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Columbia County Board of Commissioners  
Procurement Department

**Bid# 2020034-BID5100-2**

**Blanchard & Clarks Hill WTP Improvements, DIV II**

Solicitation Issued on: **October 7, 2020**

Bids will be received **electronically** via [columbiacountyga.bonfirehub.com](http://columbiacountyga.bonfirehub.com) until **November 5, 2020** no later than **12:00 PM EST**.

The public opening will be **VIRTUAL** and submissions will be unsealed and read aloud at **2:00 PM EST, on the same day**, via Webex at <https://ccgagov.webex.com/meet/gosteen>.

Columbia County Board of Commissioners  
Procurement Department  
500 Faircloth Drive, Bldg E  
Evans, GA 30809

Contact: [cgoff@columbiacountyga.gov](mailto:cgoff@columbiacountyga.gov)

Last day to submit questions will be October 28, 2020 at 5 PM via Bonfire Interactive at [columbiacountyga.bonfirehub.com](http://columbiacountyga.bonfirehub.com)

**TABLE OF CONTENTS**

**Contract Documents**

Instructions to Bidders..... IB-1 - IB-4

Proposal..... P-1 - P-4

Articles of Agreement.....AG-1- AG-2

Performance Bond ..... PB-1

Payment Bond .....PMB-1

General Provisions.....GP-1 - GP-6

Special Provisions.....SP-1 – SP-4

# INSTRUCTIONS TO BIDDERS

## Table of Contents

<u>Item No.</u>	<u>Title</u>	<u>Page No.</u>
1	Intent .....	IB-1
2	Definitions.....	IB-1
3	Location of Work.....	IB-1
4	Work to be Done.....	IB-1
5	Examination of Location, Conditions and Requirements .....	IB-1
6	Additions to or Eliminations from Contract.....	IB-1
7	Materials to be furnished by the Contractor.....	IB-1
8	Time Limit.....	IB-1
9	Commencing Work.....	IB-1
10	Interpretation of Drawings and Specifications .....	IB-2
11	Proposals .....	IB-2
12	Bid Bond.....	IB-2
13	Bonds .....	IB-2
14	Return of Checks.....	IB-2
15	Bids Opened in Public.....	IB-2
16	Right to Reject Bids.....	IB-2
17	Determination of Low Bid .....	IB-2
18	Construction Stakes .....	IB-3
19	Right-of-Way.....	IB-3
20	Weather.....	IB-3
21	Protective Work .....	IB-3
22	Sanitary Regulations .....	IB-3
23	Shanties .....	IB-3
24	Electric Light and Power.....	IB-3
25	Water Supply.....	IB-3
26	Georgia State Sales Tax .....	IB-3
27	Utilities.....	IB-3
28	Relocations.....	IB-3
29	Reference Specifications.....	IB-4
30	Signs .....	IB-4
31	NPDES Certification .....	IB-4
32	Letter of Permission.....	IB-4

## **INSTRUCTIONS TO BIDDERS**

1. **Intent:** It is intended that the Instructions to Bidders, Proposal form, Standard Provisions, Special Provisions, General Conditions, Articles of Agreement and Contract Drawings shall provide for the complete work to which they relate. These documents shall hereinafter collectively be referenced as the "Specifications, " or "Contract."
2. **Definitions:** Where the following words, or pronouns in their stead, occur herein, they shall have the following meanings:
  - a. **"Owner"** or **"County"** shall mean Columbia County, Georgia or its authorized and legal representatives.
  - b. **"Engineer"** shall mean the County Engineer of Columbia County or his duly designated representative.
  - c. **"Department"** shall mean the Columbia County Water Utility Department.
  - d. **"Contractor"** shall mean the party of the second part of the Articles of Agreement, or the legal authorized representative of such party.
3. **Location of Work:** The location of the work is in Columbia County, Georgia, as further depicted and described in the Specifications.
4. **Work to be Done:** The work to be done under this Contract consists of furnishing all materials, furnishing all construction equipment, and performing all labor necessary for the construction, including all work and appurtenances shown in the Specifications, or such other work as may be added to the Contract (hereinafter, the "Work").
5. **Examination of Location, Conditions and Requirements:** The bidder is required to make a field examination of the proposed construction site, and to inform himself fully as to the actual requirements of the Specifications, the conformation of the ground, the character of materials to be encountered, the character of equipment and facilities needed preliminary to and during the prosecution of the Work, the general and local conditions, and all other matters which may in any way affect the Work to be done under this Contract. This examination shall be made prior to submitting a bid; by submitting a bid, the bidder represents that it has complied with the provisions of this paragraph.
6. **Additions to, or Eliminations from, Contract:** The Owner reserves the right to add to, or eliminate from the Contract, components of Work, at the unit prices bid in the Contractor's Proposal.
7. **Materials to be Furnished by the Contractor:** The Contractor shall furnish all materials necessary for the completion of the Work.
8. **Time Limit:** The time allowed for completion of all work under this Contract, shall be **AS SHOWN IN THE SPECIAL PROVISIONS OF THIS CONTRACT** (the "Time Limit").
9. **Commencing Work:** Immediately upon completion of Contractual agreements, the Contractor shall submit to the Engineer for approval a construction schedule arranged to be within the Contract Time Limit. Actual construction operations shall commence within 10 days from date specified in the Work Order.
  - a. **Work Order:** Notification by the Engineer and County to commence work will be issued to the Contractor; the Contract time will start at the date specified in this Order. The Contractor shall be prepared immediately upon such notification to commence work.
  - b. **Personnel and Equipment:** The Contractor shall commence work with adequate personnel and equipment to complete the Work within the Time Limit.
  - c. **Order to Work:** The Work shall begin at such points as the Engineer/or Department shall designate and shall be prosecuted in the order they shall direct. This applies to both location and items of construction. The Contractor shall have no claim for extra compensation because of restrictions and limitations of work prescribed by the Owner, the Engineer or the Department.

10. Interpretation of Drawings and Specifications: If any person contemplating submitting a bid for the proposed Contract is in doubt as to the true meaning of any part of the Specifications, he may submit to the Engineer a written request for an interpretation not less than 3 days prior to the bid due date; the party submitting such request is responsible for its prompt delivery. Any interpretation will be made only by duly issued Addendum and a copy of such Addendum will be mailed or delivered to each person receiving a set of bid documents. No other explanations or interpretations will be deemed valid or binding.
11. Proposals: All proposals must be made on the Forms provided and shall include all materials and work shown in the Specifications. Proposals are to be submitted ELECTRONICALLY via <https://columbiacountyga.bonfirehub.com>.
12. Bid Bond: Each Proposal must be accompanied by a Bid Bond or a Certified Check, in an amount equal to ten (10%) percent of the amount bid, to guarantee that the successful bidder will, within ten (10) days after the date of notification of award of Contract, enter in a Contract with the Owner for performance of the Work and execute satisfactory bond. If for any reason whatsoever the bidder withdraws his bid after the opening of bids, or refuses to execute the required Contract and bond (if his bid is accepted) the Bid Bond or Certified Check accompanying his bid, and the monies payable thereon, shall be paid into the funds of the Owner as liquidated damages for such failure.
13. Bonds: The successful bidder will be required to execute a Performance Bond in favor of the Owner in an amount equal to one hundred (100%) percent of the Contract amount, and a Payment Bond in an amount to one hundred (100%) percent of the Contract amount, each to be in the form hereinafter set forth. The Surety on the Performance Bond and the Payment Bond shall be a Surety Company authorized to do business in Georgia, and shall be subject to approval by the Attorney for the Owner.
14. Return of Checks: The Owner will, within ten (10) days following the opening of bids, return any Certified Checks posted by bidders, except for Certified Checks which may have been posted by the three (3) lowest bidders, and upon the final award and execution of Contract the remaining checks will be promptly returned. Bid Bonds posted by Bidders will be returned upon request of the Bidder.
15. Bids Opened in Public: Bidders are requested to attend the opening of Proposals, which will be **VIRTUAL** via **WebEx** at <https://ccgagov.webex.com/meet/gosteen>.
16. Right to Reject Bids: The Owner reserves the right to reject any or all bids and to waive informalities. No bids will be received after the time set for opening Proposals. Any unauthorized conditions, limitations or provisions attached to the Proposal, will render it informal and may, at Owner's discretion, be cause for its rejection. Incomplete bids will be subject to rejection. Any bidder may withdraw their bid, either personally or by written request, at any time prior to the scheduled closing time for receipt of bids.
17. Determination of Low Bid: The County has set out in the proposal form estimated quantities for each item. The Bidder is to insert the Unit Price that the Bidder proposes for each item. The Unit Price shall be inserted as a numerical dollar and cents amount for each item. The Unit Price shall then be multiplied by the estimated quantity resulting in the amount that is put in the Estimated Cost Column. The sum of the Estimated Costs is inserted in the Estimated Total Price box. The Estimated Total Price will be used to compare bids. If there is a mathematical error in the computation of the Estimated Cost for any item, the error will be corrected by the Owner and the amount set forth in the Estimated Total Price box will be adjusted accordingly. Upon opening of the bids, Unit Prices set out in the proposal cannot be changed. Bidders should further understand that the amount in the Estimated Total Price box is not likely to be the amount that the Bidder will be paid. During the course of the job, as the quantities are increased or decreased, the price of the work will be increased or decreased accordingly, using the set Unit Price to make such calculations. Bidder understands that payment will be made on only the basis of actual quantities utilized at the Unit Prices bid. The Contract will be awarded, if it is awarded, to the lowest responsible bidder. The Owner, in its sole discretion, will decide which is the lowest responsible bidder.
18. Construction Stakes: The Engineer will furnish and lay out upon the ground a sufficient number of controlling lines to enable the Contractor to lay out the necessary construction lines. All subsequent

subsidiary lines shall be laid out by the Contractor from the controlling lines furnished by the Engineer or from measurements provided in the Specifications. The Contractor shall check and verify elevation of the forms prior to pouring any concrete. All lines shall be subject to checking by the Engineer, but this checking shall in no way relieve the Contractor from responsibility for their compliance with the Specifications. The Contractor shall provide such stakes, materials, and such labor and assistance as the Engineer may require in laying out control lines and checking and measuring the Work. Columbia County will provide the initial staking of the right of way at a frequency determined by the Engineer. The Contractor shall be responsible for maintaining the original staking at the discretion of the Engineer.

19. Right of Way: The necessary right of way for the construction of the Work will be furnished by the Owner. The Owner will provide no right of way over other property. The Contractor shall take every possible precaution not to inconvenience the owners or tenants of adjacent property. Railroad lines and public highways shall not be obstructed in such a way as to cut off traffic except as per agreement with the various owners. The Contractor shall, at his own expense, repair any damage or injury to either public or private property caused during the progress of the Work.
20. Weather: During unseasonable weather, all Work must stop when the Engineer so directs, and all Work must be suitably protected.
21. Protective Work: The Contractor shall furnish and install all necessary temporary measures for the protection of the Work.
22. Sanitary Regulations: Necessary sanitary facilities for the use of the workmen on the Work shall be erected and maintained by the Contractor, in such a manner and at such points as shall be approved by the Engineer. Their use shall be strictly enforced.
23. Shanties: With approval of the County the Contractor may build shanties or other structures for housing tools, machinery and supplies. Their surroundings shall be maintained at all times in a sanitary and satisfactory manner. On or before the completion of the Work, all such structures shall be removed, together with all rubbish and trash, at the expense of the Contractor.
24. Electric Light and Power: The Contractor shall provide temporary electric service and meter and also provide outlets at convenient point or points so that extension cords of not over 150'-0" will reach all areas of the Work requiring artificial light or power. The Contractor shall furnish extension cords, sockets, light bulbs, etc.
25. Water Supply: The Owner will furnish all water necessary for construction operations. The Contractor must provide all connections and other means of conducting water. The Contractor shall submit water usage monthly reports to the County at the Construction and Maintenance office.
26. Georgia State Sales Tax: Bidders shall include in amounts bid in the Proposal an allowance for payment of State Sales Tax on all taxable materials specified to be furnished by the Contractor and incorporated into the Work under this Contract.
27. Utilities: The attention of the bidders is called to the presence within the construction limits of the Work of overhead and underground utilities (consisting of water mains, gas mains, electrical power transmissions, communication cables, together with their service lines, and appurtenances incidental thereto). The Contractor shall be required to coordinate the General Construction procedure with the necessary removal and/or reconstruction, or relocation of utilities in a cooperative manner so as to spare the property of the utilities from damage and expedite the progress of the Work as a whole.
28. The Owner will arrange with the respective owners for any removal, relocation or reconstruction of their own utilities, other than those shown on the plans or included in the Specifications. The Contractor will not be paid directly for any delays or extra expense caused by the change in the various utilities, and should include the anticipated cost of any such expense in the bid price.

29. Reference Specifications: In order to reduce the bulk of the Specifications, any roads and storm sewers in this project will be constructed in accordance with the most recent edition of the Standard Specifications for Construction of Roads and Bridges of the Georgia Department of Transportation in addition to the Standard and Special Provisions included herewith. The water and sanitary sewer lines will be constructed in accordance with the most recent Columbia County specifications, in addition to the Standard and Special Provisions included herewith. All work within wetland areas shall conform to any permits issued for such work by the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency and/or Georgia EPD, as applicable. Should there be any conflicts between the referenced Standard Specifications and the Specifications of this Contract, the latter prevails.
30. Signs: No signs or advertisement shall be displayed without approval of the Engineer. All warning signs, Construction signs, etc. will conform to the most recent edition of the "Manual on Uniform Traffic Control Devices" as revised.
31. Contractor must have proof of a level IA or greater, NPDES certification through the Georgia Soil and Water Conservation Commission (GSWCC) (O.C.G.A. 12-7-19) which must be furnished to Owner prior to execution of the Contract. If the Contractor is required to sign the Notice of Intent (NOI) as the "Operator", the Contractor must retain level 1B GSWCC certified personnel. The Owner will file a Notice of Intent for the project with the Contractor as the Operator. A copy of the NOI will be provided to the Contractor. The Contractor is responsible for all monitoring, recording keeping, stormwater sampling & testing, agency correspondence, and all other requirements under NPDES to meet the Plan (by Architect) and NOI (by Owner). The Owner shall be hard copied on any and all correspondence to EPD. This work shall be included in Grading Complete. Upon acceptance of the Notice of Termination (NOT), the Contractor shall provide Columbia County a copy of any and all records pertaining to the NPDES permit.
32. The Contractor shall obtain a letter of permission from any property owner who allows equipment and/or materials to be placed on their property beyond the boundaries of acquired permanent or temporary construction easements. Columbia County shall be held harmless for any damages incurred or caused by Contractor. Contractor shall provide a copy of the letter signed by both the Contractor and property owner of record, to County before initiating use of property.

## ARTICLES OF AGREEMENT

STATE OF GEORGIA     )  
COUNTY OF COLUMBIA    )

This Agreement made and entered into on the \_\_\_\_ day of \_\_\_\_\_, **20** by and between Columbia County, Georgia, party of the first part, (hereinafter known as the Owner) and \*\*\*CONTRACTOR\*\*\*, party of the second part (hereinafter known as the Contractor).

### **WITNESSETH:**

That the Contractor, for the consideration hereinafter fully set out, hereby agrees with the Owner as follows:

1. The Contractor will furnish all equipment, tools, materials, skill and labor of every description (except that specified to be furnished by the Owner) necessary to carry out and to complete in good, firm, substantial and workmanlike manner, the Work specified, in strict conformity with the CONTRACT DOCUMENTS FOR THE "**Blanchard and Clarks Hill Water Treatment Plant Improvements, 2020034-BID5100-Div. 2**" PROJECT FOR COLUMBIA COUNTY, GEORGIA and the Specifications therein. Together with the foregoing Proposal made by the Contractor, this Agreement and Bonds and Addenda attached thereto shall form essential parts of this Agreement, as is fully contained herein. The Work covered by this Agreement includes all requirements shown in the Specifications and listed in the Proposal under the following items, to-wit:

### **Lump Sum Items in bid schedule**

2. That the Contractor shall commence the Work to be performed under this Agreement on a date to be specified in a written order of the Owner's Engineer and the County and shall fully complete the Work **WITHIN THE TIME LIMIT PROVIDED IN THE CONTRACT**, except as otherwise provided herein and in the Specifications for extension of the Time Limit.
3. Time is of the essence of this Contract, and the Contractor agrees to pay the Owner, not as a penalty, but as liquidated damages, the sum of \$600 Dollars for each calendar day that he shall be in default of completing the Work within the Time Limit. Because of the difficulty of fixing damages suffered by the Owner due to Contractor's default, these damages are herein agreed upon as stated.
4. The Owner hereby agrees to pay to the Contractor for the faithful performance of the Agreement, and as full compensation for everything furnished and done by the Contractor under this Contract (subject to additions and deductions as provided in the Specifications or Proposal) in lawful money of the United States, the sum of \*\*\***BID AMOUNT**\*\*\*, which sum shall also compensate for any and all loss or damages arising out of the nature of the Work, or from the action of nature or the elements, or from unforeseen obstructions or difficulties encountered in the prosecution of the Work, and for all expense incurred by, or in consequence of the Work, its suspension or discontinuance, and for well and faithfully completing the Work and the whole thereof, as herein provided, and for replacing defective work, material or equipment for a period of one year after completion.
5. Payments on Account: Not later than the 15th day after receipt of the Contractor's estimate, as the Work progresses, the Owner shall make partial payment to the Contractor, up to 90% of the value of labor and materials furnished by the Contractor and incorporated in the Work and of materials furnished by the Contractor on hand at the site of the Work for and including the last day of the preceding month, (**however no such payment on account shall exceed 33% of the Bid Amount**), less payments already made and less deductions for any unaccepted or defective work. The Owner may also withhold from time to time payment to the Contractor in such an amount or amounts as may be necessary to pay and fully satisfy all claims and demands for labor and services rendered and materials furnished in and about the Work as elsewhere provided for in this Agreement or the Specifications.
6. Final Payment: Upon written notice given to the Owner by the Contractor of the final completion of the Work, the Engineer will make an inspection of the Work, and if acceptable under the Contract, shall issue a final certificate that the balance is due the Contractor. The Owner shall then make final payment to the Contractor of the balance due under the Contract, less such amounts as may have been withheld and employed by the Owner from time to time, as provided in the preceding paragraph, to pay all claims and demands for labor, service, and material furnished; provided that before the Contractor shall be entitled to final payment, the Contractor shall submit satisfactory evidence under oath that all payrolls and all amounts due for labor and materials and other indebtedness connected with the Work have been fully paid and satisfied and that there are no outstanding claims or demands against the Contractor connected with the Work.
7. It is further mutually agreed between the parties hereto that if, at any time after the execution of this Agreement and the bonds hereto attached, the owner shall deem the surety or sureties upon such bonds to be unsatisfactory, or if, for any reason, such bonds cease to be adequate to cover the performance of the Work, the Contractor shall, at his expense, within five days after the receipt of notice from the Owner to do so, furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the Owner. In such event, no further payment to the Contractor shall be deemed to be due under this Agreement until such new or additional security for



the faithful performance of the Work shall be furnished in manner and form satisfactory to the Owner.

