM ET	TBD
<b>Earliest Possible Notice to Proceed (Note: Shrimp Baiting Season ends on November 11,2020)</b>	Monday, November 23, 2020	n/a	n/a
<b>Final Completion:</b>	130 Days from NTP	n/a	n/a

\*Due to the current COVID-19 situation, County offices at the time of this bid posting remain open but access to the public may be limited to support social distancing efforts. At the time of this posting, bid openings are being performed virtually and may occur from an alternate secure and/or remote location as needed. A virtual meeting link will be posted under the bid number before the bid opening time so that members of the public may attend the meeting virtually.

† South Island Ferry Boat Ramp; closest intersection is CR S22-23 & South Island Rd., Georgetown, SC 29440. From the above intersection go 5 miles south on South Island Rd. to the ramp area.

**South Island Landing Parking Lot Improvements**  
**GEORGETOWN COUNTY, SOUTH CAROLINA**  
**Bid #20-058**

**IMPORTANT COVID-19 NOTICE:** Until further notice all bids **MUST BE** submitted electronically through the Purchasing Department’s Vendor Registry webpage. Please click on the following link <http://www.georgetowncountysc.org/purchasing/default.html> for instructions on how to submit bids electronically through this system. As always, emailed/faxed bids will not be accepted. Your bid must be submitted electronically through Georgetown County’s Purchasing Vendor Registry page to ensure it remains sealed until the scheduled bid opening date and time.

Any scheduled bid openings will still be opened at the designated date and time as listed in the bid document or related addendum. However, at the time of this bid issuance these bid openings will be conducted virtually. As always, bid openings will be accompanied by at least one witness and bid tabulation results will be posted online for the public’s viewing after the bid opening.

<b>Purchasing Contacts:</b>	<b>Nancy Silver</b>	<b>Pamela Bassetti</b>
Phone	(843)545-3076	(843)545-3082
Fax:	(843)545-3500	(843)545-3500
E-mail:	<a href="mailto:purch@gtcounty.org">purch@gtcounty.org</a>	<a href="mailto:pbassetti@gtcounty.org">pbassetti@gtcounty.org</a>

**SCOPE OF WORK:**

This project may consist of, but not be limited to: Demolition & site preparation, clearing and grading, coordination of utility relocation, and erosion control at South Island Landing in Georgetown County.

The work performed under this Contract shall include, but not be limited to: the furnishing of all labor, materials, equipment and services, whether specifically mentioned or not, that are required to complete the Construction of the Work of the project.

**BASE BID:**

This project includes approx. 7,800 SY of concrete paving and approx. 600 LF of curb & gutter, relocation of existing power, existing pavement to be removed and replaced with new asphalt. Thirty-nine (39) boat trailer parking spaces and seventeen (17) car parking spaces will be created.

**ALTERNATE #1:** ADD-Delete asphalt paving and add concrete paving instead.

For power line relocation, Contractor must coordinate with Santee Electric Cooperative for relocation to underground power & site lighting. Contractor to maintain access to and from the ferry at all times during construction.

Contractor shall follow any and all local, state of South Carolina, and federal laws that are applicable to this project, whether specifically mentioned or not.

**Allowances:**

The Bidder shall include in the Contract sum, an Allowance in the amount of five thousand dollars (\$5,000) for Geotech testing. These services are not intended to relieve the contractor of his/her responsibility for testing and / or laboratory services required in the construction contract documents as part of his/her Quality Control (QC) activities.

The County of Georgetown (County) is working with Federal funds through the SC Department of Natural Resources (SCDNR).

**Site Inspection:**

- a) The bidder is expected to have become familiar with and take into consideration, site conditions which may affect the work and to check all dimensions at the site.
- b) Each bidder shall acquaint themselves thoroughly as to the character and nature of the work to be done. Each bidder furthermore shall make a careful examination of the site of the work and inform themselves fully as to the difficulties to be encountered in performance of the work, the facilities for delivering, storing and placing materials and equipment and other conditions relating to construction and labor.
- c) The bidder shall examine the premises and the site and compare them with any applicable drawings and specifications. He/she shall familiarize themselves with the existing conditions such as obstructive area levels and any problems related to erecting the required systems.
- d) No plea of ignorance of conditions that exist or may hereafter exist on the site of the

work, or difficulties that may be encountered in the execution of the work, as a result of failure to make necessary investigations and examinations, will be accepted as an excuse for any failure or omission on the part of the Contractor to fulfill in every detail all the requirements of the contract documents and to complete the work for the consideration set forth therein, or as a basis for any claim whatsoever.

- e) Insofar as possible, the Contractor, in carrying out his/her work, must employ such methods or means as will not cause interruption of or interference with the work of any other Contractor, or County personnel at the site.
- f) When boring data is provided by the Owner, the Bidder shall assume responsibility for any conclusions he/she may draw from such data. (S)he may employ his/her own consultants to analyze available information and shall be responsible for any conclusions drawn from that information. The cost of such employment shall be borne solely by the Bidder.

Each proposer shall respond as provided more specifically herein, Section 00100, Instructions to Bidders, Paragraph IV Preparation and Submission of Bids. Proposals or amendments to proposals received after the proposal deadline will be considered as "Late Proposals" and will not be considered for any cause whatsoever. The Respondent shall sign his / her proposal correctly. All offers shall be entered in ink or typewritten. Proposals may be rejected if any omissions, alteration of form, additions not called for, or any irregularities of any kind are shown. Proposal envelopes or containers with amendments or changes written on the exterior will not be considered or opened. Respondents and their authorized representatives are invited to be present at the proposal opening.

The Construction Contract will be awarded to the firm or team of firms submitting the lowest and most responsive and responsible proposal as determined by the County. Georgetown County reserves the right to reject any and all proposals for any reason at any time prior to execution of the Contract. It further reserves the right to waive any and all technicalities and formalities in the proposal process as well as accept in whole or in part such proposal or proposals where it deems it advisable in protection of the best interests of the County and to hold all proposals for examination for a period not to exceed ninety (90) calendar days. The selected Contractor is encouraged to utilize, to the extent possible, local firms and trades from within Georgetown County.

**Bid Security/Bid Bonding:**

- a) Each bid must be accompanied by a Bid Bond, or by a certified check payable to Georgetown County, SC, for an amount equal to five per-cent (5%) of the total base bid as a guarantee that if the bid is accepted, the required Contract will be executed within fifteen (15) days after receipt of written notice of formal award of Contract. Bids not including such a bid bond will not be considered. Bid Bonds will be returned to unsuccessful vendors after award of Bid.
- b) The successful proposer must provide a Performance Bond from a surety company qualified to do business under the laws of the State of South Carolina in the amount of 100 percent (100%) of the contract amount, within fifteen (15) days the after receipt of written notice of formal award of the Contract.
- c) The successful offeror must provide a Payment and Material Bond from a surety company qualified to do business under the laws of the State of South Carolina in the amount of 100 percent (100%) of the contract amount, within fifteen (15) days after receipt of written notice of

formal award of Contract.

- d) Should any Surety on the Construction Contract be determined unsatisfactory at any time by the Owner, notice will be given the Contractor who shall immediately provide a new Surety, satisfactory to the Owner and at no additional cost to the Owner. The Contract shall not be operative nor will any payments be due or paid until approval of the bonds has been made by the Owner.
- e) The Bidder shall require the Attorney-in-Fact who executes the required bonds, on behalf of the Surety, to affix thereto a certified and current copy of his Power of Attorney, indicating the monetary limit of such power.
- f) The cost of the bonds shall be included in the construction portion of the base bid.

Owner Provided Items:

The County will obtain and provide the following permits to the awarded contractor:

SCDOT (for South Island tie-in, County Stormwater, SCDHEC-Stormwater, and SCDHEC-OCRM. Any additional permits/licenses will be the responsibility of the Contractor.

The Construction Contract will be awarded to the firm or team of firms submitting the lowest and most responsive and responsible proposal as determined by the County. Georgetown County reserves the right to reject any and all proposals for any reason at any time prior to execution of the Contract. It further reserves the right to waive any and all technicalities and formalities in the proposal process as well as accept in whole or in part such proposal or proposals where it deems it advisable in protection of the best interests of the County and to hold all proposals for examination for a period not to exceed ninety (90) calendar days. The selected Contractor is encouraged to utilize, to the extent possible, local firms and trades from within Georgetown County.

Throughout this Project Manual all references to the "Owner" shall mean the County of Georgetown, SC or its Designated Representative.

END OF SECTION 00010

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**SECTION 00100**  
**INSTRUCTIONS TO BIDDERS**  
**Bid #20-058**

**These are general instructions and conditions that accompany each bid package. If more specific instructions are given in the individual bid package, those instructions should prevail.**

**1. Submission of Questions**

Questions must be submitted in writing via electronic mail, facsimile or postal mail to the Issuing Officer no later than the “Deadline for Questions” cutoff identified in the Bid Timeline on page four (4) in order to generate an official answer. All written questions will receive an official written response from the Georgetown County Purchasing Office (GCPO) and will become addenda to the solicitation.

GCPO reserves the right to reject or deny any requests made by the provider.

Impromptu, unwritten questions are permitted and verbal answers may be provided, but are only intended as general direction and will not represent the official GCPO position. The only official position of GCPO is that which is stated in writing and issued in the solicitation as addenda thereto.

No other means of communication, whether oral or written, shall be construed as a formal or official response/statement and may not be relied upon. SEND QUESTIONS TO:

Nancy Silver, Purchasing Officer  
Post Office Box 421270, Georgetown, SC 29442-4200  
Fax: (843) 545-3500  
Email: [purch@gtcounty.org](mailto:purch@gtcounty.org)

2. Electronic sealed bids for to provide C-FUND ROAD IMPROVEMENTS-COVE LANE & SANDY KNOWE LANE shall be received via the County’s Vendor Registry webpage until the cut-off time shown in the bid timeline on page four (4) of this document. Bids will then be promptly opened at the designated time by the Buyer. Bids that are not received prior to the stated opening date and time will be considered **NON RESPONSIVE**. An official authorized to bind the offer must sign all proposals submitted.
3. Inclement Weather/Closure of County Courthouse  
Due to the current COVID-19 situation, County offices at the time of this bid posting remain open but are limited to the public. Bid openings may occur from an alternate secure and/or remote location as needed.
4. This solicitation does not commit Georgetown County to award a contract, to pay any cost incurred in the preparation of the bid, or to procure or contract for goods or services. It is the responsibility of each bidder to see that the Georgetown County Purchasing Office receives bids on, or before, the date and time specified for the bid opening. No bid will be accepted thereafter. The County assumes no responsibility for delivery of bids that are mailed.



Georgetown County reserves the right to reject any or all bids and to waive any informalities and technicalities in the bid process.

5. **NON EXCLUSIVITY**

Nothing herein is intended nor shall be construed as creating any exclusive arrangement with Contractor. Any resulting contract shall not restrict the County from acquiring similar, equal or like goods and/or services from other entities or sources, when Staff determines internally that this resulting action is in the best interest of Georgetown County.

6. No Bidder may submit more than one bid. Multiple bids for different manufacturers but represented by the same firm will not be accepted. Bids offered directly from manufacturers shall indicate if a local dealer/representative will be involved.

7. Definitions:

a) The terms “Proposer”, “Offeror”, “Vendor” or “Bidder” refer to those parties who are submitting sealed responses for the work set forth in this document to the OWNER, as distinct from a sub-bidder who provides a bid to the Bidder. The term “Contractor” refers to the successful Bidder.

b) The term “South Island Landing Parking Lot Improvements” or “the Work” or “Project” refers to the complete set of services as specified in this document, in every aspect.

c) The terms “Owner” and “County” refer to the County of Georgetown, South Carolina.

d) Where the words “shall” or “must” are used, it signifies an absolute minimum function or capacity that, if not satisfied, may result in disqualification.

e) Where the words “should”, “may”, or “is desirable” are used, it signifies desirable, but not mandatory functions or capacities. Bidders who are able to provide these functions or capacities may be evaluated more favorably than those who cannot.

8. Bidders must be licensed as a General Contractor in the State of South Carolina and will hold all Trade Contracts and the Building Permit on the Project.

7. Trade Contractors (Prime and sub-contractors) shall be qualified to perform the work contracted for and shall be licensed as such in the State of South Carolina.

8. Design services shall be performed by qualified architects and engineers licensed to perform the contracted work in the State of South Carolina.

9. Correction or Withdrawal of Bids; Cancellation of Awards

An offeror must submit in writing a request to either correct or withdraw a bid to the Procurement Officer. Each written request must document the fact that the offeror’s mistake is clearly an error that will cause him substantial loss.

a) Correction of awards : An offeror shall not be permitted to correct a bid mistake after bid opening that would cause such offeror to have the low bid unless the mistake in the judgment of the Procurement Officer is clearly evident from examining the bid document; for example, extension of unit prices or errors in addition.

- b) Cancellation of awards prior to performance: When it is determined after an award has been issued but before performance has begun that Georgetown County's requirements for the goods or services have changed or have not been met, the award or contract may be canceled and either re-awarded or a new solicitation issued.

**10. Faxed or E-mailed bids will not be accepted by Georgetown County. Electronic bid submissions must be submitted through the Georgetown County Purchasing Vendor Registry page to ensure they remain sealed until the scheduled bid opening date and time.**

11. If you need any reasonable accommodation for any type of disability in order to participate in this procurement, please contact the purchasing office as soon as possible.

12. Title VI of the Civil Rights Act of 1964: Georgetown County hereby gives public notice that it is the policy of the agency to assure full compliance with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, Executive Order 12898 on Environmental Justice, and related statutes and regulations in all programs and activities. Title VI requires that no person in the United States of America shall, on the grounds of race, color, or national origin, be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which Georgetown County receives federal financial assistance. Any person who believes they have been aggrieved by an unlawful discriminatory practice under Title VI has a right to file a formal complaint with Georgetown County. Any such complaint must be in writing and filed with Georgetown County's Title VI Coordinator within one hundred and eighty (180) days following the date of the alleged discriminatory occurrence. For more information, or to obtain a Title VI Discriminatory Complaint Form, please see our website at <http://www.gtcounty.org/about/faqs.html>.

13. Any deviations from the specifications or modification of this bid and any extra or incidental work or reductions in work shall be set forth in writing and signed by both parties prior to making such change. Any increase or decrease in the bid price resulting from such change shall be included in writing.

14. Exceptions: The bidder shall list on a separate sheet of paper any variations from, or exceptions to, the conditions and specifications of this bid. This sheet shall be labeled "Exception(s) to Bid Conditions and Specifications," and shall be attached to the bid. When Proposers find instances where they must take exception with certain requirements or specifications of the bid, all exceptions shall be clearly identified. Written explanations shall include the scope of the exceptions, the ramifications of the exceptions for the County of Georgetown, and a description of the advantage to be gained or disadvantages to be incurred by the County as a result of these exceptions. If none, write "NONE".

15. Georgetown County reserves the right to reject any or all bids, and to waive as an informality any irregularities contained in any bid as may be deemed in the best interest of the County. Georgetown County further reserves the right to reject any bid submitted, at its sole option, that the vendor may not be able to meet the service requirements of the bid.

16. Publicity releases: contractor agrees not to refer to award of any resulting contract in commercial advertising in such a manner as to state or imply that the products or services provided are endorsed or preferred by the user.
17. Material Safety Data Sheets: The County of Georgetown will not receive any materials, products, or chemicals which may be hazardous to an employee's health unless accompanied by a Material Data Sheet when received.
18. Ownership of Copyright: All right, title and interest in all copyrightable materials which vendor shall create in the performance of its obligations hereunder shall be the property of the procurer. Vendor agrees to assign and hereby does assign any and all interest it has in and to such material to procurer. Vendor agrees, upon the request of procurer to execute all papers and perform all other such acts necessary to assist procurer to obtain and register copyrights on such materials. Where applicable, works of authorship created by the vendor in the performance of its obligations hereunder, shall be considered "works for hire" as defined in the U.S. Copyright Act.
19. Ownership of Documents: Any reports, studies, photographs, negatives or other documents prepared by vendor in the performance of its obligations shall be the exclusive property of the procurer and all such material shall be remitted to the procurer by the vendor upon completion, termination or cancellation of this order. Vendor shall not use, willingly allow or cause to have such material used for any purpose other than performance of its obligations under this order without the prior written consent of the procurer.
20. Affirmative Action: The contractor will take affirmative action in complying with all Federal and State requirements concerning fair employment and employment of the handicapped, and concerning the treatment of all employees, without regard or discrimination by reason of age, race, color, religion, sex, national origin or physical handicap. The following are incorporated herein by reference: 41 C.F.R. 60-1.4, 60-250.4 and 60-741.4.
21. Inclusion and participation of disadvantaged, small, and local business entities is strongly encouraged, but minimum participation standards are not in effect for this project.
22. All Federally Funded or Assisted Construction Contracts Over \$2,000:
  - A. Davis-Bacon Requirements. These contracts need to include a provision for compliance with the Davis-Bacon Act (40 USC 276a to a—7) and the Department of Labor implementing regulations (29 CFR Part 5). Under this Act, Contractors are required to include the contract provisions in Section 5.5 (a) of 29 CFR Part 5, and to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in the wage determination made by the Secretary of Labor. In addition, Contractors shall be required to pay wages not less than the minimum wages specified in the wage determination made by the Secretary of Labor. In addition, Contractors shall be required to pay wages not less often than once a week. Current Wage Determination for Georgetown County in South Carolina is available on-line at:  
[https://beta.sam.gov/search?index=wd&keywords=Georgetown&sort=-relevance&wdType=dbra&page=1&date\\_filter\\_index=0&inactive\\_filter\\_values=false](https://beta.sam.gov/search?index=wd&keywords=Georgetown&sort=-relevance&wdType=dbra&page=1&date_filter_index=0&inactive_filter_values=false)

B. Contract Work Hours and Safety Standard Act Requirements. The contracts must include a provision for compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 USC 327-330) as supplemented by the Department of Labor regulations (29 CFR Part 5). Under Section 103 of the Act, each Contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard workweek of 40 hours. Work in excess of the standard workweek is permissible provided that the worker is compensated at a rate not less than one times the basic rate of pay for all hours worked in excess of 40 hours in the workweek. Section 107 of the Act is applicable to construction work and provides that no laborer of mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to health and safety as determined under construction, safety and health standards promulgated by the Secretary of Labor. These requirements do not apply to the purchases of supplies, materials, or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

C. Copeland "Anti-Kickback" Act Requirements. All construction contracts over \$2,000.00 must include a provision for compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR Part 3). This act provides that each Contractor shall be prohibited from inducing, by any means, persons employed in the construction, completion, or repaid of public work to give up any part of their compensation.

23. CERTIFICATION REGARDING DRUG-FREE WORKPLACE:

The contractor certifies that the vendor(s) will provide a "drug-free workplace" as that term is defined in Section 44-107-30 of the Code of Laws of South Carolina, 1976, as amended, by the complying with the requirements set forth in title 44, Chapter 107.

24. Certification of Non-Segregated Facilities

The federally-assisted construction contractor certifies that he does not maintain or provide, for his employees, any segregated facilities at any of his establishments and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally-assisted construction contractor certifies that he will not maintain or provide, for his employees, segregated facilities at any of his establishments and that he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The federally-assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this Contract.

As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated on the basis of race, color, religion, or national origin because of habit, local custom, or any other reason. The federally assisted construction contractor agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause and that he will retain such certifications in his files.

25. Bidders must clearly mark as "confidential" each part of their bid which they consider to be proprietary information that could be exempt from disclosure under section 30-4-40, Code of Laws of South Carolina 1976, as amended (Freedom of Information Act). If any part is designated as confidential, there must be attached to that part an explanation of how this information fits within one or more categories listed in section 30-4-40. The County reserves the right to determine whether this information should be exempt from disclosure and no legal action may be brought against the County or its agents for its determination in this regard.
26. Nothing herein is intended to exclude any responsible vendor, his product or service or in any way restrain or restrict competition. On the contrary, all responsible vendors are encouraged to bid and their bids are solicited.
27. Acknowledgement of Addenda  
Each contractor is responsible to verify the number of total addenda issued prior to bid. **Failure to acknowledge all addenda may disqualify the bidder.** All addenda are posted by the County at the website located at [www.georgetowncountysc.org](http://www.georgetowncountysc.org), select "Purchasing" and "Current Bids". It is each proposer's responsibility to verify that all addenda have been received and acknowledged.
28. This Invitation for Bid covers the estimated requirements to provide South Island Landing Parking Lot Improvements for the Georgetown County Department of Public Services and Capital Projects division. The purpose is to establish a Construction Contract with firm pricing and project schedule.
29. Bids must be made on Proposal or Bid Form furnished or will be rejected. Proposals shall be typewritten or written in ink on the form prepared by the County. The person signing the bid shall initial all corrections or erasures.
30. Insurance  
The successful bidder shall procure, maintain, and provide proof of, insurance coverage for injuries to persons and/or property damage as may arise from or in conjunction with, the work performed on behalf of the County by the bidder, his agents, representatives, employees or subcontractors. Proof of coverage as contained herein shall be submitted fifteen (15) days prior to the commencement of work and such coverage shall be maintained by the bidder for the duration of the contract period; for occurrence policies.
- a. General Liability  
Coverage shall be as broad as: Comprehensive General Liability endorsed to include Broad Form, Commercial General Liability form including Products/Completed Operations.
1. Minimum Limits  
General Liability:  
\$1,000,000 General Aggregate Limit  
\$1,000,000 Products & Completed Operations  
\$1,000,000 Personal and Advertising Injury  
\$1,000,000 Each Occurrence Limit  
\$50,000 Fire Damage Limit  
\$5,000 Medical Expense Limit

b. Automobile Liability

Coverage sufficient to cover all vehicles owned, used, or hired by the bidder, his agents, representatives, employees or subcontractors.

1. Minimum Limits

Automobile Liability:

\$1,000,000 Combined Single Limit

\$1,000,000 Each Occurrence Limit

\$5,000 Medical Expense Limit

c. Workers' Compensation

Limits as required by the Workers' Compensation Act of SC. Employers Liability, \$1,000,000.

d. Owners' & Contractors' Protective Liability

Policy will be in name of County. Minimum limits required are \$1,000,000.

e. Professional Liability (a/k/a Errors and Omissions)

N/A.

f. Coverage Provisions

1. All deductibles or self-insured retention shall appear on the certificate(s).
2. The County of Georgetown, its officers/ officials, employees, agents and volunteers shall be added as "additional insured" as their interests may appear. This provision does not apply to Professional Liability or Workers' Compensation/Employers' Liability.
3. The offeror's insurance shall be primary over any applicable insurance or self-insurance maintained by the County.
4. Shall provide 30 days written notice to the County before any cancellation, suspension, or void of coverage in whole or part, where such provision is reasonable.
5. All coverage for subcontractors of the bidder shall be subject to all of the requirements stated herein.
6. All deductibles or self-insured retention shall appear on the certificate(s) and shall be subject to approval by the County. At the option of the County, either; the insurer shall reduce or eliminate such deductible or self-insured retention; or the bidder shall be required to procure a bond guaranteeing payment of losses and related claims expenses.
7. Failure to comply with any reporting provisions of the policy(s) shall not affect coverage provided the County, its officers/officials, agents, employees and volunteers.
8. The insurer shall agree to waive all rights of subrogation against the County, its' officers/officials, agents, employees or volunteers for any act, omission or condition of premises which the parties may be held liable by reason of negligence.
9. The bidder shall furnish the County certificates of insurance including endorsements affecting coverage. The certificates are to be signed by a person authorized by the insurance company(s) to bind coverage on its'

behalf, if executed by a broker, notarized copy of authorization to bind, or certify coverage must be attached.

10. All insurance shall be placed with insurers maintaining an A.M. Best rating of no less than an A:VII. If A.M. Best rating is less than A:VII, approval must be received from County's Risk Officer.

31. Workman's Compensation Coverage

Georgetown County, SC will require each contractor and service provider to maintain on file with the purchasing officer, a current Certificate of Insurance showing limits as required by the Workers' Compensation Act of SC: Employers Liability, \$1,000,000.

The law also recognizes "statutory employees." These are employees who work for a subcontractor who may be working for a business or another contractor. Employers should inquire whether or not a subcontractor working for them has workers' compensation insurance, regardless of the number of employees employed by the subcontractor. If the subcontractor does not, the subcontractor's injured employees would be covered under the employer's workers' compensation insurance. If the subcontractor does not carry workers' compensation insurance, then the owner or the principal contractor would be liable just as if the subcontractor's employee was one of their employees.

For answers to additional questions, visit the SC Worker's Compensation Commission website, at: <http://www.wcc.sc.gov/Pages/FrequentlyAskedQuestions.aspx#emp1>

32. Hold Harmless Clause

The Contractor shall, during the term of the contract including any warranty period, indemnify, defend, and hold harmless the County, its officials, employees, agents, and representatives thereof from all suits, actions, or claims of any kind, including attorney's fees, brought on account of any personal injuries, damages, or violations of rights, sustained by any person or property in consequence of any neglect in safeguarding contract work or on account of any act or omission by the contractor or his employees, or from any claims or amounts arising from violation of any law, bylaw, ordinance, regulation or decree. The vendor agrees that this clause shall include claims involving infringement of patent or copyright.

33. Condition of Items

All items shall be new, in first class condition, including containers suitable for shipment and storage, unless otherwise indicated herein. Verbal agreements to the contrary will not be recognized.

34. Workmanship and Inspection

All work under this contract shall be performed in a skillful and workmanlike manner. The County may, in writing, require the Contractor to remove any employee from work that the County deems incompetent or careless.

Further, the County may, from time to time, make inspections of the work performed under this contract. Any inspection by the County does not relieve the Contractor from any responsibility regarding defects or other failures to meet the contract requirements.

35. Progress Payments (If Applicable)

Contractor's Application for Payment shall be submitted to the Owner on AIA Document G702 and G703--1992 Edition, or such other form as may be mutually agreed upon. The period covered by each Application for Payment shall be not less than one calendar month. The Owner shall make progress payments to the Contractor on undisputed amounts certified by the Architect within thirty (30) days from receipt of the Application for Payment by the Owner.

36. South Carolina Sales Tax

The County of Georgetown, SC is not exempt and pays the appropriate SC sales tax on all applicable purchases.

37. Assignment of Contract

This contract may not be assigned in whole or part without the written consent of the Purchasing Officer.

38. Termination

Subject to the provisions below, the contract may be terminated by the County upon sixty (60) days advance written notice to the other party; but if any work or service hereunder is in progress, but not completed as of the date of termination, then this contract may be extended upon written approval of the County until said work or services are completed and accepted.

a. Termination for Convenience

In the event that this contract is terminated or canceled upon request and for the convenience of the County, without the required sixty (60) days advance written notice, then the County shall negotiate reasonable termination costs, if applicable.

b. Termination for Cause

Termination by the County for cause, default or negligence on the part of the contractor shall be excluded from the foregoing provision; termination costs, if any, shall not apply. The sixty (60) days advance notice requirement is waived in the event of Termination for Cause.

c. Non-Appropriation:

It is understood and agreed by the parties that in the event funds are not appropriated in the current fiscal year or any subsequent fiscal years, this contract will become null and void and the County will only be required to pay for services completed to the satisfaction of the County.

39. Default

In case of default by the contractor, for any reason whatsoever, the County may procure the goods or services from another source and hold the contractor responsible for any resulting excess cost and may seek other remedies under law.

40. Severability

In the event that any provision shall be adjudged or decreed to be invalid, such ruling shall not invalidate the entire Agreement but shall pertain only to the provision in question and the remaining provisions shall continue to be valid, binding and in full force and effect.

41. Applicable Laws

This Agreement shall be governed by and construed in accordance with the laws of the State of South Carolina, U.S.A.

42. Claims and Disputes:

All claims, disputes and other matters in question between parties arising out of, or relating to, this Agreement, or the breach thereof, shall be decided in the Circuit Court of the Fifteenth Judicial circuit in Georgetown County, South Carolina. By executing this Agreement, all parties specifically consent to venue and jurisdiction in Georgetown County, South Carolina and waive any right to contest jurisdiction and venue in said Court.

43. Rights of County

The County reserves the right to reject all or any part of any bid, waive informalities and award the contract to the lowest responsive and responsible bidder to best serve the interest of the County.



44. Award of Bid

In determining the lowest responsive and responsible bidder, in addition to price, there shall be considered the following:

- (a) The ability, capacity and skill of the bidder to perform the contract.
- (b) Whether the bidder can perform the contract within the time specified, without delay of interference.
- (c) The character, integrity, reputation, judgment, experience and efficiency of the bidder.
- (d) The quality of performance on previous contracts.
- (e) The previous and existing compliance by the bidder with laws and ordinances relating to the contract.

45. Notice of Award

A *Notice of Intent to Award* will be mailed to all respondents.

46. Protest

Bidders may refer to Sections 2-67, 2-73, and 2-74 of Ordinance #20-32, also known as the Georgetown County, South Carolina Purchasing Policy to determine their remedies concerning this competitive process. The failure to be awarded a bid shall not be valid grounds for protest.

47. Debarment

By submitting a bid, the offeror certifies to the best of its knowledge and belief, that it and its principals, sub-contractors and assigns are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State or local department or agency. A copy of the County's debarment procedure in accordance with Section 2-68 of Ordinance #2008-09, also known as the Georgetown County, South Carolina Purchasing Policy is available upon request.

48. Firm Pricing for County Acceptance

Bid price must be firm for County acceptance for 90 days from bid opening date.

49. Mobilization After Notice to Proceed

Bid must show the number of days required to mobilize after receiving a Notice to Proceed under normal conditions. Failure to state delivery time obligates bidder to complete delivery in fourteen (14) calendar days. Unrealistically short or long delivery promised may cause bid to be disregarded. Consistent failure to meet delivery promises without valid reason may be cause for removal from bid list.

50. BRAND NAME OR EQUAL:

- (a) The use of a "Brand Name Only" specification is for the purpose of describing the sole item that will satisfy the county's requirements. Bids offering alternate products will be declared non-responsive.
  
- (b) The use of a "Brand Name Or Equal" specification is for the purpose of describing the standard of quality, performance and characteristics desired and is not intended to limit or restrict competition. An item shall be considered to be substantially equivalent, or "equal" to the specified brand in the opinion of the Chief Procurement Officer, the County can reasonably anticipate sufficiently similar quality, capacity, durability, performance, utility and productivity as provided by the specified brand.
  
- (c) The use of a "Brand Name Or Pre-Approved Equal" specification with a reference to a brand name or model number does not preclude an offer of a comparable or better product, if full specifications

and descriptive literature are provided for the product. Bidder shall submit a Material Substitution Request form for a proposed equal to Purchasing by the date and time listed in the bid solicitation to allow Owner to make a determination of equality to the brand specified. If Owner approves the proposed equal, an addendum to the bid will be issued specifically identifying the item as a pre-approved equivalent. Failure to provide such specifications and descriptive literature may be cause for rejection of the offer.

51. Environmental Management:

Vendor/Supplier/Contractor will be responsible for complying with all federal, state and local environmental regulations relating to transportation, handling, storage, spillage and any other aspect of providing the services specified herein, as applicable.

52. Bid Tabulation Results

Vendors wishing to view the bid tabulation results may visit the Georgetown County, SC website at: <http://www.georgetowncountysc.org>. Select “Bid Opportunities” from the Quick Links box, then “Bids Under Review” and double click the link under the individual bid listing.

53. The Bidder hereby certifies that he or she has carefully examined all of the Documents for the project, has carefully and thoroughly reviewed this Request for Bid/Quotation, has inspected the location of the project (if applicable), and understands the nature and scope of the work to be done; and that this Bid is based upon the terms, specifications, requirements, and conditions of the Request for Bid/ Documents. The Bidder further agrees that the performance time specified is a reasonable time, having carefully considered the nature and scope of the project as aforesaid.

54. Apparent omission of a detailed description concerning any point, shall be regarded as meaning the best commercial practice is to prevail and that only material and workmanship of the finest quality are to be used.

55. Response Clarification

Georgetown County reserves the right to request additional written or oral information from Bidders in order to obtain clarification of their Responses.

56. Any attempt by the vendor to influence the opinion of County Staff or County Council by discussion, promotion, advertising, misrepresentation of the submittal or purchasing process or any procedure to promote their offer will constitute a violation of the vendor submittal conditions and will cause the vendor’s submittal to be declared null and void.

57. Due to the funding being used, Georgetown County’s usual Local Vendor Preference Option will be waived for this project.

58. Substitutions and Product Options

Written requests for changes in products, materials, equipment and methods of construction required by the Contract Documents shall be submitted to the Owner prior to bidding in accordance with the timeline provided and using the Material Substitution Request form provided and in accordance with *The Project Manual, Division 1, Section 01600*.

59. Bidding Documents

a) Each Bidder shall carefully examine the Bidding and Contract Documents, General Requirements, Drawings and Technical Specifications and all addenda or other revisions and thoroughly familiarize themselves with the detailed requirements prior to submitting a Bid. Bidders shall promptly notify the Owner in writing of any ambiguity, inconsistency, error or

omission, which they may discover upon examination of the Bidding and Contract Documents, Project Site and / or local conditions. The Owner shall make such interpretations, corrections or changes to the Bidding Documents and will reply to all questions submitted by the Bidders. The Owner will log all responses and issue an addendum as may be appropriate. The Owner will not be responsible for any oral instructions and / or responses. Interpretations, corrections or changes made in any other manner will not be binding. All addenda sent to Bidders will become a part of the Bidding and Contract Documents. All inquiries shall be directed in writing or transmitted by facsimile to the office of the Owner. No allowance will be made after Bids are received due to oversight and / or error by bidder.

- b) Each Bidder shall carefully review the Table of Contents and the List of Drawings in the Project Manual to determine if any instrument is missing from the Bidding Documents. Bidders shall promptly notify the Owner, in writing, of any discrepancy.
- c) Addenda will not be mailed or faxed to all Bidders. Copies of Addenda will be made available through the County website. Prior to submitting a Bid each Bidder shall ascertain that he/she has received all Addenda issued.
- d) Owner does not assume any responsibility for errors, omissions or misinterpretations resulting from the Bidder's use of incomplete Bidding Documents.

60. Retainage

Retainage in the amount of ten percent (10%) of the value of construction costs incurred for the project, shall be withheld until the project has been completed to the satisfaction of Owner.

61. Liquidated Damages

Refer to *The Project Manual, Vol. 1, Division 1, Section 01100, Summary of Work.*

62. The contractor will be responsible for disposal of any and all removed, unused and surplus materials and any fees and transportation costs associated with the disposal.

63. The contractor is responsible for contacting the **Palmetto Utility Protection Service (P.U.P.S.)** at its **811** or toll-free number **(1-888-721-7877)** between the hours of 7:30 am (ET) and 5:30 pm (ET), Monday through Friday, 72 hours before starting the proposed work.

**END OF SECTION 00100**

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# Intent to Respond

**REF: Bid #20-058, South Island Landing Parking Lot Improvements**

If your company intends to respond to this solicitation, please complete and promptly return this form to assure that you can be included on the mailing list to receive all addenda regarding this project.

It is not necessary to return any other portion of the bid documents if you are not bidding.

