

BRUNSWICK COUNTY

North Carolina



Project Manual for:

**211 WTP Gravity Sand Filter Demolition and
Replacement**

**BID DATE: February 17, 2020
9:00 a.m.**

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NOTICE TO BIDDERS

Sealed proposals will be received until 9:00 a.m. on Monday, **February 17, 2020**, in the Brunswick County Public Utilities Operations Center in Supply, NC, for the furnishing of labor, material, and equipment entering into the construction of: **211 WTP Gravity Sand Filter Demolition and Replacement** and shortly thereafter the bids will be opened publicly and read aloud.

Sealed bids shall be labeled with the project name, Contractor's name, address, and license number and must be marked "SEALED BID, DO NOT OPEN." Bids shall be sent to:

Alternate Shipping Service or Hand Delivery

Brunswick County Public Utilities
Utilities Operations Center
Attention: Brent Lockamy
250 Grey Water Road NE
Supply, NC 28462

US Post Office

Brunswick County Public Utilities
Attention: Brent Lockamy
P. O. Box 249
Bolivia, NC 28422

Project Description: In stages, demolish and remove five (5) gravity sand filters located at the 211 Water Treatment Plant, 4305 Southport-Supply Rd SE, Southport, NC 28461.

The scope of work is to include but not limited to:

- During plant shutdown remove and replace 5 air actuated gate valves (valves supplied by Brunswick County), repair areas of existing steel pipe that will remain in place.
- Demolish two filters at a time and remove materials in an approved manner. Reserve existing piping connecting the top compartment of filters as well as piping between the gate valve and head tank. Existing raw and filtered water header pipe will remain in place during all stages of construction.
- Assemble and weld provided filter components as described in plans supplied by Evoqua (Exhibit 4). Connect filter to existing piping and vacuum system. Prepare and paint all interior surfaces with high solids epoxy coating approved for potable water, following manufacture recommendations. Install stainless filter strainers. Plant staff will facilitate the addition of filter media.
- After first two filters are operational work can begin on remaining filters.
- Install a catwalk between filters tanks 1 & 2 and tanks 3&4.
- Install a single ladder on tank 5.
- Work to include all labor, installation of all equipment, material, parts, appurtenances, etc., to make the system complete, whole, and operational.

Bids will be received as **Single Prime**. All proposals shall be lump sum with provisions for unit prices as indicated in the Form of Proposal. The project shall be completed by **May 18, 2020**. There are liquidated damages associated with this project. Liquidated damages will be in the amount of \$1,000.00 per day for each calendar day beyond the completion date set from the Notice to Proceed.

Site Visitation: Inspection of the proposed construction site may be allowed outside of the pre-bid meeting by approval of Brunswick County. Telephone Jeremy Sexton at 910-477-0918 in order to schedule a visit.

Notice to Bidders

Pre-Bid Meeting: An open pre-bid meeting will be held for all interested bidders and vendors on Monday, February 10, 2020, at 10:00 a.m. at the 211 WTP, 4305 Southport-Supply Rd SE, Southport, NC 28461. Directions are as follows: From Wilmington follow US 17 toward Supply. Turn left onto Hwy. 211 heading toward Southport. The plant is located approximately 12 miles on the right.

The pre-bid meeting will address project specific questions, issues, and bidding procedures. Additional information and Addenda will be made available to the public by fax and/or email approximately seven (7) days prior to bid the date. The Contractor is responsible for ensuring that their contact information (email and fax) is correct and on file with the person designated below. All questions or requests for clarifications must be submitted no later than ten (10) days prior to the bid date by email or fax. These shall be directed to:

Brent Lockamy, PE
Email: brent.lockamy@brunswickcountync.gov
Fax: 910-253-7812
Phone: 910-253-2460

Copies of the Contract Documents may be found after February 4, 2020 at the following locations:

Contact: Brent Lockamy
Telephone: (910) 253-2460
Brunswick County Public Utilities (8 a.m. – 4:30 p.m. business days)
Utilities Operation Center
250 Grey Water Road NE
Supply, NC 28462

<http://www.brunswickcountync.gov/bid/>

Insurance Requirements: The Contractor is required to have insurance as outlined in the General Conditions.