8. "In satisfaction of the requirements of O.C.G.A. 13-10-91, and the Rules of the Georgia Department Labor relating to the Georgia Security and Immigration Compliance Act of 2006, it is agreed that compliance with the requirements of O.C.G.A. 13-10-91 and Rule 300-10-1-.02 are conditions of this Agreement.

IN WITNESS WHEREOF the parties hereto have executed this Agreement on the day and date first above written in five (5) counterparts, each of which shall, without proof or accounting for the other counterparts, be deemed an original Contract.

**(As to Owner):**

COLUMBIA COUNTY, GEORGIA

ATTEST: \_\_\_\_\_

\_\_\_\_\_

By: \_\_\_\_\_  
Clerk of Commission

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

As its: \_\_\_\_\_

(Seal)

**(As to Contractor):**

ATTEST: \_\_\_\_\_

\_\_\_\_\_

Contractor

As its: \_\_\_\_\_

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

\_\_\_\_\_

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

(Corporate Seal)

APPROVED AS TO FORM

By: \_\_\_\_\_  
County Attorney

**PERFORMANCE BOND**

STATE OF GEORGIA     )  
  ) ss:  
COUNTY OF COLUMBIA    )

KNOW ALL MEN BY THESE PRESENTS, THAT: We **\*\*\*CONTRACTOR\*\*\*** (hereinafter known as the "Contractor") as principal, and we \_\_\_\_\_ as Surety do hereby acknowledge ourselves indebted and firmly bound and held unto Columbia County, Georgia (herein called the "Owner"), in the sum of **\*\*\*BID AMOUNT\*\*\*** for the payment of which well and truly to be made, in lawful money of the United States, we do hereby bind ourselves, successors, assigns, heirs and personal representatives, jointly and severally, firmly by this bond.

BUT THE CONDITION OF THE FOREGOING OBLIGATION OR BOND IS THIS:  
**\*\*\*BID AMOUNT\*\*\*** to construct **Blanchard and Clarks Hill Water Treatment Plant Improvements, 2020034-BID5100-Div. 2** as more fully appears in a written agreement or Contract bearing date of \_\_\_\_\_, **20\_\_**, a copy of which said agreement or Contract is by reference hereby made a part hereof, and it is the desire of the said Owner that the said Contractor shall assure all undertakings under said agreement or Contract.

NOW THEREFORE, if the said Contractor shall fully and faithfully perform all the undertaking and obligations under the said agreement or contract referenced above and shall fully indemnify and save harmless the said Owner from all costs and damage whatsoever which Owner may suffer by reason of any failure on the part of the Contractor to perform said contract, and shall fully reimburse and repay the said Owner any and all outlay and expense which it may incur in making good any such default by Contractor, and shall guarantee all materials and workmanship against defects for a period of one year, then this obligation or bond shall be null and void, otherwise to remain in full force and effect. Should Contractor fail to fully and faithfully perform its obligations under the said agreement, Owner shall be entitled to call due to the above-referenced sum from Surety.

And, for value received, it is hereby stipulated and agreed that no change, extension of time, alteration or addition to the terms of the said agreement or Contract or in the Work to be performed there under or the specifications accompanying the same shall in any way affect the obligations under this bond, and notice is hereby waived of any such change, extension of time, alteration or addition to the terms of the agreement or Contract or to the specifications.

This bond is given pursuant to the terms of Section 13-10-1 et seq. of the Official Code of Georgia Annotated, as now or hereafter amended, and all the provisions of law with reference to this character of bond as set forth in said section or as may be hereinafter enacted are hereby made a part hereof to the same extent as is set out herein in full.

IN WITNESS WHEREOF the said Contractor and said Surety have hereunto caused to be affixed their respective corporate signatures and seals, by duly authorized officers, on this \_\_\_\_\_ day of \_\_\_\_\_, **20\_\_**.

**(As to Contractor):**

ATTEST: \_\_\_\_\_  
As: \_\_\_\_\_  
  
(SEAL)

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

**(As to Surety):**

ATTEST: \_\_\_\_\_  
As: \_\_\_\_\_  
  
(SEAL)

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

APPROVED AS TO FORM

By: \_\_\_\_\_  
County Attorney

**PAYMENT BOND**

STATE OF GEORGIA     )  
COUNTY OF COLUMBIA )

KNOW ALL MEN BY THESE PRESENTS, That we **\*\*\*CONTRACTOR\*\*\*** As Principals (hereinafter known as the "Contractor") and we \_\_\_\_\_, as Surety, are held and firmly bound unto Columbia County, Georgia (hereinafter called the "Owner") in the sum of **\*\*\*BID AMOUNT\*\*\*** in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, or heirs, personal representatives, successors and assigns, jointly and severally, firmly by this bond.

WHEREAS, the Owner has engaged the said Contractor for the sum of **\*\*\*BID AMOUNT\*\*\*** to construct "**Blanchard and Clarks Hill Water Treatment Plant Improvements, 2020034-BID5100-Div. 2**": as more fully appears in a written agreement or Contract bearing date of \_\_\_\_\_, 20 , a copy of which said agreement or Contract is by reference hereby made a part hereof, and it is the desire of the said Owner that the said Contractor shall assure all undertakings under said agreement or Contract.

NOW, THEREFORE, if the said Contractor promptly makes payment to all persons having a direct relationship with the Contractor, or a subcontractor of the Contractor, for furnishing labor, material or both in the prosecution of the Work provided for in the Contract identified above, and any authorized modifications of the contract that subsequently are made, this obligation shall be void. Should Contractor, or a subcontractor of the Contractor, fail to promptly make such payments to any party, Owner shall be entitled to call due this bond from Surety. The Surety hereby waives notice of any modifications to the Contract.

PROVIDED, however, that this bond is subject to the following conditions and limitations:

- A. Any person, firm or corporation that has furnished labor, materials or supplies for or in the prosecution of the work provided for in said contract shall have a direct right of action which shall be asserted in a proceeding, instituted in the County in which the Work provided for in said Contract is to be performed or in any County in which said Contractor or Surety does business. Such right of action shall be asserted in a proceeding instituted in the name of the Claimant or Claimants for his or their use, and benefit against such Contractor and Surety or either of them (but not later than one year after the final settlement of said Contract) in which action such claim or claims shall be adjudicated and judgment rendered thereon.
- B. The Principal and Surety hereby designate and appoint the Owner as the agent of each of them to receive and accept service of process of other pleading issued or filed in any proceeding instituted on this bond and hereby consent that such service shall be the same as personal service on the Contractor and/or Surety.
- C. In no event, shall the Surety be liable for a greater sum than the penalty of this bond, or subject to any suit, action or proceeding thereon that is instituted later than one year after final settlement of said Contract.
- D. This bond is given pursuant to the term of Section 13-10-1 et seq. of the Official Code of Georgia Annotated, as now or hereafter amended, and all the provisions of law with reference to this character of bond as set forth in said section or as may hereinafter be enacted are hereby made a part hereof to the same extent as if set out herein in full.

IN WITNESS WHEREOF the said Contractor and said Surety have hereunto caused to be affixed their respective corporate signatures and seals, by duly authorized officers, on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

**(As to Contractor):**

ATTEST: \_\_\_\_\_

(Contractor)

As: \_\_\_\_\_

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

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

(SEAL)

**(As to Surety):**

ATTEST: \_\_\_\_\_

(Surety)

As: \_\_\_\_\_

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

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

(SEAL)

APPROVED AS TO FORM

By: \_\_\_\_\_  
County Attorney

**GENERAL PROVISIONS**  
**Table of Contents**

<u>Item No.</u> <u>No.</u>	<u>Title</u>	<u>Page</u>
1	Contract Security.....	GP-1
2	Contractors' and Subcontractors Insurance .....	GP-1
3	Protection of Persons and Property .....	GP-1
4	Subcontracting .....	GP-2
5	Assignments .....	GP-2
6	Cooperation of Contractor .....	GP-2
7	Corrections.....	GP-2
8	Disagreement.....	GP-2
9	Competent Labor .....	GP-2
10	Time for Completion.....	GP-2
11	Construction Schedule and Periodical Estimates.....	GP-2
12	Mutual Responsibility of Contractors.....	GP-3
13	Laws or Regulations.....	GP-3
14	Extras.....	GP-3
15	Changes in Work.....	GP-3
16	Claims for Extra Cost .....	GP-3
17	Materials, Services and Facilities .....	GP-4
18	Patents.....	GP-4
19	Inspection.....	GP-3
20	Right of the Owner to Terminate Contract.....	GP-4
21	Delays - Damages.....	GP-4
22	Notice and Service Thereof.....	GP-5
23	Measurement and Payment .....	GP-5
24	Payments by Contractor.....	GP-5
25	Evidence of Payment by the Contractor.....	GP-5
26	Acceptance of Work and Final Payment .....	GP-5
27	Acceptance of Final Payment .....	GP-5
28	Guarantee .....	GP-6
29	Indemnification.....	GP-6
30	Agreement .....	GP-6

## GENERAL PROVISIONS

1. **Contract Security:** The Contractor shall furnish a surety performance bond in an amount at least equal to one hundred (100%) percent of the Contract amount, and a payment bond in an amount at least equal to one hundred (100%) percent of the Contract amount (form attached) as security for the faithful performance of this Contract, and to indemnify the Owner against liability for personal injury and property damage, and for the payment of all persons performing labor and furnishing materials in connection with this Contract. The surety on the above bond shall be a duly authorized surety company satisfactory to the Owner. The person executing the bond on behalf of the surety shall file with the bond a general power of attorney unlimited as to amount and type of bond covered by such power of attorney and certified to by an official of said surety.
  
2. The Contractor agrees at all times during the Term of this agreement to maintain in full force and effect the following insurance coverages in at least the limits set forth in Section 9.2: Worker's Compensation (including occupational disease in accordance with applicable statutory and regulatory requirements); Employer's liability insurance (including coverage on all of Contractor's employees engaged in the performance of the Work); and Comprehensive General Liability insurance (including protective liability covering death or bodily injury and contractual liability). Before commencement of any of the Work hereunder, the Contractor agrees to furnish to the County, on an annual renewal basis, certificates of insurance or other evidence satisfactory to the County to the effect that such insurance has been procured and is in force. The certificates shall accurately reflect the required insurance coverages, including any and all limitations, exclusions and restrictions, and provide that in the event of cancellation or material change in a policy affecting the certificate holder, thirty (30) days prior written notice shall be given to the County. Contractor's insurance coverage shall be primary noncontributing insurance as respects to any other insurance or self-insurance maintained by the Insured Parties shall be in excess of Contractor's insurance and shall not contribute to it. Coverage shall state that the Contractor's insured shall apply separately to each insured against whom claim is made or suite is brought, except with respect for limits of insurance provided. Coverage shall be provided on a "Pay on Behalf" basis, with defense costs payable in addition to policy limits. There shall be no cross liability exclusion.  
Subcontractors: Contractor shall either (1) ensure that its insurance policies (as described herein) cover all subcontractors and the Work performed by such subcontractors or (2) ensure that any subcontractor secures separate policies covering that subcontractor and its Work.  
For the purpose of this Agreement, Contractor shall not commence Work under this Agreement until they have obtained all the insurance required under this paragraph and such insurance has been approved by the County, nor shall Contractor allow anyone acting on their behalf to commence work pursuant to this Agreement until all similar insurance has been so obtained and approved from said person/entity.
  - a. **Worker's Compensation Insurance:** Contractor shall procure and shall maintain during the life of this Agreement Workers Compensation Insurance for all of his employees to be engaged in work on this Agreement.
  
  - b. **Public Liability and Property Damage Insurance:** Contractor shall take out and maintain during the life of this Agreement such Public Liability and Property Damage Insurance and Automobile Liability Insurance as shall protect them and anyone working on their behalf from claims for damages for personal injury, including accidental death, as well as from claims for property damages, which may arise from operations under this Agreement, whether such operations are by Contractor or by any subcontractor or by anyone directly or indirectly employed by either of them. The amount of such insurance shall be as follows:
    - i. **Public Liability and Property Damage Liability Insurance:** Contractor shall carry, with respect to the operations they perform, regular General Liability Insurance providing for a limit of not less than one million dollars (\$1,000,000) for all damage arising out of bodily injuries to or death of one person, and subject to that limit for each person, a total of one million dollars (\$1,000,000) for all damage arising out of bodily injuries to or death of two or more persons in any one accident, and regular Employer's Property Damage Liability Insurance providing for a limit of not less than five hundred thousand dollars (\$500,000) for all damages arising out of injury to or destruction of property in any one accident and subject to that limit per accident, a total (or aggregate) limit of two million dollars (\$2,000,000) for all damages arising out of injury to or destruction of property during the Policy period. If any part of the work is sublet, similar insurance, in the same amounts as required of the Contractor shall be provided by or in behalf of the subcontractor to cover their operation.
  
    - ii. **Automobile Liability Insurance:** (a) Bodily injury in an amount not less than five hundred thousand dollars (\$500,000) including accidental death to any one person, and, subject to the same limit for each person, in an amount not less than one million dollars (\$1,000,000 on account of one accident, (b) Property damage in an amount not less than one hundred thousand dollars (\$100,000) for any one damage claim, and in an aggregate amount up to two hundred fifty thousand dollars (\$250,000) during the Policy Period.
  
  - c. **Proof of Carriage of Insurance:** Contractor shall furnish the County with a certificate showing satisfactory proof of carriage of the insurance required. Contractor shall likewise furnish County with a certified endorsement(s) indicating that the County is an additional insured under all relevant policies and showing that said policies may not be modified or cancelled without thirty (30) days written notice to County. All of the insurance hereinbefore specified by Article 9 shall be carried until all work required to be performed under the terms of the Agreement is satisfactorily completed as evidenced by the formal acceptance by County. Should such insurance be canceled before such completion of the Agreement, Contractor shall suspend all work or operations until such time as Contractor shall provide another policy or policies of insurance of equivalent coverage or effect. The certificate holder should read: Columbia County, GA, Attn: Procurement, P O Box 498, Evans, GA 30809. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the County.
  
3. **Protection of Persons and Property:** The Contractor shall be responsible for all injuries or damages to persons or property that occur in connection with the performance or work under this Contract. He shall take all necessary precautions and exercise adequate diligence to prevent injuries or damages of any nature to persons or to the property of others during the prosecution of this Contract. Contractor shall prevent the construction site from being contaminated with any substance in quantities or under circumstances prohibited by environmental protection laws of the United States or the State of Georgia.

Contractor shall be responsible to Owner if, at any time, state and federal authorities make a claim or demand against the Owner on account of contamination of the site caused or allowed by Contractor or any of its forces or subcontractors.

4. Subcontracting:

- a. The Contractor shall utilize the services of specialty subcontractors on those parts of the work that, under normal Contracting practices, are performed by specialty subcontractors: **Provided** - That if the Owner shall determine that the specialty work in question has been customarily performed by the Contractor's own organization and that such organization is presently competent to perform such work, the Contractor shall be permitted to do so: **Provided Further** - That if the Owner shall determine that the performance of any specialty work by specialty subcontractors will result in materially increased costs or inordinate delays, the requirements of this paragraph shall not apply.
- b. The Contractor shall not subcontract the complete work, or any major portion thereof, and shall not award any work to any subcontractor without prior written approval of the Owner, which request shall contain written statements containing such information as the Owner may require.
- c. The Contractor shall be as fully responsible to the Owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by said subcontractors as he is for the acts and omissions of persons directly employed by him.
- d. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and other Contract Documents insofar as applicable to the work of subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of this Contract.
- e. Nothing contained in this Contract shall create any contractual relation between any subcontractor and the Owner.

5. Assignments: The Contractor shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without written consent of the Owner. In case the Contractor, with written consent of the Owner, assigns all or any part of any monies due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the Contractor shall be subject to prior liens of all persons, firms and corporations for services rendered or materials supplied for the performance of the work called for in this Contract.