Failure to return the Intent to Respond shall not be sufficient cause to rule a submittal as non-responsive; nor does the return of the form obligate an interested party to submit a response. Georgetown County's efforts to directly provide interested parties with addenda or additional information are provided as a courtesy only, and do not alleviate the respondent from their obligation to verify they have received and considered all addenda. All addenda are published and available on the county website at [www.gtcountry.org](http://www.gtcountry.org) select Quick Links, "Bid Opportunities" and "View Current Bid Solicitations".

- Our firm **does** intend on responding to this solicitation.
- Our firm **does not** intend on responding to this solicitation.

Company Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone: \_\_\_\_\_

FAX: \_\_\_\_\_

E-Mail: \_\_\_\_\_

Reason if **not** responding: \_\_\_\_\_

**Please return this completed form to Nancy Silver, Purchasing Officer:**

- by e-mail to [purch@gtcountry.org](mailto:purch@gtcountry.org)
- or by FAX to (843)545-3500.

[End of Intent to Respond]



**MATERIAL SUBSTITUTION REQUEST**

**Bid #20-058, South Island Landing Parking Lot Improvements**

Date: \_\_\_\_\_

We hereby submit for your review the following PRODUCT SUBSTITUTION of the specified material for the above listed project.

Section: \_\_\_\_\_

Paragraph: \_\_\_\_\_

Specified Material: \_\_\_\_\_

Attached is complete technical data of the PRODUCT SUBSTITUTION, highlighted or underlined for easy reading, including laboratory test, as necessary, in duplicate. Included is complete information on changes to the Project Manual Documents required by the proposed PRODUCT SUBSTITUTION for its proper installation.

A) The Trade Contractor, under whose transmittal this information is sent, has reviewed the PRODUCT SUBSTITUTION and agrees it is applicable to this project in the location described and agrees to warrant/guarantee the use of the PRODUCT SUBSTITUTION in the same manner he would the Specified Product.

**Yes**       **No**

If not, explain: \_\_\_\_\_

B) Does the PRODUCT SUBSTITUTION affect the dimensions shown on the Drawings in ANY WAY?

**Yes**       **No**

If so, how? \_\_\_\_\_

C) Does the undersigned have the approval of the Manufacturer/Supplier to pay for any changes to the building design, including engineering and detailing costs, caused by the requested PRODUCT SUBSTITUTION?

**Yes**       **No**

If so, to what extent? \_\_\_\_\_

D) What effect does the PRODUCT SUBSTITUTION acceptance have on other trades?

**None**       **Don't Know**       **As follows:**

\_\_\_\_\_  
\_\_\_\_\_





**ELECTRONIC DOCUMENT TRANSFER  
AGREEMENT**

Project: South Island Landing Parking Lot Improvements Date:  
 Client: Georgetown County Bid No. 20-058  
 Location: Georgetown, SC  
 Company Requesting Files:  
 Person Requesting Files:  
 Description of Files:  
 Reason for Requesting Files:

1. The requested electronic file(s) (the "Files") remain the property of Stantec.
2. No warranties or guarantees are made that the Files represent or reflect the complete scope of work and/or as-built condition.
3. Stantec assumes no responsibility for data files supplied in electronic format. Such data is being provided as a courtesy only.
4. Company receiving the Files and users thereof accept full responsibility for verifying the accuracy and completeness of the Files and shall indemnify and hold Stantec, its officers, employees, consultants and agents harmless from any claims or damages arising from the use of the Files.
5. The use of Files to alter or revise the scope of work is not permitted unless authorized by change orders.
6. In the event that drawing Files transferred electronically contain electronic copies of permits or professional seals, the Files shall be immediately returned to Stantec and all copies thereof destroyed.
7. No use shall be made of the Files for any purpose other than that for which they were originally intended without the express written consent of Stantec.
8. No retransmission of the Files in any form to any third party is permitted unless authorized in writing by Stantec.

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Having read and understood the above, and in consideration of Stantec providing e-copies, the undersigned agrees to be bound by the terms hereof.

\_\_\_\_\_  
 Print Name and Title

\_\_\_\_\_  
 Signature of Company's Authorized Representative

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 Signature of Stantec Project Manager Authorizing Release

\_\_\_\_\_  
 Date

The above requested files will only be released upon receipt by Stantec of an original of this agreement signed by a duly authorized representative of the company requesting the files. Stantec reserves the right to deny any request for copies of electronic files.



**SECTION 00300**  
**“EXHIBIT A” - BID FORM**  
**MANDATORY BID SUBMITTAL FORM**

For: **Bid No. 20-058, South Island Landing Parking Lot Improvements**

To: **MAILING ADDRESS:**  
 County of Georgetown  
 Post Office Drawer 421270  
 Georgetown SC 29442-4200  
 Attn: Purchasing

**STREET ADDRESS:**  
 Georgetown County Courthouse  
 129 Screven Street, Suite 239  
 Georgetown SC 29440-3641  
 Attn: Purchasing

The undersigned, having visited the site of the Work and having familiarized themselves with local conditions affecting the design and cost of the work and with all requirements of the proposed Contract Documents, and duly issued Addenda to said documents, as acknowledged herein, propose to furnish and perform all labor, materials, necessary tools, expendable equipment, and all utility and transportation services necessary to perform and complete in a workmanlike manner all work required by said documents and Addenda.

1) Firm Name: \_\_\_\_\_

2) **BASE BID PROPOSAL:** Bidder / Proposer agrees to perform all of the work described in the specifications, including any allowances, and shown on the drawings, for the sum of:

\$ \_\_\_\_\_ + \$5,000 Geotech Allowance = \$ \_\_\_\_\_

\$ \_\_\_\_\_

**Total Base Bid Price**

3) **ALTERNATE #1:** ADD-Change asphalt paving to concrete paving instead.

ADD \_\_\_\_\_ \$ \_\_\_\_\_

4) For additional work authorized after signing the Contract, the amount of overhead and the amount of profit to be added to base costs of labor and materials shall be (10%) total for overhead and profit on work performed by the Contractor’s own forces and (15%) total on work by Subcontractors.

5) **COMPLETION DATE:** Contractor must conform to Division 0, Section 00750, Summary Schedule and Key Milestones.

6) **LIQUIDATED DAMAGES:** Liquidated damages for this project shall be \$500.00 per calendar day for Contractor’s failure to complete any key milestone by its intermediate completion date or the Substantial Completion date. Refer to Division 1, Section 01100, Summary of Work.

7) The undersigned affirms that in making such Bid, neither he /she nor any company that they may represent, nor anyone in behalf of him / her or their company, directly or indirectly, has entered into any combination, collusion, undertaking or agreement with any other Bidder or Bidders to maintain the prices of said work, or any compact to prevent any other Bidder or Bidders from Bidding on said Contract or work and further affirms that such bid is made without regard or reference to any other Bidder or Proposer and without any agreement or understanding or combination either directly or indirectly with any other person or persons with reference to such Bidding in any way or manner whatsoever.



- 8) The undersigned, when notified of the acceptance of this Bid proposal, does hereby agree to enter into a Contract with the Owner within five (5) calendar days from the date of the Notice of Award, for the execution of the work described within the period of time allocated, and he / she shall give a Performance Bond and Payment Bond, with good and sufficient surety.
- 9) The undersigned further agrees that if awarded the Contract he /she will commence the work within ten (10) calendar days after the date of the Notice of Award and that he / she will complete the work in accordance with the Summary Schedule and Key Milestones and Substantial Completion date set forth in the Bidding and Contract Documents or such amended date as may be granted. If the undersigned fails to complete the work as provided in the aforementioned schedule, then and in that event, he / she further expressly agrees that, for each day that any phase of work under this Contract remains uncompleted thereafter the Owner may deduct from the Contract price herein specified the stipulated sum of liquidated damages as provided for herein and retain that sum for failure of the undersigned to complete this Contract on or before the expiration of the period shown in the completion schedule.
- 10) The undersigned agrees that the Owner's damages caused by delay are not capable of being established and would be difficult to measure accurately and that the sums herein specified as liquidated damages are not a penalty, but represent the parties' estimate of the actual damages which the Owner would suffer per day if the work is not completed as scheduled.
- 11) In submitting this Bid, it is understood that the right is reserved by the Owner to waive any informality or irregularity in any Bid or Bid guaranty, to reject any and all Bids, to re-Bid, to award or refrain from awarding a contract for the work and to negotiate with the apparent qualified low responsive Bidder to such extent as may be beneficial to the Owner.
- 12) The undersigned attaches hereto a cashier's check, certified check or Bid Bond in the sum five percent (5%) of the total base bid payable to Georgetown County, as required in the Request for Proposals, and the undersigned agrees that in case he / she fails within five (5) calendar days after Notice of Award of the Contract to him /her to enter into the Contract in writing and furnish the required Payment and Performance Bonds, with surety or sureties to be approved by Owner, and insurance policies or endorsements, the Owner may, as its option, determine that the undersigned has abandoned his / her rights and interest in such Bid and that the cashier's check, certified check, or Bid Bond accompanying his or her bid has been forfeited. Otherwise, the cashier's check, certified check, or Bid Bond shall be returned to the undersigned upon the execution of the Contract and acceptance of the bonds and insurance, or upon rejection of his / her Bid.
- 13) A Bid shall be considered unresponsive and shall be rejected if it fails to include fully executed statements or if the Bidder fails to furnish required data. When a determination has been made to award the Contract to a specific Contractor, such Contractor shall, prior to award, furnish such other pertinent information regarding his / her own employment policies and practices as well as those of his / her proposed prime contractor, subcontractors and consultants as the Owner may require.
- 14) The Bidder shall furnish similar statements executed by each of his / her prime contractor, first-tier and second-tier subcontractors and consultants whose contracts equal Ten Thousand Dollars (\$10,000.00) or more and shall obtain similar compliance by such prime contractor, subcontractors and consultants before awarding such contracts. No prime contractor or subcontract shall be awarded to any non-complying prime contractor and/or subcontractor.
- 15) It is understood and agreed that all workmanship and materials under all items of work are guaranteed for one (1) year from the date of Final Acceptance, unless otherwise specified.

- 16) The undersigned affirms that he / she has completed all of the blank spaces in the Bid Form, with an amount in words and numbers and agrees that where a discrepancy occurs between the prices quoted in words and/or in numbers the lowest figure quoted in words shall take precedence and govern when determining final costs or award of the Contract.
- 17) The undersigned affirms that wages not less than the minimum rates or wages, as predetermined for this project by the State of South Carolina were used in the preparation of this "Bid Form".
- 18) **REQUIRED FORMS:** There are specific forms required to be completed and submitted as part of the response to this Invitation for Bid (IFB). The omission, whether inadvertent or not, of any one or more of these forms will cause the Bidder's / Proposer's response to be disqualified. The following forms identified as Exhibits to this IFB, shall be included in the response:

Exhibit A	Bid Form
Exhibit B	Acknowledgement of Addenda
Exhibit C	Acknowledgement of Principal
Exhibit D	Non-Collusion Affidavit
Exhibit E	Indemnification
Exhibit F	List of Prime & Subcontractors
Exhibit G	Statement of Experience
Exhibit H	Unit Price Schedule
Exhibit I	Certification of Eligibility/Davis-Bacon
Exhibit J	Certification Regarding Debarment and Suspension
Exhibit K	Anti-Lobbying Certification
Exhibit L	Exceptions Page Form 5% Bid Bond

19) Project Mgr/NTP Contact Address: \_\_\_\_\_  
\_\_\_\_\_

20) Project Mgr/NTP Contact Person: \_\_\_\_\_

21) Telephone Number \_\_\_\_\_ Fax Number \_\_\_\_\_

22) E-Mail address \_\_\_\_\_

23) Remittance Address: \_\_\_\_\_  
\_\_\_\_\_

24) A/P Accounting Contact \_\_\_\_\_

25) Telephone Number \_\_\_\_\_ Fax Number \_\_\_\_\_

26) E-Mail address \_\_\_\_\_

27) **Suspension and Debarment**

Federal guidelines require grant recipients to obtain sufficient assurance that vendors are not suspended or debarred from participating in federal programs when contracts exceed \$25,000. By signing below you verify that no party to this agreement is excluded from receiving Federal contracts, certain subcontracts, and certain Federal financial and nonfinancial assistance and benefits, pursuant to the provisions of 31 U.S.C. 6101, note, E.O. 12549, E.O. 12689, 48 CFR 9.404, and each agency's codification of the Common

Rule for Non-procurement suspension and debarment. [See <https://www.epls.gov/> for additional information.]

28) If the bid is accepted, the required Contract must be executed within fifteen (15) days after receipt of written notice of formal award of Contract.

29) Will you honor the submitted prices and terms for purchase by other departments within Georgetown County and/or by other government entities who participate in cooperative purchasing with Georgetown County, South Carolina?

Yes       No

30) Acceptance of Invitation for Bid Content: The contents of the successful IFB/RFP are included as if fully reproduced herein. Therefore, the selected contractor must be prepared to be bound by his/her proposal as submitted.

31) **RENEWAL OF CONTRACT**

The continuation of the terms, conditions, and provisions of any resulting contract beyond the fiscal year is subject to approval and ratification by the Georgetown County Council and appropriation by them of the necessary money to fund said contract for each succeeding year.

32) CERTIFICATION REGARDING DRUG-FREE WORKPLACE:

The undersigned certifies that the vendor listed below will provide a “drug-free workplace” as that term is defined in Section 44-107-30 of the Code of Laws of South Carolina, 1976, as amended, by the complying with the requirements set forth in title 44, Chapter 107.

Yes       No

33) Any attempt by the vendor to influence the opinion of County Staff or County Council by discussion, promotion, advertising, misrepresentation of the submittal or purchasing process or any procedure to promote their offer will constitute a violation of the vendor submittal conditions and will cause the vendor’s submittal to be declared null and void.

34) The lowest or any proposal will not necessarily be accepted and the County reserves the right to award any portion thereof. I/We, the undersigned, hereby confirm that all the above noted documents for Bid/Request for Proposal No. 20-058 were received.

35) **MINORITY PARTICIPATION      [INFORMATION ONLY]**

(a) Is the bidder a South Carolina Certified Minority Business?

Yes       No

(b) Is the bidder a Minority Business certified by another governmental entity?

Yes       No

If so, please list the certifying governmental entity: \_\_\_\_\_

(c) Will any of the work under this contract be performed by a SC certified Minority Business as a subcontractor?

Yes       No

If so, what percentage of the total value of the contract will be performed by a SC certified Minority Business as a subcontractor? \_\_\_\_\_%

(d) Will any of the work under this contract be performed by a minority business certified by another governmental entity as a subcontractor?

Yes       No

If so, what percentage of the total value of the contract will be performed by a minority business certified by another governmental entity as a subcontractor?  
\_\_\_\_\_%

(e) If a certified Minority Business is participating in this contract, please indicate all categories for which the Business is certified:

- Traditional minority
- Traditional minority, but female
- Women (Caucasian females)
- Hispanic minorities
- DOT referral (Traditional minority)
- DOT referral (Caucasian female)
- Temporary certification
- SBA 8 (a) certification referral
- Other minorities (Native American, Asian, etc.)

(If more than one minority contractor will be utilized in the performance of this contract, please provide the information above for each minority business.)

36) **ILLEGAL IMMIGRATION: Non-Construction (NOV. 2008):** (An overview is available at [www.procurement.sc.gov](http://www.procurement.sc.gov)) By signing your offer, you certify that you will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agree to provide to the State upon request any documentation required to establish either: (a) that Title 8, Chapter 14 is inapplicable to you and your subcontractors or sub-subcontractors; or (b) that you and your subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." You agree to include in any contracts with your subcontractors language requiring your subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in their contracts with the sub-subcontractors language requiring

the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14. [07-7B097-1]

37)

**INFORMATION ONLY:**

- Our company accepts VISA government procurement cards.  
If yes, list any upcharge for P-Card Payment? \_\_\_\_\_
- Our company does not accept VISA government procurement cards.

38) Printed Name of person binding bid \_\_\_\_\_

39) Signature (X) \_\_\_\_\_

40) Date \_\_\_\_\_

**NOTE: THE ENTIRE IFB PACKET NEED NOT BE RETURNED. Please be sure to provide all mandatory bid submittal forms as requested. Thank you.**

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**EXHIBIT B**

**ADDENDA ACKNOWLEDGEMENT**  
**(Mandatory Bid Submittal Form)**



**Bid No. 20-058, South Island Landing Parking Lot Improvements**

COMPANY NAME: \_\_\_\_\_

- Addendum #1 Received Date: \_\_\_\_\_ Initialed By: \_\_\_\_\_
- Addendum #2 Received Date: \_\_\_\_\_ Initialed By: \_\_\_\_\_
- Addendum #3 Received Date: \_\_\_\_\_ Initialed By: \_\_\_\_\_
- Addendum #4 Received Date: \_\_\_\_\_ Initialed By: \_\_\_\_\_
- Addendum #5 Received Date: \_\_\_\_\_ Initialed By: \_\_\_\_\_
- Addendum #6 Received Date: \_\_\_\_\_ Initialed By: \_\_\_\_\_

Company Name: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

**EXHIBIT C**  
**(Mandatory Bid Submittal Form)**

**ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION:**

State of: (\_\_\_\_\_)

Country of: (\_\_\_\_\_)SS

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_ to me Known, who, being by me duly sworn, did depose and say to me that he resides at \_\_\_\_\_, that he/she is the \_\_\_\_\_ of \_\_\_\_\_ the corporation described in and which executed the foregoing instrument is an impression of such seal; that it was so affixed by the order of the directors of said corporation, and that he signed his name thereto by like order.

(Seal) \_\_\_\_\_  
Notary Public

**ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP:**

State of (\_\_\_\_\_)

Country of (\_\_\_\_\_)

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_ to me known and known to me to described in and who executed the foregoing instrument and he acknowledged to me that he executed the same as and for the act and deed of said firm.

(Seal) \_\_\_\_\_  
Notary Public

**ACKNOWLEDGMENT OF PRINCIPAL, IF AN INDIVIDUAL:**

State of (\_\_\_\_\_)

Country of (\_\_\_\_\_)

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally came and appeared \_\_\_\_\_ to me known and known to me to be the person described in and who executed the forgoing instrument and acknowledged that he executed the same.

(Seal) \_\_\_\_\_

**EXHIBIT D**

**FORM OF NON-COLLUSION AFFIDAVIT OF PRIME PROPOSER / BIDDER  
(Mandatory Bid Submittal Form)**

**State of South Carolina )  
County of Georgetown )**

Being first duly sworn deposes and says that:

- (1) He / She is \_\_\_\_\_ of \_\_\_\_\_  
The Bidder / Proposer that has submitted the attached Bid / Proposal;
- (2) He / She is fully informed respecting the preparation and contents of the attached Bid / Proposal and of all pertinent circumstances respecting such Bid / Proposal;
- (3) Such Bid / Proposal is genuine and is not a collusive or sham Bid / Proposal;
- (4) Neither the said Bidder / Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder / Proposer, firm or person to submit a collusive or sham Bid / Proposal in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder / Proposer, firm or person to fix the price or prices in the attached Bid / Proposal or of any other Bidder / Proposer, or to fix any overhead, profit or cost element of the Bid / Proposal price or the Bid / Proposal price of any other Bidder / Proposer, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Owner or any person interested in the proposed Contract; and
- (5) The price or prices quoted in the attached Bid / Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder / Proposer or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed) \_\_\_\_\_

\_\_\_\_\_  
(Title)

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 2020  
Notary Public in and for Georgetown County, South Carolina  
My commission expires on: \_\_\_\_\_

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**EXHIBIT E**

**INDEMNIFICATION  
(Mandatory Bid Submittal Form)**

The Bidder / Proposer will indemnify and hold harmless the Owner, Georgetown County, South Carolina and their agents and employees from and against all claims, damages, losses and expenses, including attorney's fees, arising out of or resulting from the performance of the Work provided that any such claims, damages, loss, or expense is attributable to bodily injury, sickness, disease or death, injury to or destruction of tangible property, including the loss of use resulting there from, and is caused by any negligent or willful act or omission of the Bidder / Proposer, and anyone directly or indirectly employed by him/her or anyone for whose acts any of them may be liable.

In any and all claims against the Owner, Georgetown County, South Carolina or any of their agents and / or employees by an employee of the Bidder / Proposer, and anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way to the amount or type of damages, compensation or benefits payable by or for the Bidder / Proposer under the Worker's Compensation Acts, Disability Benefit Acts, or other employee benefit acts.

The obligation of the Bidder / Proposer under this paragraph shall not extend to the liability of Georgetown County, South Carolina or its agents and / or employees arising out of the reports, surveys, Change Orders, designs or Technical Specifications.

BIDDER / PROPOSER: \_\_\_\_\_

BY: \_\_\_\_\_

DATE: \_\_\_\_\_

TELEPHONE NO.: \_\_\_\_\_

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**EXHIBIT F**

**LIST OF PRIME AND SUBCONTRACTORS  
(Mandatory Bid Submittal Form)**

The undersigned states that the following is a full and complete list of proposed prime contractor and subcontractors on this Project and the class of work to be performed by each, and that such list will not be added to nor altered without the written consent of the Owner.

<b>Prime Contractor, Subcontractor Consultants and Address</b>	<b>Class of Work to be Performed</b>
1) _____ _____	_____
2) _____ _____	_____
3) _____ _____	_____
4) _____ _____	_____
5) _____ _____	_____
6) _____ _____	_____

**Date:** \_\_\_\_\_ **Firm Name:** \_\_\_\_\_

**Signed:** \_\_\_\_\_ **Title:** \_\_\_\_\_

**EXHIBIT G**

**STATEMENT OF EXPERIENCE OF THE BIDDER / PROPOSER  
(Mandatory Bid Submittal Form)**

The Bidder / Proposer is requested to state below what work of similar scope and complexity he/she has successfully completed, and to provide references that will enable the Owner to judge his/her experience, skill and business standing and his/her ability to conduct the Work in conformance with the requirements of the Construction Contract Documents.

**Project and Location**

**Reference**

1) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Dated:** \_\_\_\_\_

**Bidder / Proposer:** \_\_\_\_\_

**Signed:** \_\_\_\_\_

**Title:** \_\_\_\_\_

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**EXHIBIT H**

**UNIT PRICE SCHEDULE  
(Mandatory Bid Submittal Form)**

When changes in the work are ordered by the Owner, and such changes involve the following items, the following unit prices will be used to calculate adjustments to the Contract Sum. These unit prices shall be specified, including all labor, materials, equipment, accessories, shipping, preparation, insurance, testing, overhead, profit, applicable taxes, permits, fees, warranties and all other associated costs for the finished and completed Work. All unit prices for utility conduits shall include sweeps, bends, couplings, caps, fittings, etc. which shall be included in the unit price per linear foot. Unit prices for undercut soils shall include material in place, surveyed and compacted pursuant to the Contract Documents.

Submit unit price and proposal amount for the following items. This list may not include all components necessary to provide a completed product, therefore any applicable items necessary to provide a completed product should be considered in your unit price response.

In case of errors in the extension of prices, unit price governs. In case of error in summations, corrected bid amounts will be totaled and will govern.

Contractor shall be responsible for all necessary electric and water hookups.

Contractor shall make quantity take-offs using drawings to determine quantities to his satisfaction, reporting promptly any discrepancies which may affect bidding. This is not a comprehensive list of items included in the contract documents, and represents only a portion of the project total.

**UNIT PRICE SCHEDULE.**

<b>BASE BID</b>					
<b>Item</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Unit Price</b>	<b>Total Cost</b>
<b>PAVING</b>					
1.	Mobilization/staking/general conditions	LS	1	\$	\$
2.	Bonds & Insurance	LS	1		
3.	Traffic Control	LS	1	\$	\$
4.	Removal & Disposal of Existing Asphalt Pavement (Includes Offsite Disposal)	SY	7,800	\$	\$
5.	Construction Stakes, Lines & Grades	LS	1	\$	\$
6.	Graded Aggregate Base Course (10" Uniform)	SY	7,800	\$	\$
7.	Prime Coat	GAL	2,106	\$	\$
8.	Liquid Asphalt Binder PG64-22	TON	72	\$	\$
9.	Hot mix Asphalt Surface course Type B	TON	1,350	\$	\$
10.	Concrete Curb & Gutter (1'-6") Vertical Face	LF	600	\$	\$
11.	Concrete Flumes	EA	7	\$	\$
12.	4" White Solid Lines (Pvt. Edge Lines) Thermo.-90 Mil.	LF	3,500	\$	\$

13.	4" Blue Solid Lines (Pvt. Edge Lines) Thermo.-90 Mil	LF	3,500	\$	\$
14.	8" White Solid Lines Thermoplastic-125 Mil	LF	124	\$	\$
15.	24" White Solid Lines (Stop/Diag Lines)- Thermo.-125 Mil	LF	105	\$	\$
16.	White Single Arrows (Lt., Strght, Rt.) Thermo.-125 Mil	EA	11	\$	\$
17.	Handicap Symbol – Thermoplastic-125 Mil	EA	4	\$	\$
18.	Permanent Clear Pavement Markers- Mono-Dir.- 4"X4"	EA	41	\$	\$
19.	Flat Sheet, Type III, Fixed Sz. & Msg. Sign	SF	100	\$	\$
20.	U-Section Post for Sign Supports-3P	LF	200	\$	\$
21.	Precast Concrete Curb Stops (6' long)	EA	70	\$	\$
22.	MT2 Leading End Treatment TL2	EA	1	\$	\$
23.	MGS3 GR Standard Shoulder	LF	350	\$	\$
24.	MB Trailing End Treatment	EA	1	\$	\$
25.	Field testing and laboratory services	LS	1	\$ 15,000	\$ 15,000
<b>SUBTOTAL - PAVING</b>					<b>\$</b>
<b>STORMWATER &amp; EROSION CONTROL</b>					
Item	Description	Unit	Qty	Unit Price	Total Cost
26.	Stabilized Construction Entrance	SY	270	\$	\$
27.	Concrete Washout	EA	1	\$	\$
28.	Silt Fence	LF	2330	\$	\$
29.	Inlet Structure Filter-Type F (Weighted)	LF	100	\$	\$
30.	Replace/Repair Silt Fence	LF	233	\$	\$
31.	Removal of Silt Retained By Silt Fence	LF	583	\$	\$
32.	Muhlenbergia Capillaris (Pink Muhly Grass) #1 Cont.	EA	865	\$	\$
<b>SUBTOTAL - STORMWATER</b>					<b>\$</b>
<b>GRAND TOTAL (BASE BID)</b>					<b>\$</b>

<b>BID ALTERNATE 1</b>					
<b>CONCRETE INSTEAD OF ASPHALT PAVING</b>					
Item	Description	Unit	Qty	Unit Price	Total Cost
<b>Deduct</b>					
A1	Prime Coat	GAL	2,106	\$	\$
A2	Liquid Asphalt Binder PG64-22	TON	72	\$	\$
A3	Hot mix Asphalt Surface course Type B	TON	1,350	\$	\$

A4	Graded Aggregate Base Course (10" Uniform)	SY	7,800	\$	\$
<b>ADD</b>					
A5.	Concrete Driveway (6" Uniform-4000 PSI)	SY	7,800	\$	\$
A6.	Graded Aggregate Base Course (4" Uniform)	SY	7,800	\$	\$
<b>TOTAL- BID ALTERNATE 1</b>					\$

Bidder/Proposer: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Dated: \_\_\_\_\_

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**EXHIBIT I**

**DAVIS – BACON and RELATED ACTS-CERTIFICATION OF ELIGIBILITY  
(Mandatory Bid Submittal Form)**

By entering into this Contract, the Contractor hereby certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor’s firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis – Bacon Act or 29 CFR 5.12 (a) (1).

No part of this Contract shall be sub-contracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis – Bacon Act or 29 CFR 5.12 (a) (1).

The penalty for making false statements is prescribed in the United States Criminal Code, 18 U.S.C. 100.1.

Company: \_\_\_\_\_

Name of Officer: \_\_\_\_\_  
(printed)

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**EXHIBIT J**

**CERTIFICATE REGARDING DEBARMENT AND SUSPENSION  
(Mandatory Bid Submittal Form)**

By submitting a bid/proposal under this solicitation, the bidder or offeror certifies that at the time the bidder or offeror submits its proposal that neither it nor its principals are presently debarred or suspended by any Federal department or agency from participation in this transaction.

Company: \_\_\_\_\_

Name of Officer: \_\_\_\_\_  
(printed)

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

(Reference: 2 CFR part 180 (Subpart C), 2 CFR part 1200, DOT Order 4200.5 DOT Suspension & Debarment Procedures & Ineligibility)



**EXHIBIT K**

**ANTI-LOBBYING CERTIFICATION  
(Mandatory Bid Submittal Form)**

The bidder or offeror certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the bidder or offeror, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Company: \_\_\_\_\_

Name of Officer: \_\_\_\_\_  
(printed)

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

(Reference: 49 CFR part 20, Appendix A)

**EXHIBIT L**

**EXCEPTIONS PAGE**

**(Mandatory Bid Submittal Form)**

List any areas where you cannot or will not comply with the specifications or terms contained within the bid documentation. If none, write "NONE".



PRINCIPAL (If Sole Proprietor or Partnership)

ATTEST

(Firm Name)

By: \_\_\_\_\_  
(SEAL)

\_\_\_\_\_

\_\_\_\_\_ Title (Sole Proprietor or Partner)

PRINCIPAL (If Corporation)

\_\_\_\_\_ (Corporate Name)

By: \_\_\_\_\_  
(President)

Attest: \_\_\_\_\_  
(Secretary)

(Impress Corporate Seal)

COUNTERSIGNED BY  
RESIDENT SOUTH CAROLINA  
AGENT OF SURETY:

SURETY:

\_\_\_\_\_ (Copy of Agent's current license  
as issued by State of South Carolina  
Insurance Commissioner

By: \_\_\_\_\_  
Attorney-In-Fact  
(Power of Attorney Must Be Attached)

(Impress Corporate Seal)

END OF SECTION 00400

**SECTION 00600**

**PERFORMANCE BOND**

BOND NO. \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS that we, \_\_\_\_\_ as Principal, and \_\_\_\_\_ as Surety, are held and firmly bound unto Georgetown County, South Carolina hereinafter called the Obligee, in the Penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally firmly by these presents.

WHEREAS, the Principal, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ entered into a certain Contract with the Owner, included herein, for the Contract entitled South Island Landing Parking Lot Improvements in Georgetown County.

NOW THEREFORE, the condition of this obligation is such that if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said Contract, and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then this obligation shall be void; otherwise, to remain in full force and effect.

Whenever the Principal shall be and is declared by the Owner to be in default under the Contract, or wherever the contract has been terminated by default of the Contractor, the Owner having performed the Owner's obligations hereunder, the Surety shall:

1. Complete the Contract in accordance with its terms and conditions, or at the Owner's sole option.
2. Obtain a Bid or Bids for submission to the Owner for completing the Contract in accordance with its terms and conditions, and upon determination by the Owner and Surety of the lowest responsible Bidder, arrange for a Contract between such Bidder and the Owner, and made available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost completion less the balance of the Contract price but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term balance of the Contract price: as used in this paragraph, shall mean the total amount payable by the Owner to the Contractor under the Contract and any amendments thereto, less the amount properly paid by the Owner to the Contractor.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Owner named herein or the successors or assignees thereof.

In the case of termination of the Contract, as provided in the Contract Documents, there shall be assessed against the Principal and Surety herein, all expenses, including design/engineering, geo-technical, surveying, and legal services incidental to collecting losses to the Owner under this Bond.

This Bond shall remain in full force and effect for such period or periods of time after the date of acceptance of the project by the Owner as are provided for in the Contract Documents, and the Principal hereby guarantees to repair or replace for the said periods all work performed and materials and equipment furnished, which were not performed or furnished according to the terms of the Contract Documents. If no specific periods of warranty are stated in the Contract Documents for any

particular item of work, material, or equipment, the Principal hereby guarantees the same for a minimum period of one (1) year from the date of final acceptance by the Owner.

The Surety shall permit arbitration and be ultimately responsible for the payment of any award.

IN WITNESS WHEREOF, the above bounden parties have caused this Bond to be signed and sealed by their appropriate officials as of the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

**PRINCIPAL**

\_\_\_\_\_  
(Firm Name)

By: \_\_\_\_\_

WITNESS

(Title)

**SURETY**

\_\_\_\_\_  
(Firm Name)

By: \_\_\_\_\_

WITNESS

(Title)

**END OF SECTION 00600**

SECTION 00601

LABOR AND MATERIAL PAYMENT BOND

BOND NO. \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS that we, \_\_\_\_\_ as Principal, and \_\_\_\_\_ as Surety, are held and firmly bound unto Georgetown County, South Carolina hereinafter called the Obligee, in the Penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally firmly by these presents.

WHEREAS, the Principal, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ entered into a certain Contract with the Owner, included herein, for Contract entitled South Island Landing Parking Lot Improvements in Georgetown County.

NOW THEREFORE, the condition of this obligation is such that if the Principal shall promptly make payments to all persons supplying labor, materials and supplies used directly or indirectly by said Principal or his Subcontractors in the prosecution of the work provided for in said Contract, then this obligations shall be void; otherwise to remain in full force and effect, subject, however, to the following conditions:

1. This bond is executed for the purpose of complying with the applicable State of South Carolina Statutes and all acts amendatory thereof, and this Bond shall inure to the benefit of any and all persons supplying labor, material and supplies used directly or indirectly by the Principal or his Subcontractors in the prosecution of the work provided for in said Contract so as to give such persons a right of action to recover upon this Bond in a separate suit brought on this Bond. No right of action shall accrue hereunder to or for the use of any person except as such right of action may be given and limited by the applicable State of South Carolina Statutes.
2. In each and every suit brought against the Principal and Surety upon this Bond in which the plaintiff shall be successful, there shall be assessed therein against the Principal and Surety herein, in favor of the Plaintiff therein, reasonable counsel fees, which the Principal and Surety hereby expressly agree to pay as a part of the cost and expense of said suit.
3. A claimant, except a laborer, who is not in privity with the Principal and who has not received payment for his labor, materials, or supplies, shall, within forty-five (45) calendar days after beginning to furnish labor, materials, or supplies for the prosecution of the work, furnish the Principal with a notice that he intends to look to the bond for protection.
4. A claimant who is not in privity with the Principal and who has not received payment for his labor, materials or supplies shall, within ninety (90) calendar days after performance of the labor or after complete delivery of the materials or supplies, deliver to the Principal and to the Surety written notice of the performance of the labor or delivery of the materials or supplies and of the non-payment.
5. No action for the labor, materials, or supplies may be instituted against the Principal or the Surety unless both notices have been given. No action shall be instituted against the Principal or the Surety on the bond after one (1) year from the performance of the labor or completion of delivery of the materials or supplies.

The Surety shall permit arbitration and be ultimately responsible for the payment of any award.