Licensing: All Contractors are hereby notified that they must have proper license as required under the state laws governing their respective trades. General Contractors are notified that Chapter 87, General Statutes of North Carolina, will be observed in receiving and awarding general contracts. General Contractors submitting bids on this project must have license classification for Public Utilities or Unclassified.

NOTE: Under NCGS 87-1, a Contractor that superintends or manages construction of any building, highway, public utility, grading, structure, or improvement shall be deemed a "General Contractor" and shall be so licensed. Therefore a single prime project that involves other trades will require the Single Prime Contractor to hold a proper General Contractor's license.

NOTE: The bidder shall identify on its bid proposal the minority business participation it will use on the project form (*Identification of Minority Business Participation*) and shall include either *Affidavit A* or *Affidavit B* as applicable. Forms and instructions are included within the Proposal Form in the bid documents. Failure to complete these forms is grounds for rejection of the bid. (NCGS143-128.2c Effective 1/1/2002.) General contractors are notified that Chapter 143, General Statutes of North Carolina, and the "Brunswick County Minority Business Enterprise Policy" (MBE) will be observed in receiving and awarding general contracts. Brunswick County requires contractors that are not self-performing 100% of the

total value of the work to verify that they have contacted MBE subcontractors whose work on the project would represent at least ten percent (10%) of the total value of work.

Each proposal shall be accompanied by a cash deposit or a certified check drawn on some bank or trust company, insured by the Federal Deposit Insurance Corporation, of an amount equal to not less than five percent (5%) of the proposal, or in lieu thereof a bidder may offer a bid bond of five percent (5%) of the bid executed by a surety company licensed under the laws of North Carolina to execute the contract in accordance with the bid bond. Said deposit shall be retained by the owner as liquidated damages in event of failure of the successful bidder to execute the contract within ten (10) days after the award or to give satisfactory surety as required by law.

A performance bond and a payment bond will be required for one hundred percent (100%) of the contract price. An additional bond with the North Carolina Department of Transportation may be required for work performed in the right-of-way. Surety companies must be authorized to do business in North Carolina.

Contractor agrees that the Contractor and the Contractor's subcontractors shall comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes. E-Verify is a program in which the employment eligibility of all newly hired employees will be confirmed after the Employment Eligibility Verification Form (Form I-9) has been completed.

Payment will be made based on ninety-five percent (95%) of monthly estimates and final payment made upon completion and acceptance of work.

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

Owner:
Brunswick County
Brent Lockamy, PE
250 Grey Water Road
Supply, NC 28462

910-253-2460

BRUNSWICK COUNTY



INVITATION TO BID

Sealed proposals will be received until 9:00 a.m. on Monday, **February 17, 2020**, in the Brunswick County Public Utilities Operations Center in Supply, NC, for the construction of:

211 WTP Gravity Sand Filter Demolition and Replacement

and shortly thereafter the bids will be opened publicly and read aloud. The contract shall be **Single Prime**. A general description of the work includes:

In stages, demolish and remove five (5) gravity sand filters located at the 211 Water Treatment Plant (WTP), 4305 Southport-Supply Road SE, Southport, NC. New filters to be constructed on existing filter footprint with materials provided by filter manufacturer and connected to existing plant piping. The foregoing description shall not be construed as a complete description of all work required.

Pre-Bid Meeting: An open pre-bid meeting will be held for all interested bidders and vendors on Monday, February 10, 2020, at 10:00 a.m. at the 211 WTP, 4305 Southport-Supply Road SE, Southport, NC. Directions are as follows: From Wilmington follow US 17 toward Supply. Turn left onto Hwy. 211 heading toward Southport. The plant is located approximately 12 miles on the right.

Site Visitation: Inspection of the proposed construction site may be allowed outside of the pre-bid meeting by approval of Brunswick County. Telephone Jeremy Sexton at (910) 477-0918 in order to schedule a visit.