6. Cooperation of Contractor: The Contractor will be supplied with three (3) sets of the Drawings and Specifications. The Contractor shall have available on the Work site, at all times, one (1) set of each of said Drawings and Specifications. He shall give the Work the constant attention necessary to facilitate the progress thereof and shall cooperate with the Engineer, County and authorized parties in every way possible. The Contractor shall at all times have a Superintendent, satisfactory to the Engineer, capable of acting as his agent on the Work, who shall receive instructions from the Engineer, County or authorized representatives. The Superintendent shall have full authority to execute the orders or directions of the Engineer or County without delay and to promptly supply such materials, tools, plant equipment and labor as may be required. Work requiring utility relocations performed by others will be performed concurrently; Contractor shall coordinate operations in order that maximum speed in construction is attained.

7. Corrections: Should any portions of the Contract Drawings and Specifications be obscure or in dispute, they shall be referred to the Engineer and he shall decide as to the true meaning and intent. He shall also have the right to correct any errors or omissions at any time when such corrections are necessary for the proper fulfillment of said Plans and Specifications. It shall be the Contractor's responsibility to timely advise the Owner or Owner's representative of any questions concerning, or defects with, the drawings or specifications, or of any other conditions or circumstances which the Contractor believes the Owner has the responsibility to correct or change.

8. Disagreement: Should any disagreement or difference arise as to the estimate, quantities or classifications or as to the meaning of the Drawings or Specifications, or any point concerning the character, acceptability and nature of the several kinds of Work, and materials and construction thereof, the decision of the Engineer shall be final and conclusive and binding upon all parties to the Contract.

9. Competent Labor: The Contractor shall employ only competent and skilled personnel on the Work. The Contractor shall have a competent Superintendent or Foreman present at all times when the Work is in progress, with authority to receive orders and execute the Work. The Contractor shall, upon demand from the Engineer, immediately remove any Superintendent, Foreman or workman whom the Engineer may consider incompetent or undesirable.

10. Time for Completion: The Work shall be commenced at the time stated in the notice to the Contractor to proceed and shall be completed within the Time Limit specified in the Specifications except as otherwise provided in these documents for extension of the time itself. **See Special Provisions.**

11. Construction Schedule and Periodical Estimates: Immediately after execution and delivery of the Contract, and before the first partial payment is made, the Contractor shall deliver to the Owner a construction program schedule in form satisfactory to the Owner, showing the proposed dates of commencement and completion of each of the various phases of the Work and the anticipated amount of each monthly payment that will become due the Contractor in accordance with the progress schedule. The Contractor shall also furnish a detailed estimate giving a complete breakdown of estimates of Work done for the purpose of making partial payments thereon. The values employed in making up any of these schedules will be used only for determining the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the Contract Price.

12. Mutual Responsibility of Contractors: If, through acts of neglect on the part of the Contractor, any other contractor, or any subcontractor shall suffer loss or damage on the Work, the Contractor agrees to settle with such other party if they will so settle. If such other Contractor or subcontractor shall assert any claims against the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor, who shall indemnify and save harmless the Owner against any such claim.

13. Laws or Regulations: The Contractor shall keep himself fully informed of all federal, state and local laws, ordinances and regulations which in any manner affect those engaged or employed in the Work, or the materials used in the Work, or in any way affect the conduct of the Work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over same. If any discrepancy or inconsistency shall be discovered in this Contract, or in the Specifications herein referred to, in relation to any such law, ordinance, regulation, order or decree, Contractor shall forthwith report the same in writing to the Owner. Contractor shall at all times, observe and comply with all such existing and future laws, ordinances and regulations, and shall protect and indemnify the Owner and its agents against any claim or liability arising from or based on the violation of any such law, ordinances, regulation, order or decree, whether by Contractor, its employees or subcontractors.
14. Extras: Except as otherwise provided herein, no charge for any extra work or material will be allowed unless the same has been ordered in writing by the Owner and the price stated in such order.
15. Changes in Work:
- a. The Owner may at any time, by a written order, and without notice to the Sureties, make changes in the Specifications of this Contract and within the general scope thereof. In making any changes, the change or credit for the change shall be approximately determined by the Owner in one of the following methods prior to the issuance of the order for the change.
    - i. The Owner shall fix the total lump sum value of the change in the Work of the Contractor, and shall set out the price, which shall be added to or deducted from the Contract price (which price shall include the Contractor's overhead and profit). On any change, which involves a net credit to the Owner, no allowance for overhead and profit shall be figured.
    - ii. By estimating the number of unit quantities of each part of the Work which is changed and then multiplying the estimated number of such unit quantities by the bid price (which price shall include the Contractor's overhead and profit) for a unity quantity thereof.
    - iii. By ordering the Contractor to proceed with the Work as changed and to keep and present in such form as the Owner may direct a correct account of the cost of the change together with all vouchers therefore. The cost may include an allowance for overhead and profit not to exceed 10% of the net cost. The cost may also include all items of labor or materials, the use of power tools and equipment actually used, power and all items of cost such as increased public liability and Workmen's Compensation Insurance, charges for foremen, also social security, old age and unemployment insurance; however, no percentage for overhead and profit shall be allowed on items of social security, old age and unemployment insurance. If deductions are ordered, the credits shall be the net cost. Among the items considered as overhead are included insurance (other than mentioned above), bond or bonds, superintendent, timekeeper, clerks, watchmen, use of small tools, incidental job burdens and general office expenses.
  - b. The Contractor shall, when required by the Owner, furnish to the Owner an itemized breakdown of the quantities and prices used in computing the value of any change that might be ordered.
  - c. In figuring changes, instructions for measurement of quantities set forth in the Specifications shall be followed.
  - d. Should the Contractor encounter, or the Owner discover, during the progress of the Work, subsurface or latent conditions at the site materially differing from those shown or indicated in the Specifications, or unknown conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Specifications, the attention of the Owner shall be called immediately to such conditions before they are disturbed. The Owner shall promptly investigate the conditions, and if he finds that they do so materially differ, the Contract shall, with the written approval of the Owner, be modified to provide for any increase or decrease of cost or difference in time resulting from such conditions.
  - e. No amount of Work is guaranteed under this Contract. Owner may at any time determine the Work, or any portion thereof, is no longer desired and cancels this Contract by written notice to Contractor. In such event Contractor shall be entitled to payment in accordance with this Contract only for such Work actually performed and accepted by Owner.
16. Claims for Extra Cost: If the Contractor claims that any instructions or directions involve extra cost or an extension of time, he shall so notify the Owner in writing within 10 days after the receipt of such instructions and in any event before proceeding to execute the work affected by said instruction. Thereafter, the procedure shall be the same as that described in paragraph 15 above, for Change in Work. No such claim shall be valid unless made in accordance with the terms of this section.
17. Materials, Services and Facilities:
- a. It is understood that, except as otherwise specifically stated in the Specifications, the Contractor shall provide and pay for all material, labor, tools, equipment, water, lights, power, transportation and other incidental general expenses.
  - b. Temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete and deliver the Work within the specified time.
  - c. Any work necessary to be performed after regular working hours, on Sundays, or legal holidays, shall be performed without additional expense to the Owner.
18. Patents: The Contractor shall hold and save the Owner and its officers, agents, servants and employees, harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the Work, including its use by the Contractor or Owner, unless otherwise specifically stipulated in the Specifications.
19. Inspection:
- a. Authority and Duties of Inspectors: Engineer and/or County shall be authorized to inspect all work done and all materials furnished. They shall call the attention of the Contractor to any failure of the Work or materials furnished to conform to the Specifications. They may reject materials or suspend the Work until any question at issue can be investigated and decided by the Owner.

- b. Inspection of Work and Materials: The Contractor shall furnish the Engineer with every reasonable facility for ascertaining whether or not the Work performed and materials furnished are in accordance with the requirements and intent of the Specifications. No work shall be done or materials used without suitable supervision or inspection by the Engineer or his representative. Failure to reject any defective work or materials shall not in any way prevent later rejection when such defect is discovered, or obligate the Owner to final acceptance. All materials furnished and work done not in accordance with the Specifications, will be rejected and shall immediately be removed and other work done and materials furnished in accordance with the Specifications. If the Contractor fails to remove defective work and materials as above ordered within forty-eight hours, then the Engineer shall have the right and authority to stop the Contractor from work at once and to supply men and material to remove the rejected material or work, and replace same in accordance with the Specifications, at the cost and expense of the Contractor.
- c. Defective Work and Material: The inspection of the work shall not relieve the Contractor of any of his obligations to fulfill his Contract. Defective work shall be made good, notwithstanding that such work and materials have been previously inspected by the Engineer and accepted or estimated for payment. The failure of the Engineer to condemn improper materials or workmanship shall not be considered as a waiver of any defect which may be discovered later, or as preventing the Owner at any time subsequently from recovering damages for work actually defective. All work **shall be guaranteed against defects in workmanship for a period of one year, after final acceptance**, and all materials furnished by the Contractor shall be guaranteed for a period of one year. This guarantee of work shall be in addition to and not in limitation of any other guaranty, warranty or remedy arising by law or elsewhere in the Specifications.
20. Right of the Owner to Terminate Contract: If the Contractor should be adjudged bankrupt, or make a general assignment for the benefit of creditors, or if a receiver should be appointed for the Contractor or any of its property, or if Contractor should persistently or repeatedly refuse or fail to supply enough properly skilled workmen, or proper materials, or refuse or fail to make prompt payment to persons supplying labor or materials for the Work, or persistently disregard instructions of the Engineer, County or Owner, or fail to observe or perform any provisions of the Specifications, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner may, by at least 5 days prior written notice to the Contractor, without prejudice to any other rights or remedies of the Owner, terminate the Contractor's right to proceed with the Work. In such event, the Owner may take over the Work and prosecute the same to completion, by Contract or otherwise, and the Contractor and his Sureties shall be liable to the Owner for any excess cost incurred by the Owner; and in any case the Owner may take possession of and utilize in completing the Work such materials, appliances, and equipment as may be on the site of the Work and necessary therefore. The foregoing provisions are in addition to, and not in limitation of, the rights of Owner under any other provisions of the Contract.
21. Delays - Damages:
- a. If the Contractor refuses or fails to prosecute the Work or any separable part thereof, with such diligence as will insure its completion within the Time Limit, or any extension thereof, or fails to complete the Work within such Time Limit, the Owner may, by written notice to the Contractor, terminate Contractor's right to proceed with the Work or such part of the Work for which there has been delay. In such event, the Owner may take over the Work and prosecute the same to completion, by contract or otherwise, and the Contractor and his Sureties shall be liable to the Owner for any excess cost, loss of use of the project, or other damages associated with the delay, incurred by Owner. If the Contractor's right to proceed is terminated, the Owner may take possession of and utilize in completing the Work such materials, appliances, and equipment as maybe on the site of the Work and necessary therefore. If the Owner does not terminate the right of the Contractor to proceed, the Contractor shall continue the Work, in which event the actual damages for the delay will be impossible to determine and in lieu thereof the Contractor shall pay to the Owner as fixed, agreed, and liquidated damages for each calendar day of delay until the work is completed or accepted the amount as set forth in this section and the Contractor and his Sureties shall be liable for the amount thereof provided: If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the Owner or the Engineer, or by an employee of either, or by any separate Contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in transportation, adverse weather conditions not reasonably anticipatable, unavoidable casualties, or any causes beyond the Contractor's control, or by delay authorized by the Owner, or by any other cause which the Engineer determines may justify the delay, then the Time Limit shall be extended by change order for such reasonable time as the Owner may determine. The Contractor shall make any claim for extension of time in writing to the Engineer not more than three (3) days after the commencement of the delay and shall provide in its notice an explanation for the delay and the probable effect of the delay on the progress of the Work. Any extension of time to the Contractor pursuant to this paragraph of the Contract shall be the sole remedy to Contractor for any such delay, suspension, interruption or effect thereof.
- b. Where actual damages for any delay in completion contemplated by this section are impossible of determination by reason of the Owner's election under said sections not to terminate the right of the Contractor to proceed, the Contractor and his sureties shall be liable for and shall pay to the Owner the sum of \$600 as fixed, agreed and liquidated damages for **each calendar day** of such delay until the Work is completed or accepted. Provided. That the Owner, in its sole discretion, may accept the Work if there has been such a degree of completion as will, in its opinion, make the project reasonably safe, fit, and convenient for the use and accommodation for which it was intended. In such case, the Contractor shall not be charged with liquidated damages, but the Owner may assess the actual damages caused by such delay.
22. Notice and Service Thereof:
- a. All notices, demands, requests, instructions, approvals and claims shall be in writing.
- b. Any notice to or demand upon the Contractor shall be sufficiently given if delivered at the office of the Contractor specified in the Bid (or at such other office as the Contractor may from time to time designate to the Owner in writing), or if deposited in the United States mail in a sealed, postage-prepaid envelope, or delivered by private delivery service, in each case addressed to such office.
- c. All papers required to be delivered to the Owner shall, unless otherwise specified in writing to the Contractor, be delivered to the Owner and any notice to or demand upon the Owner shall be sufficiently given if delivered to said office of the Owner or if deposited in the United States mail in a sealed, postage-paid envelope, or delivered by private delivery service, in each case addressed to the Owner or to such representative of the Owner or to such other address as the Owner may subsequently specify



in writing to the Contractor for such purposes.

- d. Any such notice or demand shall be deemed to have been given or made as of the time of actual delivery or (in the case of mailing) when the same should have been received.
23. Measurement and Payment: The work for which payment will be made shall be limited to that listed and enumerated in the Specifications. The unit prices or lump sum prices stated in the Proposal will be used in determining the amount to be paid. The Engineer in charge shall approve all measurement of quantities and check all calculations of quantities. The Engineer shall have access to notes and calculations made by the Contractor. The Contractor shall verify quantities with the Engineer prior to submitting pay requests.
  24. Payments by Contractor: The Contractor shall pay (a) for all transportation and utility services not later than the 20th day of the calendar month following that in which such services are rendered, (b) for all materials, tools and other expendable equipment to the extent of 90 percent of the cost thereof, not later than the 20th day of the calendar month following that in which such materials, tools and equipment are incorporated or used, and (c) each of his subcontractors not later than the 5th day following the payment to the Contractor, the respective amounts allowed the Contractor on account of the Work performed by his subcontractors, to the extent of each subcontractor's interest therein.
  25. Evidence of Payment by the Contractor: The Contractor shall furnish the Owner, whenever requested, with satisfactory evidence that all persons who have done Work, or furnished materials under this agreement have been duly paid or satisfactorily secured. In case such evidence is not furnished as aforesaid, such amount as may be necessary to meet the claim of such unsatisfied person may be retained from monies due the Contractor under this Contract, until the liabilities aforesaid shall be fully discharged.
  26. Acceptance of Work and Final Payment: Before final acceptance of the Work and payment to the Contractor of the percentage retained by the Owner, the following requirements shall be complied with:
    - a. Final Inspection: Upon notice from the Contractor that Work is completed, the Engineer shall make a final inspection of the Work, and shall notify the Contractor of all instances where the Work fails to comply with the Specifications, as well as any defects discovered. The Contractor shall immediately make such alterations as are necessary to make the Work comply with the Specifications, and to the satisfaction of the Owner.
    - b. Liens: Final acceptance of the Work will not be granted and the retained percentage will not be due or payable until the Contractor has furnished the Owner proper and satisfactory evidence under oath that all claims for labor and material employed or used in the construction of the Work under this Contract have been settled, and that no legal claims can be filed against the Owner for such labor or material.
    - c. Final Estimate: Upon completion of all alterations and repairs required by the final inspection, and upon submitting proper and satisfactory evidence to the Owner that all claims have been settled, the Engineer shall issue a certification of final acceptance of the Work. The Contractor shall then prepare and deliver his final estimate; the payment shall then become due.
  27. Acceptance of Final Payment: The submission of the final estimate to the Owner, and the acceptance of payment of same, shall operate as a release to the Owner for all claims and liabilities to the Contractor for all work done or materials furnished or for any act of the Owner or its agents affecting the Work.
  28. Guarantee: The Contractor shall guarantee all Work performed under this Contract against defective workmanship or materials, and shall replace all such defective work, materials or equipment furnished by the Contractor, for a period of one year from the date of final acceptance of the work, unless a longer period is otherwise provided for within the Contract.
  29. Indemnification: Contractor shall indemnify and hold harmless the Owner, its employees, agents, representatives and officers from and against all claims, damages, losses, expenses, suits, demands and judgments, including the cost of defense and attorney's fees, on account of bodily injury, sickness, disease, death or injury, or damage to property, including the loss of use thereof, arising out of or resulting from the performance of the Work, whether caused in whole or in part by any act, omission or negligence of the Contractor, its subcontractors, or anyone directly or indirectly employed by any of them or for whose acts and omissions they may be liable.
  30. Agreement: the laws of Georgia shall govern this agreement. In addition to any others, the parties consent to venue in the courts of Columbia County and Federal Courts in Richmond County. This agreement may be modified only in writing signed by the parties.