IN WITNESS WHEREOF, the above bounden parties have caused this Bond to be signed and sealed by their appropriate officials as of the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

PRINCIPAL

\_\_\_\_\_  
(Firm Name)

By: \_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Witness)

SURETY

\_\_\_\_\_  
(Firm Name)

By: \_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Witness)

**END SECTION 00601**



## SECTION 00750

### SUMMARY SCHEDULE AND KEY MILESTONES

#### 1.0 GENERAL

##### 1.01 THIS SECTION INCLUDES

- A. Summary Submittals
- B. Key Milestones
- C. Base Bid Summary Schedule
- D. Alternate Summary Schedule (If Applicable)

##### 1.02 SUMMARY SCHEDULE

- A. Summary Schedules referred to in this section will be developed by the Contractor and the Owner illustrating an approach to designing and constructing the project. The activities to be shown on the schedules will be monitored and updated.
- B. Milestones shown on the Summary Schedules will be “Key Milestones” and are to be included in the Contractor’s Contract Schedule. The Contractor is responsible to develop his/her own activities and logic to meet the required Key Milestone Intermediate Dates. Refer to Division 1, Section 01310, Project Management and Coordination.

##### 1.03 KEY MILESTONES

- A. Key Milestones shall be included in all Contractor Schedules and show completing on the intermediate dates shown in this Section.
- B. Key Milestones are a contractual requirement and liquidated damages as specified in *The Project Manual, Vol. 1, Division 1, Section 01100, Summary of Work*, will be assessed for each Key Milestone that completes beyond the dates listed below. Refer to Division 1, Section 01100 and Summary of Work.
- C. Key Milestones for the Base Bid are as follows:

Milestone: Substantial Completion	120 Days from NTP
Milestone: Final Completion	130 Days from NTP

**END OF SECTION 00750**

## SECTION 00800

### SPECIAL PROJECT CONDITIONS

#### 1.0 PURPOSE

The Special Project Conditions are intended to identify those elements of work and items of material, and responsibilities of the Contractor, which are unique to the South Island Landing Parking Lot Improvements and required by the Contract Documents. They are intended to supplement those contractual requirements contained within the Contract Documents including, but not limited to: the Contract; Division 1, General Requirements, Drawings and Technical Specifications.

#### 2.0 SAFETY AND SECURITY

##### 2.0.1 ENTRY ONTO THE PROJECT SITE

The only entrance to the Project site shall be by as designated by the Owner. This will be determined during the pre-construction meeting. The Contractor shall be responsible for project site security. Vehicles to be allowed on the Project site will include only those of the Contractor, prime and sub-contractors and those designated by the Owner. Contractor shall have sole responsibility for the control and safety of vehicles traversing to and from the Project area.

##### 2.0.2 STORAGE / STAGING AREA

All construction material, either the Contractor's, prime and sub-contractor's vehicles and equipment, and personal vehicle parking areas will be established and regulated by the Contractor and approved by the Owner

##### 2.0.3 OPEN TRENCHES

All open trenches and excavations within the project site shall be marked by lighted and flagged barricades.

##### 2.0.4 SECURITY

The Contractor shall be responsible for the security of his/her equipment and materials, as well as the security of the equipment and materials of his agents prime and sub-contractors. Further, he/her shall be responsible for the security of all gates and entrances to the Project site. The gates shall be locked at all times, or guards posted at the gates to control ingress and egress through them. The Contractor shall provide adequate lighting for the entire area of the Project site.

The Contractor shall provide to Owner a list of all his/her employees as well as a list of all the employees of the prime and sub-contractors and shall, during the work of the Project, advise the Owner of changes to the list of personnel working on the Project. The Contractor shall be responsible for the direct supervision of his/her employees, those of his agents, prime and sub-contractors at all times while on the Project site.

The Contractor shall exercise and take all precautions in the storage and dispensing of all flammable liquids such as, but not limited to, gasoline, diesel fuel and lubricants.

### **3.0 SURFACE INFORMATION AND MATERIALS INSPECTION**

The Contractor shall have full responsibility for acquisition, interpretation, analysis and cost impact of sub-surface conditions in the performance of the Work required by this contract. The Contractor shall provide, to the Owner, written certification that all materials and equipment meet the design requirements, established in the drawings and technical specifications for permitting and are in conformance with the Construction Documents. Copies of all test, inspection and certification reports shall be submitted to the Owner within twenty-four (24) hours of receipt of such reports by the Contractor.

### **4.0 PAVEMENT**

The Contractor shall be responsible for all roadways adjacent to or on the project site over which his, his agents prime and / or sub-contractors vehicles may travel. The Contractor shall at his sole cost and expense, repair any damage caused by operation of equipment or hauling of debris on any and all roads off of the project site used to travel on.

### **5.0 PROJECT PROGRESS PHOTOGRAPHS**

The Contractor shall furnish to the Owner progress photographs that shall be taken monthly for the duration of the Work of this Contract. The photographs shall be taken before the start of construction work and continuing throughout the work as it progresses and as long as the work of this Contract is being performed. Refer to Division 1, Section 01322, Photographic Documentation. A photograph shall be taken from each corner of the construction limit lines of this Contract looking towards the center of the Project site.

## **PART 2- PRODUCTS**

Not Used

## **PART 3- EXECUTION**

Not Used

**END OF SECTION 00800**

## SECTION 00900

### LIST OF DRAWINGS AND TECHNICAL SPECIFICATIONS SOUTH ISLAND FERRY LANDING IMPROVEMENTS

#### I – LIST OF DRAWINGS

<u>SHEET TITLE</u>	<u>SHEET NO.</u>
COVER SHEET	C0-00
PROJECT NOTES	C0-01
EXISTING CONDITIONS SURVEY – BY OTHERS	C1-00
COASTAL CRITICAL LINE EXHIBIT – BY OTHERS	C0-01
DEMOLITION PLAN	C2-00
EROSION CONTROL PLAN	C3-00
EROSION CONTROL DETAILS	C3-01
SITE & LAYOUT PLAN	C4-00
CONCRETE SCORING PLAN	C4-01
SITE DETAILS	C4-02
SITE DETAILS	C4-03
GRADING AND DRAINAGE PLAN	C5-00

[ALL STANDARD DRAWINGS SHOULD BE PLOTTED TO 24x36 TO MAINTAIN SCALE]

#### II - LIST OF TECHNICAL SPECIFICATIONS

<u>SECTION NO.</u>	<u>TITLE</u>
02000	Site Clearing
02050	Selective Demolition
02100	Erosion and Sediment Control
02105	General Excavation, Filling and Backfilling
02335	Sub-grade
02340	Base Course
02345	Proof Rolling
02400	Hot Mix Asphalt Pavement
02450	Roadway Pavement Markings
02460	Thermoplastic Pavement Markings
02470	Concrete Curb and Gutter
02560	Cast-in-Place Concrete
02740	Riprap and Slope Protection
02800	Seeding
805	Guardrail (from SCDOT Standard Specifications)

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## SECTION 01100

### SUMMARY OF WORK

#### PART 1-GENERAL

The Summary of Work in this Section comprises the SOUTH ISLAND LANDING PARKING LOT IMPROVEMENTS, Georgetown, Georgetown County, South Carolina. The following scope of work description is intended to be general in nature. The intention is to have the successful Contractor perform all of the work included and presented within the Construction Contract Documents, paying particular attention to the Summary Schedule, Key Milestones in Division 0, Section 00750. The Contractor shall comply with and be responsible for all of the requirements of the Project Manual including the Drawings and Specifications.

##### 1.01 RELATED REQUIREMENTS INCLUDED

- A. Project Manual, Division 0, Bidding and Contract Documents
- B. Project Manual, Division 1, General Requirements
- C. The Contractor shall comply with and be responsible for all of the requirements of the Project Manual, without exception.
- D. The Contract Form for this Project shall be as stipulated in Division 0, Section 00500 in the Project Manual.

##### 1.02 SCOPE OF WORK

**Base Bid** includes all components of the Project that pertain to site work to entail the civil and landscape portions of the SOUTH ISLAND LANDING PARKING LOT IMPROVEMENTS. The project is intended to start in DECEMBER 2020. The major components of the Base Bid include:

Demolition, Coordination of Utility Relocation (coordination with Santee Electric Cooperative), Clearing and grubbing, Erosion and Sediment Control, Grading, Paving, and Landscaping. Contractor shall maintain access to and from the ferry during construction.

##### 1.03 SUBSTANTIAL COMPLETION

Substantial completion is the time at which the Work has progressed to the point where, in the opinion of the Owner and the Engineer, the Work is sufficiently complete in accordance with the Contract Documents so that the facilities can be utilized for the purposes for which they are intended. For this project, Substantial Completion includes all components of the Work of the Project that provides immediate service to the new facility, which has been inspected by the Engineer and determined to be functioning properly. This requires the contractor to achieve completion of all Work of the Project less the paving and / or repair of driveways.

##### 1.04 FINAL COMPLETION

Final completion is the time, as certified by the Engineer and accepted by the Owner, when all Work of the Project is complete, post completion documents have been submitted by the contractor and are satisfactory, and the Project is ready for final

payment. Final completion requires the contractor to be at the level of functionality defined complete with all “punch list” items addressed to be complete in all respects as contained within the Construction Contract Documents. The date of final completion shall constitute the date of the beginning of the Guarantee and Warranty period.

#### 1.05 USE OF THE PREMISES

- A. Contractor shall have use of the area encompassing the Project Site as shown on the applicable drawings for execution of the Work of this Contract, except as may be otherwise indicated or necessitated by the requirements of the Project Manual, or as may be determined by the Owner.
- B. Contractor shall provide, or cause to be provided, and shall pay for all geo-technical services, testing, labor, equipment, materials and such other utilities, transportation and facilities necessary for the proper execution of the Work, whether temporary or permanent, and whether or not incorporated or to be incorporated in the Work.
- C. Contractor shall provide protection at all affected areas of the site during the performance of the Work.
- D. Contractor shall perform all work in conformance with O.S.H.A. requirements, which will be strictly enforced.
- E. Contractor shall coordinate the use of the premises consistent with the Project requirements as may be directed by the Owner.
- F. Contractor shall use access routes for delivery of materials and equipment only as indicated on the drawings approved by the Owner and as may be directed by the Owner. Do not use access routes other than those indicated. Contractor shall keep clean, maintain and repair all access routes used.
- G. Contractor shall assume full responsibility for the protection and safekeeping of all products under this contract, stored and / or installed on the Project Site as well as those products stored off the Project Site. Materials, products and equipment shall be stored on the Project Site only in those areas indicated or allowed for staging and approved by the Owner.
- H. Safe staging and material storage shall be limited to the area indicated on the drawings, which have been approved by the Owner and as may be designated by the Owner. Contractor must obtain specific permission from the Owner for the use of other areas for storage and staging.
- I. Contractor shall protect existing sidewalks, pavement, curbs, utilities, building exterior and interior surfaces subject to damage by Work performed under this contract. Contractor shall, at his sole cost and expense, repair or replace any existing work damaged by his/her prime and/or sub-contractor’s personnel or equipment.

#### 1.06 WORK SEQUENCE AND COMPLETION

- A. Contractor shall work in an orderly manner coordinated with the work of other disciplines and trades.
- B. No disruption to or use of adjacent facilities and access to those facilities will be allowed.
- C. The Owner may require certain work to be performed after normal working hours or on holidays or weekends or as may be necessitated in the Public interest. Such work does not constitute a change of scope or additional cost.

- D. Contractor shall perform the Work in conformance with the Summary Schedule and Key Milestones in Section 00750. This Section includes critical interim completion dates that the Contractor is required to meet.

#### 1.07 LIQUIDATED DAMAGES

The Contractor agrees to commence Work under this Contract on the effective date established as "Notice to Proceed", and to complete the Work in conformance with the established Summary Schedule and Key Milestones in Section 00750 of the Project Manual. Should the Contractor neglect, fail or refuse to complete the Work by any one of the key milestone activities by its critical interim completion date(s) or the established Completion date then the Contractor shall pay to the Owner Liquidated Damages in the amount of five hundred dollars (\$500.00) for those damages suffered by the Owner as a result of delay for each and every calendar day that the Contractor has failed to complete any key milestone activity by its interim completion date or the established Completion date. The aforementioned Liquidated Damages are not a penalty, but rather are a pre-agreed liquidation of the losses incurred by the Owner due to failure of the Contractor to complete the Work on time.

#### 1.08 SUBSTITUTIONS AND PRODUCT OPTIONS

Written requests for substitutions shall be forwarded to the Engineer for review and Owner approval.

#### 1.09 SURVEY

Contractor shall verify all survey data, geo-technical reports and investigations included within the Contract Documents and report any errors and inconsistencies in writing to the Owner before any work is performed in those areas where errors and inconsistencies may exist. Refer to Division 1, Section 01310, Project Management and Coordination in the Project Manual.

### **PART 2- PRODUCTS**

Not Used

### **PART 3- EXECUTION**

Not Used

**END OF SECTION 01100**

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## SECTION 01230

### ALTERNATES

#### PART 1 – GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. This Section identifies each Alternate by number and describes the basic changes to be incorporated into the Work, only when that Alternate is made part of the Work by specific provisions in the Contract Agreement. Administrative and procedural requirements governing Alternates is included

##### 1.02 RELATED REQUIREMENTS

- A. An Alternate is an amount proposed by Bidders and stated on the Bid Form for certain work defined in the Bidding and Contract Documents that may be added to or deducted from the Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in products, materials, equipment, systems or installation methods described in the Contract Documents.
- B. The Contract shall incorporate Alternates accepted, in writing, by the Owner.
- C. Sections of the Technical Specifications as may be referred to and listed under the respective Alternates.
- D. Referenced Sections of the Technical Specifications stipulate pertinent requirements for products and methods to achieve the Work stipulated under each Alternate.
- E. Coordinate pertinent related work and modify surrounding work as required to properly integrate work under each Alternate, and to provide the complete construction work required by the Contract Documents.
- F. Each Alternate shall be quoted giving a date on which the Alternate must be accepted so as to have no affect on the Contract amount and schedule.
- G. Division 1, General Requirements, in the Project Manual governs the execution of all Technical Specification Sections.

##### 1.03 ALTERNATES

- A. Alternates will be accepted and executed at the option of and after review by the Owner.
- B. This Section identifies each Alternate by number, and describes the basic changes to be incorporated into the Work but only when that Alternate is made a part of the Work by specified provisions in the Contract and approved by the Owner in writing. No other adjustments will be made to the Contract Sum.



1.04 DESCRIPTION OF ALTERNATES

**ALTERNATE #1:** ADD-Delete asphalt paving and add concrete paving instead.

**END OF SECTION 01230**

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## SECTION 01290

### PAYMENT PROCEDURES

#### PART 1 - GENERAL

##### 1.1 RELATED REQUIREMENTS

- A. Division 0, Bidding and Contract Documents of the Project Manual.
- B. Division 1, General Requirements of the Project Manual

##### 1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's Certified Applications for Payment.
- B. This Section requires the coordination of the Contractor's Applications for Payment with the Construction Schedule, including established Key-Milestone Dates, Schedule of Values, Submittal Schedule, Prime and Sub-Contractors work.

##### 1.3 APPLICATION FOR PAYMENT

###### A. General

1. Progress payments shall be applied for and made as the construction of the Work proceeds at intervals stated in the Contract. The Contractor will provide, to the Owner a "draft" copy of his/her Application for Payment on the 25<sup>th</sup> day of the month, or the closest workday should the 25<sup>th</sup> day fall on a weekend or holiday. This provides an opportunity to discuss figures (Schedule of Values) before they become "fixed", and will expedite the processing of the final typed Application when the Owner receives it.
2. Formal Applications for Payment shall be submitted to the Owner by close of business on the 1<sup>st</sup> day of the succeeding month, or the closest work day should the 1<sup>st</sup> day fall on a weekend or holiday of the month. The Certified Application for Payment will be processed, by the Owner, thirty (30) calendar days from the day that the Contractor submits the final Application for Payment, except if that day should fall on a weekend or holiday in which case payment shall be made on the next succeeding work day.
3. All information required on the Application shall be provided and filled in, including that for Change Orders executed prior to the date of submittal of the Application. Summary of dollar values must agree with respective totals indicated on continuation sheets.
4. Each Certified Application for Payment shall be consistent with previous Applications as approved by and paid for by the Owner.
5. All Work covered by Progress Payments shall, at the time of payment, become the property of the Owner.
6. Form of Application for Payment will be AIA Document G 702 revised, and Continuation Sheets G 703.
7. All formal Applications for Payment shall be submitted in duplicate to the Owner by means ensuring receipt within twenty-four (24) hours. Itemized Applications and supporting documents shall be submitted with a complete transmittal form listing attachments, and recording appropriate information related to the Application in a manner acceptable to the Owner. Itemized data and format provided on continuation sheets shall

include schedules, line items, values as stipulated in the Schedule of Values as accepted by the Owner.

8. With each Application for Payment the Contractor shall certify that such Application for Payment represents a just estimate of costs reimbursable to Contractor under terms of the Contract and shall certify there are no Mechanic's or Materialmen's Liens outstanding at the date of that Application for Payment, that all due and payable bills with respect to the Work have been paid to date or shall be paid from the proceeds of that Application for Payment, that there is no known basis for the filing of any Mechanic's or Materialmen's Lien against the Surety in connection with the Work, that Waivers and Bills Paid Affidavit forms from all prime and subcontractors, consultants and materialmen have been, or will be, obtained in the form agreeable to the Owner and that amount of the contract remaining to be expended is sufficient to complete the project.
9. The Contractor shall complete each entry on the forms, including notarization and execution by a person authorized to sign legal documents on behalf of the Contractor. Incomplete Applications for Payment will be returned without action.
10. Conditions governing regular schedule for applications, payment and retainage shall be as stated in the Contract.
11. Continuation sheets shall include a total list of all scheduled component items of work with item number and scheduled dollar value for each item. Dollar values to be included in each column for each scheduled line item when Work has been performed or products stored. Round off values to nearest dollar or as may be specified for Schedule of Values.
12. List each Change Order executed prior to date of submission at end of continuation sheets. List by Change Order number and description as to original component item of Work.

#### B. Waivers and Mechanics Liens

1. Monthly Applications for Payment shall include Waivers of Mechanic's Liens and Claims for all Work included in the period of construction covered by the Application for Payment and the previous month's Application. Waivers of Liens and Claims from prime contractors or subcontractors and suppliers shall include the period of construction covered by the Application for Payment, the total amount paid prior to and including the previous month's Application
2. Partial Waivers of Liens shall be submitted on each item of work for the amount requested, prior to deduction for retainage, for each item.
3. Contractor shall submit final or full Waivers of Liens and Claims for completed items of work shown on the monthly Application for Payment.
4. The Owner reserves the right to designate which entities involved in the Work must submit Waivers of Liens.
5. The Contractor's final Application for Payment shall be submitted with, or preceded by final Waivers from every entity involved with the performance of work, supplying of materials or the providing of professional services covered by the Application who could lawfully be entitled to a Lien.
6. Waivers of Liens shall be provided on forms, and executed in a manner acceptable to the Owner.

#### C. Initial (First) Monthly Application for Payment

1. Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include, but are not limited to the following:
  - a. List of all prime contractors, first and second tier subcontractors.
  - b. Contractor's Sworn Statement of principal suppliers, fabricators, prime and subcontractors.
  - c. Schedule of Values.
  - d. Contractor's construction schedule, to be updated monthly.
  - e. Schedule of principal products and long lead delivery items, to be updated monthly.
  - f. Submittal Schedule, Procurement Schedule.
  - g. Copies of all required permits.
  - h. Copies of authorizations and licenses from governing authorities for performance of work.
  - i. Initial progress report.
  - j. Certificates of Insurance and insurance policies.
  - k. Any material stored off site must carry additional insurance (All Risk Rider) stating Owner as insured. All material will be inspected by the Owner before billing can be approved. Bill of Sale and receipts for items being billed at cost only are required and 25% retainage will be held for off-site stored materials. Paperwork must accompany request two weeks prior to billing to insure adequate time to schedule Owner's inspection.
  - l. Contractor's Construction Safety Plan (Initial Only).

#### D. Application for Payment at Substantial Completion

1. The Contractor shall, upon issuance of the Certificate of Substantial Completion, submit his/her Application for payment, which shall reflect any Certificates of Substantial Completion issued previously for Owner occupancy for designated portions of the Work.
2. Application shall include, but not be limited to and as may be determined by the Owner, the following:
  - a. Certificates of Occupancy and such other permits and approvals as may be required.
  - b. Warranties (Guarantees) and maintenance agreements as may be applicable.
  - c. Testing, adjusting and balance records.
  - d. Maintenance manuals, training and instructions.
  - e. Equipment start-up performance reports.
  - f. Changeover information related to Owner's occupancy, use, operation and maintenance.
  - g. Final cleaning of the entire project site..
  - h. Application for Reduction of Retainage, and Consent of Surety.
  - i. List of incomplete Work, recognized as exceptions to issuance of Certificate of Substantial Completion.

#### E. Final Application for Payment

1. Administrative actions and submittals that shall precede or coincide with this final Application for Payment shall include, but not be limited to and as may be determined by the Owner, the following:
  - a. Completion of Project Closeout requirements.
  - b. Completion of items specified for completion after Substantial Completion.
  - c. Prepare and submit to the Owner a list of unsettled claims, as may be applicable.

- d. Transmit to the Owner all required project records including permit drawings, as constructed drawings both on hard copy and in electronic (PDF) format.
- e. Provide to the Owner evidence that all requisite taxes, fees and similar obligations have been paid in full.
- f. Removal of all temporary facilities and services.
- g. Removal of all surplus materials, rubbish and similar elements.

**PART 2 - PRODUCTS**

Not Used

**PART 3 – EXECUTION**

Not Used

**END OF SECTION 01290**

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## SECTION 01300

### REGULATORY REQUIREMENTS

#### PART 1 – GENERAL

##### 1.01 RELATED REQUIREMENTS

- A. Division 0, Bidding and Contract Documents of the Project Manual
- B. Division 1, General Requirements of the Project Manual

##### 1.02 CODES, AUTHORITIES, REGULATORY AGENCIES, AND INDUSTRY REFERENCES

- A. Where references are made on the Drawings or in the Technical Specifications to codes, they shall be considered an integral part of the Contract Documents as minimum standards. Nothing contained in the Contract Documents shall be so construed as to be in conflict with any law, bylaw or regulation of the municipal, state, federal or other authorities having jurisdiction.
- B. Perform Work in compliance with the following code:
  - 1. Current edition of all applicable building code(s), local, state and federal.
- C. Perform Work in compliance with the following Authorities and Regulatory Agencies:
  - 1. Georgetown County, South Carolina
  - 2. South Carolina Dept. of Natural Resources (SCDNR)
  - 3. South Carolina Dept. of Transportation (SCDOT)
  - 4. South Carolina Department of Health Environmental Controls (SCDHEC)
  - 5. OSHA Code of Federal Regulations. (OSHA)
  - 6. All federal, state and local clean air, clean water, water rights, resource recovery, and solid waste disposal standards and the Federal Endangered Species Act, and the Occupational Safety and Health Acts.
  - 7. Environmental Protection Agency (EPA).
- D. Perform Work in compliance with the following industry references:
  - 1. National Fire Protection Association (NFPA), National Electric Code (NEC).
  - 2. NFPA 101, Life Safety Code.
  - 3. SCE 7-88: Minimum Design Loads for Buildings and Other Structures.
  - 4. American Society for Testing and Materials (ASTM).
  - 5. Underwriters Laboratories (UL).
  - 6. The National Board of Fire Underwriters.

##### 1.03 FIRE RATINGS

- A. Where material, component, or assembly is required to be fire rated, fire rating shall be determined or listed by the following testing agency:
  - 1. Factory Mutual Laboratories (FM).
- B. Equivalent fire rating as determined or listed by another testing authority is acceptable if approved by applicable governing authorities having jurisdiction, Georgetown County Fire and Rescue and the Owner.

#### 1.04 PERMITTING

- A. At no additional expense to the Owner, file for and obtain necessary licenses and permits for any interim phases for construction, and be responsible for complying with any Federal, State, County, and Municipal Laws, Codes, regulations applicable to the performance of the Work, including, but not limited to, any laws or regulations requiring the use of licensed prime and /or subcontractors to perform parts of the Work.

#### 1.05 INSPECTION AND CERTIFICATIONS

- A. Arrange inspection and obtain Certificates of approval from applicable authorities having jurisdiction. Furnish Certificates of Approval in accordance with the applicable Technical Specifications and the General Requirements of the Contract.
- B. Notify and coordinate for all appropriate Georgetown County and State inspections of the work. Allow enough time to maintain progress of the work.

#### 1.06 PERFORMANCE

- A. Should the Contractor knowingly perform any Work that does not conform with the requirements of applicable codes, ordinances, regulations, or standards, without given prior written notice to the Owner and obtaining required variance, etc. from the governing body, Contractor shall assume full responsibility thereof and shall bear all costs involved in correcting such non-complying Work. Costs shall include but not be limited to: All fines, inspection costs, damages, design and management fees in addition to the cost of removal and replacement of the work of all trades involved.

### **PART 2 – PRODUCTS**

Not Used.

### **PART 3 – EXECUTION**

Not Used.

**END OF SECTION 01300**

## SECTION 01310

### PROJECT MANAGEMENT AND COORDINATION

#### PART 1 – GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall comply with and be responsible for all of the requirements of the Project Manual and the Construction Contract Documents, without exception
- B. The Contractor shall be responsible for general project coordination of all construction phases and aspects, trades and disciplines of the Work of the Project.
- C. The Contractor shall be responsible for general coordination of all construction site operations with other improvement projects that may be conducted by the Owner.
- D. The Contractor shall be responsible for general coordination with other interested parties including, but not limited to SC Department of Natural Resources, Owner, other Contractors working on Owner or abutter property projects, and all involved permitting authorities.

##### 1.02 RELATED REQUIREMENTS

- A. Division 0, Bidding and Contract Documents in the Project Manual.
- B. Division 1, General Requirements in the Project Manual

##### 1.03 GENERAL COORDINATION

- A. Coordinate scheduling, submittals, and work of various Sections of the Technical Specifications to assure efficient and orderly sequence of installation of construction elements with provisions for accommodating items furnished by the Owner, or others, to be installed by the Contractor.
- B. Coordinate sequence of Work to accommodate partial occupancy for the Owner as specified in Section 01100, Summary of Work and / or as directed by the Owner.
- C. Review and coordinate requirements of all Divisions of the Project Manual and Sections of the Technical Specifications. Report any discrepancies to the Owner
- D. Maintain services of prime and major sub-contractors throughout duration of the Contract, except as may be required by provisions of Conditions of Contract. Notify the Owner, in writing, of intention to replace prime or sub-contractor(s), outlining reasons for the action and naming proposed replacement contractor(s).
- E. Coordinate work of prime and sub-contractors and record contractor installation(s) data on Project Record Drawings.
- F. All communications regarding Contract requirements shall be addressed to the Owner. Outline any special procedures required for coordination and include such items as required notices, reports and attendance at meetings.
- G. Arbitrate and resolve coordination conflicts between prime and sub-contractors to ensure complete and operational systems.



- H. Coordinate work with all existing utility systems.
- I. Coordinate construction activities to ensure that operations are carried out with due consideration given to energy, water and materials.
- J. Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work.

#### 1.04 COORDINATION MEETINGS

- A. In addition to the meetings referred to in Section 01315, Progress Meetings, the Contractor shall conduct coordination meetings and pre-installation meetings with supervisory personnel, prime and sub-contractors, suppliers, the Owner and others as necessary and applicable to assure coordination of different trades and disciplines
- B. Schedule coordination and pre-installation meetings with prime and sub-contractors, suppliers and the Owner to discuss hardware installation and specialty systems installation as may be applicable.

#### 1.05 COORDINATION OF SUBMITTALS

- A. Coordinate use of Project space and sequence of installation of equipment, walks, parking areas, mechanical, electrical, plumbing, or other Work that is indicated diagrammatically on the Drawings and/or contained in the Technical Specifications. Utilize space efficiently to maximize accessibility for Owner installations, maintenance and repairs.
- B. In finished areas, except as otherwise shown, conceal ducts, pipes, wiring, and other non-finish items within construction. Coordinate locations of concealed items with finish elements, and provide as-constructed drawings of the involved location.
- C. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in sequence required to obtain best results.
- D. Make adequate provisions to accommodate items scheduled for later installation, including accepted Bid Alternates, Owner supplied items, sub-subcontractor installed items, work by others, and installation of products purchased with allowances.

#### 1.06 COORDINATION OF MECHANICAL, ELECTRICAL, AND OTHER INSTALLATIONS

- A. General: Sequence, coordinate, and integrate the various elements of mechanical, electrical, and other systems, materials, and equipment. Comply with the following requirements:
  - 1. Coordinate mechanical and electrical systems, equipment and materials installation with other building components.
  - 2. Verify all dimensions by field measurements, and advise the Owner of any dimensional conflicts.
  - 3. Arrange and coordinate for chases, slots, and openings in other building components during progress of construction.

4. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, prior to placement of concrete and/or other structural components.
5. Where mounting heights are not detailed or dimensioned, install systems, materials, and equipment to provide the maximum headroom possible and advise the Owner prior to completion of such installations.
6. Coordinate connection of systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchise service (utility) companies, and controlling agencies. Coordinate and provide required connection for each service.
7. Install systems, materials, and equipment to confirm with approved submittal data, include coordination drawings. Confirm to arrangements indicated by the Contract Documents, recognizing that portions of the Work may be shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, immediately refer conflict to the Owner
8. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other building systems and components. Elements restricting such installation will be referred to the Owner
9. Install systems, materials, and equipment to facilitate servicing, maintenance, and repair or replacement of disconnecting, with minimum of interference with other locations and ease of access.

## PART 2 – PRODUCTS

Not Used

## PART 3 – EXECUTION

Not Used.

**END OF SECTION 01310**

## SECTION 01315

### PROGRESS MEETINGS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Division 0, Bidding and Contract Documents apply to this Section.
- B. Division 1, General Requirements of the Contract Documents apply to this Section.

##### 1.2 SUMMARY

- . This Section specifies administrative and procedural requirements for all project meetings including but not limited to the following:
  - 1. Field / Site Coordination Meetings.
  - 2. Construction Progress Meetings.
  - 3. Project Coordination / Information Response Meetings (By Owner)

##### 1.3 PROGRESS MEETINGS

- A. Conduct Field / Site Work Coordination meetings at a location and at appropriate times to be determined by the Owner. Notify the Owner no less than 48 hours prior to scheduled meeting date.

Conduct Construction Progress meetings at the Project site, or at such location designated by the Owner at regularly scheduled intervals. At the onset of the project these meeting shall be held on a weekly basis until such time as the frequency is changed by the Owner. Notify the Owner of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request.

Conduct Project Coordination / Information Response Meetings at such times as may be required and at a location to be approved by the Owner. Notify the Owner no less than 48 hours prior to scheduled meeting date.

- B. Agenda: Agendas and minutes for Field and Project Coordination meetings will be prepared by whoever (Contractor or Owner) requests the meeting. Agenda for regularly scheduled Construction Progress Meetings will be prepared by the Owner; minutes of those meetings will be prepared by the Contractor.. Review and provide comment on minutes of the previous (Field/Site Coordination, Progress or Project Coordination meetings. Review other items of significance that could affect progress. Include topics for discussion as appropriate in the current status of the Project.
  - 1. Contractor's construction schedule: Review progress since the last meeting. Determine where each activity is in relation to the construction progress schedule, whether on time or ahead or behind schedule. Determine how schedule can be improved if behind..
- C. Reporting: After each Construction Progress meeting date the Contractor will prepare and forward to the Owner, minutes of the meeting for review and comment. The Owner will distribute (corrected) copies of minutes of the meeting to each party present and to other

parties who should have been present. Contractor shall include a brief summary, in narrative form, of progress since the previous meeting and report.

1. Schedule Updating: Contractor will revise / update the construction schedule after each Construction Progress Meeting where revisions to the schedule have been made or recognized. Contractor will Issue the revised schedule, to the Owner, concurrently with the report / minutes of each meeting.

**PART 2 – PRODUCTS**

Not Used

**PART 3 - EXECUTION**

Not Used

**END OF SECTION 01315**

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## SECTION 01320

### CONSTRUCTION PROGRESS AND DOCUMENTATION

#### PART 1 - GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Schedule for Submittals
- B. Scheduling Personnel (NIC)
- C. Contract Milestones
- D. Submittal Schedule.
- E. Material Procurement Schedule.
- F. Construction Activities Schedule
- G. Construction Activities Schedule Revisions and Updates.
- H. Short Interval Schedule.
- I. Adjustments of Time for Completion.

##### 1.04 RELATED REQUIREMENTS

- A. Division 0, Bidding and Contract Documents in the Project Manual, more specifically Section 00750, Summary Schedule and Key Milestones apply to this Section..
- B. Division 1, General Requirements in the Project Manual, more specifically Section 01100, Summary of Work, Section 01330, Submittal Procedures and Section 01770, Close Out Procedures apply to this Section.

##### 1.05 SCHEDULE FOR SUBMITTALS

- A. Allow ten (10) calendar days for review and turnaround of any submittals as may be required in the Drawings and / or Technical Specifications. All required Submittals shall be forwarded directly to the Architect / Engineer of record with sufficient time to allow for review, approval, fabrication and delivery to support the Schedule as outlined. Copy of the transmittal only must be sent to the Owner.
- D. The Contractor shall submit the following as may be appropriate and acceptable to the Owner:
  - 1. Schedule of Submittals and Product Data: To be submitted within ten (10) calendar days from Notice to Proceed (NTP). Schedule shall show submittals commencing within ten (10) calendar days from NTP and completing within sixty (60) calendar days from NTP.
  - 2. Material Procurement Schedule: To be submitted within ten (10) calendar days from NTP.
  - 3. Construction Activities Schedule: To be submitted within ten (10) calendar days from NTP.
  - 4. Short Interval Schedule: To be submitted within seven (7) calendar days from NTP.
  - 5. Inspection and Material Testing Schedule: To be submitted within twenty-one (21) calendar days from NTP.
  - 6. Hot Laid Asphalt and Portland Cement Concrete Pour Schedules: To be submitted no less than five (5) calendar days prior to the date scheduled for the activity.

### 1.03 SCHEDULING PERSONNEL

- A. Not Included (NIC)

### 1.04 CONTRACT MILESTONES

- A. Key Milestones developed by the Owner and provided for in Division 0, Section 00750, Summary Schedule and Key Milestones in the Project Manual, are to be incorporated into the Contractor's Construction Schedule.
- B. Key Milestones: Key Contract Milestones (the "Milestones") are significant interim dates on the Critical Path of the Work and within the Contract Time at which certain portions of the Work must be either partially or totally complete in order for the Work to be in compliance with the Contract Documents
- C. Identify all Milestones in the Schedule Submittals, whether or not the Owner has identified those dates in the Bidding and Contract Documents.
- D. Milestones will be clearly identified in all Contractor submitted schedules and will serve as an essential instrument of measurement, by the Owner, of the Contractor's compliance with the Contract Documents.
- E. Failure by the Contractor to achieve Milestones by the Contract Dates may result in Owner implementing contractual remedies, as required, in order to regain the Contract Schedule.

### 1.05 SUBMITTAL SCHEDULE

- A. Within ten (10) calendar days after NTP, develop and submit a Schedule of Submittals on a form acceptable to the Owner. At a minimum, the Submittal Schedule shall be in the form of: (i) a hard copy and (ii) an electronic version ( PDF) to be approved by the Owner.
- B. Incorporate all submittals required by the Contract Documents for the duration of the Contract Time.
- C. Integrate the Submittal Schedule into the Contract Schedule and link material and equipment deliveries as appropriate to construction work activities.
- D. Submit status of the Submittal Schedule with the monthly Contract Schedule Status Submission.
- E. Indicate changes from the previous report with an asterisk.
- F. The Owner's review of the Submittal Schedule does not constitute it to be a complete listing of all submittals required by the Contract.