Copies of the Contract Documents can be downloaded after February 4, 2020, at <http://www.brunswickcountync.gov/bid/>

Copies of the Contract Documents may be reviewed at the following location after February 4, 2020 (8 a.m. - 4:30 p.m. business days):

Contact: Brent Lockamy
Telephone: (910) 253-2460

Brunswick County Public Utilities
Utilities Operation Center
250 Grey Water Road NE
Supply, NC 28462

Brunswick County reserves the unqualified right to reject any and all proposals. A 5% bid bond or deposit is required. Brunswick County has implemented a Minority Business Enterprise Policy that requires Contractors to exhibit a good-faith effort to contact minority business subcontractors whose work on the project would represent 10% of the total value of the work. Contractors must be properly licensed. Additional instructions to bidders are included in the Contract Documents.

BRUNSWICK COUNTY, NORTH CAROLINA



INSTRUCTIONS TO BIDDERS Version Date – January 2019

For a proposal to be considered it must be in accordance with the following instructions:

1. PROPOSALS

Proposals must be made in accordance with the Form of Proposal provided, and all blank spaces for bids, alternates, and unit prices applicable to Bidder's Work shall be properly filled in. When requested alternates are not bid, the proposal may be considered incomplete. The Bidder agrees that a bid on the Form of Proposal detached from specifications will be considered and will have the same force and effect as if attached thereto. Faxed proposals will not be considered. Numbers shall be stated both in writing and in figures for the base bids and alternates.

The proposal shall include the following:

- a. Form of Proposal
- b. Identification of Minority Business Participation form
- c. MBE Affidavit A (Listing of Good Faith Efforts) **or** Affidavit B (Intent to Perform Contract with Own Workforce)
- d. Form of Bid Bond **or** cash deposit.

Any modifications to the Form of Proposal (including alternates and/or unit prices) may disqualify the bid and may cause the bid to be rejected.

The Bidder shall fill in the Form of Proposal as follows:

- a. If the documents are executed by a sole Owner, that fact shall be evidenced by the word "Owner" appearing after the name of the person executing them.
- b. If the documents are executed by a partnership, that fact shall be evidenced by the word "Co-Partner" appearing after the name of the partner executing them.
- c. If the documents are executed on the part of a corporation, they shall be executed by either the president or the vice president and attested by the secretary or assistant secretary in either case, and the title of the office of such persons shall appear after their signatures. The seal of the corporation shall be impressed on each signature page of the documents.

- d. If the proposal is made by a joint venture, it shall be executed by each member of the joint venture in the above form for sole Owner, partnership or corporation, whichever form is applicable.
- e. All signatures shall be properly witnessed.
- f. If the Contractor's license of a Bidder is held by a person other than an Owner, partner or officer of a firm, then the licensee shall also sign and be a party to the proposal. The title "Licensee" shall appear under his/her signature.

Proposals shall be addressed as indicated in the Notice to Bidders and shall be delivered, enclosed in an opaque sealed envelope, marked "SEALED BID, DO NOT OPEN" and bearing the project name, name of the Bidder, address of the Bidder, and the Contractor's license number. Bidders shall clearly mark on the outside of the bid envelope which Contract(s) they are bidding.

Bidder shall identify on the bid the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit listing good faith efforts or an affidavit indicating Work under Contract will be self-performed, as required by NCGS 143-128.2(c) and NCGS 143-128.2(f). Failure to comply with these requirements is grounds for rejection of the bid. Upon notification of being the apparent low bidder, the apparent low Bidder and any other Bidder so requested, will within seventy-two hours of the notification submit an affidavit that includes a description of the portion of Work to be executed by minority businesses, which is equal to or more than the applicable goal (Affidavit C), or submit an affidavit documenting the Contractor's good faith efforts to meet the goal (Affidavit D).

For projects bid in the single-prime alternative, the names and license numbers of major Subcontractors shall be listed on the proposal form.

It shall be the specific responsibility of the Bidder to deliver his bid to the proper official at the selected place and prior to the announced time for the opening of bids. Later delivery of a bid for any reason, including delivery by the United States Postal Service or other delivery service, shall disqualify the bid.