## **SPECIAL PROVISIONS ASSOCIATED WITH COUNTY SPECIFICATIONS**

Section 1.0	General
Section 2.0	Clearing and Grubbing
Section 3.0	Roadway Excavation & Embankment
Section 4.0	Construction of Sub-base
Section 5.0	Construction of Base Course
Section 6.0	Bituminous Prime and/or Tack Coat
Section 7.0	Asphalt Surface Course
Section 8.0	Concrete Construction
Section 9.0	Construction of Concrete Curb & Gutter
Section 10.0	Concrete Sidewalks & Driveways
Section 11.0	Excavation, Trenching and Backfill for Pipelines
Section 12.0	Construction of Sanitary Sewer
Section 13.0	Construction of Sanitary Sewer Manholes, Cleanouts & Appurtenances
Section 14.0	Construction of Aerial Lines, Cradles & Collars
Section 15.0	Construction of Water Distribution System
Section 16.0	Construction of Storm Sewer (Closed System)
Section 17.0	Storm Sewer (Open System)
Section 18.0	Construction of Storm Sewer Structures
Section 19.0	Soil Erosion Control
Section 20.0	Grassing
Section 21.0	Fencing

\*\* Landscape will be replaced in as good as or better condition

\*\* Contractor to video job site before construction begins

**SPECIAL PROVISIONS FOR  
Blanchard and Clarks Hill Water Treatment Plant Improvements**

1. In an effort to minimize traffic disruptions, work should be planned in a manner so as to prevent road closures.
2. The Time Limit for construction is 240 calendar days. Contractor may work 6 days per week, Monday – Saturday. Construction and transport activities shall not commence before 7 am on weekdays and 8 am on Saturdays. No construction activities shall be performed on Sundays or Holidays.
3. All work performed under this contract shall conform to GA. Department of Transportation Standard and Specifications, 1993 Edition, (or current issue) and Columbia County Standards and Specifications.
4. All work shall be coordinated with designated Columbia County manager of Water Utility Department, 2140 William Few Parkway – Building C, Grovetown, GA 30813, 706-868-4243. A pre-construction conference shall be required prior to commencing construction.
5. It shall be the responsibility of the Contractor to locate any and all utilities within the proposed construction areas. Any damage to the utilities during construction shall be at the Contractor's expense.
6. The Contractor shall submit to Columbia County a work schedule by the first day of each month for that month. The schedule shall include, but not limited to, original bid price, approved change orders, adjusted contract price the original number of days in contract, the adjusted number of days in contract, the number of days to be claimed as "rain days" due to unseasonable weather and projection dates for completion of the grading, drainage, or other discrete events or tasks.
7. The Contractor is responsible for notifying the United States Postal Service that is responsible for mail delivery in this area. The United States Postal Service shall approve the method of mail delivery during construction. Mail delivery shall not be interrupted during construction. Mail pick-up shall not be an inconvenience to the property owners affected by construction. Prior to re-setting the mail boxes at the completion of the construction the contractor shall have the mailbox location approved by the Columbia County and the United States Postal Service.
8. ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCING CONSTRUCTION. See Columbia County Soil Erosion Ordinance requirements. The engineer will be responsible for the location of the preliminary erosion control devices. Contractor shall have a designated certified worksite erosion control person on call and able to respond within 45 minutes of notification by engineer.
9. Columbia County reserves the right to delete and/or remove items from the bid proposal and increase or decrease quantities as shown on the bid proposal.
10. A certificate of payment to sub-contractors and suppliers shall be submitted with each pay request. A pay request submitted for payment without said certificate of payment **shall not** be processed for payment until properly submitted to Columbia County.
11. Traffic control shall meet Georgia DOT Section 150 requirements and the Manual on Uniform Traffic Control Devices (MUTCD). Columbia County will provide traffic control signage. Maintenance of traffic control will be the responsibility of the Contractor.
12. No activity, including structures and work in navigable waters of the United States or discharges of dredged or fill material, may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) And material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act.)
13. Land disturbance within State waters buffers and waters of the United States must be minimized or avoided to the maximum extent practical at the project sites.
14. Landscaping/yards are to be restored to the original condition or better.
15. Columbia County requires the Contractor to document the existing condition of the work area and adjacent properties with a video and still camera prior to commencement of construction.
16. In addition to the requirements set forth in the special provisions, the contractor is required to follow all special instructions or notes as stated on the bid sheet.

## TABLE OF CONTENTS

<b>SECTION NO.</b>	<b>DESCRIPTION</b>	<b>PAGE NO.</b>
<b>SECTION 1</b>	<b>GENERAL REQUIREMENTS</b>	
1.01	Location	1-1
1.02	Work to be Done	1-1
1.03	Schedule of Work	1-1
1.04	Drawings	1-2
1.05	Specifications	1-2
1.06	Protecting Existing Utilities and Structures	1-3
1.07	Subsurface Investigations	1-3
1.08	Easements	1-3
1.09	Working Drawings	1-4
1.10	Shop Drawings	1-4
1.11	As-Built Drawings	1-6
1.12	Operation and Maintenance Manuals	1-9
1.13	Clean-Up	1-9
1.14	Payment	1-9
<b>SECTION 2</b>	<b>CONTROL OF MATERIAL</b>	
2.01	Source of Supply and Quality of Materials	2-1
2.02	Samples and Testing of Materials	2-1
2.03	Schedule of Materials and Standard Tests	2-1
2.04	Payment	2-3
<b>SECTION 3</b>	<b>BUILDING &amp; BUILDING SERVICE EQUIPMENT</b>	
3.01	General Requirements	3-1
3.02	Miscellaneous Metals	3-1
3.03	Rough Carpentry and Millwork	3-3
3.04	Finish Carpentry	3-4
3.05	Retrofit Membrane Roof	3-5
3.06	Metal Door Frames	3-10
3.07	Metal Doors	3-12
3.08	Fiberglass Doors and Frames	3-12
3.09	Aluminum Windows	3-14
3.10	Glass and Glazing	3-18
3.11	Suspended Ceiling	3-20

**TABLE OF CONTENTS (CONTINUED)**

<b>SECTION NO.</b>	<b>DESCRIPTION</b>	<b>PAGE NO.</b>
3.12	Resilient Tile Flooring (Luxury Vinyl Tile)	3-22
3.13	Ceramic Tile	3-25
3.14	Carpet 3-27	
3.15	Toilet Partitions	3-28
3.16	Payment	3-28
<b>SECTION 4</b>	<b>PAINTING</b>	
4.01	Scope 4-1	
4.02	Material	4-1
4.03	General: Painting	4-1
4.04	Testing Equipment Required	4-1
4.05	Surfaces Requiring Painting	4-1
4.06	Preparation of Painting Surfaces	4-1
4.07	Manufacturer	4-3
4.08	Painting Systems	4-3
4.09	Colors	4-6
4.10	Piping Color Codes	4-6
4.11	Signs and Labels	4-6
4.12	Payment	4-7

**SECTION 1  
GENERAL REQUIREMENTS**

- 1.01 Location: The work described in these Specifications is located in Columbia County, Georgia.
- 1.02 Work to be Done: Project consists of the furnishing of all materials, labor and equipment for the complete construction of Blanchard and Clarks Hill Water Treatment Plant Improvements for Columbia County, Georgia consisting of:

Division 1 (Painting): Surface preparation, priming, painting, and coatings at the Blanchard and Clarks Hill Water Treatment Plants and associated pump stations including structures, equipment, piping, and appurtenances as scheduled in the specifications and drawings. Time allotted for this work is 240 consecutive calendar days.

Division 2: Improvements to the Blanchard and Clarks Hill Water Treatment Plants and associated pump stations including retrofit of new TPO roof at the Blanchard plant, window and door replacements, and other modifications as specified and/or shown on the drawings. Time allotted for this work is 240 consecutive calendar days.

- 1.03 Schedule of Work: The Contractor shall schedule the work to minimize interruptions or shutdowns of the existing water treatment plants and pump stations during the work without prior approval of both the Owner and Engineer.

The Contractor shall notify the Engineer and the Owner before starting any new phase of construction to verify that no interruption of service will be encountered.

- 1.04 Drawings: The Drawings entitled “Blanchard and Clarks Hill Water Treatment Plant Improvements” for Columbia County, Georgia, July 2020” form a part of the Construction Agreement.
- 1.05 Specifications: The Specifications form a part of the Construction Agreement, and include this Section and Sections 2 through 4 as identified below:

<u>Section Number</u>	<u>Title of Section</u>
2	Control of Materials
3	Building and Building Service Equipment
4	Painting

- 1.06 Protecting Existing Utilities and Structures: Prior to any excavation, the Contractor shall call the Utilities Protection Inc. “Call Before You Dig” number (811). Any damage done to existing utility lines, drains, power and telephone cable, poles, and structures of every nature, not indicated to be replaced and/or abandoned shall be repaired or replaced by the Contractor at his own expense. The approximate position of certain known underground lines and structures are shown on the Drawings according to the best available

information. Existing small lines are not shown. The Contractor shall locate, excavate and expose all existing underground lines in advance of trenching and other construction operations. Where connections are to be made at underground structures and pipe lines, elevations and locations shall be verified prior to construction of the pertinent work. Where underground utilities or obstructions are encountered which conflict with the new work, the location and/or alignment of the new or existing lines may be changed to avoid interference upon written approval of the Engineer.

- 1.07 Subsurface Investigations: A subsurface investigation has not been made on the work. The prospective bidder must form his own opinion of the character of the subsurface materials to be encountered in excavating for and the construction of the various facilities.
- 1.08 Easements: The Owner has obtained easements for all work on private property. The Contractor will be provided copies of all easement agreements to the Owner. The Contractor shall review any special conditions of any easement agreement and notify the Engineer of any condition which cannot be met under the Plans and Specifications without an increase in contract price.
- 1.09 Working Drawings: The Contractor's attention is directed to the requirements of the "Instructions to Bidders and Special Provisions" with reference to working drawings. The Contractor shall submit a digital copy of the drawings and details, covering Reinforcing Steel, Structural Steel, Miscellaneous Metals, Piping and such other items of work as may be necessary for successful completion of the work of the Project, to the Engineer for review. After review, the Engineer will return the digital copy to the Contractor. The Contractor will forward three hard copies, exactly as marked in the returned digital copy, to the Engineer within 7 days. The contractor will be responsible for printing any hard copies required by field crews, subcontractors, suppliers, etc.
- A. The Contractor shall check all working drawings for accuracy of dimensions and details and for conformity with the Drawings and Specifications before submitting working drawings to the Engineer for approval. The Contractor shall indicate that working drawings have been checked by him by affixing an appropriate stamp or notation on the face of each of the working drawings.
- B. Responsibility for Accuracy: Approval by the Engineer of the Contractor's working drawings shall not relieve the Contractor of the responsibility for accuracy of dimensions and details. The Contractor shall be responsible for agreement and conformity of working drawings with the Drawings and Specifications.
- 1.10 Shop Drawings: The Contractor shall submit shop drawings and details covering the required items of work and such other items which may be necessary for the successful completion of this Contract to the Engineer for checking and approval before any fabrication, erection or installation shall commence. A reviewed set of shop drawings with Engineer's review stamp shall be kept on the job at all times.

The Contractor shall notify the Engineer in writing about any information in the shop drawings which deviates from the Contract Documents.

Shop drawings, product data and engineering calculations covering all equipment, material, fabrications and similar items shall be submitted to the Engineer for review. Submittals shall verify compliance with the contract documents with any deviations noted by the Contractor.

The Contractor shall submit an electronic copy as described in “working drawings” above or submit six copies of drawings and details to adequately describe the function, performance characteristics, dimensions, arrangement, support, anchorage and other similar information to allow for installation, operation and maintenance. After review, the Engineer will return the digital copy to the Contractor. The Contractor will forward three printed copies, exactly as marked in the returned digital copy, to the Engineer. If hard copies are submitted in-lieu of the electronic copy, the Engineer will return three marked copies after review.

- A. **Submittal Identification:** Each submittal shall cover items from one Specification Section unless multiple sections are required for clarity. Each submittal shall be accompanied with a cover sheet that bears the Project Name, Engineer’s project number, and the Contractor’s name along with the following information:
1. **Submittal Date**
  2. **Submittal Number:** Submittal numbers shall be sequentially numbered without division by trades. Resubmittals shall be given the number of the original submittal followed by the letter A for the first resubmittal, the letter B for the second resubmittal, etc. (Example: 10A, 10B, etc.)
  3. **Item Name**
  4. **Location:** Identify the location(s) where the material or equipment is to be placed. (Example: RAS pump station, yard piping, construction joints greater than 12" thick.) The noted location shall be as specific as possible.
  5. **Subcontractor or Supplier:** Identify the equipment or material provider.
  6. **Manufacturer:** Identify the manufacturer of the material or equipment being submitted.
  7. **Drawing or Identification Number:** When available, list the shop drawing or identification number given by the contractor, supplier or manufacturer. Such numbers are typically found shop drawings for piping details, reinforcing steel, miscellaneous metals, etc.
  8. **Specification Section:** Identify the Specification Section(s) applicable to the equipment or material being submitted.
- B. **Contractor Review:** The Contractor shall check all working drawings for accuracy of dimensions and details and for conformation with the Drawings and Specifications before submitting working drawings to the Engineer for approval. The Contractor shall indicate that working drawings have been checked by him by affixing an appropriate stamp on the face of each of the working drawings and the submittal cover sheet. All notes by the contractor shall be in GREEN.



1. Pertinent Information: Where catalogs or data sheets include multiple listings, the Contractor shall highlight all entries that are pertinent to the submittal. Information that is not pertinent to the review shall be crossed out.
  2. Deviations: The Contractor must clearly identify any deviations from the contract Specifications or Drawings and provide additional data that may be required for the Engineer's review. When applicable, the Contractor must identify any required modifications to other components resulting from the deviation and may include but not limited to structural components, piping systems, electrical systems, etc.
- C. Engineer's Review: The Engineer shall review all shop drawings for general compliance with the contract documents. All corrections required by the Engineer will be noted in RED. The Engineer's review stamp shall be placed on the submittal cover sheet and/or the working drawing indicating the status of the returned submittal and date of review.
- D. Responsibility for Accuracy: Verification of all dimensions, quantities, material, identification numbers and other similar details shall be the sole responsibility of the Contractor. The Contractor shall be responsible for agreement and conformity of working drawings with the Contract Drawings and Specifications. Submittal approval by the Engineer shall not relieve the Contractor of these responsibilities, including errors and omissions.
- E. Resubmittals: The Contractor shall verify that all corrections and additional information requested by the Engineer have been provided on the resubmittal. The Contractor shall clearly identify any additional revisions to the submittal that were not specifically called out or requested in the initial review. Resubmittals shall be numbered as noted in these Specifications.
- F. Colors and Samples: Provide colors and samples as required by individual specification sections or when required for a complete and accurate review of the equipment or material. The samples should be submitted in the quantity required to be returned, plus one to be retained by the Engineer / Owner.
1. The Contractor shall provide samples that are identical to the proposed item. Where indicated in the Specifications or when requested by the Engineer, full size samples shall be provided.
  2. Owner's Color Selection: All products requiring color selection shall be submitted as early as possible. The Engineer will coordinate selection with the Owner after all samples, colors and finishes for the accepted products have been received. The Engineer will provide the Contractor with a schedule of the Owner selected colors and finishes.
  3. Sample Identification: Samples, color charts or similar data shall be identified as a decimal of the related submittal number. (Example: If the flooring submittal is Number 10, all samples related to the flooring submittal shall be numbered 10.1, 10.2, 10.3, etc.)

1.11 As-Built Drawings: As the work progresses, the Contractor shall regularly record on one set of Drawings all changes and deviations from the Contract Drawings and record the exact final locations of any deviation and original work. Upon completion, the Contractor shall have these drawings and records certified as to their completeness and correctness by the Resident Inspector and deliver them to the Engineer for incorporation in the tracings. Final as-built alignment, invert elevations and locations are to be supplied by the Contractor.

A. Monthly Submittal: As-built information for each item completed shall be provided monthly to the Engineer and submitted with partial pay request. Pay requests WILL NOT be processed without as-built records.

On stand-alone projects such as treatment plants, buildings or other similar projects, the Engineer may approve a monthly review of as-built drawings by the Resident Inspector in lieu of the monthly submittal requirement if discussed at the preconstruction conference.

B. As-Built Requirements: All submitted as-builts must meet the following requirements:

1. Contractor must present as-builts on a clean set of Drawings. All as-builts must be neat and legible. Revision or detail drawings, if required, may be included as additional sheets to plan set.
2. Items to be included on the as-built drawings include, but are not limited to the following:
  - a. Any deviations to the contract drawings
  - b. Additional details not originally shown on the Drawings
  - c. Changes made by change orders, field orders, work directives or submittals
  - d. Detail of all piping and pavement replacement
  - e. Finish elevations and invert elevations of all structures
  - f. Location and depth / elevation of utilities buried underground or concealed in concrete
3. Requirements for Utilities:
  - a. All new buried utilities and other similar items will be located with a minimum of two distances from permanent points to all intersections, changes in direction and appurtenance locations. Any statement such as "Installed Per Plans" shall not relieve Contractor of these requirements.
  - b. Utilities to be located include, but are not limited to, pipes, conduits, duct banks, wires, cables, fiber optic and other similar items.