### 1.06 MATERIAL PROCUREMENT SCHEDULE

- A. Within ten (10) calendar days after the NTP, develop and submit a Material Procurement Schedule on a form acceptable to the Owner. At a minimum, the Submittal Schedule shall be in the form of (i) a hard copy and (ii) an electronic version ( PDF) to be approved by the Owner.
- B. Incorporate all material required by the Contract Documents for the duration of the Contract Time.
- C. Integrate the Material Procurement Schedule with the Schedule of Submittals and the Contract Schedule.
- D. Review the Material Procurement Schedule at the weekly scheduled Construction Progress Meeting.
- E. Submit status of the Material Procurement Schedule with the monthly Contract Schedule Status Submission.
- F. Indicate changes from the previous report with an asterisk.

## 1.07 CONSTRUCTION ACTIVITIES SCHEDULE

- A. Within ten (10) calendar days following NTP and prior to submission of the first Application for Payment, submit the Construction Activities Schedule (Project Schedule) both in (i) a hard copy and (ii) electronic version (PDF). The Project Schedule shall employ the Critical Path Method (CPM) and may utilize Microsoft Project or equal.
- B. Incorporate all Key Milestones as designated by the Owner in the Contract Documents, Division 0, Section 00750, as well as other Milestones the Contractor identifies as significant points in time.
- C. At a minimum, the Construction Activities Schedule (Project Schedule) shall include the following:
  - 1. A computer generated bar chart, based upon the CPM logic, organized by discipline and resource and sorted by early start, early finish.
  - 2. No work activity shall exceed fifteen (15) working days in duration, unless agreed upon by the Owner.
  - 3. Each activity shall be cost loaded to reflect the estimated value of performing the work. Activity cost shall consist of the sum of labor, materials, equipment, supervision and allocated overhead. The sum of all activity cost shall equal the Contract Sum.
  - 4. All Milestones, submittal dates and completion dates for all shop drawing activities, material procurement, fabrication and delivery dates shall be in support of the Construction Activities Schedule. Anticipated types and durations of usage for major equipment, and any other scheduling data relevant to the Work shall be included. .
  - 5. Activities required for Project Closeout shall include appropriate activities for obtaining Substantial Completion, Punch List, Punch Work, Final Inspections (including pre-inspections and system checkouts), Closeout Submittals (Certificates, Warranties, Manuals, Release of Liens, As-Constructed drawings etc.). Show Milestones for Substantial Completion, Temporary Certificate of Occupancy (where appropriate), Certificate of Occupancy, and Final Completion.
  - 6. Weather conditions, such as high or low ambient temperatures, wind, and/or precipitation, can influence progress of the work shall be considered and allowed for in the planning and scheduling of work. This is to ensure completion of the work within the Contract time. Weather conditions shall be determined by an assessment of average historical climatic conditions based upon the preceding ten (10) year records published for the locality by the U.S. Weather Bureau Service. Weather must be unusually severe and beyond the 10 year average to even be considered as having impacted the Project Schedule.
  - 7. The Project Schedule shall indicate holidays and any non-work days applicable to the schedule.
- D. Joint Review, Revision, and Acceptance of the Construction Activities Schedule:
  - 1. Within five (5) calendar days of receipt of Contractor's proposed Construction Activities Schedule (Project Schedule), the Owner and the Contractor shall meet for joint review of the Project Schedule to address corrections or adjustments needed. Any areas that conflict with timely completion of the Work of the Project shall be subject to revision by the Contractor at no cost to the Owner.
  - 2. Within five (5) calendar days after joint review, the Contractor shall revise and resubmit the Project Schedule in accordance with agreements reached during review. Within five (5) calendar days of resubmission of the revised proposed Project Schedule, the Owner and Contractor shall again meet for joint review.

3. Any areas of the schedule still not in compliance shall be corrected and the Project Schedule resubmitted for acceptance within three (3) calendar days of the joint review.
  4. If the Contractor fails to define any element of work, activity or logic, and the Owner's review does not detect this error or omission, such error or omission when discovered shall be corrected at the next monthly update without change to Contract Time, and at no cost to the Owner.
  5. If the Owner questions Contractor's proposed logic, activity duration or cost, Contractor shall provide satisfactory revisions or adequate justification, within five (5) calendar days of receipt of written request. Any changes to the Project Schedule shall be at the Contractor's sole cost and expense.
- E. The Project Schedule shall become the basis for tracking and measuring progress once the Owner has provided written acceptance of the Contractor's submittal. Acceptance of the Project Schedule by the Owner does not relieve Contractor of any responsibilities for the accuracy or feasibility of the schedule, or the Contractor's ability to meet Substantial Completion, Contract Completion and/or Key Milestones – Intermediate dates. Also, acceptance does not warrant, acknowledge or admit the reasonableness of logic, activity duration or cost loading of the Project Schedule.

#### 1.08 CONSTRUCTION ACTIVITIES SCHEDULE REVISIONS AND UPDATES

- A. The Construction Activities Schedule (Project Schedule) shall be updated monthly to show progress and submitted for the Owner's review. The Contractor shall provide the updated Project Schedule with each payment application. This shall include two (2) schedule hard copies and reports along with one electronic version using Microsoft Project or equal software. Non-submittal of the update will be grounds to withhold the Application for Payment.
- B. Updating of the Project Schedule to reflect actual progress shall not be considered revisions to the Schedule. The accepted Project Schedule cannot be changed (revised) without review and acceptance, by the Owner of the Contractor's proposed change.
- C. After the monthly Schedule Update, if the Project Schedule no longer represents actual progress of the Work, Contractor shall revise the Project Schedule to properly reflect progress and resubmit to the Owner. Any costs determined as a product of the Schedule Update shall be borne solely by the Contractor
- D. If Contractor desires to make changes in the Project Schedule to reflect revisions in method(s) of operating and scheduling of Work, Contractor shall notify the Owner in writing, stating the reason for the proposed revision. After the Owner accepts the proposed revision, the Contractor shall implement the revision within three (3) calendar days and submit the Project Schedule to the Owner for review and final approval. Any costs determined as a product of the Project Schedule changes shall be borne solely by the Contractor
- E. In addition, revisions to the Project Schedule that are requested by the Owner shall be made by the Contractor within three (3) calendar days of the requested revision.
- F. All revisions to the Project Schedule shall be identified by an appropriate activity code. The Contractor shall submit the proposed code structure to the Owner for approval. Approval of the codes and requested revision(s) are required prior to revising the accepted Project Schedule.
- G. If the Contractor defaults by failing to submit a Project Schedule, or provide the required updates or revisions, the Owner reserves the right to prepare the Project Schedule, update, or revision back-charging the Contractor for the cost of this work. In such an event:
  1. The Owner will request the Contractor's participation in the development of the Project Schedule, update or revision to assure the Project Schedule produced



accurately reflects Contract requirements and progress of the Work. The Contractor shall respond and participate in this effort within three (3) calendar days of the Owners request.

2. If the Contractor refuses to participate or cooperate with the Owner, then the Owner will develop the status of the Project Schedule to the best of its ability with the information available.
3. Whether the Contractor participates or not, the Project Schedule shall be issued for the use of a unilateral Change Order to the Contract as may be appropriate and determined by the Owner.

#### 1.09 SHORT INTERVAL SCHEDULE

- A. Within seven (7) calendar days from receipt of Notice to Proceed (NTP) the Contractor shall submit to the Owner a Short Interval Schedule.
- B. The Short Interval Schedule shall be a time-scaled, hand-drawn or computer generated schedule and be consistent with the timing and sequencing of the Construction Activities Schedule (Project Schedule). It is not required to be in a CPM format.
- C. The Short Interval Schedule shall depict all activities planned to occur within the next four (4) weeks from the data date and show status for activities, which have occurred within the prior one (1) week from the data date.
  1. Generally, no activity presented in the Short Interval Schedule shall have a duration greater than five (5) working days.
  2. The Owner, from time to time, may require the Contractor to further define activities on the Short Interval Schedule that have a duration greater than one (1) day.
- D. The Contractor shall update the Short Interval Schedule at a minimum of once a week for the duration of the project. It shall be submitted to the Owner at regularly scheduled Progress and Coordination meetings. The data date shall be within one (1) workday of the aforesaid meeting.
- E. The Short Interval Schedule shall be utilized with Contractor's prime and sub-contractors and other project parties for the near term coordination of the Work.
- F. All Milestones identified in the Contract and scheduled to take place within the calendar time frame of the Short Interval Schedule shall be included in the Schedule.

#### 1.10 ADJUSTMENT OF TIME FOR COMPLETION

- A. Time for Completion will be adjusted only in accordance with this Clause and the Contract Documents.
- B. Any request for adjustment of time for completion because of changes or alleged delays shall be accompanied by a complete and comprehensive **Time Impact Analysis Proposal**, which shall be submitted for approval within five (5) calendar days of the event causing delay. Failure to provide the proper notice within this time frame shall be construed as the Contractor's acceptance that the event causing delay can be absorbed into the Construction Activities Schedule (Project Schedule) without causing a delay to the project completion or any Key Contract milestone date.
- C. Each **Time Impact Analysis Proposal** shall provide information justifying the request and stating the extent of the adjustment requested. Each Analysis shall be in a form and content acceptable to the Owner and shall include, but not be limited to, the general information set forth in this section appropriate to the type of request (change or alleged delay) including the following:
  1. A fragnet (a detailed sub-level schedule) CPM Schedule illustrating how Contractor proposes to have the change or alleged delay incorporated into the current Updated Project Schedule.

2. Identification of activities in current updated Project Schedule, which are proposed to be amended due to the change or alleged delay, together with engineering estimates and other appropriate data justifying the proposal.
3. **Time Impact Analysis Proposals** shall be based upon the dates when the change or changes were issued, or dates when alleged delay or delays began, status of work at that time, and shall include time computations for affected activities.
4. Activity delays shall not automatically mean that an extension of the Contract Time is warranted or due to the Contractor . *It is the Owner's intention to own and control all float time indicated in the Project CPM Schedule.*
5. Contract Time Extensions or Key Contract Milestone Adjustments will only be considered when a Critical Path activity or activities are affected and a resulting delay extends the Contract Completion Date or Key Contract Milestone date(s).
6. Adjustment of a Key Contract Milestone date(s) may not necessarily result in an adjustment to the Contract Completion Date.
7. As an alternative to extending the Contract Completion Date or adjusting Key Contract Milestones, the Owner may require the Contractor to adjust the Project Schedule. This shall be accomplished by revising logic, adding resources, working crews on overtime, working additional shifts, and any other mitigating measures that the Owner determines is in the best interest of the project and the Public. Contractor agrees to fully cooperate with the Owner in finding the most effective (least cost) means to accomplish this task when requested.
8. Should the Owner find, after review of the **Time Impact Analysis**, that the Contractor is entitled to an extension of time for completion, the time extension for completion will be considered for approval by the Owner..
9. **Time Impact Analysis** related to Change Order Work and/or Contract Time Extensions shall be incorporated into and attached to the applicable Change Order to be prepared by the Owner.

## **PART 2 – PRODUCTS**

Not Used

## **PART 3 – EXECUTION**

Not Used

**END OF SECTION 01320**

## SECTION 01322

### PHOTOGRAPHIC DOCUMENTATION

#### PART 1 – GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall comply with and be responsible for all of the requirements of the Project Manual, without exception.
- B. Construction progress record photographs shall be taken by the Contractor periodically during the course of the Work as requested by the Owner.
- C. Furnish construction photographs taken at commencement of Work and at monthly intervals until completion of the Work.
- D. Views and quantities required:
  - 1. At each specified time, take photographs from numerous different views to show the progress of the Work. Indicate date photo was taken on all photographs.
  - 2. Furnish one (1) print or PDF file to the Owner.
  - 3. The Owner shall have the right to request fewer photographs be taken at certain intervals so more photographs may be taken at other times, providing the total number of photographs remains unchanged.
- E. Do not display photographs in publications, contests or other public or private forums without the express written consent of Owner.
- F. Assemble construction photographs at project closeout in accordance with requirements stipulated in Section 01781, Project Record Documents.

##### 1.02 RELATED REQUIREMENTS

- A. Division 1, General Requirements of the Project Manual. .
- B. Section 01781, Project Record Documents.

##### 1.03 COST OF PHOTOGRAPHY

- A. Contractor shall pay all costs for specified photography and prints.

#### PART 2 – PRODUCTS

##### 2.01 PRINTS

- A. Identify each print on back, listing time and date of exposure, location and orientation of view, Project name and address of photographer, and photographer's numbered identification of exposure.

## 2.02 DIGITAL IMAGES

- A. Digital Images will become the property of Owner with sole rights of reproduction.

## **PART 3 – EXECUTION**

### 3.01 VIEWS REQUIRED

- A. Consult with the Owner for instructions concerning views required at each specified visit to Site.
- B. Photographs from locations to adequately illustrate conditions of construction and progress status.

### 3.02 DELIVERY OF PRINTS

- A. Deliver images to the Owner as soon as processed.

**END OF SECTION 01322**

## SECTION 01330

### SUBMITTAL PROCEDURES

#### PART 1 – GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Submit shop drawings, product data, samples, coordination drawings and certifications concurrently as required in the applicable Drawings and / or Technical Specifications.
- B. Prepare and submit to the Owner no later than ten (10) calendar days after receipt of Notice to Proceed (NTP), a list of submittals required by each applicable Section of the Technical Specifications. Submit in accordance with this Section and the requirements of Section 01310, Project Management and Coordination.
- C. Designate in schedule data dates for submission and review of shop drawings, product data and samples and the date of return.

##### 1.02 RELATED REQUIREMENTS

- A. Division 1, General Requirements of the Project Manual.

##### 1.03 SHOP DRAWINGS

- A. Present drawings in a clear and thorough manner. Prepare original, project specific documents-do not reproduce Construction Documents.
- B. Identify details by reference to sheet and detail, schedule or room numbers shown on Contract Drawings or as may be referred to in the Technical Specifications..
- C. Consecutively number shop drawings for each section of Work. Retain numbering system throughout all revisions.
- D. Show detail, material, dimensions, thickness, methods of assembly, attachments and relationship to adjoining Work and other pertinent data and details.
- E. Verify dimensions and field conditions. Clearly indicate field dimensions and field conditions.
- F. Check and coordinate shop drawings of any Section or trade with requirements of other Sections or trades as related and as required for proper and complete installation of Work.
- G. Prepare composite shop drawings and installation layouts when necessary or requested to depict proposed solutions for tight field conditions. Coordinate in field with affected trades for proper relationship to work of other trades based on field conditions.

##### 1.04 PRODUCT DATA

- A. Preparation
  - 1. Annotate each sheet to clearly identify specific product or part installed, and specific data applicable to installation.

2. Show performance characteristics and capacities.
3. Show dimensions and clearances required.
4. Show wiring or piping diagrams and controls.
5. Indicate specified finish.
6. Indicate only those sheets, which are pertinent to specific product(s) with product clearly identified.

B. Manufacturer's standard schematic drawings and documents.

1. Modify drawings and diagrams to delete information which is not applicable to the Work.
2. Supplement standard information to provide information which is applicable to the Work.

### 1.05 SAMPLES

- A. Provide a minimum of two (2) samples, or as otherwise indicated in the Technical Specifications, of sufficient size to clearly illustrate:
1. Functional characteristics of the product, with integrally related parts and attachment devices.
  2. Full range of color, texture, and pattern.
  3. Samples shall be referenced to the applicable section of the Technical Specifications.

### 1.06 MANUFACTURER'S CERTIFICATION OF MATERIALS AND EQUIPMENT

- A. Before shop drawings or manufacturer's data for equipment are submitted for approval, a duly authorized manufacturer's representative of the proposed equipment shall review the design of the system relative to the proper operation of his/her equipment and material.
1. Shop drawings and/or manufacturer's data submitted shall include letter from manufacturer's representative certifying that his/her equipment and materials will operate and function satisfactorily under the proposed design conditions. If required by the jurisdiction having authority, data shall be signed and sealed by a South Carolina Registered Engineer in the respective discipline.
- B. Before the work is accepted, a duly authorized manufacturer's representative of the installed equipment shall inspect the installation and operation of his/her equipment and materials to determine that they are properly installed and properly operating in accordance with the manufacturer's recommendations.
- C. Systems requiring certification will be specified in each of the applicable Sections of the Technical Specifications.

### 1.07 CONTRACTOR REVIEW

- A. Contractor shall review all submittals prior to transmittal to the Architect / Engineer of record and the Owner.
1. The Contractor shall consecutively number all shop drawings and product data transmittals. Re-submittals would have the same number of the previous submittal followed by the suffix "A, B, C etc."
  2. The transmittal is to contain the Owner's RFP / Bid number and the applicable specification section for each product represented on the transmittal.

- B Apply Contractor's stamp to submittals, initialed or signed by authorized person and dated, certifying: review of submittal, verification of products, field measurements and field construction criteria, and coordination of information within submittal with requirements of Work and the Construction Contract Documents.
- C Submittals without Contractor's stamp or submittals which, in the Owner's and the Architect / Engineer of record opinion are incomplete, contain numerous errors, or have not been checked or have only been checked superficially, will be returned without comments. Delays resulting therefrom shall be solely the Contractor's responsibility.
- D. Clearly note proposed deviations from the Contract Documents on submittals. Submit listing identifying deviations in a format acceptable to the Architect / Engineer of record and the Owner.
- E. Contractor shall be responsible to ensure quantities and dimensions shown on submittals comply with the requirements of the applicable Drawing and Technical Specifications.

## 1.08 SUBMISSION REQUIREMENTS

- A. Make submittals promptly to the Architect / Engineer of record and the Owner in accordance with approved Submittal and Project Progress Schedule and in such sequence as to cause no delay in the Work.
- B. Number of submittals required:
  - 1. Shop Drawings: Submit one (1) electronic version (PDF) in addition to what the Contractor will require back; submit one (1) additional electronic version (PDF) each for civil, structural, mechanical, electrical or landscaping work.
  - 2. Product Data: Submit one (1) electronic version (PDF) that will be retained by the Architect / Engineer of record and the Owner..
  - 3. Samples: Submit the number stated in each of the respective Technical Specifications, with a minimum of one (1) sample, or as otherwise noted in the applicable Technical Specifications, for each item.
- C. Submittals shall contain:
  - 1. Date of submission and dates of any previous submissions.
  - 2. Owner RFP / Bid number.
  - 3. The names of:
    - a. Contractor.
    - b. Subcontractor.
    - c. Supplier.
    - d. Manufacturer.
  - 4. Identification of the product, with the applicable Specification Section number.
  - 5. Field dimensions, clearly identified as such.
  - 6. Relation to adjacent or critical features of the Work or Materials.
  - 7. Applicable standards, such as ASTM or Federal Specification numbers.
  - 8. Identification of deviations from Contract Documents and justification.
  - 9. Identifications of revisions on re-submittals.
  - 10. Additional information as required by Contract Documents.
  - 11. An 8 in. x 3 in. blank space for Contractor and Architect/Engineer stamps.

- D. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by the Architect / Engineer of record or Owner review of submittals
- E. Numbering system established by the Contractor. shall be agreeable to the Owner

#### 1.09 RESUBMISSION REQUIREMENTS

- A. Contractor will make any corrections or changes in the submittals required by the Architect / Engineer of record or the Owner, mark number of submission, and resubmit as required until approved; none of this shall be of any cost to the Owner.
- B. Shop Drawings and Product Data:
  - 1. Contractor will revise initial drawings and data, and resubmit as specified for the initial submittal.
  - 2. Contractor will indicate any changes which have been made other than those requested by the Architect / Engineer of record or the Owner.
  - 3. Mark number of submission and resubmit until accepted.
- C. Samples: Contractor will submit new samples as required for initial submittal. Remove samples, which are "rejected" or designated "resubmit."

#### 1.10 REVIEW RESPONSIBILITIES – ARCHITECT / ENGINEER OF RECORD (A/E)

- A. The A/E shall review submittals, when applicable, with responsible promptness in accordance with the requirements of the Project Manual.
- B. The A/E will affix stamp and initials or signature, and indicate requirements for revisions and re-submittal, if any.
- C. The A/E will return submittals to Contractor, with copy of transmittal to Owner, for distribution, or for resubmission within five (5) days of original receipt.

#### **PART 2 – PRODUCTS**

Not Used

#### **PART 3 – EXECUTION**

Not Used.

**END OF SECTION 01330**



## SECTION 01331

### SCHEDULE OF VALUES

#### PART 1 – GENERAL

##### 1.01 RELATED REQUIREMENTS

- A. Contractor shall submit to the Owner a Schedule of Values with line items allocated to various portions of the Work for the purpose of monitoring the progress of the work and administration of the Application for Payment Process with their response (Bid) to the RFP.
- B. Provide Owner, after receipt of the Notice to Proceed (NTP) and upon request by the Owner, including support values and data substantiating their accuracy and correctness.
- C. Division 0, Bidding and Contract Documents in the Project Manual.
- D. Division 1, General Requirements in the Project Manual.

##### 1.02 FORM AND CONTENT

- A. The Schedule of Values shall be tabulated to correspond with the Contractor's Application for Payment form, and shall be identified with:
  - 1. Title of Project, Location and Owner RFP or Bid Number.
  - 2. Project Manager for Contractor
  - 3. Name and Address of Contractor
  - 4. Contract Designation
  - 5. Date of Submission
- B. Schedule of Values shall be presented in accordance with the CSI format on a line item basis
- C. Listing of Component Items:
  - 1. Identify each line item with the number and title of the respective major section of the Technical Specifications.
  - 2. Provide breakdown of Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and Progress Reports. Break principal subcontract amounts down into several line items by completed task in various locations.
  - 3. Round off amounts to nearest whole dollar, total of all listed values shall equal total Contract Sum.
  - 4. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on Schedule of Values for initial cost of materials, for each subsequent state of completion, and for total installed value of that part of the Work.
  - 5. Costs of actual work-in-place may be shown as separate line items in Schedule of Values, such as:
    - a. Bonds
    - b. Insurance
    - c. Temporary facilities, services and controls.
    - d. Field supervision and layout
    - e. Testing
  - 6. Separate material cost and labor cost as directed or requested by the Owner
- D. For each major line item whose value is larger than five thousand dollars (\$5,000.00) list sub-values of major products or operations under the item.

- E. For various portions of the Work:
  - 1. Each item shall include a directly proportional amount of overhead and profit.
  - 2. For items on which progress payments will be requested for stored materials, break down the value into:
    - a. Cost of materials, delivered and unloaded, with taxes paid.
    - b. Total installed value.
- F. The sum of all values listed in the Schedule of Values must equal the total Contract Sum.

#### 1.03 SUB-SCHEDULE OF UNIT MATERIAL VALUES

- A. Not Included (NIC)

#### 1.04 RESUBMITTAL

- A. After review by the Owner, the Contractor may be requested to revise and resubmit Schedule of Values as may be determined appropriate by the Owner.
- B. Revised and approved Schedule of Values shall be resubmitted as part of monthly Application for Payment.

#### 1.05 MATERIALS STORED OFF - SITE

- A. Payment for materials and equipment stored off – site, and not on the property of Georgetown County shall be subject to, and comply with the following:
  - 1. Prior written approval from the Owner, of materials and equipment to be stored, and location of facilities to be used for storage.
  - 2. Storage of materials and equipment will be in a bonded warehouse. Proof of insurance shall be provided to the Owner in the name of Georgetown County.
  - 3. Contractor shall furnish an inventory, including invoices, for all stored materials and equipment that are included in the Application for Payment using a form acceptable to and approved by the Owner.
  - 4. Contractor shall issue a Bill of Sale to the Owner for all items.

### **PART 2 - PRODUCTS**

Not Used

### **PART 3 – EXECUTION**

Not Used

**END OF SECTION 01331**

## SECTION 01400

### QUALITY REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Contractor's Quality Control (QC), in addition to customary testing and control requirements and those included in the Construction Contract Documents.
- B. Manufacturer's field services, coordinated by the Contractor.

##### 1.02 RELATED REQUIREMENTS

- A. Division 0, Bidding and Contract Documents of the Project Manual.
- B. Division 1, General Requirements of the Project Manual.

##### 1.03 GENERAL QUALITY CONTROL

- A. Maintain Quality Control over construction activities, suppliers, manufacturers, products, services, site conditions, and workmanship of all personnel to assure Work is of specified quality.
- B. Quality inspections: Contractor to provide under \$8,000 allowance.
  - 1. Contractor shall be the first line of quality control and shall review all items for compliance with the Drawings and Technical Specifications reviewed and approved by the Owner. Prior to the Contractor's Testing Laboratory inspectors performing Quality Assurance (QA) review and inspections such as rebar placement, asphalt and concrete, piling inspection, soil compaction, etc., the Contractor shall have verified conformance to the requirements of the Construction Contract Documents, plans and technical specification prepared by the Architect / Engineer of record and reviewed and approved by the Owner.
  - 2. Maintain a written Quality Assurance / Control Program establishing the methods of assuring compliance to the contract documents. The Program shall be submitted to, reviewed and approved by the Owner. Quality Control personnel shall be identified at the initiation of the Project and shall be adequate to monitor the Work effectively and to enforce the Quality Assurance / Control procedures.
  - 3. Inspect each phase of Work for compliance with Contract Documents, plans and specification prepared by the Architect / Engineer of record and reviewed and approved by the Owner.
  - 4. Contractor shall have defective conditions corrected before calling for inspections and starting subsequent operations which would cover or are dependant upon the Work in question.
  - 5. Where visual inspection is not sufficient, such as in verifying slope of pavement or depth of retention / detention ponds for proper drainage, use instruments with qualified operators to inspect work.
  - 6. Secure the services of a testing laboratory when necessary to assist in evaluating quality.

#### 1.04 WORKMANSHIP

- A. Comply with industry standards, except when more restrictive tolerances or specified requirements are called for in Construction Contract Documents, plans and specifications prepared by the Architect / Engineer of record and reviewed and approved by the Owner.
- B. Perform work by persons qualified to produce workmanship of specified quality.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stress, vibration and other forces such as, but not limited to hurricane force winds.

#### 1.05 MANUFACTURER'S INSTRUCTIONS

- A. When required by the Technical Specifications, submit manufacturer's current printed instructions, in the quantity required for product data, for delivery, storage, assembly, installation, startup, adjusting and finishing, as necessary.
- B. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Construction Contract Documents, plans and technical specifications prepared by the Architect / Engineer of record and reviewed and approved by the Owner, Contractor shall re-submit and provide written clarification and explanation to the Architect / Engineer of record and the Owner.

#### 1.06 MANUFACTURER'S CERTIFICATES

- A. When required by the Technical Specifications, supplier/manufacturer shall provide qualified personnel to observe field conditions, conditions of the surfaces and installation, quality of workmanship, start-up of equipment, testing, adjusting and balancing of equipment as applicable, and to make appropriate recommendations.

#### 1.07 MANUFACTURER'S FIELD SERVICES

- A. When specified in the respective Technical Specification Sections, the supplier/manufacturer will provide qualified personnel to observe field conditions, conditions of the surfaces and installation, quality of workmanship, start-up of equipment, testing, adjusting and balancing of equipment as applicable, and to make appropriate recommendations.
- B. Manufacturer's Representative shall submit written report to Architect / Engineer of record and the Owner listing observations and recommendations.

#### 1.08 CONTRACTOR'S CERTIFICATION

- A. Contractor shall supply written certification that the Work, as installed, has been reviewed by him/her for compliance with the Contract Documents, applicable Drawings and Technical Specifications.

### **PART 2 – PRODUCTS**

Not Used

### **PART 3 – EXECUTION**

Not Used

**END OF SECTION 01400**

## SECTION 01410

### TESTING LABORATORY SERVICES

#### PART 1 – GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall employ and pay for the services of an Independent Testing Laboratory to perform specified testing of work and materials at the Project Site or at point of manufacture under the provided allowance. Contractor shall incorporate recommendations from testing results.
- B. The Contractor shall comply with and be responsible for all of the requirements of the Project Manual, without exception.

##### 1.02 RELATED REQUIREMENTS

- A. Conditions of the Contract: Inspections and testing required by laws, ordinances, rules, regulations, orders, or approvals of public authorities.
- B. Each specification section listed: Inspection and laboratory testing required, and standards for testing.
- C. Division 1, General Requirements of the Project Manual.

##### 1.03 QUALIFICATIONS OF LABORATORY

- A. Meet “Recommended Requirements for Independent Laboratory Qualification,” published by American Council of Independent Laboratories.
- B. Comply with the following requirements:
  - 1. ANSI/ASTM D3740: Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
  - 2. ANSI/ASTM E329: Standard Recommended Practice for Inspection and Testing for Concrete, Steel, and Bituminous Materials as Used in Construction.
- C. Authorized to operate in the State of South Carolina
- D. Submit copy of report of inspection of facilities made by Materials Reference Laboratory of National Bureau of Standards during the most recent tour of inspection, with memorandum of remedies of any deficiencies reported by the inspection.
- E. Testing Equipment:
  - 1. Calibrated at reasonable intervals by devices of accuracy traceable to either:
    - a. National Bureau of Standards.
    - b. Accepted values of natural physical constants.

#### 1.04 LABORATORY DUTIES

- A. Cooperate with the Owner and Contractor; provide qualified personnel after due notice from Contractor.
- B. Perform specified inspections, sampling and testing of materials and methods of construction:
  - 1. Comply with specified standards.
  - 2. Ascertain compliance of materials with requirements of Contract Documents.
- C. Promptly notify Owner and Contractor of observed irregularities or deficiencies of work or products.
- D. Promptly submit written report of each test and inspection: one (1) copy each to Owner and Contractor. Each report shall include:
  - 1. Date issued.
  - 2. Project title and Bid Number
  - 3. Testing laboratory name, address and telephone number.
  - 4. Name and signature of laboratory inspector.
  - 5. Date and time of sampling or inspection.
  - 6. Record of temperature and weather conditions.
  - 7. Date of test.
  - 8. Identification of product.
  - 9. Location of sample or test in the Project.
  - 10. Type of inspection or test.
  - 11. Results of tests and compliance with Contract Documents.
  - 12. Interpretation of test results, when requested by Owner
- E. Perform additional tests as may be required.

#### 1.05 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

- A. Laboratory is not authorized to:
  - 1. Release, revoke, alter or enlarge on requirements of Contract Documents.
  - 2. Approve or accept any portion of the Work.
  - 3. Perform any duties of the Contractor.
  - 4. Stop the Work.

#### 1.06 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate, together with laboratory personnel, will provide access to the point/location of the Work, and to manufacturer's operations.
- B. Secure and deliver to laboratory at designated location(s) adequate quantities of representational material proposed to be used and which require testing together with applicable proposed design mixes.
- C. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other material mixes which required control by the testing laboratory.
- D. Furnish copies of Products test reports to the Owner as required.

- E. Furnish incidental labor and facilities:
  - 1. To provide access to Work to be tested.
  - 2. To obtain and handle samples at the Project Site or at the source of the product to be tested.
  - 3. To facilitate inspections and tests.
  - 4. For storage and curing of test samples.
- F. Notify laboratory twelve (12) hours in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.
- G. Make arrangements with laboratory and pay for services to perform inspections, sampling and testing required.

#### 1.07 SOURCE OF MATERIALS

- A. Source of supply of each of materials required shall be acceptable to the Owner and before delivery is started.
- B. Representative samples shall be submitted for inspection or tests.
- C. Results obtained from testing samples will be used for preliminary approval, but will not be used as final acceptance of materials.
- D. If it is found that sources of supply, which have been approved, do not furnish product of uniform quality, or if product from any source proves unacceptable at any time, Contractor shall furnish approved material from another source without additional cost to Owner or delay in completion date.

#### 1.08 IDENTIFICATION

- A. Required samples submitted by Contractor shall be properly labeled for identification.
- B. Materials and/or equipment that have been inspected and/or tested shall be stored in a controlled area with suitable identification referencing tests and certifications.
- C. Continuous inventory shall be kept of all items in this area controlled by log in and log out with receiving and disbursing signatures.
- D. Copies of receiving or disbursing actions shall be sent to the Owner on a daily basis.
- E. Disbursing records shall show final destination and installation.

#### 1.09 MATERIAL STORAGE

- A. Materials shall be stored so as to ensure preservation of their quality and fitness for Work, in accordance with requirements of Section 01620, Storage and Protection.

#### 1.10 SCHEDULE OF INSPECTIONS AND TESTS

- A. Refer to each individual Section of the Project Manual for specific testing requirements, or as otherwise required by the Contract Documents or appropriate regulatory agency.

**PART 2 – PRODUCTS**

Not Used.

**PART 3 – EXECUTION**

Not Used.

**END OF SECTION 01410**



## **SECTION 01500**

### **TEMPORARY FACILITIES AND UTILITIES**

#### **PART 1 – GENERAL**

##### **1.01 REQUIREMENTS INCLUDED**

- A. The Contractor shall comply with and be responsible for all of the requirements of the Project Manual and the Construction Contract Documents.
- B. Furnish, install and maintain temporary utilities required for construction, to be removed at completion of Work.
- C. Provide and maintain methods, equipment, and temporary construction required to control environmental conditions at construction site and other areas under Contractor's control. Remove evidence of temporary facilities at completion of Work.
- D. Furnish and pay for installation of all temporary utilities, permanent utilities except as provided by Owner, or fuel required for testing of installed equipment and systems.

##### **1.02 RELATED REQUIREMENTS**

- A. Division 1, General Requirements of Project Manual.

##### **1.03 REQUIREMENTS OF REGULATORY AGENCIES**

- A. Comply with National Electric Code (NEC), federal, state, and local codes and regulations and with utility company requirements.
- B. Comply with State of South Carolina regulatory agencies having judicial authority.
- C. All affected Utility Organizations should be contacted by the Contractor to arrange temporary utilities. The appropriate Utility Organization, as well as other Contacts are listed on the cover sheet of the construction contract drawings.

#### **PART 2 – PRODUCTS**

##### **2.01 MATERIALS, GENERAL**

- A. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

##### **2.02 TEMPORARY ELECTRICITY AND LIGHTING**

- A. Arrange with utility provider for temporary service.
- B. Contractor will pay all electrical consumption charges.
- C. Furnish and install circuit and branch wiring, transformers, temporary meters, weatherproof area distribution boxes, and any other devices necessary, located so that

power and lighting is available throughout the construction by the use of construction-type power cords.

- D. Provide adequate artificial lighting for day and night operations, minimum 35-foot candle power for finish work within all areas of the Project.

2.03 TEMPORARY HEAT AND VENTILATION  
[not included]

2.04 TEMPORARY TELEPHONE SERVICE  
[not included]

2.05 TEMPORARY WATER

- A. Arrange with utility provider for temporary service.
- B. Contractor will pay all water consumption charges.

2.06 TEMPORARY SANITARY FACILITIES

- A. Provide portable chemical-type sanitary facilities in compliance with applicable health laws, and state, county and local regulations and ordinances.
- B. Service, clean and maintain facilities and enclosures.
- C. Facilities shall be fitted with approved sanitary holding capacity and shall be emptied periodically to prevent overflow. Legal disposal of sanitary waste must be off-site and is Design/Builder's responsibility.
- D. Construction workers and project staff shall not use permanent plumbing facilities
- E. Sanitary facilities failing to meet required standards or maintenance methods shall be corrected immediately.
- F. Contractor will pay all costs for installation, maintenance and removal.