- c. Appurtenances requiring location include, but are not limited to, manholes, fire hydrants, fittings, water taps, sewer taps, meters, valves, clean-outs, junction boxes, pull boxes, hand holes, and other similar items.
  - d. A distance from centerline of road is required for all new water and sewer lines every 100'.
  - e. The location of utilities installed below slabs or encased in concrete must be accurately dimensioned on the structure plans and sections.
  - f. Provide ground elevation, top elevation and all invert elevations for each manhole, drop inlet, junction box, and other similar structures.
  - g. For force mains or other pipes shown in a profile view, provide ground elevation and invert elevation at all high points, low points and change of slope. Additional elevations may be required to verify positive slope.
- C. Dimension Tolerances for As-Built Drawings: Dimensions provided on as-built drawings, whether measured by GPS or conventional methods, shall meet the following requirements:

<i>Project Type or Structure</i>	<i>Horizontal (X,Y)</i>	<i>Vertical (Z)</i>
1. Water Lines and Appurtenances	<1 meter	Not required
2. Sewer Lines and Appurtenances	<1'	<0.10'*
3. Force Mains and Appurtenances	<1'	<0.10'*
4. Storm Drains and Appurtenances	<1'	<0.10'*
5. Roadways, Sidewalks and Similar	<1'	<0.10'*
6. Location of Building and Structures	<1'	<0.05'
7. Actual Dimensions of Buildings and Structures	<1/4"	<0.05'
8. Temporary Benchworks		<0.01'

*\* Where vertical tolerance exceeds mapping grade, elevations must be supplemented by differential leveling using surveyor's level and grade rod.*

*\*\*Tolerances are for recording purposes only; actual construction may require closer tolerances than those noted.*

- 1.12 Operation and Maintenance Manuals: If applicable and before the work is 50% complete, the Contractor shall submit three printed copies and one digital pdf file of operation and maintenance manuals for equipment as specified. The digital file shall be

provided on a single drive or disk. Each component shall be labeled per the specification section referenced, for example:

“8.22 Aluminum Gates.pdf” or “11.13 Mechanical Bar Screen.pdf”

- 1.13 Clean-Up: Upon completion of the work, all excess material and rubbish shall be removed from the job site and disposed of as directed by the Engineer. The surrounding construction area shall be left in essentially as good a condition as existed prior to construction.

All unsuitable excavated material must be properly disposed of in a manner acceptable to the Engineer and in a manner that will not adversely impact the environment.

- 1.14 Payment: No separate payment will be made for the work of this Section. The cost of the work and all cost incidentals thereto shall be included in the price bid for the item to which the work pertains.

## SECTION 2 CONTROL OF MATERIALS

- 2.01 Source of Supply and Quality of Materials: The source of supply for all materials and equipment shall be submitted to the Engineer for approval before orders are placed. Suppliers of reinforcing steel, fabricated metal work, and metal castings may be required to submit guarantees of conformity with Drawings and Specifications. Representative preliminary samples of the character and quantity prescribed shall be submitted by the Contractor or producer for examination and tested in accord with the methods referred to under the samples and testing materials section of these Specifications. Only materials conforming to the requirements of the Specifications and approved by the Engineer shall be used in the work. All materials proposed to be used may be inspected or tested at any time during their preparation and use. If, after trial, it is found that sources of supply which have been approved do not furnish a uniform product, or if the product from any source proves unacceptable at any time, the Contractor shall furnish materials from other approved sources. No material, which after approval has in any way become unfit for use, shall be used in the work.
- 2.02 Samples and Testing of Materials: Unless otherwise specified, standard tests of materials shall be made in accord with the Specifications and tests of the American Society for Testing Materials, by a commercial testing laboratory approved by the Engineer. Reports of the tests shall promptly be furnished to the Engineer. Tests shall be arranged by the Contractor. The cost of all tests will be paid for by the Contractor unless otherwise specified.
- 2.03 Schedule of Materials and Standard Tests: The following schedule of materials and the standard test to which each is to be subjected is given for the Contractor's guidance.
- A. Cement (any quantity): Certificate of mill test to be furnished by producers of laboratory tests made as per ASTM C-1
  - B. Fly Ash: Independent laboratory test as per ASTM C 618
  - C. Sand (any quantity for use in cement concrete): Tests to indicate conformity with ASTM C-33
  - D. Stone and Gravel (any quantity for use in cement): Coarse Aggregate, similar to sand
  - E. Concrete: Cylinder compression tests of concrete placed in the work from 4 cylinders made for each day's placing of each class of concrete of each 50 cubic yards or fraction thereof. One cylinder shall be broken at 7 days, 2 cylinders shall be broken at 28 days, and one cylinder shall be held in reserve.
  - F. Brick (1 to 5,000): Visual inspection for shape, color soundness, freedom from cracks, balls of clay, and particles of lime
  - G. Concrete Masonry Units: Visual inspection for shape, soundness and freedom from cracks and fractures. Laboratory tests are required on at least 5 units as per ASTM C-140.

- H. Structural Tile: Visual inspection for shape, soundness, color, texture and crazing. Laboratory tests are required on at least 5 units as per ASTM C-126.
- I. Building Stone:
1. 1 to 5 Tons: Visual inspection for shape and color
  2. For Each Additional 5 Tons or Part Thereof: Visual inspection for shape and color and test for compression as per ASTM C-97 and C-170
- J. Cast Iron Pipe and Ductile Cast Iron Pipe:
1. Field Inspection: Visual inspection for dimensions, coating, cement lining, holes, hammer test, weights
  2. Laboratory Tests: Certified test reports by foundry
- K. Steel Pipe: ASTM A-134 and A-139
- L. Polyvinyl Chloride Pipe:
1. Visual Inspection: To ensure that pipe is homogenous throughout, free from cracks, nicks, gouges, severe scratches, voids, inclusions and other defects, reasonably uniform in color density and other physical properties. Quality Control Certification Seal and markings to include manufacturer's name or trademark, nominal pipe size and size base, PVC Cell Classification or Material Code, Dimension Ratio or Standard Dimension Ratio Number, product type, pressure class or pressure rating standard specification designation, production records code.
  2. Laboratory Tests: In amounts and character as per ASTM D-3034 for sewer pipe and AWWA C 900 for water pipe
- M. Structural Steel:
1. Any Quantity: Field inspection for rust, shape, and dimensions
  2. 25 to 200 Tons: Independent shop inspection and certified copies of mill tests
  3. For Structures and Buildings: See ASTM A-36
- N. Concrete Reinforcement Steel:
1. Up to 50,000 Pounds: Field inspection for rust, shape and dimensions
  2. 50,000 Pounds and Up: Independent laboratory inspection as follows:
    - a. Billet Steel: ASTM A-615
    - b. Roll Steel: ASTM A-616
    - c. Cold-Drawn Steel Wire: ASTM A-82
    - d. Wire Fabric: ASTM A-185

O. Cast Iron Castings:

1. Field Inspection: For dimensions, coatings, holes, hammer test
2. Laboratory Tests: Certified test reports by foundry

2.04 Payment: No separate payment will be made for work under this Section of the Specifications. The cost of such work and all cost incidentals thereto shall be included in the price bid for the item to which the work pertains.

**SECTION 3  
BUILDING & BUILDING SERVICE EQUIPMENT**

3.01 General Requirements:

- A. Scope: The Contractor shall furnish under this section all labor, material, tools and equipment for, and erect all building structures complete as herein specified and as shown on the Drawings.
- B. Materials and Workmanship:
  - 1. All materials furnished and used under this Section shall be specified, or if not particularly designated, shall be of the best of their respective kinds.
  - 2. Workmanship shall be first class in all respects. Neat and workmanlike appearances in the finished work will be required.
  - 3. All work shall be done in accordance with all pertinent codes, laws and regulations. Where gauges are shown, these shall be U.S. Standard for all metals except aluminum which shall be "B and S".
  - 4. Where Contractor's or manufacturer's detail drawings are called for herein, these shall be from measurement of structures as built and to which the several materials may apply.
- C. Color Requirement: Within sixty (60) days of the "Notice to Proceed", the Contractor shall submit a complete set of color samples for each product in these Specifications, requiring color selection, to the Engineer for selection.

3.02 Miscellaneous Metals:

- A. General: Furnish all bolts, nuts, anchor bolts, plates, anchors, ties, clamps, hangers, nails, spikes, screws, straps, toggle and expansion bolts and other items of rough hardware of sufficient size and number to tie together the various parts of the building and secure all of its parts in place. Such miscellaneous items shall be of same material as metals they contact.
- B. Materials:
  - 1. Bronze and Aluminum: All bronze and aluminum shall be close-grained, tough metal, with planes, angles and corners true and out of wind. The work shall be free of blowholes, flaws and other defects.
  - 2. Cast Iron: All castings shall be tough gray iron, of uniform thickness and free from blowholes and other defects, cast true to pattern and finished in a workmanlike manner.
  - 3. Steel: All structural shapes and plates shall conform to Standard Specifications for Structural Steel for Buildings as adopted by the American Society for Testing Materials,
  - 4. Wrought Iron: Wrought iron shall be tough, fibrous and of uniform quality.



C. Fabrication:

1. All work shall be laid out, cut and assembled by mechanics skilled in the fabrication of the different metals required so that the work will present a neat, satisfactory appearance in the building. Measurements shall be accurate, cutting true in line, joints tight and secure, all in accordance with the best practice in modern fabricating shops.
2. When the cutting torch is used, the burned edges of the metal shall be milled to dimension. All exposed edges of metal shall be milled smooth and straight.
3. All required holes shall be drilled or punched, not cut with the torch. Punching or drilling shall be accurately done and any holes not matching shall be reamed and not drifted.
4. Welding shall be done with electric arc equipment and executed in accordance with the "Code for Fusion Welding in Building Construction" of the American Welding Society. The welding electrode shall conform to American Welding Society Specifications Class E-40. Welding joints in metal cut with torch shall have the scale and burned metal ground or stripped back to bright metal before welding. All welded joints that will be exposed to view shall have the welds formed so the joint can be and shall be ground smooth. Unless otherwise specifically noted for items specified hereinafter, exposed welds shall be ground smooth so that connected surfaces are true to place, of same texture and generally imperceptible.
5. Should it be necessary to use cutting torch or welding arc on the inside of the building, the Contractor shall provide adequate fire extinguishers and other protective devices at the location of the work before any cutting or welding is started.

D. Joints in Metal Work: All jointing of metal members shall be designed to develop the full strength of the members at the connection. Where members are bolted together, not less than two (2) bolts are to be used for each connection, unless otherwise noted.

E. Galvanizing: Any items specified under this Section to be hot-dip galvanized shall conform to the following:

1. Rolled, pressed, or forged steel shapes, or steel plates, bars, or strips, 1/8" thick and heavier shall meet the requirements of ASTM Designation A 123-59.
2. Bolts and other fasteners shall meet the requirements of ASTM Designation A 153.
3. Iron or steel sheets lighter than 1/8" thickness shall meet the requirements of ASTM Designation A 93- 59T.
4. If the Engineer requires verification of weight of coating on any item delivered to the job site, he shall select sample and the Contractor shall

effect test by the stripping method in accordance with ASTM Designation A 90. If the tested item conforms to coating requirements, the Owner will pay cost of test.

If the items fail to meet coating requirements, the Contractor shall pay cost of test. In event of failure, at the Contractor's option and expense, second and third specimens may be similarly selected and tested. Failure of tested item or items to meet coating requirements shall cause the entire lot to be rejected. All rejected items shall be replaced with items meeting the requirements at no additional cost to the Owner.

### 3.03 Rough Carpentry and Millwork:

A. Shop Drawings: Furnish shop drawings for all fabricated items in this Section.

B. Products:

1. Blocking, nailers, rough bucks, furring and grounds shall be No. 1, common, Southern Pine, S4S.

2. Treated Wood:

a. Chemical Treatment: All lumber as hereinafter specified to be "Treated Wood" shall be impregnated with Fluor-Chrome-Arsenate-Phenol type wood preservatives (Osmosalts, Wolmanized or equal) in accordance with Fed. Spec. No. TT-W- 535. Osmosalts shall be applied in a closed cylinder by vacuum-pressure process in accordance with Fed. Spec. No. TT-W-571 f. The retention of dry salts shall be .35 lbs. per cubic foot of wood.

b. Drying: After treatment, all lumber shall be kiln dried to a 15% to 19% moisture content.

c. Color: Treated lumber shall have a pale green appearance which shall be apparent throughout the full section of the member when cut.

d. Job Treatment: Job cut surfaces and bolt holes shall be brushed with a 1-1 mixture of Osmosalts and water before being anchored or nailed in place.

e. Schedule of Treated Wood: Lumber used in the following locations shall be chemically treated:

1) Wood in contact with concrete or steel.

2) Wood in contact with masonry.

3) Wood built into concrete or masonry and wood members concealed by other materials or finish.

C. Execution:

1. General: Work shall be installed straight, plumb, in line, in neat fashion. Lay out work carefully to produce results intended by Drawings and to accommodate work of other trades.
2. Nailers on roof shall be applied only when they can be immediately covered by roofing and sheet metal materials. Should it be necessary to leave them exposed, cover with felt or plastic film to prevent wetting.

3.04 Finish Carpentry:

A. Scope: Provide all finish carpentry work including wood trim, casings, baseboards, chair rails, site-built cabinetry and shelving units and other items required for the construction as shown on the drawings or specified herein.

B. Submittals:

1. Provide shop drawings for site-built or custom cabinetry, shelving units, or similar items.

C. Products:

1. General:

- a. All wood products shall be graded and marked with the grade stamp of the appropriate agency or association.
- b. Specified lumber dimensions are nominal.
- c. All lumber shall be surfaced on four sides (S4S), unless specified otherwise.

2. Lumber and Trim:

- a. All lumber and trim shall be kiln dry to 15% maximum moisture content.
- b. Exterior Trim, where indicated on the drawings, shall be No. 1 Southern Pine, No.1 Spruce, or No.1 Douglas Fir
- c. Interior Trim shall be grade B&BTR Southern Pine, Spruce or Fir.
- d. Plywood: Exposed Both Sides: EXT-APA-A-A; 2. Exposed one Side: EXT-APA-A-C
- e. Shelving shall be Spruce, Fir, or Pine – Custom Grade, paint finish unless noted otherwise.
- f. Site Built cabinetry (where indicated on drawings)
  - 1) Plywood: Poplar or Birch – paint grade finish
  - 2) Boards and Lumber: Poplar or Birch – paint grade finish or C-Select Pine where noted
- g. Wainscot: 11/32 Ply-Bead Panels

3. Fasteners and Hardware: Provide galvanized nails, screws, spikes and staples in all locations of size and type to suit application.

D. Installation:

1. Provide joints that are tight, true and well fastened.
2. Construct work plumb, level, true and straight.
3. Trim Work
  - a. Install with a minimum number of joints possible.
  - b. Cope at returns and miter at corners to produce tight fitting joints with full surface contact.
  - c. Connect trim ends with concealed scarf joints

E. Finish Preparation:

1. Set all exposed nail and counter-sink exposed screws.
2. Remove rough surface by sanding to a minimum of 220 grit.
3. Thoroughly clean all surfaces to remove all dirt, adhesives, and sawdust.

3.05 Retrofit Membrane Roof:

- A. Scope of Work: Furnish and install a membrane roof with all accessories over an existing built-up roof in accordance with these specifications and the contract drawings.

B. Submittals:

1. Product Data: Manufacturer's data sheets for each product to be provided.
2. Detail Drawings: Provide roofing system plans, elevations, sections, details, and details of attachment to other Work, including:
3. Verification Samples: Provide for each product specified

C. Design Criteria:

1. General: Installed roofing membrane system shall remain watertight; and resist specified wind uplift pressures, thermally induced movement, and exposure to weather without failure.
2. Material Compatibility: Roofing materials shall be compatible with one another under conditions of service and application required, as demonstrated by roofing system manufacturer based on testing and field experience.

D. Products:

1. Thermoplastic Polyolefin Roofing (TPO) Membrane meeting the requirements of ASTM D 6878, uniform, flexible sheet formed from a thermoplastic polyolefin, internally fabric or scrim reinforced. TPO

Membrane shall be manufactured by John Mansville, Carlisle, Firestone, or approved equal.

- a. Thickness: 60 mils (1.52 mm), nominal
  - b. Accelerated Weathering: Minimum of 24,000 hours without cracking or crazing as tested using ASTM G155
  - c. Tensile Strength: Minimum of 300 lbf as tested using ASTM D751
  - d. Tearing Strength: Minimum of 85 lbs as tested using ASTM D751
2. Auxiliary Roofing Materials. Provide auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
- a. Liquid-type auxiliary materials shall meet VOC limits of authorities having jurisdiction.
  - b. Sheet Flashing: Manufacturer's sheet flashing of same material, type, reinforcement, thickness, and color as sheet membrane.  
Basis of Design:
  - c. Metal Termination Bars: Manufacturer's standard predrilled stainless-steel or aluminum bars, with anchors.
  - d. Metal Battens: Manufacturer's standard aluminum-zinc-alloy-coated or zinc-coated steel sheet, pre-punched. Fasteners required for all applications. Retain fasteners appropriate for application and change of plane terminations.
  - e. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer.
  - f. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, termination reglets, cover strips, and other accessories.
  - g. Fascia System: Manufacturer's factory fabricated fascia consisting of a base piece and a snap-on cover. Provide product manufactured and marketed by single-source membrane supplier that is included in the No Dollar Limit guarantee
  - h. Recovery Board: Provide high-density polyisocyanurate technology bonded in-line to mineral-surfaced, fiber glass reinforced facers with greater than 125 lbs of compressive strength. Provide Invinsa Roof Board by Johns Manville or approved equal

E. Moisture Survey:

1. Submit prior to installation, results of a non-destructive moisture test of existing roof system utilizing Infrared Thermography or Nuclear Backscatter.
2. Any areas identified to be deficient shall be repaired and replaced with materials similar to the existing prior to beginning construction of new roof.

F. Installation:

1. Re-roof Preparation:

- a. Remove all existing roofing aggregate
- b. Remove or replace all base flashings, counterflashings, pitch pans, pipe flashings, vents and like components necessary for the installation of the new membrane.
- c. Remove abandoned equipment curbs, skylights, smoke hatches, and penetrations.
- d. Raise all HVAC units and other equipment supported by curbs to conform with the following:
  - 1) Modify curbs as required to provide a minimum 8" base flashing height measured from the surface of the new membrane to the top of the flashing membrane.
  - 2) Nail top of flashing and install new metal counterflashing prior to re-installation of unit.
  - 3) Immediately remove all debris from roof surface. Demolished roof system may not be stored on the roof surface.

2. Recovery Board Installation:

- a. Coordinate installing membrane roofing system components so cover board is not exposed to precipitation or left exposed at the end of the workday.
- b. Comply with membrane roofing system manufacturer's written instructions for installing roof cover board.
- c. Install cover board with long joints of cover board in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch (6 mm) with cover board.
  - 1) Cut and fit cover board within 1/4 inch (6 mm) of nailers, projections, and penetrations.

- d. Trim surface of cover board where necessary at roof drains so completed surface is flush and does not restrict flow of water.
  - e. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces
  - f. Mechanical Fasteners: Install each layer of cover board and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof cover board to deck type
3. Roofing Membrane Installation, General:
- a. Install roofing membrane in accordance with roofing system manufacturer's written instructions, applicable recommendations of the roofing manufacturer and requirements in this Section.
  - b. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.
  - c. Where roof slope exceeds 1/2 inch per 12 inches (1:24, contact the membrane manufacturer for installation instructions regarding installation direction and back-nailing.
  - d. Coordinate installing roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is imminent.
  - e. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.
4. Mechanically Fastened Roofing Membrane Installation:
- a. Install roofing membrane over area to receive roofing in accordance with roofing system manufacturer's written instructions. Unroll roofing membrane and allow to relax before installing.
  - b. Accurately align roofing membranes and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
  - c. Mechanically fasten roofing membrane securely at terminations, penetrations, and perimeter of roofing.
  - d. Always install membrane laps perpendicular to the steel deck flutes. "Picture Frame" installation method is not permitted.
  - e. Apply roofing membrane with side laps shingled with slope of roof deck where possible.
  - f. Seams: Clean seam areas, overlap roofing membrane, and hot-air weld side and end laps of roofing membrane according to

manufacturer's written instructions to ensure a watertight seam installation.

- 1) Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roofing membrane.
  - 2) Verify field strength of seams a minimum of twice daily and repair seam sample areas.
  - 3) Repair tears, voids, and lapped seams in roofing membrane that do not meet requirements.
- g. Spread sealant or mastic bed over deck drain flange at deck drains and securely seal roofing membrane in place with clamping ring.
- h. Attachment: Membrane shall be attached as recommended by the manufacturer using one of the following methods..
- 1) In-Splice Attachment: Secure one edge of roofing membrane using fastening plates or metal battens centered within membrane splice and mechanically fasten roofing membrane to roof deck. Field-splice seam.
  - 2) Through-Membrane Attachment: Secure roofing membrane using fastening plates or metal battens and mechanically fasten roofing membrane to roof deck. Cover battens and fasteners with a continuous cover strip.

5. Flashing Installation:

- a. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- b. Flash penetrations and field-formed inside and outside corners with sheet flashing.
- c. Clean seam areas and overlap and firmly roll sheet flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation.
- d. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

6. Field Quality Control:

- a. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform roof tests and inspections and to prepare test reports.



- b. Final Roof Inspection: Arrange for roofing system manufacturer's Registered Roof Observer (RRO) to inspect roofing installation on completion and submit report to Architect.
- c. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.
- d. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

G. Guarantee:

- 1. Provide manufacturer's system guarantee equal to Johns Manville's Peak Advantage No Dollar Limit Roofing System Guarantee.
  - a. Single-Source special guarantee includes roofing plies, base flashings, liquid applied flashing, roofing membrane accessories, roof insulation, fasteners, substrate board, vapor retarder, and other single-source components of roofing system marketed by the manufacturer.
- 2. Guarantee Period: 15 years from date of Substantial Completion.
  - a. Wind Rider: Guarantee shall not exclude coverage for wind events up to [number between 55-120] mph.
  - b. Hail Rider: Guarantee shall have no exclusions for hail events up to [1 inch] [1.5 inches] [2 inches]
  - c. Accidental Puncture Rider: Guarantee shall provide coverage for accidental puncture for up to 8 billed repair hours per year for the life of the guarantee.
- 3. Installer's Guarantee: Submit roofing Installer's guarantee, including all components of roofing system for the following guarantee period:
  - a. Guarantee Period: Two Years from date of Substantial Completion.

3.06 Metal Door Frames:

- A. Shop Drawings: Submit shop drawings for all work fabricated under this section. Drawings shall show elevations of frames, gauges of materials, and sections through frames indicating adjacent materials and anchorage.
- B. Products: Unit type full welded door frames shall be fabricated to details and profiles shown of cold rolled buck steel.

1. Manufacturer: Hollow metal door frames shall be as manufactured by Amweld Metal Door and Frame Company, Habersham Metal Products Company, or equal.
2. Gauges: Frames shall be 16 USS gauge.
3. Sizes: Frame sizes shall be as shown on the Drawings.
4. Construction:
  - a. Head and jamb intersections including angles, molds, returns and miters, shall be continuously welded and ground off smooth and flush.
  - b. Steel reinforcements, minimum 1/8" × 1-1/2" × 9", shall be provided for hardware cutouts to ensure rigid construction, and shall be spot welded to the inside surface of the jambs over which weld 26-gauge galvanized plaster guards.
  - c. Removable steel angle spreaders shall be welded to the bottom to insure parallel alignment.
  - d. Provide minimum of three, 16-gauge × 2" × 10" adjustable corrugated steel anchors per jamb except as required for labeled frames. Jambs at columns shall be provided for transoms at a maximum spacing of 24" O.C.
  - e. Removable stops of 14-gauge steel shall be provided where indicated on Drawings for securing glass and grilles. Stops shall be secured to frames with countersunk oval head Phillip's Head sheet metal screws at 9" O.C.
  - f. Each jamb shall be provided with sill clips welded to the frame and punched with two 3/8" holes for anchoring. Unless specifically indicated otherwise on the Drawings, frames shall extend down to structural slabs.
  - g. Holes shall be drilled and tapped from template to receive butts, closers, and lock strikes. Templates for this purpose shall be furnished to the frame manufacturer by the hardware manufacturer.
  - h. Painting: Frames shall be thoroughly cleaned of oil, grease, dirt, and filled to assure a smooth finish, and shall be given factory baked-on prime coat of rust inhibitive paint.

C. Execution:

1. Door frames shall be stored on jobsite in an upright position, under cover, on wooden sills so as to protect frames from rust, stain, and damage prior to installation.
2. Attach sill clips on frames to concrete slabs with 5/16" expansion bolts operating in expansion shields. Secure jambs to steel studs. Where frames are installed in masonry walls, the space between masonry and

frame shall be filled with mortar. Erect frames plumb and in perfect alignment,

3.07 Metal Doors:

- A. General: Submit shop drawings for work fabricated under this Section. Drawings shall show elevations, gauges of materials, and sections.
- B. Hollow Metal Doors: Hollow metal doors shall be as manufactured by Amweld Metal Door and Frame Company, Habersham Metal Products Co., or equal.
  - 1. Flush Type Doors shall meet requirements of ANSI A.250.8, Level 3 (Extra Heavy Duty), Model 2 (Seamless). Each door shall be formed from a single sheet of No. 16 U.S. Gauge cold rolled, leveled sheet metal. There shall be no visible seams on the surface of the faces or along the vertical edges. Seams shall be continuously welded and dressed smooth.
  - 2. Door cores shall be polystyrene or polyurethane.
  - 3. Doors shall be mortised reinforced for hardware and shall be drilled and tapped at the factory from templates to receive items of mortised hardware. Templates shall be provided by hardware manufacturer. Surface applied items shall be reinforced, but drilling and tapping shall be done in the field.
  - 4. Tops and bottoms of doors shall be closed with not less than 18-gauge channels. Tops of doors shall be completely closed.
  - 5. Doors shall be given one (1) factory baked-on prime coat of rust inhibitive paint. Prior to painting, all materials shall be thoroughly cleaned of oil, grease, dirt, and filled to assure a smooth finish.
  - 6. Doors shall be covered by a ten (10) year performance warranty.
  - 7. All hardware and accessories shall be provided for all doors as specified on the drawings. Hardware shall be manufactured by Corbin, Sargent, Russwin or equal.
- C. Execution:
  - 1. Doors shall be stored indoors, in a horizontal position, on wooden sills and covered to protect from damage prior to installation.
  - 2. Installation shall be plumb and true and doors shall be adjusted to operate free and easily.

3.08 Fiberglass Doors and Frames: Fiberglass doors shall be manufactured by Chem-Pruf Door Co., Ltd, or equal.

A. Products:

- 1. Doors shall be made of fiberglass reinforced plastic (FRP) using chemically proven resins resistant to contaminants typically found in the environment for which these specifications are written. Doors shall be 1 ¾ inch thick and of flush construction having no seams or cracks. All doors

up to 4'-0" × 8'-0" shall have equal diagonal measurements with a maximum tolerance of +/- 1/32 inch.

2. Door plates shall be 1/8-inch-thick, molded in one continuous piece, starting with a 25-mil gelcoat of the color specified, integrally molded with at least two layers of 1.5 ounce per square foot fiberglass mat and one layer of 16 ounce per square yard unidirectional roving. This will yield a plate weight of 0.97 lbs. per square foot at a ratio of 30/70 glass to resin.
3. Stiles and rails shall be constructed starting from the outside toward the inside of a 25-mil gel coat of the color specified followed by a matrix of at least three (3) layers of 1.5 ounce per square foot of fiberglass mat. The stile and rail shall be molded in one continuous piece to a U-shaped configuration and to the exact dimensions of the door. In this manner there will be no miter joints or disparate materials used to form the once piece stile and rail.
4. Core material shall be a 2 psf expanded polyurethane foam which completely fills all voids between the door plates.
5. Internal reinforcement shall be firestop of sufficient amount to adequately support required hardware and function of same.
6. Finish of door and frame shall be identical in color and texture. At time of manufacture, 25 mil of resin-rich gelcoat must be integrally molded into both the door and frame. Secondary painting to achieve color is not acceptable.

B. Execution:

1. Window openings shall be provided for at a time of manufacture and shall be completely sealed so that the interior of the door is not exposed to the environment. Fiberglass retainers which hold the glazing in place shall be resin transfer molded with a profile that drains away from glazing. The retainers must match the color, texture and finish of the door plates. Glass shall be furnished and installed by door and frame manufacturer.
2. Louver openings shall be sealed in the same manner as the window openings. Louvers are to be solid fiberglass inverted "V" vanes and shall match the color, texture and finish of the door plates.
3. Transoms shall be identical to the doors in construction, materials thickness and reinforcement.
4. Frames shall be fiberglass and manufactured using the resin transfer method in closed rigid molds to assure uniformity in color and size. Beginning with a minimum 25 mil gel coat and a minimum of two layers continuous strand fiberglass mat saturated with resin, the frame will be of one-piece construction with molded stop. All frame profiles up to 3/4" will be solid fiberglass. All frame profiles greater than 3/4" shall have a core material of 2 psf polyurethane foam. Metal frames or pultruded fiberglass frames will not be accepted.

5. Finish of frame shall be identical in color and texture to the door .25 mil resin rich gel coat will be integrally molded into the frame at time of manufacture. Secondary painting to achieve color is not acceptable.
6. Jamb/Header connection shall be copied by CNC for tight fit.

C. Hardware:

1. Internal reinforcement shall be continuous within the structure to allow for mounting of specified hardware. Material shall be completely non-organic with a minimum hinge screw holding value of 656 lbs. Frame screw holding value to accommodate screw shall be minimum of 1,000 lbs per screw. Documented strength of frame screw holding value after third insert must be submitted. Dissimilar materials, such as steel, will be deemed unacceptable as reinforcement for hardware attachment.
2. Mortises for hardware shall be accurately machined by manufacturer to hold dimensions to +/- 0.010 inch in all three axes.
3. Hinge pockets shall be accurately machined by manufacturer to facilitate heavy duty hinges at all hinge locations, using spacers when standard weight hinges are used.

3.09 Aluminum Windows:

A. General:

1. Provide aluminum windows capable of complying with performance requirements indicated, based on testing manufacturer's windows that are representative of those specified and that are of minimum test size required by AAMA/NWWDA 101/I.S.2. Windows shall be manufactured by WINCO, Wausau Window, Architectural Products Co., or equal.

B. Performance Characteristics:

1. Structural: Provide aluminum windows capable of withstanding the following, including wind loads based on passing AAMA/NWWDA 101/I.S.2, Uniform Load Structural Test:
  - a. Wind Load: Each assembly shall be designed for a minimum wind load of 35 pounds per square foot unless noted otherwise on the drawings.
  - b. Deflection: Based on passing AAMA/NWWDA 101/I.S.2, Uniform Load Deflection Test or on glass framing system designed to limit lateral deflections of glass edges to less than 1/175 of glass-edge length or 3/4 inch (19 mm), whichever is less, at design pressure
2. Air Infiltration: Maximum rate not more than .10 CFM/sf AT 6.24 PSF when tested according to ASTM E 283, Air Infiltration Test

3. Water Resistance: No water leakage as defined in AAMA/NWWDA referenced test methods at a water test pressure equaling 12 PSF when tested according to ASTM E 331/ASTM E 547, Water Resistance Test.
4. Forced-Entry Resistance: Comply with Performance Level 10 requirements when tested according to ASTM F 588
5. Condensation-Resistance Factor: Provide aluminum windows tested for thermal performance according to AAMA 1503, showing a CRF of 48, Thermal Transmittance: Provide aluminum windows with a whole-window U-value maximum .54 BTU/hr-sf-degrees at 15-mph (24-km/h) exterior wind velocity and winter condition temperatures when tested according to NFRC 103 where windows are indicated to be "thermally improved."
6. Solar Heat Gain Coefficient (SHGC), not greater than .25, or as required by the applicable energy code.
7. Thermal Movements: Provide aluminum windows, including anchorage, that accommodate thermal movements of units resulting from the following maximum change (range) in ambient and surface temperatures without buckling, distortion, opening of joints, failure of joint sealants, damaging loads and stresses on glazing and connections, and other detrimental effects. Base engineering calculation on actual surface temperatures of materials due to solar heat gain and nighttime-sky heat loss.
  - a. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C) material surfaces

C. Submittals:

1. Product Data and Shop Drawings: Provide plans, elevations, sections, details, hardware, attachments to other Work, and operational clearances signed and sealed by a registered Professional Engineer. Engineered calculations may be submitted after approval of windows for design, but in no event shall fabrication of window begin until calculations have been submitted and approved
2. Samples: Provide samples of exposed finish and glass

D. Glazing:

1. Glass: Unless noted otherwise on the drawings, all windows shall be provide double insulated glass (¼" tempered exterior lite, ½" gas-filled air space, and ¼" tempered with Low-E coating interior lite).
2. Glazing System: Provide manufacturer's standard factory-glazing system that produces weathertight seal.

E. Material:

1. Frame, ventilator and weathering sections shall be solid extruded aluminum shapes specifically designed for the purpose. Extruded

aluminum shall be 60653-T6 alloy and temper, with a tensile strength of 24,000 PSI.

2. Hardware:

- a. Locking handles shall be cam type and manufactured from a white bronze alloy with a US25D brushed finish
- b. Operating arms shall consist of a 4-bar stainless steel arms or equal.

3. Weather strip shall be double Santropene thermos plastic rubber or equal.

4. Thermal Barrier:

- a. All exterior aluminum shall be separated from the interior aluminum by an integrally concealed, low-conductance structural thermal barrier in a manner that eliminates direct metal-to metal contact.
- b. Poured-in-place structural thermal barrier shall transfer shear during bending and provide composite action between frame components
- c. Thermal barrier pocket on aluminum extrusions shall be Azo-Braded to create a mechanical lock to improve the adhesion properties between the polyurethane polymer and the surface of the thermal barrier pocket.
- d. Window manufacturer must provide a warranty from the manufacturer of the polyurethane thermal barrier that warrants against product failure as a result of thermal shrinkage beyond 1/8 inch (3.2 mm) from each end and fracturing of the polyurethane for a period not to exceed ten years from the date of window manufacture.

5. All frame sections shall not be less than two (2") inch deep front to back and not less than 1/8" thick.

6. Anchors and Clips: Anchors, clips, bolts and screws necessary to secure windows shall be provided and shall be at manufacturer's option either aluminum, non-magnetic stainless steel, or zinc coated steel

F. Fabrication:

1. General:

- a. Fabricate aluminum windows, in sizes indicated, that comply with requirements and that meet or exceed AAMA/NWWDA 101/LS.2 performance requirements for the following window type and performance class. Include a complete system for assembling components and anchoring windows:

- 1) Casement, Awning, Projection, and Fixed Windows: AW  
60

- b. All aluminum frame and vent extrusions shall have a minimum wall thickness of 0.125". Depth of main frame and vent sections shall not be less than 2"
  - c. Windows shall be fabricated to allow reglazing without dismantling sash or ventilator framing
2. Frame: Frame components shall be assembled by means of mechanical fastening with screws. Joinery to be sealed with small joint sealant.
  3. Ventilator: All vent extrusions shall be tubular on all 4 sides. Each corner shall be mitered and assembled by means mechanical fastening with screws. Joinery is sealed with small joint sealant. Each vent shall have two rows of weather stripping installed in a specifically designed weather strip pocket for the extrusion.
  4. Provide full-perimeter weather stripping for each operable sash and ventilator.
  5. Provide weep holes and internal passages to conduct infiltrating water to exterior
  6. Provide weep holes and internal passages to conduct infiltrating water to exterior
  7. Provide mullions and cover plates as shown, matching window units, complete with anchors for support to structure and installation of window units. Coverplates shall be attached with screws or rivets not taped. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections, as indicated. Provide mullions and cover plates capable of withstanding design loads of window units.
  8. Provide snap-on extruded aluminum glazing stops coordinated with the Glass and Glazing section and glazing system indicated. Provide glazing stops to match sash and ventilator frames.
  9. Provide concealed stainless steel hinges.
  10. At all operable casement ventilators, provide a stainless steel key releasable custodial limit stop with Friction Adjuster to limit opening of ventilator to 90 degrees.
  11. Provide standard trim including head and jamb filler, interior snap trim
  12. Provide sub-sill as required
  13. Screens: All operable sections shall be provided with screens: Extruded frames shall be fabricated from aluminum 6063-T6. Screen mesh shall be .011 aluminum screen wire mesh produced from 5154 alloy. All mesh shall be installed to allow the cloth to be easily replaceable.
- G. Finish: All windows shall be chemically cleaned and given an anodized finish with medium bronze color or as selected by the owner.