2.07 TEMPORARY FIRE PROTECTION

- A. During construction, provide temporary fire protection and life safety provisions in accordance with local jurisdiction requirements, the International Code and / or NFPA Standards.
- B. A "Hot Work" permit may be required when welding or cutting operations are to take place. Take necessary precautions in welding or cutting operations to keep work area free of combustible materials. Do not use welding equipment around flammable liquids or vapors.
- C. Keep welding and cutting equipment outdoors wherever possible. Remove welding and cutting equipment from any structure daily, wherever practical.
- D. At completion of welding or cutting operations, inspect work and adjacent area for hazards. When operations are near any building opening, inspect areas above, below or adjacent to work area hazards.

- E. Do not open, turn off, interfere with, attach any pipe or hose to, or connect anything to any fire hydrant, stop valves, or stop cock, or tap any water main without prior written permission of proper authority or the Owner.

### **PART 3 – EXECUTION**

#### **3.01 GENERAL**

- A. Comply with local jurisdiction and all other applicable requirements as stated in this Section.
- B. Contractor shall obtain and pay for all required permits for the Work.

#### **3.02 REMOVAL**

- A. Completely remove from the project site temporary materials and equipment when their use is no longer required.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities immediately after removal.
- C. Restore existing facilities used for temporary services to specified, or to original, condition.
- D. Restore permanent facilities used for temporary services to specified condition.
  - 1. Prior to final inspection, remove temporary lamps and install new lamps where appropriate.

**END OF SECTION 01500**

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## SECTION 01510

### TEMPORARY CONSTRUCTION CONTROLS

#### PART 1- GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall comply with and be responsible for all of the requirements of the Project Manual, without exception.
- B. Furnish, install and maintain temporary controls required for construction.
- C. Remove all temporary controls at completion of Work.

##### 1.02 RELATED REQUIREMENTS

- A. Division 1, General Requirements of the Project Manual.

##### 1.03 CONSTRUCTION SITE CLEANING

- A. Maintain areas within limits of the Project Work Site free of extraneous debris and litter.
- B. Initiate and maintain specific program to prevent accumulation of debris at construction site, storage and parking areas, or along access roads and off site hauls routes.
  - 1. Furnish on-site containers for collection of waste materials, debris and rubbish.
  - 2. Prohibit overloading of trucks to prevent spillage on access and haul routes.
  - 3. Provide periodic inspection of traffic areas to enforce requirements.
  - 4. Remove waste material, debris and rubbish from site and building area daily, or sooner as otherwise needed.
  - 5. Do not drop or throw materials from heights. Lower waste material in a controlled manner and with as few handlings as possible.
  - 6. During entire construction period, and at all times, keep the site access entry road, parking areas free from accumulation of waste materials, debris and rubbish caused by the Work of this Project.
  - 7. Dirt and debris shall be removed from all surfaces prior to closure of all areas (walls, ceilings, chases, etc.).
- C. Hazards Control:
  - 1. Store volatile wastes in covered metal containers.
  - 2. Remove containers from premises daily.
  - 3. Prevent accumulation of wastes, which create hazardous conditions.
  - 4. Provide adequate ventilation during use of volatile or noxious substances.
- D. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws:
  - 1. Do not burn or bury rubbish and waste materials on project site.
  - 2. Do not dispose of wastes into streams or waterways.
  - 3. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.

#### 1.04 DUST CONTROL

- A. Provide positive methods and apply dust control materials to minimize raising dust from construction operations and provide positive means to prevent air-borne dust from dispersing into atmosphere.
- B. Clean interior building areas to prevent accumulation of dirt and debris and execute prior to start of finish painting, special coatings, and/or other finish material installations.
- C. Wet down materials and rubbish to prevent blowing dust.
- D. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- E. Continue cleaning on an as-needed basis until building and/or site is ready for beneficial occupancy.

#### 1.05 EROSION AND SEDIMENT CONTROL

- A. Plan and execute construction and earthwork by methods to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation. Wetland areas shall be protected as well.
  - 1. Hold areas of bare soil exposed at one time to minimum.
  - 2. Provide temporary control measures such as berms, dikes, and drains.
  - 3. Comply with federal, state and local regulations.
- B. Construct fills and soil waste areas by selective placement to eliminate surface soils or clay, which will erode.
- C. Periodically inspect earthwork to detect any evidence of start of erosion, apply corrective measures as required for erosion control.

#### 1.06 POLLUTION CONTROL

- A. Provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by discharge of noxious substances from construction operations.
- B. Contractor is responsible only for pollution control of the immediate Work of the Contract, the actions and operations of the Contractor, and the workers employed or contracted to Contractor. Provide equipment and personnel to perform emergency measures required to contain spillage, and to remove contaminated soil or liquids.
- C. Take special measures to prevent harmful substances from entering public waters. Prevent disposal of wastes, effluents, chemicals or other such substances adjacent to basins, or in sanitary or storm sewers.
- D. Provide systems for control of atmospheric pollutants. Prevent toxic concentrations of chemicals. Prevent harmful disposal of pollutants into atmosphere.

## 1.07 WATER CONTROL

- A. Provide methods to control surface water to prevent damage to project site or adjoining properties. Control fill, grading, and ditching to direct surface drainage away from excavations, pits, tunnels and other construction areas. Direct drainage to proper runoff.
- B. Provide, operate, and maintain hydraulic equipment of adequate capacity to control surface and water.
- C. Dispose of drainage water in manner to prevent flooding, erosion or other damage to any portion of site or adjoining areas.
- D. Dewater areas in accordance with applicable local and state requirements and accepted professional practice.

## 1.08 EARTH CONTROL

- A. Contractor shall, at his/her sole cost, remove excess soil, pier spoils, etc., at time of generation.

## **PART 2 – PRODUCTS**

Not Used

## **PART 3 – EXECUTIONS**

### 3.01 REMOVAL

- A. Contractor shall, at his/her sole cost, remove temporary construction controls at the completion of the Work, or as required by execution of the Work or as may be directed by the Owner.

**END OF SECTION 01510**

## **SECTION 01530**

### **BARRIERS**

#### **PART 1 – GENERAL**

##### **1.01 REQUIREMENTS**

- A. The Contractor shall comply with and be responsible for all the requirements of Division 1, General Requirements of the Project Manual, without exception.
- B. Provide and maintain barriers and lighted barriers for the protection of personnel and materials in accordance with the requirements of applicable state and local codes.
- C. Install barriers at the start of construction.

##### **1.02 RELATED WORK**

- A. Section 01510, Temporary Construction Controls

##### **1.03 REGULATORY AGENCIES**

- A. Comply with federal, state, and local, municipal regulations and with utility company and insurance agencies' requirements.

#### **PART 2 – PRODUCTS**

##### **2.01 MATERIALS, GENERAL**

- A. Materials and equipment must be adequate in capacity for the required usage, and not violate applicable codes and standards.
- B. Provide warning signs to help prevent damage and injury.
- C. Should it become necessary to remove safety items it shall be the Contractor's responsibility to replace the item immediately in conformance with applicable codes, standards and regulations.
- D. Wood materials used in barricades and barriers within any building and in material storage areas shall be fire-retardant.

##### **2.02 BARRICADES**

- A. Protect all vertical shafts with safe, temporary railings, adequately braced.
- B. Cover trenches and holes when not in use. Erect barriers at sharp changes in plane of more than 3 feet.

##### **2.03 CONSTRUCTION FENCE**

- A. Prior to starting Work at Project Site the Contractor, as may be directed by the Owner, shall install enclosure fence with locked entrance gates.

- B. Provide construction fence around material storage and construction areas to prevent unauthorized access. Comply with local, municipal and / or Georgetown County requirements for construction barriers.
- C. Provide minimum number of gates, padlocked during non-working hours as may be directed by the Owner.
- D. Locate personnel gates as necessary to provide controlled entry from construction parking to construction area, as may be directed by the Owner.

#### 2.04 CONSTRUCTION LIGHTING

- A. Provide construction lighting throughout construction areas as may be required and necessary to maintain safety and security.
- B. Maintain lighting on a daily basis, including weekends, holidays, and foul-weather days so that the Project Site is adequately lighted at all times in the interest of safety and security.

### **PART 3 – EXECUTION**

#### 3.01 REMOVAL

- A. Contractor shall, at his/her sole cost, completely remove barricades, including barricades foundations when construction has progressed to a point that they are no longer required, and when requested by the Owner.

#### 3.02 CLEANING

- A. Clean and repair damage caused by the Work of this Section. Fill and grade the areas of the Site to required elevations and slopes, and clean the area.

**END OF SECTION 01530**



## SECTION 01550

### ACCESS ROADS AND PARKING AREAS

#### PART 1 – GENERAL

##### 1.01 REQUIREMENT INCLUDED

- A. The Contractor shall comply with and be responsible for all the requirements of Division 1, General Requirements of the Project Manual without exception.
- B. Access to and egress from the Project Site will be gained only via routes as shown on the Plans and/or approved by Owner. Contractor is responsible for providing access as instructed per Owner. Contractor and trade contractors of all tiers shall be responsible to comply with these requirements.
- C. Install barriers and necessary traffic controls at start of construction to protect public and leave in place throughout construction. Remove at end of construction.
- D. Contractor is responsible for assessing risk to public and providing any necessary lights and/or barriers as needed and/or required by law.
- E. Contractor shall be responsible to repair all damage to in and around the site or access roads/parking areas to the site.

##### 1.02 RELATED WORK

- A. NIC

##### 1.03 REGULATORY AGENCIES

- A. Comply with federal, state and local codes and regulations, and with utility company and insurance agencies' requirements.

#### PART 2 – PRODUCTS

##### 2.01 GENERAL

- A. If repair to public or private roadways is necessary due to damage by construction traffic, materials and methods used for repairs are to be acceptable to the applicable jurisdictional authority and are to match existing conditions. Contractor shall perform such work at his/her sole cost and expense.
- B. Provide warning signs to help prevent damage and injury and to promote safety.
- C. Should it become necessary to remove safety items, it shall be Contractor's responsibility to replace them immediately, in conformance with applicable regulations. Contractor shall perform such work at his/her sole cost and expense.

##### 2.02 PARKING

- A. Contractor's vehicles and employee parking shall be confined to an area identified within the site limits and as directed by the Owner.

## 2.03 STAGING

- A. Contractor shall confine materials, products, equipment and temporary facilities within site limits and as directed by the Owner.

## PART 3 – EXECUTION

### 3.01 REMOVAL

- A. Temporary construction shall be removed at completion of Work or as required by execution of Work at the Contractor's sole cost and expense.
- B. Areas shall be returned to original or better condition unless otherwise required by the Owner.

**END OF SECTION 01550**

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## **SECTION 01563**

### **HANDLING OF INCIDENTAL FUEL SPILLAGE DURING CONSTRUCTION**

#### **PART 1 – GENERAL**

##### **1.01 RELATED REQUIREMENTS**

- A. Division 0, Bidding and Contract Documents in the Project Manual.
- B. Division 1, General Requirements in the Project Manual.
- C. South Carolina Dept. of Health and Environmental Controls (SCDHEC)

##### **1.02 SCOPE**

- A. This section consists of procedures to be followed in handling material contaminated with petroleum fuel products (hydrocarbons including petroleum, petroleum derivatives, hydraulics and like products) caused by incidental spillage (including leaks) from the Contractor's or his/her prime and sub-contractor's equipment.

Incidental spillage shall mean spillage of a quantity not greater than 25 gallons per incident, of vehicular or mechanical equipment fuel products, onto open ground and absorbed or not absorbed by the soils.

Spillage or leakage of petroleum fuel products in quantities in excess of 25 gallons shall be immediately remediated by the Contractor using applicable and appropriate procedure(s). Whenever such spillage or leakage occurs, the Contractor shall immediately implement the appropriate corrective actions as required.

- B. The provisions of this Section are limited to incidental petroleum fuel spillage on ground surfaces and it excludes fuel spillage onto surface waters.

##### **1.03 APPLICABLE CODES**

- A. The Contractor shall comply with all prevailing federal, state, and local environmental protection ordinances and codes governing and having application to and any discharges, intentional or accidental, which may cause water pollution and constitute a nuisance, and sanitary nuisance.
- B. Leaks and spillage may occur when using mechanical equipment. Equipment generated or lubricated with petroleum products, is prone to leaks or spillages, therefore proper management of "spillage incidents" is essential.

#### **PART 2 – PRODUCTS**

##### **2.01 ABSORBENT MATERIALS**

Contractor shall equip crews and/or provide machinery with the most efficient type of petroleum absorbent materials. These materials are available at petroleum equipment suppliers and must be readily accessible so that spillages can be quickly contained and prevented from becoming greater incidents. Fiber material, sand or cat litter may be used as an absorbent material. Sufficient quantity of absorbent material capable of absorbing up to 25 gallons of petroleum fuel products shall be stocked at the job site at all times.

## PART 3 - EXECUTION

### 3.01 PROCEDURES

- A. Personnel handling waste materials must have a minimum of 40 hours training as defined in 29 CFR 1910.120 and in accordance with the certified OSHA course.
- B. Perform work as specified herein and in accordance with the applicable provisions of South Carolina Dept. of Transportation (SCDOT) and South Carolina Dept. of Health and Environmental Controls (SCDHEC). No payment will be made to the Contractor for the cost of handling and disposing of leaks, spillages and materials, soils and environment contaminated by such leaks or spillages.

The procedure for the proper handling and disposal of contaminated soils and absorbent materials is readily available through the aforementioned agencies:

- C. The steps outlined below are minimum requirements and are merely presented as guidelines. They do not constitute a complete compliance procedure.

#### STEP 1:

If a fuel contamination to open ground has been discovered, check for the origin of that leak or spillage. Then stop the spillage or leak and positively contain it, and then use absorbents to collect the discharged liquid. Immediately notify the Owner.

#### STEP 2:

Sand may be used to absorb ground surface spills while absorbent materials may be used to absorb ground spills as well as surface water spills. Once absorption of spilled fuels is complete the impacted (contaminated) absorbent materials shall be stored in 55-gallon steel drums (100-150 lbs.). If leaked or spilled fuel has been absorbed into the soils, excavate and containerize the impact (contaminated) soils. Soils may be stored in 55- gallon steel drums.

#### STEP 3:

The contaminated materials must be collected, containerized and otherwise properly stored and labeled prior to transport to a pre-approved storage, disposal or treatment facility. All drums used to store impacted (contaminated) absorbent material and/or contaminated soils shall be properly sealed and labeled with the following information.

Name of Company (Contractor)

RFP / Bid No.:

Location of origin:

Type of contents:

Type of containment:

Quantity: (e.g. 1 of 1)

Date:

Containerized by:

Labeled by:

**END OF SECTION 01563**

## SECTION 01570

### TRAFFIC REGULATION

#### PART 1 – GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall comply with and be responsible for all of the requirements of the Project Manual, without exception.
- B. Construction parking control, flagmen, flares and lights, haul routes, traffic signs and signals, and removal.
- C. The Contractor shall comply with and be responsible for traffic control planning and implementation as may be directed and approved by SCDOT and the Owner.
- D. Maintenance of safety and convenience of public.

##### 1.02 RELATED WORK

- A. Division 1, General Requirements of the Project Manual.

##### 1.03 PUBLIC SAFETY AND CONVENIENCE

- A. Materials and equipment shall be stored and Work conducted to minimize obstruction to pedestrian movement and vehicular traffic. Materials and equipment stored in or near path of traffic shall be protected with appropriate warning signs and barricades. At night, or as otherwise required, equipment not in use shall be stored in such manner and location to not interfere with safe passage of pedestrians and vehicles. Contractor shall provide and maintain flagmen at points and for periods of time required to provide safety and convenience of traffic, and as may be required by the SCDOT and as directed by the Owner
- B. Contractor shall not close traffic to any bridge, culvert, or any other portion of public road except as designated. in the Construction Contract Documents. Prior to closing any access way and/or structure coordinate Work schedule with the Owner and the SCDOT if applicable.
- C. Contractor shall provide the Owner with notice at no less than 48 hours prior to movement of heavy equipment and/or wide or slow moving vehicles to or from Project Site. Contractor shall strictly adhere to vehicular routes established or as may be directed by the Owner and / or the SCDOT if applicable..

##### 1.04 HAUL ROUTES

- A. Based on regulations prescribed by the South Carolina Dept. Transportation (SCDOT), Georgetown County or any other agency having jurisdiction, use only established roadways or use temporary roadways constructed by Contractor when and as authorized by the Owner. When materials are transported in executing the Work vehicles shall not be loaded beyond loading capacity recommended by manufacturer of vehicle or prescribed by federal, state, or local law or regulation. When it is necessary to cross curbs or sidewalks, Contractor shall protect them from damage, and shall repair or pay for repair of all damaged curbs, sidewalks, roads and/or paving.

## 1.05 TRAFFIC SIGNS AND SIGNALS

- A. At approaches to site and on-site, install signs or signals at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public vehicular, waterway, and pedestrian traffic. This should be included in the Contractor's approved Traffic Control Plan.
- B. Install and operate traffic control signals to direct and maintain orderly flow of traffic in areas under Contractor's control, and areas affected by Contractor's operations.
- C. Relocate traffic control signs and signals as Work progresses, to maintain safe and effective traffic control.
- D. Coordinate with construction signs described in Section 01580, Project Identification and Signs.

## 1.06 FLAGMEN

- A. Provide trained and equipped flagmen to regulate traffic when construction operations and/or traffic encroach on public vehicular or pedestrian traffic lanes.

## 1.07 FLARES AND LIGHTS

- A. Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic in landside areas only.

## **PART 2 – PRODUCTS**

### 2.01 SIGNS, SIGNALS AND DEVICES

- A. Post-mounted and wall-mounted at parking areas to indicate spaces designated for use by construction personnel.
- B. Traffic control signals, as required, and as approved by SCDOT and the Owner.
- C. Traffic cones and drums and lights, as approved by SCDOT and the Owner.
- D. Flagmen equipment as required by SCDOT and the Owner.

## **PART 3 – EXECUTION**

### 3.01 REMOVAL

- A. Contractor shall remove equipment and devices, at his/her sole cost, when no longer required. Repair damage caused by installation. Remove post settings to depth of three (3) feet.

**END OF SECTION 01570**

## **SECTION 01580**

### **PROJECT IDENTIFICATION AND SIGNS**

#### **PART 1 – GENERAL**

##### **1.01 REQUIREMENTS INCLUDED**

- A. The Contractor shall comply with and be responsible for all requirements of the Project Manual, without exception.
- B. The Contractor shall comply with applicable requirements in this Section and more specific requirements of Section 00800, Special Project Conditions and Section 01100, Summary of Work.
- C. Furnish, install and maintain Project Identification Signs.
- D. Provide temporary, on site informational signs to identify key elements of the construction facilities.
- E. Remove Project Identification Signs upon completion of the construction Work of this contract.
- F. Allow no other signs to be displayed.
- G. Submit Shop Drawings of the proposed Project Identification Sign within fifteen (15) calendar days of the Notice to Proceed (NTP).

##### **1.02 RELATED REQUIREMENTS**

- A. Division 1, General Requirements of the Project Manual.

#### **PART 2 – PRODUCTS**

##### **2.01 SIGN MATERIALS**

To Be Determined By Owner

##### **2.02 TEMPORARY SIGNAGE**

To Be Determined By Owner

#### **PART 3 – EXECUTION**

##### **3.01 PREPARATION**

The Contractor shall be responsible for the cost of preparing and installing the Sign

##### **3.02 MAINTAINANCE**

The Contractor shall be responsible for the cost of maintaining the Sign.

3.03 REMOVAL

The Contractor shall be responsible for the cost of removing the Sign.

**END OF SECTION 01580**

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## SECTION 01590

### FIELD OFFICE AND SHEDS

#### PART 1 – GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Contractor shall comply with and be responsible for all requirements of the Project Manual without exception.
- B. Contractor shall comply with applicable requirements in this section and more specifically the requirements in Division 1, Section 01100, Summary of Work.

##### 1.02 SCOPE

- A. Furnish, install and maintain temporary construction offices throughout duration of the Construction Work of this contract; remove at completion of Work.
- B. Furnish, install and maintain work sheds as required for construction. Remove at completion of Work.
- C. Restore Site to original condition, unless otherwise required by the Contract Documents.

##### 1.03 RELATED WORK

- A. Division 1, General Requirements of the Project Manual are applicable.

#### PART 2 – PRODUCTS

##### 2.01 FIELD OFFICES

- A. Furnish, install and maintain temporary field office during entire construction period for Contractor use and separate, but attached, office and plan room for Owner field representative.
- B. Field office shall be structurally sound, weather tight, with floors raised above ground meeting requirements of the local and applicable building Code. At Contractor's option, portable or mobile buildings may be used. Do not use mobile buildings for living quarters.
- C. Provide heating or air conditioning as dictated by outside temperatures.
- D. Field office shall have operable, screened windows with locks.
- E. Contractor shall provide his own janitorial services.
- F. Field offices shall include either fixed or portable plan racks or shelving.
- G. The Contractor, prime and each subcontractor shall provide adequate provisioned first aid kits on the Project Site for personnel employed by him/her and for the convenience of all workmen employed on the Project Site.

- H. Field office shall be located by Contractor, or as may be directed by the Owner.

## 2.02 DRINKING WATER

- A. Furnish potable water for drinking of all personnel connected with the Work of this contract.
- B. Pipe or transport water to keep clean and fresh.
- C. Provide drinking water in suitable containers or dispensers and paper cups located in close proximity to where work is in progress.
- D. Provide field offices with bottled drinking water, dispenser and cooling apparatus. Contractor shall pay for service, maintain daily, and remove when offices are removed.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

- A. Construct or locate construction offices and sheds on proper foundation, with utility connections, provide steps and landing at entrances.
- B. Locate a thermometer in a convenient outdoor location, out of direct sunlight. Maintain record of a daily weather conditions to include temperature range, wind conditions, time and amount of rainfall, and sky conditions.
- C. Locate construction offices and sheds as directed by the Owner

### 3.02 MAINTENANCE

- A. Provide daily janitorial cleaning and maintenance of construction office, sheds, furnishings, and equipment as required or requested.

### 3.03 REMOVAL

- A. Remove construction office and sheds including foundations and contents at completion of project, when no longer needed, or as directed by the Owner
- B. Grade site to required elevation and clean the area upon the removal of the temporary offices and sheds.

**END OF SECTION 01590**

## SECTION 01600

### PRODUCT REQUIREMENTS

#### PART 1 - GENERAL

##### 1.1 RELATED REQUIREMENTS

- A. Division 0, Bidding and Contract Documents of the Project Manual without exception.
- B. Division 1, General Requirements of the Project Manual without exception.

##### 1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Construction Contract.
- B. Procedural requirements governing the Contractor's selection of products and product options are included under Section 01610, Materials and Equipment.

##### 1.3 DEFINITIONS

- A. Definitions used in this Section are not intended to change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "Substitutions." The following are not considered substitutions:
  - 1. Substitutions requested by Bidders during the bidding period, and accepted prior to award of Contract, are considered as included in the Construction Contract Documents and are not subject to requirements specified in this Section for substitutions.
  - 2. Revisions to Construction Contract Documents requested by Georgetown County
  - 3. Specified options of products and construction methods included in Contract Documents.
  - 4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

##### 1.4 SUBMITTALS

- A. Substitution Request Submittal: Requests for substitution will be considered if received within thirty (30) calendar days after commencement of the Work. Requests received more than thirty (30) calendar days after commencement of the Work may be considered or rejected at the discretion of the Owner.
  - 1. Submit one (1) digital copies of each request for substitution for consideration. Submit requests in the form to be provided by the Owner and in accordance with procedures required for Change Order proposals to be established by the Owner
  - 2. Identify the product, or the fabrication or installation method to be replaced in each request. Include related Technical Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:

- a. Product Data, including Drawings and descriptions of products, fabrication and installation procedures.
  - b. Samples, where applicable or requested.
  - c. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.
  - d. A statement indicating the substitution's effect on the Contractor's Construction Progress Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
  - e. Cost information, including a proposal of the net change, if any in the Contract Sum.
  - f. Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Construction Contract Documents. Include the Contractor 's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.
3. Owner's Action: Within one (1) week of receipt of the request for substitution, the Owner may request additional information or documentation necessary for evaluation of the request. Within two (2) weeks of receipt of the request, or one (1) week of receipt of the additional information or documentation, which ever is later, the Owner will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified by name. Acceptance will be in the form of a Change Order.

## **PART 2 - PRODUCTS**

### **2.1 SUBSTITUTIONS**

- A. Conditions: The Contractor's substitution request will be received and considered by the Owner when one or more of the following conditions are satisfied, as determined by the Owner, otherwise requests will be returned without action except to record noncompliance with these requirements.
1. Extensive revisions to Construction Contract Documents are not required.
  2. Proposed changes are in keeping with the general intent of the Construction Contract Documents.
  3. The request is timely, fully documented and properly submitted.
  4. The request is directly related to an "or equal" clause or similar language in the Construction Contract Documents.
  5. The specified product or method of construction cannot be provided within the Contract time. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
  6. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
  7. A substantial advantage is offered the Owner in terms of cost, time, energy conservation or other considerations of merit after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect / Engineer of record for redesign, increased cost of other construction elements by the Owner or other separate Contractors, and similar considerations.

8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
  9. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
  10. The specified product or method of construction cannot provide a warranty required by the Construction Contract Documents and where the Contractor certifies that the proposed substitution will provide the required warranty.
- B. The Contractor's submittal and the Owner's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.
- C. Substitution request constitutes a representation that the Contractor:
1. Has investigated the proposed product and determined that it meets or exceeds, in all respects, the product specified.
  2. Will provide the same warranty for substitution as for the product specified.
  3. Will coordinate installation and make other changes, which may be required for work to be complete in all respects.
  4. Waives claims for additional costs, which may subsequently become apparent. All costs associated with the substitution will be paid for by the Contractor regardless of approvals given, and regardless of subsequent difficulties experienced as a result of substitutions.

### **PART 3 - EXECUTION**

Not Used

**END OF SECTION 01600**

## SECTION 01610

### MATERIALS AND EQUIPMENT

#### PART 1 - GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall comply with and be responsible for all requirements of the Project Manual, without exception.
- B. The Contractor shall comply with the applicable requirement in this Section, and the requirements of Division 1, Section 01100 Summary of Work.
- C. Division 1, Section 01600, Product Requirements.
- D. Division 1, Section 01770, Closeout Procedures

##### 1.02 RELATED WORK

- A. Division 1, General Requirements of the Project Manual .

##### 1.03 SCOPE

- A. General storage and protection of project materials and equipment.
- B. Furnish, install and maintain storage sheds as required for protection of materials and equipment. Remove at completion of Work.
- C. Exterior storage requirements for all specified materials and equipment requiring protection.

##### 1.04 MATERIAL AND EQUIPMENT INCORPORATED INTO WORK

- A. Comply with applicable specifications, manufacturer's recommendations and standards.
- B. Comply with size, make, type and quality specified or as specifically accepted in writing by the Owner.
- C. Design, fabricate, assemble deliver and install products in accordance with engineering and shop practices normal to trade.
- D. Manufacture like parts of duplicate units to standard interchangeable sizes and gauges. Two or more items of same kind shall be identical by same manufacturer.
- E. Products shall be suitable for intended purpose.
- F. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically accepted in writing.

- G. Do not use material or equipment for any purpose other than for which it is designed or is specified.

#### 1.05 IDENTIFICATIONS AND NAMEPLATES

- A. Nameplates, trademarks, and other identifying marks on manufactured and fabricated items are not permitted on surfaces exposed to view in public spaces, including elevators and escalators except as noted otherwise in the Construction Contract Documents. This does not apply to UL labels.

#### 1.06 QUALITY ASSURANCE

- A. Materials specified are to define standard of quality or performance and to establish basis for evaluation of proposals.
- B. Comply with individual Technical Specification Sections and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a Technical Specification Section shall be of same manufacturer and shall be interchangeable, unless otherwise required.

#### 1.07 PRODUCT OPTIONS

- A. For Products specified only by reference standard, select Product meeting that standard by any manufacturer.
- B. For Products specified by naming only one Product and manufacturer, select any one of the products and manufacturers named which complied with the Technical Specifications.
- C. For products specified by naming only one Product and manufacturer, there is no option and no substitution will be allowed.

#### 1.08 PRODUCTS LIST

- A. Within twenty (20) calendar days after award of Contract, submit to the Owner three (3) copies of complete list of major Products, which are proposed for installation.
- B. Tabulate Products by Technical Specification Section number and title.
- C. For products specified only by reference standards list for each such Product:
  - 1. Name and address of manufacturer.
  - 2. Trade name.
  - 3. Model or catalogue designation.
  - 4. Manufacturer's data:
    - a. Reference standards.
    - b. Performance test data.
- D. The Owner will coordinate with the Architect / Engineer of record and reply in writing stating whether there is reasonable objection to listed items. Failure to object to a listed item shall not constitute a waiver of the requirements of the Construction Contract Documents.

## 1.09 MANUFACTURER'S INSTRUCTIONS

- A. When Construction Contract Documents require installation of work to comply with manufacturers printed instructions, obtain and distribute copies of instructions to parties involved in installation, including two (2) copies to the Owner, prior to commencing work.
- B. Maintain one (1) set of complete instructions at job site during installation and until work is complete.
- C. Maintain copies for Project Record Documents.
- D. Handle, install, connect, clean, condition and adjust products in strict accord with manufacturer's instructions and in conformity with specified requirements.
- E. Should job conditions or specified requirements conflict with manufacturer's instructions, notify the Owner in writing for further instructions. Do not proceed with Work without clear instructions.
- F. Perform Work in accordance with manufacturer's instructions. Do not omit preparatory steps on installation procedures unless specifically modified or exempted by the Contract Documents.

## 1.10 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of materials and equipment in accordance with construction schedules. Coordinate to avoid conflict with Work and conditions at Site. Avoid congesting traffic.
- B. Deliver materials and equipment in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
- C. Immediately upon delivery, inspect shipments to assure compliance with requirements of the Construction Contract Documents and accepted submittals, and that products are properly protected and undamaged.
- D. Promptly remove unsatisfactory materials from Site.
- E. Furnish equipment and personnel to handle products by methods necessary to prevent soiling or damage to products or packaging.

## 1.11 STORAGE

- A. Store materials subject to damage from exposure to weather in weather tight storage facilities of suitable size with floors raised above ground. Materials not subject to weather damage may be stored on blocks off ground.
- B. Store fabricated products in accordance with manufacturer's instructions, seals and labels intact and legible. Store product subject to damage by elements in weather tight enclosures. Maintain temperature and humidity within ranges required by manufacturer's instructions.
- C. Cover materials, which are subject to deterioration with breathable, impervious sheet covering to provide adequate ventilation to avoid condensation.



- D. Store loosed granular materials in well-drained area on solid surfaces to prevent mixing with foreign matter and cover during inclement weather. Store cementitious and clay products clear of earth or concrete floors, away from walls.
- E. Arrange storage in manner to permit easy access for inspections.
- F. Protect metal from damage, dirt or dampness. Furnish flat, solid support for sheet products during storage.
- G. Make periodic inspections of stored materials to verify that products are maintained under specified conditions and are free from damage or deterioration.
- H. Do not use materials in work that have deteriorated, become damaged or are otherwise unfit for use.
- I. Store paints in assigned room or area kept under lock and key. Prevent mixing of refuse or chemically injurious materials or liquids with stored materials.
- J. Remove oil, rags and other combustible materials daily and take precautions to prevent fire hazard.
- K. Do not load structure during construction by storing materials with load greater than structure is calculated to support safely. Such storage is subject to approval by the Owner.
- L. Provide substantial platforms, blocking, or skids to support fabricated products above ground; slope to provide drainage. Provide surface drainage to prevent erosions and pounding of water.
- M. Pipe and conduit stored outdoors shall have open ends sealed to prevent entrance of dirt, moisture, etc.

#### 1.12 PROTECTION AND MAINTENANCE

- A. Furnish protection against weather. Cover building openings and penetrations to protect interior of building from weather.
- B. Maintain work, materials, apparatus and fixtures free from damage, accumulation of debris, and protected from dust and dirt.
- C. Protect items having factory finish to prevent damage to finish and equipment.
- D. At end of day's work, cover new work likely to be damaged or otherwise protect and necessary.
- E. After installation, secure substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations.
- F. Remove protection where no longer needed. Upon completion of Work, remove storage facilities from site.
- G. Contractor shall replace, at no additional cost to the Owner, stored items damaged by inadequate protection and environmental control.

- H. For mechanical and electrical equipment in long-term storage, provide manufacturer's service instructions shown on exterior of package.
- I. Service equipment on a regular basis as recommended by manufacturer. Maintain log of maintenance services; submit log as Project Record Document in accordance with requirements of Section 01781, Project Record Documents.
- J. After cabinets and boxes are installed, cover openings to prevent entrance of water and foreign materials. Close conduit openings with temporary metal or plastic cap, including those terminated in cabinets.
- K. Provide temporary enclosures for equipment such as substations and motor control centers. Provide and maintain heat in closures until equipment is energized, to avoid condensation damage.

### 1.13 MANUFACTURER CERTIFICATION

- A. Prior to Final Acceptance of Work, for items designated in Technical Specifications Sections, an authorized representative of each manufacturer of materials and/or equipment installed under the work of that Section, shall personally inspect installation and operation of his/her materials, system and equipment to determine they are correctly installed and operating properly as follows:
  - 1. Inspection and testing shall be accomplished:
    - a. For Work which will be concealed during execution of Work, after completion of installation and prior to concealment.
    - b. For Work which will not be concealed, at completion of Work.
  - 2. Each representative shall submit a signed statement to the Owner through the Contractor certifying to his personal inspection and to the correct installation and proper operation of materials, systems and/or equipment. Their certification shall list all items included.
  - 3. Contractor shall transmit all such certifications to the Owner at or prior to Final Acceptance Inspection. Transmittal shall include a list of all certifications included.

## **PART 2 - PRODUCTS**

### 2.01 MATERIALS, EQUIPMENT & FURNISHINGS

- A. Materials and equipment intended for use in Project must be new. Equipment and furnishings utilized for installation of material and equipment in the Project may be new or used, but must be serviceable, must be adequate for intended purpose, and must not violate applicable codes and/or regulations.

## **PART 3 - EXECUTION**

### 3.01 GENERAL

- A. Store products immediately upon delivery at location acceptable to the Owner, in accordance with manufacturer's storage instructions, with seals and labels intact. Protect until uninstalled.

- B. Arrange storage in manner to provide access for maintenance of stored items and for inspection.

### 3.02 MAINTENANCE OF STORAGE

- A. Verify that storage facilities comply with manufacturer's product storage requirements.
- B. Verify that manufacturer required environmental conditions are maintained continually.
- C. Verify that surfaces of products to elements are not adversely affected and that any weathering of finishes is within acceptable tolerances under requirements of Construction Contract Documents.