H. Installation:

1. Use only skilled craftsmen for work to be done in accordance with approved shop drawings and specifications.
2. Set square and level aligning window faces in a single plane for each opening. Windows and materials must be set square and level. Adequately anchor window so when subjected to normal thermal movement, specified building movement, and specified wind loads, so windows will maintain a permanent position.
3. Adjust windows for proper ease of operation after installation has been completed.
4. Contractor furnish and apply sealant, per manufacturers recommendations, to provide a weather tight installation at all opening perimeters. Wipe off excess material and leave all exposed surfaces and joints clean and smooth.

- I. Cleaning and Protection: The Contractor shall protect all windows from misuse or damage after installation, and shall clean all plaster, mortar, or other foreign materials from the windows immediately prior to the completion of his contract.

3.10 Glass and Glazing: Glazing system shall be produced, fabricated, and installed to withstand normal thermal movement, wind loading, and impact loading (where applicable) without failure including loss or glass breakage attributable to the following: defective manufacture, fabrication and installation, failure of sealants or gaskets to remain watertight and airtight,; deterioration of glazing materials, and other defects in construction.

- A. Glass Design: Glass thicknesses indicated on Drawings are for detailing only. Confirm glass thicknesses by analyzing project loads and in-service conditions. Provide glass lites for the various size openings in the thicknesses and strengths (annealed or heat-treated) to meet or exceed a minimum glass thickness, nominally, of lites in exterior walls of 6.0 mm (0.23").

Normal thermal movement results from the following maximum change (range) in ambient and surface temperatures acting on glass-framing members and glazing components.

1. Base engineering calculation on materials' actual surface temperatures due to both solar heat gain and nighttime sky heat loss
2. Temperature Change (Range): 120°F ambient; 180°F material surfaces

B. Flat Glass Materials:

1. Float Glass (Type FG-A): ASTM C1036, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select; ¼" minimum thick
2. Safety Glass (Type FG-B): ASTM C1048, fully tempered, Condition A uncoated, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select; conforming to ANSI Z97.1; ¼" minimum thick

3. Wired Glass (Type FG-H): ASTM C1036, Type II patterned and wired flat, Class 1 translucent, Quality q8 glazing; ½" square mesh, ¼" minimum thick
4. Tinted Glass: PPG Industries, Inc. Solarbronze, meeting requirements of float glass and safety glass at locations indicated

C. Insulating Glass Products:

1. Sealed Insulating Glass Units: Provide preassembled units consisting of organically sealed lites of glass separated by dehydrated air spaces complying with ASTM E 774 and with other requirements indicated.
  - a. For properties of individual glass lites making up units, refer to requirements specified elsewhere in this Section applicable to types, classes, kinds, and conditions of glass products comprising lites of insulating glass units.
  - b. Provide heat-treated, where recommended by manufacturer, to comply with system performance requirements specified and kind fully tempered where safety glass is designated or required.
  - c. Performance characteristics designated for insulating glass are nominal values based on manufacturer's published test data for units with lites 0.23" thick and nominal ½" dehydrated space between lites, unless otherwise indicated.
  - d. U-values are expressed as Btu/hour x square feet x °F.
2. Insulated Glass Units:
  - a. ASTM E774 and E773
  - b. Double pane with glass elastomer edge seal
  - c. Outer pane of ¼" tinted glass, inner pane of ¼" clear low-e glass
  - d. Purge interpane space and fill with argon
  - e. Total unit thickness of 1" (25 mm)
3. Edge Seal Material: Black color

D. Elastomeric Glazing Sealants:

1. General: Provide products of type indicated, complying with the following requirements:
  - a. Compatibility and Suitability: Contractor shall comply with sealant and glass manufacturer's recommendations for selecting glazing sealants and tapes that are suitable for applications indicated and conditions existing at time of installation and service, as demonstrated by testing and field experiences. Selection shall be based on proven compatibility with contact materials, including glass products, seals of insulating glass units, and glazing channel

substrates, and under conditions of installation and service as demonstrated by testing and field experience

- b. Colors: The Contractor shall submit a complete set of standard color samples for the exposed joint sealants to the Engineer for selection.
  2. Elastomeric Glazing Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealants.
  3. Glazing Sealant for Fire-Resistant Glazing Products: Identical to product used in test assembly to obtain fire-resistive rating.
- E. Back-Bedding Mastic Glazing Tape: Provide preformed, butyl-based elastomeric tape with a solids content of 100%, nonstaining and nonmigrating in contact with nonporous surfaces, with or without spacer rod as recommended by tape and glass manufacturers for application indicated, packaged on rolls with a release paper backing, and complying with AAMA 800.
- F. Miscellaneous Glazing Materials: Provide products of material, size and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials involved for glazing application indicated, and with a proven record of compatibility with surfaces contacted in installation.
1. Cleaners, Primers and Sealers: Type recommended by sealant or gasket manufacturer
  2. Setting Blocks: Elastomeric material with a Shore A durometer hardness of  $85 \pm 5$
  3. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated
  4. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side-walking)
- G. Fabrication of Glass and Other Glazing Products: Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with recommendations of product manufacturer and referenced glazing standard as required to comply with system performance requirements.
- H. Insect Screens:
1. Furnish extruded aluminum framed screens on all operating window vents.
  2. Screens shall be extruded aluminum frames, and 18-14 aluminum mesh complete with aluminum clips and screws.
  3. Screens for project-out ventilators shall be mounted from the interior and shall contain sliding wicket ventilators.
- 3.11 Suspended Ceiling: Provide and install suspended ceiling system complete with all appurtenances to meet the following:

A. Acoustical Panels:

1. Surface Texture: Fine
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24in x 24in
5. Edge Profile: Angled Tegular 15/16"
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, 0.50.
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 35
8. Flame Spread: ASTM E 1264; Class A (UL)
9. Light Reflectance (LR): ASTM E 1477
10. White Panel Light Reflectance: 0.83
11. Dimensional Stability: HumiGuard Plus or Equal
12. Mold/Mildew Inhibitor: The front and back of the product have been treated with a paint that contains a special biocide that inhibits or retards the growth of mold or mildew, ASTM D 3273.
13. Acceptable Manufacturer: Armstrong Dune 1774 or approved Equal

B. Suspension System:

1. Main beams and cross tees, base metal and end detail, fabricated from commercial quality hot dipped galvanized steel complying with ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleaned, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.
  - a. Structural Classification: ASTM C 635 HD.
  - b. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
  - c. Acceptable Product: PRELUDE XL 15/16" Exposed Tee as manufactured by Armstrong World Industries, USG or approved equal.
2. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1; Direct hung unless otherwise indicated.
3. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper, pre-stretched with a yield stress load of at least three design load, but not less than 12 gauge.

4. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.

C. Installation:

1. Do not install interior ceilings until space is enclosed and weatherproof; wet work in place is completed and nominally dry; work above ceilings is complete; and ambient conditions of temperature and humidity are continuously maintained at values near those intended for final occupancy. Building areas to receive ceilings shall be free of construction dust and

3.12 Resilient Tile Flooring (Luxury Vinyl Tile):

- A. Scope: Provide resilient tile flooring (luxury vinyl tile) where shown on the drawings or specified herein

B. Submittals:

1. Materials list of items proposed to be provided under this section.
2. Manufacturers product data on each material provided including but not limited to tile, baseboards where required, adhesives, and primers.
3. Samples of each item, color, and pattern available in the specified grades from proposed manufacturers.
4. Manufacturers recommended installation procedures which, when approved by the Engineer, will become the basis for accepting or rejecting actual installation.

- C. Extra Stock: Deliver to the Owner for his use an extra stock of approximately 100 sq.ft. of each color and pattern used. Each type of material shall be packaged separately, distinctly marked, and protected against deterioration

D. Products:

1. Resilient Materials: Provide Luxury Solid Vinyl flooring as manufactured by Armstrong World Industries, Inc., Floorfolio, or equal having a nominal total thickness of 0.125 in. (3.2 mm) gauge, consisting of a tough, clear, unfilled, polyurethane-coated, 0.020 in (0.5mm) thick wear layer composed of polyvinyl chloride resins, plasticizers, stabilizers, and processing aids over a printed film on an intermediate layer over a filled vinyl backing. Flooring shall meet composition, size, thickness, squareness, flexibility, residual indentation, resistance to chemicals, resistance to heat and resistance to light requirements of ASTM F 1700, "Standard Specification for Solid Vinyl Tile," Class III, Type B – Embossed Surface.
2. Adhesive: Provide waterproof and stabilized type adhesive as recommended by the manufacturer of the material being installed.

(Asphalt emulsions and other non-waterproof adhesives will not be acceptable). Adhesive shall be suitable for a relative humidity up to 99% as determined by ASTM F 2170 test method.

3. Concrete Slab Primer: Provide non-staining type when recommended by the manufacturer.
4. Accessories: Provide the following where required for proper installation.
  - a. For sealing joints between the top of wall base or integral cove cap and irregular wall surfaces such as masonry, provide plastic filler applied according to the manufacturer's recommendations
  - b. Provide transition/reducing strips tapered to meet abutting materials.
  - c. Provide threshold of thickness and width as shown on the drawings.
  - d. Provide resilient edge strips of width shown on the drawings, or equal gauge to the flooring, homogeneous vinyl or rubber composition, tapered or bullnose edge, with color to match or contrast with the flooring as selected by the Owner from standard colors available.
  - e. Provide metal edge strips of width shown on the drawings and of the required thickness to protect exposed edges of the flooring. Provide units of maximum available length to minimize the number of joints. Use butt-type metal edge strips for concealed anchorage or overlap-type metal edge strips for exposed anchorage. Unless otherwise shown, provide strips made of extruded aluminum with a mill finish.

E. Preparation and Installation:

1. Testing, preparation, installation, and protection must be in strict accordance with the manufacturer's recommendations and industry standards.
2. Climate Control:
  - a. Resilient flooring should only be installed in temperature-controlled environments. It is necessary to maintain a constant temperature before, during and after the installation. Therefore, the permanent or temporary HVAC system must be in operation before the installation of resilient flooring. Portable heaters are not recommended, as they may not heat the room and subfloor sufficiently. Kerosene heaters should never be used.
  - b. Allow all flooring materials and adhesives to condition to the room temperature for a minimum of 48 hours before starting the installation.

- c. The flooring materials shall be maintained at temperatures recommended by the manufacturer before, during, and after the installation.

3. Subfloors:

- a. Curing, sealing, hardening, or parting compounds should be avoided on concrete floors that will later receive resilient floor coverings. If such compounds are used, a letter of compatibility must be provided by the manufacturer.
- b. Before installation on concrete floors, moisture, alkali, and bond testing must be conducted.
  - 1) Moisture testing must be performed in accordance with the current edition of ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes (preferred method) or in accordance with the current edition of ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. See Section E-10, Moisture Testing for more details.
  - 2) The surface of the concrete must have a pH of 9 or less.
  - 3) Bond testing must be completed to determine compatibility of the adhesives to the concrete slab.
- c. The surface shall be free of dust, solvents, varnish, paint, wax, oil, grease, sealers, curing compounds, residual adhesive, adhesive removers and other foreign materials that might affect the adhesion of resilient flooring to the substrate or cause a discoloration of the flooring from below. Spray paints, permanent markers and other indelible ink markers must not be used to write on the back of the flooring material or used to mark the substrate as they could bleed through, telegraphing up to the surface and permanently staining the flooring material. If these contaminants are present on the substrate, they must be mechanically removed prior to the installation of the flooring material.
- d. In renovation or remodel work, remove any existing adhesive residue so that 100% of the overall area of the original substrate is exposed. The contractor shall be responsible for protecting electrical, HVAC, and other sensitive equipment during grinding or other similar procedures.

4. Installation:

- a. Verify that the substrate is smooth, level, and without more than 1/8" in 10'-0" variation from level or slopes shown on the drawings. Remove all rough areas, projections, ridges and bumps.

Fill all low areas with a Fast-Setting Cement-Based underlayment as recommended by the manufacturer.

- b. Lay units from center marks established with principal walls, discounting minor offsets, so that units at opposite edges are of equal width. Adjust as necessary to avoid cut widths less than 3” at room perimeters.
- c. Lay units square to axes of the room or space.
- d. Lay tiles in Ashlar patten with grain in all units running in the same direction, unless directed otherwise by the Engineer.

F. Cleaning and Protecting:

- 1. Thoroughly clean floors and perform initial maintenance as recommended by the manufacturer.
- 2. Remove excessive adhesive and other blemished from exposed surfaces using a neutral cleaner as recommended by the manufacturer.
- 3. Protect installed floors from rolling loads and furniture placement.
- 4. Protect floor from foot traffic with non-staining paper or plastic walkway until accepted by owner.
- 5. Any damaged shall be replaced by the contractor prior to final acceptance by the owner.

3.13 Ceramic Tile:

A. General: Provide ceramic / porcelain tile where indicated on the Drawings or specified herein.

B. Quality Assurance:

- 1. Comply with ANSI Standard for Tile Installation Material and current Tile Council of America Handbook for products and materials indicated for setting and grouting.
- 2. Use only installers with a minimum of 2 years’ experience and five (5) commercial tile installations similar in material, design and scope to that indicated.
- 3. Deliver, store and handle materials in accordance with manufacturer’s instructions.

C. Submittals:

- 1. Product data from tile manufacturer, indicating compliance with applicable standards and specifications.
- 2. Mortar and grout manufacturer’s data sheets indicating suitability for the specified installation and MSDS.
- 3. Samples: Submit the following for each type, color, size and finish included in the work.



- a. Manufacturer's color charts for each product line specified indicating full range of colors and patterns
  - b. Full size tile and trim shapes
  - c. Grout and sealant color samples
4. Field Mock-Up: If requested by the Owner, provide a mock-up of adequate size to show laying patterns, joint quality, color range, and tile size for each type of tile installation. No mock-up shall be less than 5'x5'.
- D. Extra Stock: Provide to the owner a minimum of 3%, but not less than 25-sqft, additional stock for each color and pattern installed. Extra stock shall be boxed and clearly marked.
- E. Product:
- 1. Porcelain Tile: Porcelain tile shall be of standard grade quality as manufactured by Crossville Inc. or equal and shall conform to requirements of ANSI A-137.1-1988. Tile shall be from the Crossville Porcelain Stone Series or similar series by an equal manufacturer.
    - a. Surface: Tile surface shall be Cross-Sheen [UPS].
    - b. Size: Tile shall be manufactured to specific size after firing and shall be nominal 12"x12" and a minimum of 3/8" (10mm) thick.
    - c. Product Performance:
      - 1) Breaking Strength: > 450 lbf      ASTM C648
      - 2) Bond Strength: >200 psi      ASTM C482
      - 3) Chemical Resistance: Unaffected      ASTM C650
      - 4) Water Absorption: < 0.20%      ASTM C373
      - 5) Scratch Hardness: >7      Mohs Scale
      - 6) Static Coefficient of Friction: > 0.6 wet      ASTM C1028
  - 2. Tile Accessories: Provide matching trim shapes such as bullnose, corners, borders and cove base where indicated on Drawings or required for transitions between tile and other flooring types.
  - 3. Setting and Grouting Materials:
    - a. Use appropriate installation mortars according to ANSI-A118-1999 Series as recommended by the manufacturer for the installation environment and substrate.
    - b. Use high performance epoxy grout. Provide SPECTRALOCK® by Laticrete or equal.
- F. Preparation and Installation:
- 1. Before tiling, verify that floor surfaces are structurally sound, true to plane, and with a maximum variation of 1/4" in 10'.

2. Before tiling, all surfaces must be free of curing compounds, oil, grease, wax, dirt, dust, form releases or other substances that would interfere with proper bond of setting materials
3. Setting Methods:
  - a. Comply with appropriate ANSI A108-1999 specification and current Tile Council of America Handbook for appropriate method of installation for each specification.
    - 1) For thin set adhesive mortar application use following technique:
      - With the flat side of trowel, key mortar into substrate.
      - Using the appropriate size trowel, comb mortar in one direction with notched side of the trowel.
      - Set tile with a sliding motion, perpendicular to the mortar ridges.
      - Obtain as near 100% coverage as possible of mortar to tile.

Mortar coverage shall be no less than 85% and shall be sufficiently distributed to give full support under all corners and edges of the tile. Note: 95-100% coverage is mandatory for wet and exterior areas. Periodically, remove sheets or individual tiles to assure proper bond coverage consistent with industry specifications.
  - b. Ensure there is a minimum 1/8-inch of mortar between tile and substrate after proper bedding. Installer must periodically remove sheets or individual tiles to assure proper bond coverage consistent with industry specifications. If coverage is found to be insufficient, use a larger size notch trowel.
4. Expansion Joints: Install architecturally designed expansion joints as per current TCA Detail EJ171.
5. Grouting: Follow exactly grout manufacturer's instructions and comply with appropriate ANSI A108-1999 specification depending on type of grout selected.