**END OF SECTION 01610**

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## SECTION 01620

### STORAGE AND PROTECTION

#### PART 1 – GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. General storage and protection of project materials and equipment.
- B. Furnish, install and maintain storage sheds as required for protection of materials and equipment. Remove at completion of Work.
- C. Exterior storage requirements for all specified materials and equipment requiring protection.

##### 1.02 RELATED REQUIREMENTS

- A. Division 1, General Requirements in the Project Manual without exception..

#### PART 2 – PRODUCTS

##### 2.01 MATERIALS, EQUIPMENT & FURNISHINGS

- A. Materials and equipment intended for use in Project must be new. Equipment and furnishings utilized for installation of material and equipment in the Project may be new or used, but must be serviceable, must be adequate for intended purpose, and must not violate codes or regulations.

#### PART 3 – EXECUTION

##### 3.01 GENERAL

- A. Store products immediately upon delivery at location acceptable to the Owner, in accordance with manufacturer's storage instructions, with seals and labels intact. Protect until installed.
- B. Arrange storage in manner to provide access for maintenance of stored items and for inspection.

##### 3.02 ENCLOSED STORAGE

- A. Store products subject to damage by elements in substantial weather tight enclosures or storage sheds of adequate dimensions.
- B. Maintain temperature and humidity within ranges stated in manufacturer's instruction.
- C. Provide humidity control and ventilation for sensitive products as required by manufacturer's instruction.
- D. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.
- E. Contractor shall replace, at no additional cost to the Owner, store items damaged by inadequate protection or environmental control.

- F. Provide substantial platforms, blocking, or skids to support fabricated products above ground; slope to provide drainage.
- G. For products subject to dislocation or deterioration from exposure to elements, cover with impervious sheet materials. Provide ventilation to prevent condensation below covering.
- H. Store loose, granular materials on clean, solid surfaces, or on rigid sheet materials, to prevent mixing with foreign matter.
- I. Provide surface drainage to prevent erosion and pounding of water.
- J. Prevent mixing of refuse or chemically injurious materials or liquids with stored material.
- K. Pipe and conduit stored outdoors shall have open ends sealed to prevent entrance of dirt, moisture, etc.

### 3.03 MAINTENACE OF STORAGE

- A. Periodically inspect stored products on a scheduled basis.
- B. Verify that storage facilities comply with manufacturer's product storage requirements.
- C. Verify that manufacturer required environmental conditions are maintained continually.
- D. Verify that surfaces of products exposed to elements are not adversely affected and that any weathering of finishes is within acceptable tolerances established by the applicable manufacturer.

### 3.04 MAINTENACE OF EQUIPMENT STORAGE

- A. For mechanical and electrical equipment in long-term storage, provide manufacturer's service instructions shown on exterior of package.
- B. Service equipment on a regular basis as recommended by manufacturer. Maintain log of maintenance services; submit log in accordance with requirements of Section 01781, Project Record Documents

### 3.05 PROTECTION OF INSTALLED EQUIPMENT

- A. After cabinets and boxes are installed, cover openings to prevent entrance of water and foreign materials. Close conduit openings with temporary metal or plastic cap, including those terminated in cabinets.
- B. Provide temporary enclosures for equipment such as substations and motor control centers. Provide and maintain heat in closures until equipment is energized, to avoid condensation damage.

**END OF SECTION 01620**

## SECTION 01700

### EXECUTION REQUIREMENTS

#### PART 1- GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Contractor shall comply with and be responsible for all of the requirements of the Project Manual without exception.
- B. Contractor shall provide field engineering and general layout services required on the project as follows:
  - 1. Civil, structural or other professional engineering services specified, or required to execute construction methods consistent with the requirements of the Construction Contract Documents..
  - 2. Survey work required for execution of the total Work. of the Project.
  - 3. Continuous horizontal and vertical control regarding layout and execution of Work. of the Project.
  - 4. Coordinate field engineering services with the Owner.

##### 1.02 RELATED REQUIRMENTS

- A. Division 1, General Requirements of the Project Manual without exception.
- B. The Technical Specifications, Sections 0200 through 1900, as may be applicable.

##### 1.03 CONTROLS

- A. Contractor will establish primary controls, horizontal and vertical control points at various locations at the Site. These will be described and indicated on the Contractor's approved Drawings and will be coordinated in the field by the Contractor.
- B. Existing control points and property line markers will be shown on the Owner's survey drawings.

##### 1.04 QUALIFICATIONS OF SURVEYOR OR ENGINEER

- A. For Surveying, a qualified engineer or registered land surveyor, registered in the State of South Carolina and acceptable to the Owner.
- B. For engineering, a registered professional engineer of a discipline required for this Project licensed in the State of South Carolina and acceptable to the Owner.

##### 1.05 SURVEY REFERENCE POINTS

- A. Existing horizontal and vertical control points for the Project are those designated on Owner's survey drawings or as determined from investigation of the existing conditions.
- B. Verify property, grades, lines, levels and dimensions indicated.

- C. Locate and protect control points prior to starting Site Work and preserve permanent reference points during construction.
  - 1. Make no changes or relocations without prior approval of the Owner
  - 2. Report to the Owner when a reference point is lost, destroyed or requires relocation because of necessary changes in grades or locations.
  - 3. Require surveyor to replace Project control points, which may be lost or destroyed.

#### 1.06 PROJECT LAYOUT REQUIREMENTS

- A. Establish a sufficient number of permanent bench marks on Site, as may be required, referenced to data established by survey control points. Record locations of benchmarks with horizontal and vertical data on Project Record Documents, Section 01781.
- B. From established control points, Contractor shall layout all Work by establishing all lines and grades at Site necessary to control Work, and shall be responsible for all measurements that may be required for execution of Work.
- C. Furnish, at own expense, all such stakes, steel pins, equipment, tools and material and labor that may be required in laying out Work control points.
- D. Establish lines and levels, locate and layout by instrumentation and similar appropriate means:
  - 1. Site Improvements
    - a. Stakes for grading, fill, and topsoil placement.
    - b. Utility slopes and invert elevations.
    - c. Limits of pavement (concrete and asphalt).
  - 2. Batter boards for structures.
  - 3. Building foundation column locations, piling and floor levels.
  - 4. Controlling lines and levels required for mechanical and electrical trades.
- E. Verify and coordinate in field all existing and proposed underground components including civil, structural, utilities and other components prior to initiation of the Work. Advise the Owner of any conflicts or discrepancies.

#### 1.07 SUBMITTALS AND DOCUMENTS

- A. Submit name and address of Surveyor and Professional Engineer assigned to the Project to the Owner.
- B. On request of the Owner, submit documentation to certify accuracy of field engineering work and compliance with Construction Contract Documents.
- C. Submit certificate signed by registered engineer or surveyor certifying that elevations and locations of improvements are in conformance, or non-conformance, with Construction Contract Documents.
- D. Standards and Availability: Data and other measurements shall be recorded in accordance with standard and approved methods. All field notes, sketches, recordings, and computation in establishing above horizontal and vertical control points shall be available at all times during progress of Work for ready examination by the Owner

- E. Maintain complete and accurate record data on underground utilities and obstructions, new and existing, encountered in execution of Work. Record data on Project Record Documents in accordance with requirements of Section 01781, Project Record Documents.
- F. On completion of all foundation walls, pavement and other major site improvements, prepare certified survey showing dimensions, locations, angles, and elevations of construction.

**PART 2 – PRODUCTS**

Not Used

**PART 3 – EXECUTION**

Not Used

**END OF SECTION 01700**

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## SECTION 01710

### FINAL CLEANING

#### PART 1 – GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- C. Contractor shall comply with and be responsible for all requirements of the Project Manual, without exception.
- D. Contractor shall comply with applicable requirements in this Section and more specific requirements in Section 00800, Special Project Conditions, and Section 01100, Summary of Work.
- E. Execute final cleaning at completion of the Work as required by the Construction Contract Documents.

##### 1.02 RELATED REQUIREMENTS

- A. Divisions 1, General Requirements in the Project Manual without exception..

##### 1.03 DISPOSAL REQUIREMENTS

- A. Conduct cleaning and disposal operations to comply with all applicable codes, ordinances, regulations, and anti-pollution laws.

#### PART 2 – PRODUCTS

##### 2.01 MATERIALS

- A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.
- B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.
- C. Using cleaning materials only on surfaces recommended by cleaning material manufacturer.
- D. Refer to applicable manufacturer's recommendations for specific products and materials.

#### PART 3 – EXECUTION

##### 3.01 FINAL CLEANING

- A. Execute prior to inspection at Substantial Completion.
- B. Employ skilled workmen or professional cleaners for the final cleaning.
- C. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces, and clean as follows:

1. Remove grease, dust, dirt stain, labels, fingerprints, and other foreign materials from site-exposed interior and exterior surfaces; wash and polish surfaces so designated to shine finish.
  2. Repair, patch and touch-up marred surfaces to specified finish, to match adjacent surfaces.
- D. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.
- E. Clean roof areas of debris; flush roof drainage system(s) with water until clear.
- F. Prior to final completion, or Owner occupancy, Contractor and Owner shall conduct an inspection of sight-exposed interior and exterior surfaces, and all work areas, to verify that the entire Project Work area is clean.
- G. Leave Project Work area clean and ready for use and occupancy.

**END OF SECTION 01710**

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## SECTION 01731

### CUTTING AND PATCHING

#### PART 1 – GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Requirements and limitations of cutting and patching associated with the Work of this Contract.
- B. Cutting, fitting and patching, including attendant excavation and backfill required completing the Work of this Contract.
- C. Assume that concealed or previously unknown conditions may be encountered during the execution of the Work. No consideration whatsoever will be given to any claim for additional cost and/or time resulting from such conditions that can reasonably be expected, which are ordinarily encountered or which are generally recognized as inherent in the character of the Work anticipated for this Project.

##### 1.02 RELATED REQUIREMENTS

- A. Division 1, General Requirements in the Project Manual without exception.
- B. The Technical Specifications, which may be applicable and incidental to the Work of the respective Sections.

##### 1.03 DESCRIPTION AND SCOPE

- A. Execute cutting, fitting and patching, including attendant excavation and backfill required to complete the Work or to:
  - 1. Make all parts of the Work fit together.
  - 2. Uncover portions of the Work to provide for installation of ill-timed work.
  - 3. Remove and replace defective work, products and/or equipment.
  - 4. Remove and replace work not conforming to the requirements of the Construction Contract Documents, approved Drawings and Technical Specifications.
  - 5. Remove samples of installed work as specified for testing.
  - 6. Provide routine penetrations of non-structural surfaces for installation of mechanical, electrical and plumbing work.
  - 7. Uncover work that has been covered prior to a required observation by the Owner

##### 1.04 SUBMITTALS

- A. The Contractor shall submit a written request to the Owner seventy two (72) hours in advance of any cutting or alteration work. The written request/notice shall state the location, date and time the work will be accomplished. The preceding will apply to instances that affects:
  - 1. Work of other Contractors engaged by the County on the site.
  - 2. The structural value or integrity of any element of the Work of the Project.
  - 3. The integrity or effectiveness of weather exposed or moisture resistant elements of, or systems within the Work of the Project.
  - 4. Efficiency, operational life, maintenance and/or safety of the operational elements of, or systems within the Work of the Project.

5. The visual and esthetic qualities of sight exposed elements of the Work of the Project.
- B. The Contractor's requests / notices shall include, at a minimum:
1. Owner RFP / Bid Number.
  2. Location and description of the affected work to be performed.
  3. The necessity for cutting, patching, alteration or excavation.
  4. Effect of the work on the Owner and / or its Contractors and abutting property.
  5. Effect of the work on the integrity of the structural and/or weatherproof elements of the Work of the Project.
  6. Description of the proposed work:
    - a. Scope of cutting, patching, alteration or excavation.
    - b. Contractor's prime or sub-contractors who will execute the work.
    - c. Products proposed to be used.
    - d. Extent of refinishing to be done.
  7. Alternatives to cutting, patching, alteration or excavation.
  8. Written permission of any affected entity other than the Contractor's prime and sub-contractors.
- C. Should the conditions and schedule of the work to be performed indicate a change of products from the original installation, the Contractor shall submit a written request to the Owner for substitution pursuant to the stipulations in Section 01600, Product Requirements.

## **PART 2 – PRODUCTS**

### **2.01 MATERIALS**

- A. Contractor shall comply with the final, approved Technical Specifications and standards for each specific product involved.

## **PART 3 – EXECUTION**

### **3.01 EXAMINATION**

- A. Contractor shall examine existing conditions in the area of the work, including any elements subject to damage or to movement during cutting, patching, alteration or excavation.
- B. After uncovering the work, Contractor shall inspect the conditions affecting installation of products, or performance of the work.
- C. Contractor shall report unsatisfactory or questionable conditions to the Owner in writing. No work is to proceed until a written response is received from the Owner.
- D. Beginning of cutting, patching, alterations or excavation operations shall be considered as acceptance, by the Contractor of the existing conditions.

### **3.02 PREPARATION AND PROTECTION**

- A. Contractor shall provide adequate temporary support as necessary to assure structural value or integrity of the affected portion of the work.
- B. Contractor shall provide devices and methods to protect adjacent work and other portions of the Work of the Project from any damage.

- C. Contractor shall provide protection from the elements of weather for that portion(s) of the Work of the Project that may be exposed by cutting, patching, alteration or excavation.
- D. Contractor shall maintain excavations free from water and comply with the requirements of state and local agencies having jurisdiction.

### 3.03 DUST CONTROL

- A. Contractor shall obtain approval of the means and method by which dust and debris will be controlled from the Owner.
- B. Contractor shall provide and maintain positive methods of dust control and apply dust control materials to minimize raising and spreading of dust from cutting, patching and alteration operations.
- C. Contractor shall conform to the requirements of Section 01510, Temporary Construction Controls.

### 3.04 PERFORMANCE

- A. Open flame torch cutting operations require a “Hot Work” permit in compliance with current state and local codes and regulations. Contractor shall exercise all fire and safety precautions as required.
- B. Contractor shall execute all cutting, patching, alteration and demolition by methods that will prevent damage to other work, and will provide proper surfaces to receive installation of repairs or alterations.
- C. Contractor shall execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
- D. Contractor shall cut, remove and legally dispose of selected mechanical equipment, components and materials as indicated, including but not limited to removal of mechanical piping, heating units, plumbing fixtures and trim, and other mechanical items made obsolete by the modified work.
- E. Contractor shall restore work that has been cut or removed, and shall install new products to provide completed work in accordance with the requirements of the Construction Contract Documents.
- F. Contractor shall fit work tight to pipes, sleeves, ducts, conduit, and other penetrations through vertical and/or horizontal surfaces. Where fire rated separations are penetrated, fill space around pipe or insert penetration with material having physical characteristics equivalent to fire resistant requirements of penetrated surfaces in accordance with state or local codes and acceptable construction practices.
- G. Contractor shall refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
  - 1. For continuous surfaces, refinish to nearest intersection.
  - 2. For an assembly, refinish entire unit.
- H. Contractor shall employ the Original Installer or Fabricator of Work performed under this Contract to execute cutting and patching for:
  - 1. Weather exposed or moisture resistant elements to maintain warranty and/or bonds.
  - 2. Sight exposed specialty finished surfaces.

**END OF SECTION 01731**

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## SECTION 01770

### CLOSEOUT PROCEDURES

#### PART 1 – GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall comply with and be responsible for all of the requirements of the Project Manual, without exception.
- B. The Contractor shall comply with applicable requirements in this Section and more specific requirements in Division 1, Section 01100, Summary of Work.
- C. The Contractor shall comply with the requirements stated in the Construction Contract and in approved and permitted Drawings and Technical Specifications for the Work.

##### 1.02 RELATED REQUIREMENTS

- A. Conditions of the Construction Contract: fiscal provisions, legal submittals and additional administrative requirements.
- B. Division 1, General Requirements in the Project Manual without exception.
- C. Closeout submittals required of trades as may be indicated in various sections of the approved Technical Specifications.

##### 1.03 DAMAGES

- A. If the Contractor neglects, fails, or refuses to complete the work by the Substantial Completion Date, Final Completion Date, or any portion of the Work by an Interim Completion Date, subject to any proper extension granted by the Owner, then the Contractor will pay, or cause the Contractor's Surety to pay damages to the Owner as defined in Summary of the Work, Section 01100.

##### 1.04 PHASED COMPLETION

- A. In addition to Substantial Completion (Beneficial Occupancy) and Final Completion as defined below, the Contractor shall complete and make available to the Owner certain portions of the Work set forth on the Summary Schedule and Key Milestones in Section 00750 no later than the dates indicated on said Schedule ("Interim Completion Date")
- B. The Contractor acknowledges that such Interim Completion Dates are essential to the Owner's plans and use and, therefore, time is of the essence in meeting said Interim Completion Dates.

##### 1.05 SUBSTANTIAL COMPLETION

- A. When Contractor considers the Work is substantially complete, he shall submit to the Owner the following:
  - 1. A written certification that the Work, or designated portion thereof, is substantially complete. All items not complete shall be listed and deficient items noted.

2. Owner will review the Contractor's certification and examine the Work for conformance to the Certification and the Construction Contract Documents.
  3. Owner will inform the Contractor of non-compliance or incomplete items.
  4. Contractor shall remedy the deficiencies in the Work within seventy-two (72) hours, and send a second written notice of substantial completion to the Owner.
  5. The Owner will re-examine the Work.
- B. When the Owner determines that the Work is substantially complete, the Owner will:
1. Prepare a Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected, as verified and amended.
  2. Send to Contractor for his/her written acceptance of the responsibilities assigned to them in the Certificate.
- C. After Work is substantially complete, Contractor shall:
1. Obtain and submit Certificate of Occupancy. Owner shall, in detail, list the status of the area affected by partial acceptance and occupancy to establish the existing conditions prior to such acceptance or occupancy.
  2. Complete Work listed for completion or correction within designated form.
  3. Perform all cleaning in accordance with Section 01710, Final Cleaning.

## 1.06 FINAL COMPLETION

- A. Within ten (10) calendar days after substantial completion, the Contractor shall submit to the Owner written certification that:
1. Construction Contract Documents have been reviewed.
  2. Work has been examined for compliance with Construction Contract Documents.
  3. Work has been completed in accordance with Construction Contract Documents.
  4. Equipment and systems have been tested in the presence of the Owner and the appropriate County personnel, and are operational.
  5. Work is completed and ready for final examination.
  6. Submittal of Closeout Documents as stipulated in paragraph 1.07 below.
- B. The Owner will make an examination to verify the status of completion within ten (10) calendar days after receipt of such certification.
- C. Should the Owner consider the Work incomplete or defective, or the Contractor has not demonstrated to the Owner that a "good faith" effort has been made within the time (72 hours) allotted in paragraph 1.05 A above, any Damages and/or Liquidated Damages,

will be charged against the Contractor as defined and explained in Section 01100, Summary of Work

1. The Owner will promptly notify the Contractor in writing of all deficiencies listing the incomplete or defective work.
  2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written Certification to the Owner that the Work is complete.
  3. The Owner will re-examine the Work.
- D. When the Owner concludes that the Work is complete, the Owner shall determine the number of days for which Liquidated Damages will be assessed and request the Contractor to prepare closeout submittals.
- E. Acceptance of the entire project shall commence after all contract work is complete, final inspections are made, corrective actions completed, the Work re-examined, and after final acceptance by the Owner
- F. The date established by the Owner as the Final Completion Date shall initiate the guarantee and the warranty periods for all system components and the construction of the Project. The Project shall not be considered Final Complete until all Close Out Documents are properly completed and transmitted to the Owner.
- G. The Owner shall review the status of the Work and compare it to the request for final payment and compare it with the Project records for conformance to the final settlement requirements.
- H. The Owner shall receive from the Contractor, and maintain, the permit drawings and specification package, copy of all shop drawings and submittals, the “as-built” set of drawings and specifications, maintenance manuals as required by the contract and submitted by the Contractor. In addition, the Contractor shall provide spare parts and supplies, stored materials, special tools, filters, and other pertinent items as required under the Construction Contract Documents to the Owner for transmittal to the appropriate County department(s)

#### 1.07 CLOSEOUT SUBMITTALS

- A. Evidence of compliance with requirements of governing authorities:
1. Certificate of Occupancy.
  2. Certificates of Inspection:
- B. Project Record (Permit) Documents, in accordance with Section 01781
- C. Operating and Maintenance Data, in accordance with Section 01782
- D. Warranties and Bonds, in accordance with Section 01790.
- E. Spare Parts and Maintenance Materials, in accordance with Section 01785.
1. Provide products, spare parts, and maintenance materials in quantities specified in each approved Specification Section in addition to that required for completion of Work.
- F. Certificate of Insurance for Products and Completed Operations.



## 1.08 EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

- A. Contractor's Affidavit of Release of Liens.
  - 1. Consent of Surety to Final Payment. Use form acceptable to the Owner
  - 2. Contractor's Release or Waiver of Liens. Standard Form "Affidavit and Partial Lien Waiver". Use form acceptable to Owner.
  - 3. Separate releases of waivers of liens from prime and subcontractors, suppliers and others with lien rights against property of the Owner together with a list of those parties, in accordance with Standard Form "Affidavit and Final Lien Waiver". Use form acceptable to Owner.
- B. All submittals shall be duly executed and notarized before delivery to the Owner.

## 1.09 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final Statement of Accounting to the Owner.
- B. Statement shall reflect all adjustments to the Contract Sum:
  - 1. The original Contract Sum.
  - 2. Additions and deductions resulting from:
    - a. Previous Change Orders.
    - b. Allowances.
    - c. Unit Prices.
    - d. Deductions for uncorrected Work.
    - e. Deductions for liquidated damages.
    - f. Other adjustments.
  - 3. Total Contract Sum, as adjusted.
  - 4. Previous payments.
  - 5. Sum remaining due.
- C. The Owner will prepare a final Change Order reflecting approved adjustments to the Contract Sum, which was not previously made by Change Orders.

## 1.10 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit final Application for Payment in accordance with procedures and requirements stated in the Construction Contract and Section 01290, Payment Procedures of the Project Manual.

## 1.11 ADDITIONAL ADJUSTMENT

- A. No adjustments to the Construction Contract requested by the Contractor will be allowed if asserted after execution of Final Payment of Contract.

## 1.12 POST-CONSTRUCTION INSPECTION

- A. Prior to expiration of one (1) year from the Date of Final Completion, the Owner, or its designated representative, will make visual inspection of the Project Work in the company of the Contractor to determine whether further correction of Work is required in accordance with the provisions of the Construction Contract. The Contractor shall be responsible for contacting the Owner and scheduling and coordinating the one (1) year inspection.
- B. The Owner will notify the Contractor, in writing, of any observed deficiencies.
- C. Contractor shall contact the Owner to arrange convenient time and establish schedule for correction of deficiencies.

### PART 2 – PRODUCTS

Not Used

### PART 3 – EXECUTION

Not Used

**END OF SECTION 01770**

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## SECTION 01781

### PROJECT RECORD DOCUMENTS

#### PART 1 – GENERAL

##### 1.01 REQUIRED INCLUDED

- A. Contractor shall comply with and be responsible for all requirements of the Project Manual without exception.
- B. Contractor shall comply with the applicable requirements in this Section and more specific requirements in: Section 00800, Special Project Conditions; Section 01100, Summary of Work; Section 01330, Submittal Procedures; Section 01322, Photographic Documentation; and Section 01770, Close Out Procedures.
- C. Contractor shall conform to the requirements of the Owner, Georgetown County, and such other federal, state and municipal agencies having jurisdiction.

##### 1.02 RELATED REQUIREMENTS

- A. Division 0, Bidding and Contract Documents, in the Project Manual without exception.
- B. Division 1, General Requirements in the Project Manual without exception.

##### 1.03 MAINTENACE OF DOCUMENTS AND SAMPLES

- A. For duration of Project, maintain at job Site the following:
  - 1. One copy of the Drawings, Technical Specifications, Addenda, shop drawings, products data, miscellaneous requested submittal data, Change Orders and other modifications to Contract, field orders, field test or written instructions.
  - 2. One copy of transmittal letters.
  - 3. One set of construction photographs.
  - 4. One set of samples.
  - 5. One copy of Permit Drawings as may be required by the appropriate governing agency having jurisdiction.
- B. Store documents and samples in Contractor's field office apart from documents used for construction.
  - 1. Provide files and racks for storage of documents.
  - 2. Provide locked cabinets or secure storage space for storage of samples.
- C. File documents and samples in accordance with CSI 16-division format.
- D. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- E. Make documents and samples available at all times for inspection by the Owner.

- F. Incomplete or out of order documents and samples will be grounds for not approving the Design/Builder's Application for Payment.
- G. Provide felt tip marking pens for recording information in color code designated by the Owner.
- H. Label each document "PROJECT RECORD" in neat large printed letters. Keep record documents current. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.

#### 1.04 RECORD DRAWINGS

- A. Electronic data "As-Built" record drawings shall be required. The Owner will select electronic format and software to be used by Contractor.
- B. Permanent and Accurate Record Drawings shall be created on full size sheets (24 in. x 36 in. ft.) capable of being reproduced. These shall be made from the approved, original drawings, which shall be provided to a commercial reprographics service at an appropriate time. All of the aforementioned shall be at the Contractor's sole cost and expense.
- C. Legibly mark in color code designated by the Owner to record actual construction on designated Record Drawing prints:
  - 1. Depths of various elements of structure(s) foundations in relation to finish first floor datum.
  - 2. Horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements.
  - 3. Location of all internal utilities and appurtenances and features of the structure(s), including dimensional locations of underground activities and other work
  - 4. Dimensional locations, vertical and horizontal, of site work, including utilities.
  - 5. Dimensional location, vertical and horizontal, of asphalt and concrete pavement.
  - 6. Dimensional location, vertical and horizontal, of storm water drainage system including pipe invert elevations.
- D. Indicate the following installed conditions:
  - 1. All electrical systems, plumbing and mechanical systems and such other units installed requiring periodic maintenance or repair.
  - 2. Equipment locations (exposed and concealed), dimensioned from prominent building lines.
  - 3. Approved substitutions, contract modifications, and actual equipment and materials installed.
  - 4. Field modifications with dimensions and details.
  - 5. Modifications made by addenda, clarifications, Field Orders or Change Orders.
  - 6. Details not on original, approved Construction Contract drawings.
  - 7. Record information on a daily basis, or as often as necessary.
  - 8. Include references to related shop drawings and modifications.
- E. Contractor shall retain competent drafting services, as necessary, for transfer of "mark-up notations" from information recorded during construction.

- F. Contractor shall submit Record Documents drawings to the Owner for review and acceptance thirty (30) days prior to final closeout.
- G. Make revisions and additions as may be indicated by the Owner.
- H. Do not use these Drawings for reference or construction, nor allow them to leave the field office.

#### 1.05 RECORD SPECIFICATIONS AND ADDENDA

- A. Legibly mark up in color code designated by the Owner each Specification Section to record the following:
  - 1. Manufacturer, trade name, catalog name and supplier (with address and phone number) of each product and item of equipment actually installed.
  - 2. Modifications made by Change Order.
  - 3. Other matters not originally specified.

#### 1.06 RECORD SAMPLES

- A. Record in transmittal, if not indicated, manufacturer, trade name, catalog number.

#### 1.07 SUBMITALLS

- A. At Contract closeout, Contractor shall sign each final Record Drawing and cover of Record Specifications stating documents are complete and accurate, deliver project Record Documents to the Owner.
- B. Accompany submittal with transmittal letter in duplicate, containing:
  - 1. Date.
  - 2. Owner RFP / Bid Number.
  - 3. Contractor's name and address.
  - 4. Title and number of each Record Document.
  - 5. Signature of Contractor or his/her authorized representative.
- C. Submit the following quantities of Record Documents:
  - 1. One (1) complete and full sets of Project Record Drawings (digital PDF acceptable).
  - 2. One (1) complete sets of "Up-Dated" Technical Specifications (digital PDF acceptable).

#### 1.08 BURDEN OF ACCURACY

- A. Contractor shall bear all costs of damages of any nature incurred by the Owner due to inaccuracies or incompleteness of the submitted Project Record Documents.

### **PART 2 – PRODUCTS**

Not Used

### **PART 3 – EXECUTION**

Not Used

**END OF SECTION 01781**

## SECTION 01790

### WARRANTIES AND BONDS

#### PART 1 - GENERAL

##### 1.01 RELATED REQUIREMENTS

- A. Division 0, Bidding and Contract Documents of the Project Manual without exception.
- B. Division 1, General Requirements of the Project Manual without exception.
- C. Approved Technical Specifications: Sections 0100 – 2000 as applicable and required.

##### 1.02 SUMMARY

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Construction Contract Documents, including manufacturer's standard warranties on products and special warranties.
  - 1. Refer to the applicable requirements of Division 0 and Division 1 for Contractor's special warranty of workmanship and materials.
  - 2. General closeout requirements are included in Section 01770, Closeout Procedures.
  - 3. Specific requirements for warranties for the Work and products and installations that are specified to be warranted, are included in the individual and applicable Sections of the Technical Specifications.
  - 4. Certifications and other commitments and agreements for continuing services to the Owner, Georgetown County, South Carolina are specified elsewhere in the Construction Contract Documents.
- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products.

##### 1.03 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Construction Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
- D. Owner Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor

shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

- E. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Construction Contract Documents.
- F. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to counter sign such commitments are willing to do so.

#### 1.04 SUBMITTALS

- A Submit written warranties to the Owner prior to the date certified for Substantial Completion. If the Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Owner.
- B When a designated portion of the Work is completed and occupied or used by the Owner by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Owner within ten (10) calendar days of completion of that designated portion of the Work.
- C When a special warranty is required to be executed by the Contractor, or the prime and a subcontractor, supplier or manufacturer prepare a written document that contains appropriate terms and identification, ready for execution by the required parties, Contractor shall submit a draft to the Owner for approval prior to final execution.
- D Form of Submittal: At Final Completion, the Contractor shall compile two (2) copies of each required warranty and bond properly executed by the Contractor, or by the prime, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
- E Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.
- F Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the installer.
- G Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS, the Project title or name and location, Owner RFP / Bid number and the name of the Contractor.

H When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

**PART 2 - PRODUCTS**

Not Used

**PART 3 - EXECUTION**

Not Used

**END OF SECTION 01790**

**END OF PROJECT MANUAL, VOLUME I**



## **SECTION 02000**

### **SITE CLEARING**

#### **PART 1 - GENERAL**

##### 1.1 DESCRIPTION

Scope of Work: The work of this Section consists of all necessary clearing and grubbing as shown on the plans and specified in current SCDOT Technical Specification SC-M-201 and SC-M-202.

#### **PART 2 - PRODUCTS**

Refer to SCDOT Technical Specification

#### **PART 3 - EXECUTION**

Refer to SCDOT Technical Specification

**END OF SECTION 02000**

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## SECTION 02050

### SELECTIVE DEMOLITION

#### PART 1 - GENERAL

##### 1.1 1.1 SUMMARY

###### A. Section Includes:

1. Demolition and removal of selected portions of structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

##### 1.2 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.

##### 1.3 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
  1. Hazardous materials will be removed by Owner before start of the Work.
  2. If suspected hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed by Owner under a separate contract.
- D. Storage or sale of removed items or materials on-site is not permitted.

- E. 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.
- F. Arrange selective demolition schedule so as not to interfere with Owner's operations.

#### 1.4 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties.

### **PART 2 - PRODUCTS**

#### 2.1 PERFORMANCE REQUIREMENTS

- 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 ASSE A10.6 and NFPA 241.

### **PART 3 - EXECUTION**

#### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected if required by utility provider before starting selective demolition operations.
- B. Inventory and record the condition of items to be removed and salvaged.

#### 3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Coordinate with Utility providers and locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished as required.
  - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.

2. Arrange to shut off utilities with utility companies as required.
3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems as required.

### 3.3 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent facilities to remain.
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
- C. Remove temporary barricades and protections where hazards no longer exist.

### 1.5 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
  2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  4. Maintain fire watch during and for at least 2 hours after flame-cutting operations.
  5. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  6. Dispose of demolished items and materials promptly. Comply with local agency requirements.
  7. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- B. Removed and Salvaged Items:
  1. Clean salvaged items.
  2. Pack or crate items after cleaning. Identify contents of containers.

3. Store items in a secure area until delivery to Owner.
  4. Transport items to Owner's storage area designated by Owner.
  5. Protect items from damage during transport and storage.
- C. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
  2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  3. Protect items from damage during transport and storage.
  4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

## 1.6 CLEANING

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
1. Do not allow demolished materials to accumulate on-site.
  2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn demolished materials.
- C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

**END OF SECTION 02050**

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## SECTION 02100

### EROSION AND SEDIMENT CONTROL

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION

Scope of Work: The work consists of all necessary erosion and sediment control as shown on the plans and specified herein. Provide protection of the environment during the construction of this project to reduce soil erosion and siltation to the lowest reasonably achievable level.

- A. Exercise every reasonable precaution, throughout the life of the project, to prevent the eroding of soil and the silting of rivers, streams, lakes, reservoirs, other water impoundments, ground or roadway surfaces, or other property. Erosion control practices to be used for this project are shown on the drawings and are to conform to South Carolina Department of Health and Environmental Control regulations.

#### PART 2 – PRODUCTS

2.1 Refer to the South Carolina Department of Health and Environmental Control BMP Handbook.

##### 2.2 STONE

- B. Provide #57 AASHTO stone for temporary sediment barriers around inlets and for temporary silt fence rock outlets.

##### 2.3 GRASSING

- A. Comply with Section 02800 - Seeding.

##### 2.4 SILT FENCE

- A. All posts to be self-fastener angle steel, 5' in length.
  - 1. Wooden posts are not acceptable.
- B. Woven wire shall conform to the requirements of ASTM A 116, Class I zinc coating for wire. Each woven square shall measure 5.33" X 12". The top and bottom wires shall be 10 gauge. All other wires shall be 12-1/2 gauge.
  - 1. Securely attach woven wire to posts with wire ties.

- C. Filter fabric shall be Mirafi 600X synthetic fabric as manufactured by Celanese Fibers Co., Bidim C34 as manufactured by DuPont or approved equal.
  - 1. Limit splices in filter fabric using continuous rolls whenever possible.
  - 2. Whenever splices are necessary a minimum overlap of 6" is required and all splices must occur at a post so that the integrity of the fence is not compromised.
  - 3. Securely attach filter fabric to top of woven wire and at posts with wire ties.
  
- D. Silt fences should be continuous and transverse to the flow. The silt fence should follow the contours of the site as closely as possible. Place the fence such that the water cannot runoff around the end of the fence.

## 2.5 EROSION CONTROL BLANKET

- A. Use erosion control blanket SC150, from North American Green or approved equal.
  - 1. Use Biostakes where staples are required or indicated on the drawings for stabilization.
    - a. Staple in pattern recommended by blanket manufacturer.
  - 2. Staple locations must be clearly marked on the blanket when stakes are used.

## 2.6 RIP-RAP

- A. Provide rip-rap which:
  - 1. Has thickness of 12" minimum.
  - 2. Weighs a minimum of 25 lbs. to a maximum of 150 lbs.
  - 3. Has at least 60% of stone weighing more than 60 lbs.