G. Cleaning and Protecting:

1. Remove all mortar, grout and dirt from face of tiles per manufacturer's instructions.
2. Protect all floor tile installations with clean construction paper or other heavy covering until accepted by owner.
3. No foot or wheel traffic shall be permitted on the floor for at least 3 days after grouting.

3.14 Carpet: Provide and install 24-inch carpet tile manufactured by Shaw Contract Group or equal meeting the following:

• Style Number	59490
• Construction	<u>Random tip shear</u>
• Fiber	<u>Eco solution q™ nylon</u>
• Dye Method	<u>100% solution dyed</u>
• Tufted Weight	32.0
• Gauge	1/10
• Stitches per Inch	13.0
• Finished Pile Thickness	0.155
• Total Thickness	0.287
• Average Density	7.432
• Product Size	24" x 24"
• Primary Backing	<u>Synthetic</u>
• Secondary Backing	<u>ecoworx™ tile</u>
• Protective Treatment	<u>ssp™ Shaw Soil Protection</u>

3.15 Toilet Partitions:

A. General: Contractor shall submit for the Engineer's approval shop drawings of all items in this Section.

B. Products:

1. Toilet partitions shall be floor supported, overhead brace laminated plastic finish as manufactured by Mid-South Manufacturing Company, Sanymetal Products Co., or equal.
2. Doors, stiles, wall posts and panels shall have a finished thickness of 1-inch and shall have a uniform flush front appearance. Core of doors, stiles, wall posts and panels shall be constructed of 3 ply resin impregnated particle board. Stiles shall have 11-gauge steel core and shall have leveling device welded to steel core. Furnish 4-inch stainless steel satin finish shoes. Surface of partitions shall be laminated plastic with matte finish and shall be self-edge. Hardware and fittings shall be stainless steel. Furnish all brackets, hinges, latches, etc.
3. Urinal partition construction and hardware shall be the same as toilet partition except urinal partition shall be wall hung.

C. Execution: Partitions shall be installed plumb and level according to approved shop drawings.

3.16 Payment: No separate payment will be made for the work of this Section. The cost of the work, and all costs incidental thereto, shall be included in the price bid for the item to which the work pertains.

**SECTION 4  
PAINTING**

- 4.01 Scope: Furnish all materials and equipment and perform all labor necessary for painting all surfaces constructed under this Contract, and specified to require painting, gas proofing, or coating as indicated on the Drawings, and in accordance with the following schedule.
  
- 4.02 Material: Materials for use in this work shall be delivered in unbroken original containers, bearing the manufacturer's name, and shall be mixed and applied in conformance with the manufacturer's specifications and directions.
  
- 4.03 General: Painting shall be done in a first-class, workmanlike manner, and no paint shall be applied upon damp or frosty surfaces, or in wet, foggy, or freezing weather. All surfaces shall be brushed free of dust, and all foreign matter removed before any paint is applied. All surfaces shall be completely dry before any paint is applied. All iron and steel and other steel work which is shop primed shall have all abrasions in the priming coat cleaned by wire brushing, sandpaper or an approved method to bright metal, so as to remove all scale, ridges, rust or faults in the prime coat. All welding splatter shall be removed and this area reprimed. All voids, open or hollow places shall be repaired with a material suitable to the surface to be repaired. Paint shall be evenly spread and well brushed out, so that there shall be no drops, runs, or sagging of the coating. Where runs and drops do occur, they shall be removed and the surface recoated to the satisfaction of the Engineer. Sufficient time, as directed by the manufacturer shall be allowed for the paint to dry before the application of succeeding coats. Drop cloths shall be used to protect other surfaces of the structure or equipment in place, and upon completion of work all paint spots shall be removed from surfaces as directed by the Engineer, and any defaced surfaces shall be refinished as directed by the Engineer. Any painting work found to be defective or applied under adverse conditions shall be removed and replaced at the direction of the Engineer.
  
- 4.04 Testing Equipment Required: Contractor will furnish the engineer with one (1) DeFesco, BYK-Gardner, or Equal PosiTector 6000 or equal dry film thickness gauge.
  
- 4.05 Surfaces Requiring Painting: Surfaces requiring painting shall include all surfaces specified under this Section of the Specifications.

<b>Painting Schedule</b>	
<b>Location &amp; Description</b>	<b>Prep - Painting System</b>
See Drawings	

- 4.06 Preparation of Painting Surfaces: All surfaces to be painted shall be prepared in accordance with the best practices in accordance with the following. (Refer to the painting schedule and painting system sections for locations.) Surface preparation and special coatings shall be done only by crews experienced in this work and approved by

the Engineer. A representative of the paint company shall be present when work begins to instruct personnel in sandblasting and application.

The Contractor shall furnish the Engineer a Sample No. 5 blast cleaning plate suitably sealed in plastic and purchased from the Steel Structures Painting Council to be used as a field guide. Under no circumstances shall sandblasted surfaces be permitted to rust or have condensation to form thereon prior to coating. Surfaces sandblasted shall be coated the same day. If surfaces are allowed to remain uncoated overnight or longer, the surfaces shall be sandblasted again prior to coating. All cleaning and coating application shall be performed only during daylight hours.

No coating shall be applied when temperature is below 50° F, nor when the relative humidity is greater than 85%, nor when condensation is present on base and coated surfaces, nor when ambient air temperature is falling.

- A. SSPC SP1: Solvent Cleaning - The removal of all visible oil, grease, soil, drawing and cutting compounds and other soluble contaminants from surfaces with solvents or commercial cleaners using various methods of cleaning such as wiping, dipping, steam cleaning or vapor degreasing.
- B. SSPC-SP2: Hand Tool Cleaning - The removal of all loose mill scale, loose rust, loose paint and other loose detrimental foreign matter by the use of non-power hand tools. Hand tool cleaning will not remove adherent mill scale, rust and paint. Mill scale, rust and paint are considered adherent if they cannot be removed by lifting with a dull putty knife.
- C. SSPC-SP3: Power Tool Cleaning - The removal of all loose mill scale, loose rust, loose paint and other loose detrimental foreign matter by the use of power-assisted hand tools. Power tool cleaning will not remove adherent mill scale, rust and paint. Mill scale, rust and paint are considered adherent if they cannot be removed by lifting with a dull putty knife. Power tool cleaning usually provides a slightly higher degree of cleanliness than hand tool cleaning but is not regarded as adequate surface preparation for long-term exterior exposure of most high-performance coating systems.
- D. SSPC-SP5: White Metal Blast Cleaning - The complete removal of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products and other foreign matter by compressed air nozzle blasting, centrifugal wheels or other specified method.
- E. SSPC-SP6: Commercial Blast Cleaning: The removal of all visible oil, grease, dirt, dust, mill scale, rust, paint oxides, corrosion products and other foreign matter by compressed air nozzle blasting, centrifugal wheels or other specified method. Discoloration caused by certain stains shall be limited to no more than 33 percent of each unit area. Unit area is approximately 9 sq. in. (5776 sq. mm).
- F. SSPC –SP7: Brush-Off Blast Cleaning - A brush-off, blast-cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust and loose coating. Tightly adherent mill scale, rust and coating may remain on the surface. Mill scale, rust and coating are considered tightly adherent if they cannot be removed by lifting with a dull putty knife. The

entire surface shall be subjected to the abrasive blast. The remaining mill scale, rust or coating shall be tight. When coating is specified, the surface shall be roughened to a degree suitable for the specified coating system. Prior to coating application, the surface shall comply with the degree of cleaning as specified herein. Visual standards of comparators may be specified to supplement the written definition. In any dispute, the written standards shall take precedence over visual standards and comparators.

- G. SSPC-SP10: Near-White Metal Blast Cleaning - The removal of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products and other foreign matter by compressed air nozzle blasting, centrifugal wheels or other specified method. Discoloration caused by certain stains shall be limited to no more than 5 percent of each unit area. Unit area is approximately 9 sq. in. (5776 sq. mm).
- H. SSPC-SP11: Power Tool Cleaning to Bare Metal - The removal of all visible oil, grease, dirt, mill scale, rust, paint, oxide, corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portion of pits if the original surface is pitted. Differs from SSPC-SP3 in that it requires more thorough cleaning and a surface profile not less than 1 mil (25 microns).
- I. All concrete or masonry surfaces must be free of dust, from oils, curing compounds or any foreign matter that would interfere with the bond of the coating.

4.07 Manufacturer: Contractor shall submit for approval proposed paint manufacturer, coatings and color charts in accordance with the General Requirements section of these Specifications.

- A. Coating products by Tnemec Company, Inc. are listed as a standard of quality and performance for the Base Bid. Coatings from Sherwin Williams and Carboline that meet or exceed the performance of these specified coatings may be submitted for use. No substitutions will be considered unless the Engineer/Owner has received a written request for approval at least 15 days prior to the bid date for receipt of bids. Each request shall include manufacturer's literature for each product giving the name of the specified material, product number, solids-by-volume, ASTM performance criteria and a complete description of the proposed substitute including performance and test data, cure times, recoat windows, and generic composition. In addition, a list of five projects shall be submitted in which each product has been used and rendered a minimum of five years of satisfactory service.
- B. No request for substitution shall be considered that would decrease film thickness, offer a change in the generic type of coating specified or the number of coats specified. The decision of the Engineer/Owner regarding approval or disapproval of the proposed substitution shall be final.

4.08 Painting Systems: The Contractor shall provide an acceptable painting system for each specified material. All surfaces to be painted that have an existing coating shall be patch tested.

- A. Exterior Metals, Non-Immersion: (Other substrates and environments may be scheduled for these systems)
1. System A.3
    - a. Surface Prep: SSPC SP 6
    - b. Painting: First coat of Tnemec Series 135 applied at 3 mils dry. Second coat of Tnemec Series 135 applied at 3 mils dry. Third coat of Tnemec Series 72 applied at 2 to 3 mils dry.
  2. System A.5
    - a. Surface Prep: SSPC SP 3, Clean and Dry
    - b. Painting: First coat of Tnemec Series 530 applied at 2 to 3 mils dry. Second coat of Tnemec Series 135 at 2 to 3 mils dry. Third coat of Tnemec Series 72 applied at 2 to 3 mils dry
  3. System A.6
    - a. Surface Prep: SSPC SP 3, Clean and Dry
    - b. Painting: First coat of Tnemec Series 27 applied at 2 to 3 mils dry. Second coat of Tnemec Series 27 applied at 2 to 3 mils dry. Third coat of Tnemec Series 72 applied at 2 to 3 mils dry
  4. System A.7
    - a. Surface Prep: SSPC SP 3, Clean and Dry
    - b. Painting: First coat of Tnemec Series 530 applied at 2 to 3 mils dry. Second coat of Tnemec Series 66 applied at 2 to 3 mils dry. Third coat of Tnemec Series 290 applied at 2 to 3 mils dry
- B. Interior Metals, Non-Immersion:
1. System B.1
    - a. Surface Prep: Hand scuff and clean and dry
    - b. Painting: One coat of Tnemec Series 297 at 2 to 3 mils dry if same color as previously painted
  2. System B.2
    - a. Surface Prep: Grind to CSP 2. Clean and dry
    - b. Painting: First coat of Tnemec Series 530 at 2 to 3 mils dry. Second coat of Tnemec Series 161 at 2 to 3 mils dry. Third coat of Tnemec Series 161 at 2 to 3 mils dry.
  3. System B.3
    - a. Surface Prep: SSPC SP 3, Clean and Dry
    - b. Painting: Spot prime rusty areas with Tnemec Series 138 at 3 mils dry. First coat of Tnemec Series 138 at 3 mils dry. Second coat of Tnemec Series 138 at 3 mils dry.

4. System B.4
    - a. Surface Prep: SSPC SP 3, Clean and Dry
    - b. Painting: First coat of Tnemec N69 at 2 to 3 mils dry. Second coat of Tnemec N69 at 2 to 3 mils dry
- C. Concrete and Masonry (Other substrates may be scheduled for these systems)
1. System D.1
    - a. Surface Prep: Clean and dry  
*(When system is used on metal surfaces (ex. doors & frames) provide SSPC SP2 or 3 on all visible rust areas and spot coat with Tnemec 135)*  
*(On previously painted concrete or CMU surfaces scrape back to sound coating and feather edges)*
    - b. Painting: First coat of Tnemec Series 1029 applied at 2 to 3 mils dry. Second coat of Tnemec Series 1029 applied at 2 to 3 mils dry
  2. System D.1A (Same as C.1 except Series 1026 in-lieu of Series 1029)
  3. System D.2
    - a. Surface Prep: Scrape back to sound coating, feather edges. Clean and Dry
    - b. Painting: First coat of Tnemec Series 113 applied at 2 to 3 mils dry. Second coat of Tnemec Series 113 applied at 2 to 3 mils dry
- D. Floors
1. System E.2
    - a. Surface Prep: Grind to a CSP 2 and Clean and Dry
    - b. Painting: First coat of Tnemec Series 205 applied at 2 to 3 mils dry. Second coat of Tnemec Series 205 applied at 2 to 3 mils dry. Third coat of Tnemec Series 291 with 212 non slip applied at 2 to 3 mils dry.
  2. System E.3
    - a. Surface Prep: Grind to a CSP 2 and Clean and Dry
    - b. Painting: First coat of Tnemec Series 205 applied at 2 to 3 mils dry. Second coat of Tnemec Series 282 applied at 6 mils dry. Third coat of Tnemec Series 282 with 212 non slip applied at 6 mils dry.
- E. Concrete Coatings and Repairs
1. System F.1 (Concrete Coating/Repair)
    - a. Surface Prep: Grind to CSP-2. Clean and Dry



- b. Coating: First coat of Tnemec Series 218 applied at 1/16" average. Second coat of Tnemec Series 282 at 6 mils dry. Third coat of Tnemec Series 282 at 6 mils dry

F. Interior Wood

1. System G.1

- a. Surface Prep: Clean and dry
- b. Painting: First coat of 10W at 2 to 3 mils dry. Second coat of Tnemec Series 1026/1029 applied at 2 to 3 mils dry. Third coat of Tnemec Series 1026/1029 applied at 2 to 3 mils dry.

G. PVC Pipe (Other substrates may be scheduled for these systems)

1. System H.1

- a. Surface Prep: Clean and dry
- b. Painting: First coat of Tnemec Series 66 or N69 applied at 2 to 3 mils dry. Second coat of Tnemec Series 72 applied at 2 to 3 mils dry.

4.09 Colors: Where more than one coat of paint is required, paint for each undercoat shall be job tinted off shade, sufficient to show complete coverage for each coat. The colors of paints for the various parts of the work shall be selected by the Engineer. The lower four (4) feet of walls and partitions shall have dado stripe and color darker than the upper walls and ceilings, unless otherwise specified or directed by the Engineer.

4.10 Piping Color Codes: The Contractor shall paint all exposed metallic pipelines with the colors specified. Small diameter non-metallic lines should not be painted, but should be color-coded with the colors specified using labels according to the "Signs and Labels" section. Colors specified are Tnemec.

- A. Water Lines: Potable - Blue – 11SF Safety Blue
- B. Chemical Lines: 02SF Safety Yellow
- C. Waste Lines: 84BR Weathered Bark
- D. Sewage: 33GR Gray
- E. Air Line: 91GN Balsam
- F. Gas Line: 28RD Monterey Tile
- G. Reuse Line: 14SF Safety Purple

*NOTE: Where pipes are only touched-up or partially painted, contractor shall color match the existing paint.*

4.11 Signs and Labels: After other painting of pipe work has been completed as provided for herein, the Contractor shall label the pipe work by stenciled legends, all as ordered by the Engineer.

- A. In addition to the color coding of piping, there shall be stenciled adjacent thereto on the pipelines, and on the side of the bands away from the valve or fittings, two legends descriptive of the function of the pipe, such as "Sludge," one legend being stenciled on each side of the pipe. The legend shall be so located on the pipe that it will be in direct line of vision. Legend may be omitted from one side if view is obstructed from that side. Where the flow in a pipe shall be at all times in one direction only, then a flow arrow shall be placed in front of each legend on the pipe. The lettering and arrows shall be cut neatly into stencils, the arrows being the same height as the letters. The size of lettering shall be:

<b>Outside Diameter of Pipe or Covering</b>	<b>Size of Letters</b>
¾" to 1¼"	½
1½" to 3"	¾
3¼" to 4¼"	1
4½" to 6¾"	1½
7" to 7¾"	2
8" to 9¾"	2-10
10" to 11¾"	3
12" and over	3½"

- B. For pipes smaller than ¾" in outside diameter, use laminated plastic or aluminum tag with the lettering etched or stamped and filled in with black or contrasting enamel.
- C. The legends and flow arrows shall be stenciled with approved black or contrasting stencil paint. The above outline of intent designates the general extent of the identification work and is not exclusive of other similar work such as identification and other equipment as may be directed by the Engineer. Following the completion of the work under this item, the Contractor shall deliver to the Owner two sets of all stencils used.
- D. In addition to the above labeling of pipe work, the Contractor shall paint stencil lengths, in the same manner as a pipe of appropriate size on the individual units of equipment such as blowers, pumps, collector drives, compressors, silencers, etc. All push buttons, starters, switches, etc. when remote from the equipment controlled and/or power packs, shall have labels of the engraved plastic type fixed to or adjacent to the remote switch, push button, starter, etc.
- 4.12 **Payment:** No separate payment will be made for the work of this Section. The cost of the work, and all cost incidentals thereto, shall be included in the price bid for the item to which the work pertains.