## 2.7 SEDIMENT TUBES

- A. Use sediment tubes as designated on the plans to control erosion along contours, around inlets, and in drainage conveyance swales.
- B. Use sediment tubes manufactured by an experienced manufacturer producing tubes for erosion control.
- C. Tube fill is to be composed of 100% weed free materials consisting of a mix of some or all of the following: curled excelsior wood, natural coconut fibers, hardwood mulch and agricultural straw.
- D. Tubular netting is to be constructed of a flexible outer netting that will contain the fill materials and sediment. Netting is to be constructed from seamless high density polyethylene, polyester, and/or ethyl vinyl acetate, photodegradable materials, treated with ultraviolet stabilizers.
- E. Tubes are to be minimum 20-inches in diameter with minimum weight of 3.2 lbs per foot +/- 10%. Minimum tube length is 10-feet. Netting weight is to be 0.35 oz/foot minimum.

## **PART 3 - EXECUTION**

### **3.1 GENERAL**

- A. Construct and maintain all erosion control measures until the substantial completion of the project.

### **3.2 TEMPORARY CONSTRUCTION ENTRANCE/EXIT**

- A. Construct a gravel area or pad at points where vehicles enter and leave a construction site.
- B. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade and place gravel to the grade and dimensions shown on the plans.
- C. Construct drainage channels to carry water to a sediment trap or other suitable outlet.
- D. Use geotextile fabrics to improve stability of the foundation in locations subject to seepage or high water table.
- E. Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site by periodic top dressing with two inches of stone.
- F. After each rainfall, inspect any structure used to trap sediment and clean it out as necessary.
- G. Immediately remove objectionable materials spilled, washed, or tracked onto public roadways.

### **3.3 TEMPORARY GRASSING**

- A. Provide a temporary cover for erosion control on disturbed areas that will remain unstabilized for a period of more than 30 days.
- B. This practice applies to cleared areas, diversions, dams, temporary sediment basins, temporary road banks, and topsoil stockpiles where vegetation is needed for less than 1 year.
- C. Provide grassing on slope 5% or greater within 14 days of disturbance. Comply with Section 02800.

### **3.4 SILT FENCE**

- A. Provide silt fence barrier where shown on the plans and on utility construction parallel to the disturbed trench where perpendicular sheet flow runoff occurs on disturbed areas with slopes greater than 4%.
- B. Place at the extreme limits of the area to be disturbed as shown.
- C. Construct temporary sediment barriers of filter fabric, buried at the bottom, stretched and supported by posts and install below small disturbed areas as indicated on the drawings to retain sediment by reducing the flow velocity to allow sediment deposition.
- D. Space posts 10'-0" on center, maximum or as indicated on the drawings.
- E. Remove sediment deposits prior to reaching one-third height of the fence.



- F. Monitor site frequently and place additional silt fencing should evidence indicate that erosion is about to occur at locations other than those shown on plan.

### 3.5 INLET PROTECTION

- A. Construct temporary sediment barriers around storm drain curb inlets using block and gravel as indicated on the drawings.
- B. Construct metal frame barriers around grate and frame of drop inlets as indicated on the drawings.
- C. Inspect structure after each rainfall and repair as required.
- D. Remove sediment when trap reaches one-half capacity.
- E. Remove structure when protected areas have been stabilized.

### 3.6 EROSION CONTROL BLANKET

- A. Provide on areas as shown on the plans or on all embankments with slopes equal to or steeper than 2-1/2:1.

### 3.7 SILT FENCE ROCK OUTLETS

- A. Utilize temporary silt fence rock outlets as indicated on the plans or directed by Engineer.
- B. Provide temporary silt fence rock outlets constructed of both rip-rap and #57 stone, as illustrated on the plans.

### 3.8 SEDIMENT TUBES

- A. Construct small U-shaped trench that is 20% of depth of tube perpendicular to stormwater flow pattern.
- B. Anchor tube in trench according to manufacturer's recommendations.
- C. Compact the up stream soil surface adjacent to the tube.
- D. Backfill sediment tube with coarse filter material on the upstream side.
- E. Follow manufactures recommendation on installation.
- F. Maintain, repair and/or replace sediment tubes as required to maintain their effectiveness throughout the project

### 3.9 Rip Rap

- A. Where thickness is not shown on the plans, it shall be 12".
- B. The slope upon which this rip-rap is to be placed shall conform with the cross section shown on the plans or as directed by the Engineer.
- C. Properly compact depressions that may be filled in trimming and shaping the slope.

- D. Install filter fabric, lapping sides 12".
- E. Begin placing in a trench at least 2' below the toe of the slope.
- F. Firmly imbed against the slope and the adjoining piece with the sides in contact and with broken joints.
- G. Fill the spaces between the larger pieces with spalls of suitable size, thoroughly ram into place.
- H. The finished surface shall present an even, tight surface true to line, grade and section.

### 3.10 MAINTENANCE

- A. Place all erosion control devices or measures prior to any land disturbing activity within the drainage area they are located.
- B. Inspect erosion control devices and clean or otherwise remove silt buildup as necessary once a week or 24-hours following a rain event of  $\geq 0.5$ ".

### 3.11 REMOVAL

- A. Remove temporary structures after protected areas have been stabilized.

**END OF SECTION 02100**

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## **SECTION 02105**

### **GENERAL EXCAVATION, FILLING AND BACK FILLING**

#### **PART 1 - GENERAL**

##### 1.1 DESCRIPTION

Scope of Work: The work of this Section consists of all necessary excavation, filling and back filling as shown on the plans and specified in SCDOT Technical Specification SC-M-203 to SC-M-205.

#### **PART 2 - PRODUCTS**

Refer to SCDOT Technical Specifications

#### **PART 3 - EXECUTION**

Refer to SCDOT Technical Specifications

**END OF SECTION 02105**

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## **SECTION 02335**

### **SUBGRADE**

#### **PART 1 - GENERAL**

##### 1.1 DESCRIPTION

Scope of Work: The work consists of all necessary installation of sub-grade as shown on the plans and specified in SCDOT Technical Specification SC-M-208.

#### **PART 2 - PRODUCTS**

Refer to SCDOT Technical Specifications

#### **PART 3 - EXECUTION**

Refer to SCDOT Technical Specifications

**END OF SECTION 02335**

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## **SECTION 02340**

### **BASE COURSE**

#### **PART 1 - GENERAL**

##### 1.1 DESCRIPTION

Scope of Work: The work consists of all necessary installation of base course as shown on the plans and specified in SCDOT Technical Specification SC-M-301 to SC-M-310.

#### **PART 2 - PRODUCTS**

Refer to SCDOT Technical Specifications

#### **PART 3 - EXECUTION**

Refer to SCDOT Technical Specifications

**END OF SECTION 02340**

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## **SECTION 02345**

### **PROOF ROLLING**

#### **PART 1 - GENERAL**

##### **1.1 DESCRIPTION**

Scope of Work: The work consists of all necessary proof rolling of the sub-grade and base course as shown on the plans and specified in SCDOT Technical Specification SC-M-211.

#### **PART 2 - PRODUCTS**

Refer to SCDOT Technical Specifications

#### **PART 3 - EXECUTION**

Refer to SCDOT Technical Specifications.

**END OF SECTION 02345**

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## **SECTION 02400**

### **HOT MIX ASPHALT PAVEMENT**

#### **PART 1 - GENERAL**

##### 1.1 DESCRIPTION

Scope of Work: The work consists of all necessary Hot Mix Asphalt (HMA) as shown on the plans and specified in SCDOT Technical Specification SC-M-401 to SC-M-403.

#### **PART 2 - PRODUCTS**

Refer to SCDOT Technical Specifications

#### **PART 3 - EXECUTION**

Refer to SCDOT Technical Specifications

**END OF SECTION 02400**

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## **SECTION 02450**

### **ROADWAY PAVEMENT MARKINGS**

#### **PART 1 - GENERAL**

##### **1.1 DESCRIPTION**

Scope of Work: The work consists of all necessary roadway pavement markings due to project construction as shown on the plans and specified in SCDOT Technical Specification SC-M-625.

#### **PART 2 - PRODUCTS**

Refer to SCDOT Technical Specifications

#### **PART 3 - EXECUTION**

Refer to SCDOT Technical Specifications

**END OF SECTION 02450**

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## **SECTION 02460**

### **THERMOPLASTIC PAVEMENT MARKINGS**

#### **PART 1 - GENERAL**

##### 1.1 DESCRIPTION

Scope of Work: The work consists of all necessary thermoplastic pavement markings due to project construction as shown on the plans and specified in SCDOT Technical Specification SC-M-627.

#### **PART 2 - PRODUCTS**

Refer to SCDOT Technical Specifications

#### **PART 3 - EXECUTION**

Refer to SCDOT Technical Specifications

**END OF SECTION 02460**

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## **SECTION 02470**

### **CONCRETE CURB AND GUTTER**

#### **PART 1 - GENERAL**

##### 1.1 DESCRIPTION

Scope of Work: The work consists of all necessary concrete curb, gutter, curb and gutter, sidewalk, driveway, and median installation or repair due to project construction as shown on the plans and specified in SCDOT 2007 Standard Specifications for Highway Construction Section 720.

#### **PART 2 - PRODUCTS**

Refer to SCDOT Technical Specifications

#### **PART 3 - EXECUTION**

Refer to SCDOT Technical Specifications

**END OF SECTION 02470**

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## SECTION 02560

### CAST-IN-PLACE CONCRETE

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION

- A. Work included: Provide cast-in-place concrete, including formwork and reinforcement, where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- 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.

##### 1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Reference standards: Comply with the following codes, specifications and standards, except as otherwise shown or specified:
  - 1. American Concrete Institute (ACI) Publications:
    - ACI 301 Specification for Structural Concrete for Buildings
    - ACI 305 Recommended Practice for Hot Weather Concreting
    - ACI 306 Recommended Practice for Cold Weather Concreting
    - **ACI 315 Manual of Standard Practice for Detailing Reinforced Concrete Structures**
    - ACI 318 Building Code Requirements for Reinforced Concrete
    - ACI 347 Recommended Practice for Concrete Framework
  - 2. American Society for Testing and Materials (ASTM) Publications:
    - A185 Welded Steel Wire Fabric for Concrete Reinforcement
    - A615 Deformed and Plain Billet Steel Bars for Concrete Reinforcement
    - C31 Making and Curing Concrete Test Specimens in the Field
    - C33 Concrete Aggregates
    - C39-72 Compressive Strength of Cylindrical Concrete Specimens

- C94 Ready-Mixed Concrete
  - C150 Portland Cement
  - C260 Air-Entraining Admixtures for Concrete
3. Concrete Reinforcing Steel Institute (CRSI):
    - "Manual of Standard Practice"
  4. American Welding Society (AWS) Publication:
    - D12.1-61 Welding Reinforcement Steel, Metal Inserts and Connections in Reinforced Concrete
- C. Testing agency: A testing laboratory will be retained by the Owner to perform material evaluation tests required by these specifications.
  - D. Qualifications of contractors performing concrete work: Minimum of two (2) years experience on comparable concrete projects.
  - E. Plant qualification: Plant equipment and facilities shall meet all requirements of the Check List for Certification of Ready Mixed Concrete Production Facilities of the National Ready Mixed Concrete Association and ASTM C94.

### 1.3 SUBMITTALS

- A. Within 15 calendar days after receiving the Owner's Notice to Proceed, submit proposed mix designs for approval.
  1. Proportions shall be determined by means of laboratory tests of concrete made with the cement and aggregate proposed for use.
  2. Provide report in detail from an approved testing laboratory showing 7-day and 28-day strengths obtained using materials proposed.
  3. Required average strength above specified strength:
    - a. Determinations of required average strength above specified strength (f'c) shall be in accordance with ACI 318 and ACI 301.
    - b. Establish the required average strength of the design mix using the materials proposed to be employed. Standard deviations shall be determined by thirty tests. Average strength used for selecting proportions shall exceed specified strength (f'c) by at least:
 

400 psi	Standard deviation is less than 300
550 psi	Standard deviation is 300 to 400
700 psi	Standard deviation is 400 to 500
900 psi	Standard deviation is 500 to 600
1200 psi	Standard deviation is above 600 or unknown
    - c. When the ready-mix producer does not have a record of past performance, the combination of materials and the proportions selected shall be selected from trial mixes having proportions and consistencies suitable for the work using at least three (3) different water/cement ratios which will produce a range of strengths encompassing those required.

Average strength required shall be 1200 psi above specified strength.

4. Cost of this work shall be borne by the Contractor.
- B. Manufacturer's data: Submit manufacturer's specification with application instructions for proprietary materials and items, including curing compound, form release agents, admixtures, patching compounds, and others as required by the Engineer.
- C. Shop drawings: Submit the following shop drawings to the Engineer for approval before work is started:
  1. Reinforcing steel drawings: Prepare in accordance with ACI 315. Indicate bending diagrams, assembly diagrams, splicing and laps of bars, dimensions and details of bar reinforcing and accessories.
  2. Cementitious coating.

#### 1.4 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01640.
- B. Store reinforcement in a manner that will avoid excessive rusting or coating by grease, oil, dirt and other objectionable materials.
- C. Keep reinforcement in separate piles or racks so as to avoid loss of identification after bundles are broken.

### PART 2 - PRODUCTS

#### 2.1 FORMS

- A. Use form materials conforming to ACI 347.
- B. Form lumber: Use lumber of sufficient quality and grade, size and stiffness to adequately support the work and ensure dimensional accuracy.
- C. Form ties: Use form ties which do not leave an open hole through the concrete and which permit neat and solid patching at every hole.
  1. Use ties with cones that allow a 1" break back and facilitate patching.
  2. On structures containing water or other liquid or below grade structures, use embedded rod ties with integral waterstops in addition to cones.
  3. Through-bolts that utilize a removable tapered sleeve in water containing and below grade applications: Use mechanical EPDM rubber plugs to seal holes made after removal of taper ties. Acceptable product is X-Plug by the Greenstreak Group, Inc. 800-325-9504. Follow manufacturers' instructions for installation. Friction fit plugs are not allowed.
  4. Wire ties and wood spreaders will not be permitted.

- D. Form coatings: Form release coating shall be neat oil with surface wetting agent or chemical release agent which effectively prevents absorption of moisture, prevents bonding with concrete, is non-staining to concrete and leaves the concrete with a paintable surface.
  - 1. On surfaces to receive an applied coating, use a residual free chemical form release agent which is compatible with the applied coating and will not prevent the applied finish from satisfactorily bonding to the concrete.
- E. Chamfer strips: Chamfer strips shall be wood or polyvinyl strips or approved equal, designed to be nailed in the forms to provide a 3/4" chamfer (unless indicated otherwise) at all exposed edges and corners of concrete members.

2.2 REINFORCEMENT

- A. Comply with the following as minimums:
  - 1. Bars: ASTM A615, Grade 60, unless otherwise shown on the Drawings, using deformed bars for Number 3 and larger.
  - 2. Welded wire fabric: ASTM A185.
    - a. Use sheet (mat) welded wire fabric only.
    - b. Welded wire fabric supplied in rolls will not be accepted.
  - 3. Bending: ACI 315 and ACI 318.
- B. Fabricate reinforcement to the required shapes and dimensions, within fabrication tolerances stated in the CRSI "Manual of Standard Practices".
- C. Do not use reinforcement having any of the following defects:
  - 1. Bar lengths, depths, or bends exceeding the specified fabricating tolerances.
  - 2. Bends or kinks not indicated on the Drawings or required for this Work.
  - 3. Bars with excessive rust, scale, dirt, oil or other defects which will reduce the bond or the effective cross section of the bar.
- D. Furnish all support bars, tie bars, chairs, bolsters, etc. required for properly supporting and spacing bars in the forms.
  - 1. For slabs on grade, use supports with stand plates or horizontal runners where wetted base materials will not support chair legs. Other supports must be approved by the Engineer.
  - 2. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, provide supports with legs which are hot-dip galvanized, plastic protected or stainless steel.
  - 3. Supply supports for welded wire fabric as follows:

**Welded Wire Fabric Support Spacing**

<b>Welded Wire Reinforcement</b>	<b>Welded Wire Spacing</b>	<b>Maximum Support</b>
--------------------------------------	--------------------------------	----------------------------

(diameter)	(inches)	Spacing (feet)
W9 or larger	12 and greater	4
W5 to W8	12 and greater	3
W9 and larger	Less than 12	3
W4 to W8	Less than 12	2
Less than W4	Less than 12	1.5

- E. Tie wire: FS QQ-W-461, annealed steel, black, 16 gauge minimum.
- F. Welding electrodes: AWS A5.1, low hydrogen, E70 series.
- G. Splice devices: Shall be sized to develop one hundred twenty-five (125%) percent of yield strength of bar.

### 2.3 CONCRETE MATERIALS

- A. Cement: Use portland cement: ASTM C150, Type I, Type I-P or Type II, low alkali.
  - 1. Where concrete will be exposed to sewage, use Type II or I-P cement.
  - 2. Fly ash shall conform to ASTM C618, Class C or F.
  - 3. Fly ash content shall not exceed 20% by weight of the total amount of cementitious materials (portland cement plus fly ash).
- B. Aggregates:
  - 1. Fine aggregate: Conform to ASTM C33.
  - 2. Coarse aggregate: Conform to ASTM C33, Size #57.
- C. Water: Clean and potable and free from injurious amounts of deleterious materials.
- D. Admixtures:
  - 1. Air entraining admixture: ASTM C260.
  - 2. Water reducing, set controlling admixture: Conform to ASTM C494.
    - a. Type A - water reducing.
    - b. Type D - water reducing and retarding.
  - 3. Superplasticizers: Conform to ASTM C494, Types F and G.
    - a. Use superplasticizers in thin section placements and in areas of congested reinforcing and/or embedded items, or where otherwise approved by the Engineer.
    - b. Use where conventional consolidation techniques are impractical.
  - 4. Do not use admixtures containing calcium chloride.
- E. Fiber reinforcing:
  - 1. Use fiber reinforcing where indicated on the drawings.

2. Provide polypropylene or co-polymer fibers as manufactured by High Tech Fibers, Inc., Fibermesh Company or an approved equal.
3. Where required, use fiber reinforcing at a rate of 2.0 lbs. per cubic yard unless another rate is indicated on the drawings.

F. Curing compounds:

1. On all vertical and formed surfaces, construction joints, basin slabs, surfaces to receive an applied coating or finish, and other surfaces except as otherwise indicated or specified, use a non-residual, non-staining curing compound conforming to ASTM C309 Type 1 and 1D. Acceptable products are:
  - a. L&M Cure by L&M Construction Chemicals, Inc.
  - b. Horn WB-75 by A.C. Horn Company.
  - c. Sonosil by Sonneborn, Inc.
  - d. Approved equal.

2.4 CONCRETE MIXES

A. Provide concrete with the compressive strengths shown on the Drawings. When such strengths are not shown on the Drawings, provide the following 28-day strengths as minimum:

- |    |  |                                 |
|----|--|---------------------------------|
| 1. | All structural concrete except as indicated in Nos. 2 and 3 below or as noted otherwise on the plans | 4000 psi                        |
| 2. | All sidewalks, curbs and gutters, and unreinforced foundations                                       | 4000 psi with fiber reinforcing |
| 3. | Thrust blocking, backfill or encasement for piping, and concrete fill                                | 2500 psi                        |
| 4. | Prestressed or precast concrete:   | 5000 psi                        |

B. Maximum water cement ratios:

- |                   |      |
|-------------------|------|
| 4000 psi concrete | 0.5  |
| 3000 psi concrete | 0.53 |
| 2500 psi concrete | 0.67 |

C. Entrained air:

- |                            |              |
|----------------------------|--------------|
| 3000 and 4000 psi concrete | 5% ± 1%      |
| 2500 psi concrete          | Not Required |

D. Slump:

- |                            |         |
|----------------------------|---------|
| 3000 and 4000 psi concrete | 4" ± 1" |
| 2500 psi concrete          | 5" ± 1" |

E. Production of concrete:

1. General: Concrete shall be ready mixed and shall be batched, mixed and transported in accordance with ASTM C94 except as otherwise indicated.
2. Monitor time and mix proportions by plant delivery slips.



3. Air entraining admixtures: Add air entraining admixture into the mixture as a solution and measure by means of an approved mechanical dispensing device.
4. Water reducing and retarding admixture: Add water reducing and retarding admixture and measure as recommended by the manufacturer.
5. Addition of water to the mix upon arrival at the job site shall not exceed that necessary to compensate for a 1" loss in slump, nor shall the design maximum water-cement ratio be exceeded. Water shall not be added to the batch at any later time.
6. Weather conditions: Control temperature of mix as required by ACI 306 "Cold Weather Concreting" and by ACI 305 "Hot Weather Concreting".

### PART 3 - EXECUTION

#### 3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Water, mud, organic, and other detrimental material shall be removed from excavations before concrete is deposited.
- C. Notify the Engineer prior to placing concrete and place no concrete until the formwork, reinforcing and embedded items have been observed by the Engineer.

#### 3.2 FORMWORK

- A. General:
  1. Construct forms in conformance with ACI 347.
  2. Design, erect, support, brace and maintain formwork so it will safely support vertical and lateral loads which might be applied until such loads can be supported safely by the concrete structure.
  3. Construct forms to the exact sizes, shapes, lines and dimensions shown, and as required to obtain accurate alignment, location, grades, level and plumb work in the finished structure.
  4. Provide formwork sufficiently tight to prevent leakage of cement paste during concrete placement. Solidly butt joints and provide backup material at joints as required to prevent leakage and prevent fins.
- B. Form construction and erection:
  1. Construct forms in conformance with ACI 347.
  2. Provide for openings, offsets, keyways, recesses, moldings, reglets, chamfers, blocking, screeds, bulkheads, anchorages, inserts and other embedded items as required.
  3. Hold inner and outer forms for vertical concrete together with combination steel ties and spreaders approved by the Engineer.

4. Unless specifically stated otherwise, provide 3/4" chamfer at all exposed edges of concrete.
5. Provide temporary openings in the formwork where necessary to facilitate cleaning and inspection of the formwork.
6. Coat form contact surfaces with approved form coating compound prior to placing reinforcing steel.
7. Do not allow excess form coating material to accumulate in the forms or to come in contact with reinforcing surfaces which will bond to fresh concrete.
8. Side forms for footings may be omitted, and concrete may be placed directly against excavation only when requested by the Contractor and approved by the Engineer.
9. Provide a positive means of adjustment of shores and struts and ensure that all settlement is taken up during concrete placing.
10. Construct blockouts and formed openings of sufficient size and proper location to permit final alignment of items within it or passing through it.
  - a. Allow sufficient space for grouting, packing or sealing around any items penetrating the opening as may be required to ensure watertightness.
  - b. Provide openings with continuous keyways with waterstops where required, and provide a slight flare to facilitate grouting and the escape of entrapped air during grouting.
  - c. Provide only blockouts or openings that are shown on the drawings or otherwise approved by the Engineer.

C. Formwork reuse: Reuse only forms that are in good condition and which maintain a uniform surface texture on expose concrete surfaces.

1. Apply a light sanding as necessary to obtain a uniform texture.
2. Plug unused tie holes and penetrations flush with the form surface.

D. Removal of forms:

1. Do not disturb or remove forms until the concrete has hardened sufficiently to permit form removal with complete safety. Do not remove shoring until the member has acquired sufficient strength to support its own weight, the load upon it, and the added load of construction.
2. Do not remove forms before the following minimum times without prior approval from the Engineer:
 

a. Sides of footings or slabs on grade	24 hrs
b. Walls not supporting load	48 hrs
c. Vertical sides of beams	48 hrs
d. Columns not supporting load	48 hrs
e. Suspended slabs or beam bottoms (forms only)	10 days
3. In determining the minimum stripping times, consider only the cumulative time during which the ambient temperature of the air surrounding the concrete is above 50°.
4. Do not remove shoring for suspended slabs or beams until the concrete has reached 75% of the specified 28 day strength.
5. When reshoring or backshoring is permitted or required, plan the operations in advance and submit procedures to the Engineer for approval.

- a. Design and plan all reshoring operations to support all construction loading and in accordance with ACI 347.
6. Exercise care in removing forms from finished concrete surfaces so that surfaces are not marred or gouged and that corners are true, sharp and unbroken.
7. Do not permit steel spreaders, form ties, or other metal to project from or be visible on any concrete surface except where so shown on the drawings.
8. Whenever the formwork is removed during the curing period, continue to cure the exposed concrete by one of the methods specified herein.

### 3.3 EMBEDDED ITEMS

- A. Embedded items: Set anchor bolts and other embedded items accurately and securely in position in the forms until the concrete is placed and set.
  1. Use templates where practical for all anchor bolts.
  2. Check locations of all anchor bolt and special castings prior to placing concrete and verify locations after concreting.
- B. Piping cast in concrete:
  1. Install and secure sleeves, wall pipes and pipe penetrations before placing concrete.
  2. Do not weld or otherwise attach piping to reinforcing steel.
  3. Support piping to be encased in concrete securely and on firm foundation so as to prevent movement or settlement during concreting.
- C. Locate electrical conduit so that it will not impair the strength of the construction.
  1. Do not use conduits running within (not passing through) a slab, wall or beam that are larger in outside diameter than 1/3 overall concrete thickness unless otherwise approved by the Engineer.
  2. Do not space conduits closer than three conduit diameters apart unless otherwise approved by the Engineer.

### 3.4 REINFORCEMENT

- A. General: Comply with the specified codes and standards and Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars" for details and methods of reinforcement placement and supports and as herein specified.
  1. Clean reinforcement and remove loose dust and mill scale, earth, and other materials which reduce or destroy bond with concrete.
  2. Position and secure reinforcement against displacement by forms, construction, and the concrete placement operations.
  3. Use adequate number of ties to secure reinforcing.
  4. Do not weld or field bend reinforcing without prior approval by the Engineer.

- B. Placing reinforcing:
1. Provide and install all chairs, runners, bolsters, standees and other accessories in sufficient quantities to satisfactorily position the reinforcing and hold it in place during concrete placement.
  2. Support reinforcing for slabs on ground on chairs or bolsters with stand plates or a properly sized concrete cube.
    - a. Use concrete bricks as supports only as approved by the Engineer.
  3. Secure and tie dowels in place prior to placing concrete. Do not press dowels into wet concrete.
- C. Concrete cover: Unless otherwise indicated on the drawings or specified herein, install reinforcing with clear concrete coverage in conformance with ACI 318.
1. All reinforcement, regardless of size, exposed to water or sewage shall have 2" cover.
  2. Place reinforcement a minimum of 2" clear of any openings or metal pipe or fittings.
- D. Splicing reinforcement: Splice reinforcement steel in accordance with the latest revisions of ACI 318 "Building Code Requirements for Reinforced Concrete" unless shown otherwise on the drawings.
1. All splices at wall corners or intersections and at wall and foundation intersections shall be Class B tension splices per ACI 318, Sections 12.2.2 and 12.15.
  2. All other splices of vertical or horizontal steel in walls shall be Class B tension splices as per ACI 318, Sections 12.2.2 and 12.15.
  3. Horizontal ring steel in circular, non-prestressed concrete tanks shall be Class B tension splices and the splices shall be staggered so that no more than 50% of the bars are spliced at any one location.
  4. All welded or mechanical splicing devices shall develop 125% of the yield strength of the bar.
  5. Column vertical bars shall lap 30 bar diameters with dowels at the base of the column unless otherwise noted. Dowels shall be the same size and quantity as column vertical bars unless otherwise noted.
  6. All splices not otherwise shown or specified shall be Class B tension lap splices per ACI 318, Sections 12.2.2 and 12.15.
- E. Tolerances: Place bars in the locations indicated within the tolerances conforming to the CRSI "Manual of Standard Practice".
- F. Welded wire mesh: Install welded wire fabric in as long of a length as practicable and lay flat before placing concrete.
1. Use only mat welded wire fabric. Do not use welded wire fabric from rolls.
  2. Support and tie mesh to prevent movement during concrete placement.
  3. Lap adjoining pieces at least one full mesh and lace splices with wire.

4. Provide, at a minimum, supports for welded wire fabric according to the Table in Section 2.2.D.3. Confirm the adequacy of the support spacings listed therein for the anticipated construction loads. Increase the number of supports, if necessary, to assure that the final position of the welded wire fabric will conform to that shown on the drawings.
5. Do not place welded wire fabric on the subbase surface and then hook or "pull up" the reinforcement during concrete placement.
6. Do not lay welded wire fabric on top of the freshly placed concrete and then "walk it" into place.

### 3.5 PLACING CONCRETE

#### A. Preparation:

1. Remove foreign matter accumulated in the forms.
2. Rigidly close openings left in the formwork.
3. Wet wood forms sufficiently to tighten up cracks. Wet other material sufficiently to maintain workability of the concrete.
4. Use only clean tools.
5. Provide and maintain sufficient tools and equipment on hand to facilitate uninterrupted placement of the concrete.
6. Before commencing concrete, inspect and complete installation of formwork, reinforcing steel and all items to be embedded or cast-in.

#### B. Conveying:

1. Transport and handle concrete from the truck to the place of final deposit as rapidly as practicable by methods which will prevent segregation or loss of ingredients to maintain the quality of the concrete.
2. Provide equipment for lifting, dumping, chuting, pumping or conveying the concrete, of such size and design as to ensure a practically continuous flow of concrete at the delivery and without separation of materials.
3. Use hoppers and elephant trunks where necessary to prevent the free fall of concrete for more than 4'.
4. Do not use concrete that is not placed within 1-1/2 hours after water is first introduced into the mix unless the slump is such that it meets the specified limits without the addition of water to the batch.

#### C. Placing:

1. Deposit concrete as nearly as practicable in its final location so as to avoid separation due to rehandling and flowing.
2. Deposit concrete in horizontal layers not deeper than 2', avoiding inclined layers.
3. Place concrete at such a manner that concrete upon which fresh concrete is deposited is still plastic.
4. Bring slab surfaces to the correct level with screeds set to the proper elevation.

#### D. Hot weather placement: Place concrete in hot weather in accordance with ACI 305 "Hot Weather Concreting" and as specified herein.

1. Do not place concrete whose temperature exceeds 100°F.
  2. Thoroughly wet forms and reinforcing prior to placement of concrete.
  3. Use additional set retarder as necessary to increase set time.
  4. Limit the size of the pour where it may reduce the likelihood of cold joints due to reduced set time.
  5. Shade the fresh concrete as soon as possible after placing.
  6. Start curing as soon as the concrete is sufficiently hard to permit without damage.
- E. Cold weather placement: Place concrete in cold weather in accordance with ACI 306 and as specified herein.
1. Except when authorized specifically by the Engineer, do not place concrete when the atmospheric temperature is below 40°F.
  2. When cold weather placement is approved by the Engineer, heat either the mixing water or aggregate or both so that the concrete temperature is between 65°F and 85°F.
  3. Protect the freshly placed concrete by adequate housing or covering and provide heat to maintain a temperature of not less than 50°F for not less than four days.
  4. Do not add salts, chemicals, or other materials to the concrete mix to lower the freezing point of the concrete.
- F. Consolidation:
1. Consolidate each layer of concrete immediately after placing, by use of internal concrete vibrators supplemented by hand spading, rodding, or tamping.
    - a. Use vibrators having a 2" head diameter and a minimum frequency of 8000 vibrations per second.
    - b. Provide sufficient number of vibrators to properly consolidate the concrete, keeping up with placement operations.
    - c. Provide at least one spare vibrator on site.
  2. Insert and withdraw vibrators at points approximately 18" apart.
  3. Do not vibrate forms or reinforcement.
  4. Do not use vibrators to transport concrete inside the forms.

### 3.6 PROTECTION

- A. Protect the surface finish of newly placed concrete from damage by rainwater or construction traffic.
- B. Do not apply design loads to structures until the concrete has obtained the specified strength.
1. Do not backfill against walls until they have reached the specified strength and all supporting or bracing walls, slabs, etc. have also reached the specified strength, unless otherwise permitted by the Engineer.
  2. Protect structures from construction overloads.

### 3.7 CURING

- A. Beginning immediately after placement, protect concrete from premature drying, excessively hot and cold temperatures and mechanical injury.
- B. Continuously cure concrete for a period of not less than 7 days after placement.
  - 1. When seven-day cylinder breaks indicate, in the opinion of the Engineer, the possibility of low strength concrete, provide additional curing as per the request of the Engineer.
  - 2. When temperatures during the curing period fall below 40°F, provide additional curing time as directed by the Engineer.
- C. Unless otherwise directed by the Engineer, cure concrete not in contact with forms in accordance with one of the following procedures:
  - 1. Ponding or sprinkling: Keep entire concrete surface wet by continuously sprinkling or by allowing water to pond, covering all surfaces.
  - 2. Wet burlap: Thoroughly wet and cover all concrete surfaces with wet burlap mats as soon as the concrete has set sufficiently to avoid marring the surface.
    - a. Keep the burlap continuously wet during the curing period.
  - 3. Curing blankets: Thoroughly wet concrete surfaces to be cured and cover with curing blankets as soon as the concrete has set sufficiently to avoid marring the surface.
    - a. Weight the blankets down to maintain close contact with the concrete surface.
    - b. Use sheets of waterproof kraft paper with the joints between sheets taped continuously; or
    - c. Use sheets of 4 mil or thicker polyethylene with the joints between sheets continuously taped.
  - 4. Wet sand: Apply a layer of sand over the entire surface and keep it continuously wet.
  - 5. Curing compound: Apply curing compound immediately after completion of the finish on uniformed surfaces and within two hours after removal of forms on formed surfaces.
    - a. Spray the entire surface with two coats of liquid curing compound, applying the second coat in the direction of 90° to the first coat.
    - b. Apply compound in accordance with the manufacturer's instructions to cover the surface with a uniform film which will seal thoroughly.
- D. Hot weather: When necessary, provide wind breaks, shading, fog spraying, sprinkling, ponding or wet covering with a light colored material applying as quickly as concrete hardening and finishing operations will allow.

### 3.8 CONCRETE FINISHING

- A. Finish schedule: Unless otherwise indicated on the drawings, finish all concrete surfaces in accordance with the following schedule:

1. Form finish: Formed surfaces not ordinarily exposed to view, including:
  - a. Interior walls of open tanks below a line one foot lower than the lowest normal water level.
  - b. The underside of slabs not exposed to view.
  - c. Walls below grade.
2. Cementitious coating: All formed surfaces exposed to view including:
  - a. Interior walls of tanks above a line one foot lower than the lowest normal water level.
  - b. The underside of slabs, soffits, etc. exposed to view.
3. Float finish: Slab surfaces not exposed to view or not receiving an applied thin finish, including:
  - a. Bottom slabs of tanks or structures containing water sewage or other liquid.
  - b. Foundations not exposed to view.
  - c. Roof slabs to be covered with insulation and/or built-up roofing.
4. Trowel finish: Interior slab surfaces exposed to view or to receive an applied thin film coating or floor finish, including:
  - a. Interior, indoor slabs and floors of buildings.
  - b. Surfaces on which mechanical equipment moves.
  - c. Floors receiving vinyl tile, resilient flooring, carpet, paint, etc.
5. Broom finish: Exterior, outdoor slabs exposed to view including:
  - a. Outdoor floor slabs and walkways.
  - b. Other floors which may become wet or otherwise require a non-skid surface.
  - c. Sidewalks and concrete pavements.
6. Scratch finish: Surfaces which are to receive a thick topping or additional concrete cast against them including:
  - a. Surfaces receiving concrete equipment pads.
  - b. Floors receiving concrete topping.
  - c. Construction joints not otherwise keyed.
7. Edge finish: Exposed edges of slabs not receiving chamfer including:
  - a. Sidewalk edges and joints.
  - b. Pavement edges and joints.
  - c. Other slab edges not chamfered.

B. Finishing procedures:

1. Form finish:
  - a. Repair defective concrete.
  - b. Fill depressions deeper than 1/4".
  - c. Fill tie holes.
  - d. Remove fins exceeding 1/8" in height.
2. Cementitious finish:
  - a. Patch all tie holes and defects and remove all fins.
  - b. Within one day of form removal, fill all bug holes, wet the surfaces and rub with carborundum brick until a uniform color and texture are produced; or
  - c. Dampen surfaces, brush apply a grout slurry consisting of 1 part portland cement to 1-1/2 parts sand, and rub the surface vigorously with a stone. Remove all excess grout.



- d. Provide a two coat cement base waterproofing, sealing finish of Thoroseal and Thoroseal Plaster Mix as manufactured by Standard Dry Wall Products, Inc. or an approved equal.
  - 1) Patch all tie holes and defects and removal all fins, and clean surface of all dirt, laitance, grease, form treatments, curing compounds, etc.
  - 2) Key coat: Apply key coat of Thoroseal at a rate of two (2) lbs. per sq. yd. by fiber brush. Mix material using one part of Acryl 60 to three parts clean water. Should material start to drag during application, dampen surface with water. During hot weather periods, dampen surfaces with water prior to application of key coat material. Key coat shall be allowed to cure for five (5) days before applying finish coat.
  - 3) Apply a finish coat consisting of a four (4) to six (6) lbs. per sq. yd. application of Thoroseal Plaster Mix using steel trowel or spray gun. Color to be selected by the Owner. Mix dry material using one (1) part Acryl 60 to three (3) parts clean water. Firmly press the mix into all voids and level with a steel trowel. When surface is set so that it will not roll or lift, float it uniformly using a sponge float.
3. Float finish:
  - a. Begin floating when the water sheen has disappeared and when the surface has stiffened sufficiently to permit the operation.
  - b. Cut down all high spots and fill all low spots and float the slab to a uniform sandy texture.
4. Trowel finish:
  - a. Float finish as specified herein.
  - b. Power trowel to a smooth surface free of defects.
  - c. After the surface has hardened sufficiently, hand trowel until a ringing sound is produced as the trowel is moved over the concrete surface.
5. Broom finish:
  - a. Float finish as specified herein.
  - b. Provide a scored texture by drawing a broom across the surface.
6. Scratch surface:
  - a. Screed the surface to the proper elevations.
  - b. Roughen with rakes or stiff brushes.
7. Edge finish: Tool slab edges and joints with a 1/4" radius edging tool.

### 3.9 SURFACE REPAIR

#### A. Patching mortar:

1. Make a patching mortar consisting of 1 part portland cement to 2-1/2 parts sand by damp loose volume.
2. Mix the mortar using one part acrylic bonding admixture to two parts water.

- B. Tie holes: Clean and dampen all tie holes and fill solidly with patching mortar.
- C. Surface defects:
  - 1. Remove all defective concrete down to sound solid concrete.
  - 2. Chip edges perpendicular to the concrete surface or slightly undercut, allowing no feather edges.
  - 3. Dampen surfaces to be patched.
  - 4. Patch defects by filling solidly with repair mortar.
- D. Allow the Engineer to observe the work before placing the patching mortar.
- E. Repair defective areas greater than 1 sq. ft. or deeper than 1-1/2" as directed by the Engineer using materials approved by the Engineer at no additional expense to the Owner.

### 3.10 JOINTS

- A. Construction joints:
  - 1. Unless otherwise approved by the Engineer, provide construction joints as shown on the drawings.
  - 2. If additional construction joints are found to be required, secure the Engineer's approval of joint design and location prior to start of concrete placement.
  - 3. Continue all reinforcing across construction joints and provide 1-1/2" deep keyways unless indicated otherwise on the drawings.
    - a. Form keyways in place.
  - 4. Provide waterstops in all construction joints of liquid containing structures, structures below grade or other structures as shown on the drawings.

### 3.11 FIELD QUALITY CONTROL

- A. Concrete cylinder tests:
  - 1. During construction, prepare test cylinders for compressive strength testing, using 6" diameter by 12" long single use molds, complying with ASTM C31.
    - a. Make a set of three test cylinders from each pour of 50 cubic yards or less, plus one additional set of cylinders for each additional 50 cubic yards or fraction thereof.
    - b. Identify each and tag cylinder as to date of pour and location of concrete which it represents.
    - c. Deliver cylinders to testing lab selected by the Owner.
    - d. Cost for preparation and delivery of cylinders shall be borne by the Contractor. Cost for testing cylinders will be borne by the Owner.
  - 2. Should strengths shown by test cylinders fail to meet specified strengths for the concrete represented, then:
    - a. Engineer shall have the right to require changes in the mix proportions as he deems necessary on the remainder of the work.

- b. Additional curing of those portions of the structure represented by the failed test cylinders shall be accomplished as directed by the Engineer.
- c. Upon failure of the additional curing to bring the concrete up to specified strength requirements, strengthening or replacement of those portions of the structure shall be as directed by the Engineer.
- d. The Engineer may require additional testing of concrete in question by either non-destructive methods such as the Swiss Hammer, Windsor Probe or Ultrasonics or by coring and testing the concrete in question in accordance with ASTM C42. Such testing shall be performed at no additional cost to the Owner.

B. Other field concrete tests:

- 1. Slump tests: Either the Engineer or a testing laboratory representative will make slump tests of concrete as it is discharged from the mixer.
  - a. Slump test may be made on any concrete batch at the discretion of the Engineer.
  - b. Failure to meet specified slump requirements (prior to addition of any superplasticizers) will be cause for rejection of the concrete.
- 2. Temperature: The concrete temperature may be checked at the discretion of the Engineer.
- 3. Entrained air: Air content of the concrete will be checked by a representative of the testing laboratory at the discretion of the Engineer.

C. Coordination of laboratory services: The Contractor shall be responsible for coordination of laboratory services.

- 1. Maintain a log recording quantities of each type of concrete placed, date and location of pour.
- 2. Inform the testing laboratory of locations and dates of concrete placement and other information as required to be identified in the laboratory's test reports.

D. Tests required because of extensive honeycombing, poor consolidation of the concrete or any suspected deficiency in the concrete will be paid for by the Contractor.

E. Dimensional tolerances:

- 1. Dimensional tolerances for allowable variations from dimensions or locations of concrete work, including the locations of embedded items shall be as given in ACI 301.
- 2. Where anchor bolts or other embedded items are required for equipment installation, comply with the manufacturer's tolerances if more stringent than those stated in ACI 301.

F. Watertight concrete:

1. All liquid containing structures, basements or pits below grade shall be watertight.
  2. Any visible leakage or seepage shall be repaired as instructed by the Engineer at no expense to the Owner.
  3. Where physical evidence of honeycombing, cold joints or other deficiencies which may impair the watertightness of a structure exists, the Engineer may at his discretion call for leak testing of the structure.
    - a. Fill the structure with water and allow to stand for not less than 48 hours.
    - b. Make repairs on the structure until all visible leaks are sealed and the leakage rate of the water in the structure is less than 0.1% of the volume held in the structure per day.
    - c. The cost of testing and repairs shall be performed at no expense to the Owner.
- G. Concrete which fails to meet strength requirements, dimensional tolerances, watertightness criteria, or is otherwise deficient due to insufficient curing, improper consolidation or physical damage shall be replaced or repaired as instructed by the Engineer at no expense to the Owner.

### 3.12 MEASUREMENT AND PAYMENT

- A. No measurement or direct payment will be made for the work under this Section and all costs for same shall be included in the price bid for the item in which the concrete work is an integral part.

**END OF SECTION 02560**

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## **SECTION 02740**

### **RIPRAP AND SLOPE PROTECTION**

#### **PART 1 - GENERAL**

##### **1.1 DESCRIPTION**

Scope of Work: The work consists of all necessary riprap and slope protection as shown on the plans and specified in SCDOT Technical Specification SC-M-804.

#### **PART 2 - PRODUCTS**

Refer to SCDOT Technical Specifications

#### **PART 3 - EXECUTION**

Refer to SCDOT Technical Specifications

**END OF SECTION 02560**

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## **SECTION 02800**

### **SEEDING**

#### **PART 1 - GENERAL**

##### **1.1 DESCRIPTION**

Scope of Work: The work consists of all necessary seeding as shown on the plans and specified in SCDOT Technical Specification SC-M-810.

#### **PART 2 - PRODUCTS**

##### **2.1 SEED**

- D. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances.
- E. Seed Species: See seeding schedule on drawings.

#### **PART 3 - EXECUTION**

Refer to SCDOT Technical Specifications

**END OF SECTION 02800**

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## SECTION 805

### GUARDRAIL

#### 805.1 Description

1 This section contains specifications for the materials, equipment, construction, measurement, and payment for the installation of guardrail in conformity with the Plans and the Specifications or as directed by the RCE.

##### 805.1.1 Guardrail Types

- 1 Guardrail types in this section include the following:
- Steel Beam Guardrail (W-Beam),
  - Adjustable Guardrail,
  - Steel Beam Guardrail (Double Layer),
  - Steel Beam Guardrail (Thrie),
  - Steel Beam Guardrail (Thrie-Double Layer),
  - Box Beam Median Barrier,
  - Tubular Beam Guardrail (Bridge Railing),
  - Temporary Guardrail,
  - Concrete Median Barrier, and
  - Median Cable Barrier.

##### 805.1.2 Scope of Work

1 Installation of guardrail includes the construction of anchor blocks and anchorage of the specified kind and dimensions at the approach and off ends of bridges, terminal and end anchor sections and blockouts; and includes the assembly and erection of all component parts and materials at the locations shown on the Plans and in the Specifications or as directed by the RCE.

#### 805.2 Materials

##### 805.2.1 Steel Beam Rail Elements

- 1 Provide W-beam or Thrie beam rail elements, as specified, fabricated from sheet steel conforming to the requirements of AASHTO M 180 for Class A, Type 2.
- 2 If guardrail is erected on radii of 150 feet or less, make field measurements before fabrication to determine the proper curvature of the rail elements. Shop fabricate the rail elements to conform to the curvature of the radii. Whenever field fabrication that is approved by the RCE requires cutting or drilling, coat the cut or drilled members by applying two coats of 90% minimum zinc-rich cold galvanizing compound.

### **805.2.2 Adjustable Guardrail Rail Elements**

- <sup>1</sup> Use materials conforming to the material requirements indicated on the Plans and in the Specifications.
- <sup>2</sup> The Department may allow the substitution of composite or plastic blockouts for treated wood blockouts for use with adjustable guardrail if they meet the requirements shown on the Plans and as stated in **Subsection 805.2.4.2**. The substitution is subject to approval by the RCE.

### **805.2.3 Posts**

#### **805.2.3.1 General**

- <sup>1</sup> Use wood or steel posts with W-beam guardrail elements. Do not use wood posts with Thrie beam guardrail elements. For adjustable W-beam guardrail, use wooden or steel posts manufactured with the appropriate holes for blockout attachment. Field drill or punch additional holes if necessary. Ensure that steel posts, blocks, and base plates for median cable barriers conform to the requirements of **Subsection 805.2.9.2**.

#### **805.2.3.2 Steel Posts**

- <sup>1</sup> Use steel posts conforming to the requirements of AASHTO M 270, Grade 36 steel. Ensure that the dimensions and weight of the posts are as shown on the Plans. Fabricate the posts from structural steel conforming to the requirements of **Section 709**. Galvanize the posts in accordance with ASTM A 123 after fabrication.
- <sup>2</sup> Whenever field fabrication that is approved by the RCE requires cutting or drilling, protect the cut or drilled metal by applying two coats of 90% minimum zinc-rich cold-galvanizing compound.

#### **805.2.3.3 Wood Posts**

- <sup>1</sup> Use Southern Yellow Pine conforming to the requirements for guardrail posts specified in **Section 706** unless otherwise indicated on the Plans or in the Specifications.

#### **805.2.3.4 Extra Length Posts**

- <sup>1</sup> Ensure that extra length of post material meets the requirements of **Sub-section 805.2.3.2** or **805.2.3.3** as applicable.

### **805.2.4 Blockouts**

#### **805.2.4.1 Wood Blockouts**

- <sup>1</sup> Use Southern Yellow Pine conforming to the requirements for guardrail posts as set forth in **Section 706** unless specified otherwise on the Plans or in the Specifications. Ensure that the dimensions of the blockout are as described herein or as shown on the Plans.



#### **805.2.4.2 Composite or Plastic Blockouts**

- 1 Use composite or plastic blockouts appearing on the most recent edition of *SCDOT Qualified Product List 49*.

#### **805.2.4.3 Steel Blockouts**

- 1 Use steel blockouts that conform to the requirements **Subsection 805.2.3.2**. Do not use steel blockouts on steel posts on a W-beam guardrail system.

#### **805.2.5 Box Beam Median Barrier**

- 1 Use hollow structural tubing rail elements conforming to the requirements of ASTM A 500, Grade B or ASTM A 501 and conforming in all respects to the details and dimensions shown on the Plans. Ensure that the beams are hot-dipped zinc-coated in accordance with AASHTO M 111.
- 2 Use hot-dipped zinc-coated steel posts of the section and length shown on the Plans and conform to the requirements of **Subsection 805.2.3.2**.
- 3 Use splice bolts, anchor bolts, and nuts that conform to the requirements of ASTM A 307 and are galvanized in accordance with **Subsection 708.2.7**.
- 4 Provide the rail hardware that includes end caps, bolts, nuts, splice joints, anchor assemblies, and all other items to complete the railing. Except for bolts and nuts, provide rail hardware that meets the requirements of AASHTO M 270 and is galvanized in accordance with AASHTO M 111.
- 5 Ensure that all fabrications are complete and ready for assembly before hot-dipped zinc coating. No punching, drilling, cutting, or welding is permitted after hot-dipped zinc coating. Furnish each rail length with splice joint at one end as required. Use welding conforming to the current edition of AWS specifications.

#### **805.2.6 Temporary Guardrail**

- 1 Due to the staging of projects at locations shown on the Plans, guardrail may be required on a temporary basis. Use guardrail that meets all requirements indicated on the Plans and as specified herein.
- 2 Place temporary guardrail at the locations shown in the Plans. Remove temporary guardrail as dictated by the staging requirements.
- 3 Used guardrail materials may be installed in permanent locations with approval of the RCE, provided they are undamaged and have been properly stored and maintained after their removal in accordance with **Subsection 202.4.4**.
- 4 Thoroughly clean reused guardrail elements and apply two coats of 90% minimum zinc-rich cold galvanizing to all steel parts that are not galvanized. Obtain approval of reused material from the RCE before permanent

installation.

#### **805.2.7** Guardrail Hardware and Accessories for Steel Beam Guardrail

- 1 Use blockouts and brackets of the type shown on the Plans and meeting the same requirements as the posts.
- 2 Use bolts of the sizes specified on the Plans and that conform to ASTM A 307. Use nuts conforming to the requirements of ASTM A 563. Use washers that conform to the requirements of AASHTO M 180. Coat the bolts, nuts, and washers after fabrication in accordance with AASHTO M 232 as tested by **SC-T-137**. Use post bolts at least long enough to extend through posts, blockouts, one washer, and the nut plus an extension of one bolt diameter beyond the nut. Do not allow the extension to be longer than 2 inches after an additional washer is placed under the nut.
- 3 Use end anchor sections and other guardrail appurtenances conforming to the requirements shown on the Plans.

#### **805.2.8** Concrete and Reinforcing Steel

<sup>1</sup> When required, Use Class 2500 concrete for filling around posts. Use Class 3000 concrete for Concrete Median Barrier and Median Cable Barrier. Ensure that concrete conforms to the requirements of applicable subsections of **Section 701**. Use reinforcing steel conforming to the requirements of applicable subsections of **Section 703**.

#### **805.2.9** Median Cable Barrier

##### **805.2.9.1** Cable

<sup>1</sup> Use cable consisting of ¾-inch wire rope manufactured in accordance with AASHTO M 30, Type I, Class A coating.

##### **805.2.9.2** Steel Posts, Blocks, and Base Plates

<sup>1</sup> Where required, use steel posts, blocks, and base plates that conform to AASHTO M 270, Grade 36 and galvanize in accordance with AASHTO M 111. Weld and repair welds, when necessary, for steel fabrication in conformance with the latest edition of the ANSI/AASHTO/AWS D1.5, *Bridge Welding Code*. Complete fabrication before galvanizing.

##### **805.2.9.3** Compensating Devices

<sup>1</sup> Use compensating devices that have a spring rate of 450 lbs. (±50 lbs.) per inch and a total available throw of 6 inches. Ensure that the spring develops a minimum compressed strength of 27,000 lbs., and is made from 9/16-inch steel wire with a minimum breaking strength of 25,000 lbs.

##### **805.2.9.4** Hardware

- 1 Design all fittings to develop a minimum tensile strength of 25,000 lbs. Use open-end wedge type cable socket fittings that permit visual inspection of the cable end and wedge after installation. Ensure that hook bolts develop an

ultimate pull open strength of 500 lbs. to 1000 lbs. applied in the direction normal to the longitudinal axis of the post.

Ensure that malleable iron fittings conform to the requirements of ASTM A 47. Use cast steel fittings conforming to the requirements of AASHTO M 103, Grade 70-36 unless otherwise designated on the Plans or in the Specifications.

- 2 Galvanize bolts, nuts, washers, plates, rods, and other hardware in accordance with AASHTO M 232.

#### **805.2.9.5 Concrete for Median Cable Barrier**

- 1 Use Class 3000 concrete conforming to the applicable requirements of Section 701.

#### **805.2.9.6 Certification, Sampling, and Testing Requirements**

- 1 Before inclusion in the work, provide the certifications listed below to the RCE. Ensure all certifications are original signed copies. If requested, the RCE will make a file copy of the original and return the original to the Contractor. Certifications include the following:

- Cable Rope - manufacturer's certification of test data per 2000 feet or spool,
- Hook Bolts - manufacturer's certification of compliance per lot or heat,
- Posts – manufacturer's certification of compliance per lot or heat,
- Delineators - certification per lot indicating brand and grade of reflective sheeting, and
- Concrete Blocks for End Anchors - certification per end anchor indicating supplier, date of pour, and results of concrete compressive strength testing.

- 2 Bolts, nuts, compensating devices, turnbuckle assemblies, and splices will be sampled by the RCE. In addition, the RCE may, at its sole discretion, sample any materials used in the work at any time ranging from the point of manufacture to the construction site for whatever testing or inspection the RCE deems necessary.

#### **805.2.9.7 Cable Barrier Delineator**

- 1 Furnish non-metallic, flexible delineators made of recycled plastics meeting the requirements of ASTM D 5033, Section 3.1.7 and 3.1.18. Ensure that the materials are flexible polymers and elastomers, which are resistant to impact, ultraviolet light, ozone, and hydrocarbons. Provide delineators of good workmanship and free of burrs, discoloration, contamination, and other objection- able marks or defects that affect their appearance or serviceability.
- 2 Furnish the delineators in the standard color of white and yellow unless otherwise specified by the Department. Ensure that the dimensions of the delineator conform to the details and dimensions shown on the *SCDOT*

*Standard Drawings* for Cable Barrier Delineators.

- 3 Ensure that the sheeting is Type IV and conforms to the requirements specified in the latest edition of the *SCDOT Qualified Product List 20*.
- 4 Attach delineators on cable barrier posts with either VHB 4941 or VHB 4943 double-coated acrylic foam tape manufactured by 3M or ¼-inch galvanized or stainless steel bolts, one inch in length with nuts, and fender washers.

### **805.3 Equipment**

1 Ensure that the equipment necessary for the proper construction of the work is on site, in acceptable working condition, and approved by the RCE as to both type and condition before the start of work under this section. Provide sufficient equipment to enable prosecution of the work in accordance with the project schedule and completion of the work in the specified time.

### **805.4 Construction**

#### **805.4.1 Installation of Posts**

##### **805.4.1.1 General**

1 Set post plumb either driven in-place or set in a hand or mechanically dug hole backfilled as specified herein. Separate contact surfaces with an approved protective coating for dissimilar metal-to-metal post and rail installations. When posts are placed within paved areas, restore any pavement disrupted to a depth of 4 inches in like kind.

##### **805.4.1.2 Installation of Wood Posts**

1 Drive wood posts or set in excavated holes. If post is driven, drive with approved methods and equipment that leaves the post in its final position free from any distortion, battering, burring, or any other damage. If post is set in excavated holes, ensure that the postholes have a firm bottom. Backfill with suitable material and thoroughly compact. Do not set in concrete. Install top of treated posts to final elevation. Do not saw treated posts.

##### **805.4.1.3 Installation of Steel Post**

1 Ensure that the installation of steel posts is in conformance with the details shown on the Plans. Drive steel posts or set in dug holes. Conform to installation requirements in **Subsection 805.4.1.2**.

#### **805.4.2 Erection of Rail Element**

- 1 Erect rail elements at the proper height in a manner resulting in a smooth, continuous installation. Tighten all bolts, except those required at expansion joints. While still allowing rail elements to slide past one another longitudinally, tighten bolts through expansion joints as much as practicable.
- 2 Use lengths of rail elements so that splices occur at posts. Lap splices in the direction of adjacent traffic.
- 3 Where hot-dipped zinc-coated surfaces are abraded, the base metal is exposed, and bolts have field cut ends, apply two coats of 90% minimum zinc-rich cold-galvanizing compound.

- 4 When new guardrail is being erected on a project that is open to traffic, proceed with work in the direction of traffic flow, so the end of the installed sections does not face oncoming traffic. Do not begin work on any section of guardrail until preparations are made to complete the installation of the section, including posts, rail, anchors, and hardware in a continuous operation. Once the work is initiated on a section, continue the work to its completion unless inclement weather or other conditions beyond the Contractor's control interfere with the work. If interrupted sections are allowed by the Plans or the RCE, place the proper traffic control devices to protect the traveling public.

#### **805.4.3 Resetting Guardrail**

- 1 Carefully remove existing guardrail. When necessary, store it in a careful manner and erect it where shown on the Plans or as directed by the RCE.
- 2 If not galvanized, thoroughly clean all steel parts and apply two coats of 90% minimum zinc-rich cold-galvanizing compound.
- 3 When resetting or replacing existing guardrail, remove only the length of guardrail that can be replaced or reset in the same day. Do not reuse any existing posts or blocks. If a portion of existing guardrail is reset, use the same type of materials used in the existing guardrail. Reset guardrail to new guardrail standards with any additional materials necessary for this work.

#### **805.4.4 Adjusting Guardrail Blockouts and Post**

- 1 Carefully remove the existing rail element, adjust the blockout assembly to raise the height of the guardrail as shown on the Plans, and reinstall the rail where shown on the Plans or as directed by the RCE. Thrie beam guardrail is not adjustable. Steel blockouts are not allowed with adjustable W-beam guardrail. In order to provide the required ground elevation under the guardrail when the guardrail is raised, fill the area under and adjacent to the guardrail by adding material specified as Unclassified Excavation, Borrow, or HMA Under Guardrail. Place earthwork in accordance with **Section 203**. If re- placement of guardrail elements is required, use elements that conform to the applicable requirements of this subsection.
- 2 If wood guardrail posts are required, use blockouts with the nominal dimensions of 6 inches x 8 inches x 14 inches. Mount the blockout to the wood post by means of a  $\frac{5}{8}$ -inch bolt, of the necessary length, placed through a  $\frac{3}{4}$ -inch diameter hole located 7 inches from the top and 3 inches from either side. Place an additional  $\frac{3}{4}$ -inch hole 11 inches from the top of the blockout and 3 inches from either side, which is used on the final adjustment and an additional bolt is required at that time. For initial installation and the first 2-inch adjustment, drive two 16d hot-dipped zinc-coated nails or corrugated fasteners ( $\frac{5}{8}$  inch x  $1\frac{1}{8}$  inches minimum) through the blockout and into the post after the post bolt is installed to prevent the block from rotating.
- 3 If steel guardrail posts are used, use guardrail blockouts with the nominal dimensions of 6 inches x 8 inches x 14 inches. Create a slot measuring  $4\frac{1}{2}$

inches (maximum width) x 14 inches (nominal height) x ¼ inch (minimum depth), centered along the back of the blockout, to facilitate mounting to the steel guardrail post and to prevent rotation. Create the slot to allow a 7½-inch minimum offset from the post. Mount the blockout to the steel guardrail post by means of a ⅝-inch bolt, of the necessary length, placed through a ¾-inch diameter hole in the blockout located 7 inches from the top of the blockout and 1⅝ inches from the side. Place an additional ¾-inch hole 11 inches from the top of the blockout and 1⅝ inches from the same side as shown in the Plans. Use both holes on the final adjustment and supply an additional bolt at that time.

#### **805.4.5 Construction of Permanent Concrete Median Barrier**

- 1 Construct permanent concrete median barrier in accordance with the details shown on the Plans and the applicable requirements of **Section 702**. Place concrete median barrier on pavement or directly on an earth or another foundation. Drilled holes may be required in the existing concrete pavement to accommodate dowel bars. Grout dowel bars as shown on the Plans with approved grout.
- 2 When a trench is required, excavate the trench for the base of the barrier to the lines and grades shown on the Plans or established by the RCE. Properly compact the bottom of the trench and have it approved by the RCE before placing concrete.
- 3 An approved slip-form machine may be used to construct concrete median barrier provided satisfactory results are obtained. When in the opinion of the RCE satisfactory results are not being obtained, discontinue the work and use form type construction with no adjustment in compensation. Remove unsatisfactory work and replace it without additional compensation.
- 4 Where median paving is removed or damaged in placing the barrier, furnish an approved pavement mix and repair the pavement without additional compensation.

#### **805.4.6 Installation of Temporary Concrete Barrier**

- 1 Install temporary concrete barrier in conformance with applicable requirements of **Section 605**.

#### **805.4.7 Installation of Median Cable Barrier**

##### **805.4.7.1 Anchor Placement**

1 Set the concrete end anchors into an excavation as detailed on the *SCDOT Standard Drawings*. The end anchor may be precast or cast-in-place concrete. Ensure that the bottom of the anchor has a full and even bearing on the surface under it. After the concrete end anchor is in place, backfill the excavation in accordance with **Subsection 205.4.2**. When the anchor is set into a slope, construct the top of the anchor so that a 6:1 slope is created from side to side, and the anchor resembles the natural slope of the ground. Prior to pre-casting the anchors, provide the total of left-sloping or right-sloping anchors as determined by the RCE.

##### **805.4.7.2 Cable Connections**

1 Ensure that cables are continuous between the spring cable assemblies or spring cable assemblies and turnbuckles. At all locations where the cable is connected to a cable socket with a wedge type connection, crimp one wire of the wire rope over the base of the wedge to hold it firmly in place.

##### **805.4.7.3 Cable Barrier Tensioning**

- 1 Install and tension the cable barrier as follows:
  1. Properly seat the spring compensation device and then permanently mark the unloaded position.
  2. Complete assembly of the cable barrier and set the compensating devices to a spring compression of 3.5 inches.

3. Leave the springs at this setting for at least 2 weeks, then set them to the proper setting according to chart for the ambient temperature in the following table.

Temperature (°F)	Spring Compression (inches)
110 - 120	1
100 - 109	1.25
90 - 99	1.5
80 - 89	1.75
70 - 79	2
60 - 69	2.25
50 - 59	2.5
40 - 49	2.75
30 - 39	3
20 - 29	3.25
10 - 19	3.5
0 - 9	3.75
-10 - -1	4
-20 - -11	4.25

#### 805.4.7.4 Cable Splices

- 1 Allow only one splice per cable between end anchor assemblies. Stagger cable splices a minimum of 20 feet from splices on adjacent cables. Carefully assemble cable splices in accordance with the details shown in the Plans.

#### 805.4.7.5 Mounting Cable Barrier Delineators

- 1 If tape is used to mount the delineators to the steel posts, use the following procedure:
  1. Use a minimum of 5 square inches of tape to mount each delineator.
  2. Use VHB 4941 or VHB 4943 tape to apply delineators when the temperature at installation is 60°F or above. If the temperature is between 32°F and 60°F, use VHB 4943 tape. Do not install the guard-rail delineators with tape when the temperature is less than 32°F.
  3. Before applying the tape, clean the surface of the delineator and the post with a solvent that is a 50:50 mixture of isopropyl alcohol and water. Wipe the surfaces with a clean dry cloth to remove any solvent.
  4. After cleaning, prime the surface of the post with 3M primer 94 or 3M Aerosol Spray 80.
  5. The tape may be applied first to either the post or the delineator. Ensure that the tape is applied only to dry surfaces. Apply firm pressure when locating the delineator on the post. Ensure that both surfaces are fully in contact with the tape.
  6. Follow additional installation recommendations by the tape manufacturer.
- 2 If bolts are used to mount the delineators, provide two 0.31-inch diameter holes in

the delineator and steel post. Use two ¼-inch, galvanized or stainless steel, bolts with nut and fender washer. Place fender washer under the nut on the outside of the delineator. Tighten bolts snugly.

#### **805.4.7.6 Site Clean-Up**

- 1 Remove all construction debris from the site at the end of each day.

#### **805.4.7.7 Maintenance During Construction Phase**

- 1 Maintain the erected median cable barrier until it is accepted. No additional measurement or payment is made for this work.
- 2 Begin repairs within 48 hours of receiving notification from the Department of the damage to the median cable barrier. Perform all repairs necessary to bring the damaged section back to full service within 96 hours of receiving notification of damage.

#### **805.5 Measurement**

- 1 The quantity for the pay item Guardrail, Box Beam Median Barrier or Concrete Median Barrier (of the type specified) is the length of guardrail or barrier constructed as specified in-place, measured by the linear foot (LF) along the centerline of the guardrail or barrier from end to end, complete, and accepted, excluding end anchorages and bridge end connections.
- 2 The quantity for the pay item End Anchor or Guardrail Bridge Connection is measured by each (EA) unit constructed as specified in-place, complete, and accepted.
- 3 The quantity for the pay item Temporary Guardrail is the length of temporary guardrail installed as specified in-place and is measured by the linear foot (LF) in the same manor as permanent guardrail, complete, and accepted.
- 4 The quantity for the pay item Additional Length of Guardrail Posts is the length of required post installed in excess of the standard 6-foot post, measured by the linear foot (LF), complete, and accepted.
- 5 The quantity for the pay item Adjustable Guardrail is the length of guardrail for each stage of adjustment as specified, measured by the linear foot (LF) along the line of adjusted guardrail, complete, and accepted. Additional materials required to make adjustments are considered incidental items and are not measured separately.
- 6 The quantity for the pay item Median Cable Barrier is the length of median cable barrier constructed as specified and is measured by the linear foot (LF) along the line of median cable barrier between barrier end anchors, complete, and accepted.
- 7 The quantity for the pay item the Cable Barrier End Anchor is measured by each (EA) end anchor constructed as specified, complete, and accepted.
- 8 No separate measurement or payment is made for the median cable barrier delineators. Furnishing and installing the delineators are considered incidental to median cable barrier work and are not measured separately.
- 9 Minor excavation, disposal of surplus materials, painting, and making necessary repairs to pavement are considered incidental items necessary to complete the work as specified and included in the unit price of guardrail, median barrier or related guardrail item; and therefore, this work is not measured separately.

#### **805.6 Payment**

- 1 Payment for the accepted quantity for each pay item, measured in accordance with **Subsection 805.5**, is determined using the contract unit bid price for the



applicable pay item, and the payment includes all direct and indirect costs and expenses necessary to complete the work.

- 2 Payment for Guardrail, Box Beam Median Barrier, or Concrete Median Barrier (of the type or class required), is full compensation for constructing guardrail or barrier as specified or directed and includes furnishing and installing the required guardrail or barrier, anchorages to bridge ends when a bridge end connector is not installed, hardware, posts, and blockouts and all other materials, equipment, labor, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract.
- 3 Payment for the accepted quantity for Reset Guardrail is full compensation for resetting guardrail as specified or directed and includes removing guard-rail; storing and resetting undamaged guardrail; replacing damaged guardrail or missing parts; and all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract.
- 4 Payment for the accepted quantity for Temporary Guardrail (of the type required) is full compensation for constructing the temporary guardrail as specified or directed and includes placing and removing temporary guardrail; anchoring to structures; disposing of guardrail or barrier materials that cannot be reused on the project; and all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract.
- 5 Payment for the accepted quantity for End Anchor is full compensation for constructing end anchors as specified or directed and includes providing and installing concrete, reinforcing steel, structural steel, rail segments, cable, rods, turn buckles, anchor bolts, backing rail, soil tubes, plates, nuts, bolts, washers, attachments, and transition sections and all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract.
- 6 Payment for the accepted quantity for Adjustable Guardrail (for each stage of adjustment) is full compensation for constructing adjustable guardrail as specified or directed and includes the initial installation or incremental adjustments specified or indicated on the Plans and all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract.
- 7 Payment for the accepted quantity for Median Cable Barrier is full compensation for constructing median cable barrier as specified or directed and includes furnishing, installing, splicing, and tensioning the cable median barrier; supplying and installing delineators; maintaining and repairing cable barrier during construction; and all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract, except for the end anchors, which are paid for separately.
- 8 Payment for the accepted quantity for Cable Barrier End Anchor is full compensation the constructing median cable barrier end anchors as specified or directed and includes furnishing and installing the median cable barrier end anchors, concrete foundation, compensating devices, and hardware and all other materials, labor, equipment, tools, supplies transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications,

and other terms of the Contract.

9 Pay items under this section include the following:

<b>Item No.</b>	<b>Pay Item</b>	<b>Unit</b>
8051100	Steel Beam Guardrail	LF
8051101	Adjustable Height Steel Beam Guardrail (Initial Installation)	LF
8051102	Adjustable Height Steel Beam Guardrail (2 Inch Adjustment)	LF
8051103	Adjustable Height Steel Beam Guardrail (Final Adjustment)	LF
8051200	Steel Beam Guardrail (Double Layered)	LF
8051300	Steel Beam Guardrail (Thrie)	LF
8051400	Steel Beam Guardrail (Thrie - Double Layered)	LF
8051600	Box Beam Median Barrier	LF
8051655	Median Cable Barrier	LF
8051656	Reset Median Cable Barrier	LF
8051800	Temporary Guardrail	LF
8051900	Reset Guardrail	LF
8052210	End Anchor - Type B	EA
8052220	End Anchor - Type B (Thrie Beam)	EA
8052300	End Terminal - Type T	EA
8052500	Cable Barrier End Anchor	EA
8052600	Thrie Beam Guardrail Bridge Connection	EA
8053000	Additional Length Guardrail Post	LF
8058100	Concrete Median Barrier (Type-1)	LF
8058105	Concrete Median Barrier (Type-2)	LF
8058110	Concrete Median Barrier (Type-3)	LF
8058115	Concrete Median Barrier (Type-4)	LF
8058120	Concrete Median Barrier (Type-5)	LF
8058125	Concrete Median Barrier (Type-6)	LF

**END OF**

**DIVISION 2 – TECHNICAL SPECIFICATIONS**

**AND**

**PROJECT MANUAL**