Modifications of previously deposited bids will be acceptable only if delivered in writing or by telegram or fax to the place of the bid opening prior to the time for opening bids. Telegraphic and fax modifications must be confirmed in writing within 72 hours after the opening of bids.

Unit prices quoted in the proposal shall include overhead and profit and shall be the full compensation for the Contractor's cost involved in the Work. See General Conditions, "Changes in the Work" Paragraph (C 1).

2. EXAMINATION OF CONDITIONS AND CONTRACT DOCUMENTS

It is understood and mutually agreed that by submitting a bid the Bidder acknowledges that he has carefully examined all documents pertaining to the Work; the location, accessibility, and general character of the site of the Work and all existing buildings, structures, and utility facilities within and adjacent to the site; and has satisfied himself as to the nature of the Work; sequences or procedures of construction (if any); the condition of existing buildings and structures; the conformation of the ground; the character, quality, and quantity of the material to be encountered; the subsurface conditions

(including type and depth of rock and soil layers); the character of the equipment, machinery, plant and any other facilities needed preliminary to and during prosecution of the Work; the general and local conditions; federal, state, and local laws and regulations; the construction hazards; and all other matters, including, but not limited to, the labor situation which can in any way affect the Work under the Contract; and including all safety measures required by the Occupational Safety and Health Act of 1970 and all rules and regulations issued pursuant thereto. It is further mutually agreed that by submitting a proposal the Bidder acknowledges that he has satisfied himself as to the feasibility and meaning of the plans, drawings, specifications, and other Contract Documents for the construction of the Work and that he accepts all the terms, conditions, and stipulations contained therein; and that he is prepared to Work in cooperation with other Contractors performing Work on the site. Neither the Owner nor Designer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents.

Reference is made to Contract Documents for the identification of those surveys and investigation reports of subsurface or latent physical conditions at the site or otherwise affecting performance of the Work which have been relied upon by the Designer in preparing the documents. In no event shall these surveys and investigation reports be considered part of the Contract Documents. The Owner will make copies of all such surveys and reports available to the Bidder upon request. Neither the Owner nor the Designer assumes any responsibility for the accuracy or completeness of the information provided.

Each Bidder may, at his own expense, make such additional surveys and investigations as he may deem necessary to determine his bid price for the performance of the Work. Any on-site investigation shall be done at the convenience of the Owner. Reasonable requests for access to the site will be honored by the Owner. It is the responsibility of the Bidder to clean up and restore the site to its former condition upon completion of such explorations, investigations, tests, and studies. Such Work shall be done in a manner that in no way hinders or complicates normal operation and maintenance of existing facilities.

The Contractor performing excavation Work shall be responsible for locating underground utilities prior to excavation. The utility locations shown in the Plans are approximate and for information only. The Contractor may obtain the services of a commercial utilities locator and/or call the various utility companies who may have lines in the area.

3. AVAILABILITY OF LANDS FOR WORK

The lands upon which the Work is to be performed, rights-of-way, and easements for access thereto and other lands designated for use by the Contractor in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage for materials and equipment to be incorporated into the Work are to be obtained and paid for by the Contractor. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by the Owner unless otherwise provided in the Contract Documents.

4. PRE-BID CONFERENCE

Prior to the date set for receiving bids, the Designer may arrange and conduct a Pre-Bid Conference for all prospective Bidders. The purpose of this conference is to review project requirements and to respond to questions from prospective Bidders and their Subcontractors or material suppliers related to the intent of bid documents. Attendance by prospective Bidders

shall be as required by the "Notice to Bidders." Brunswick County strongly encourages attendance at the pre-bid meeting. It should be noted that attendance may help to fulfill necessary MBE requirements.

5. SUBSTITUTIONS

In accordance with the provisions of NCGS 133-3, material, product, or equipment substitutions proposed by the Bidders to those specified herein can only be considered during the bidding phase until ten (10) days prior to the receipt of bids when submitted to the Designer with sufficient data to confirm material, product, or equipment equality. Proposed substitutions submitted after this time will be considered only as potential change orders.

Submittals for proposed substitutions shall include the following information:

- a. Name, address, and telephone number of manufacturer and supplier as appropriate.
- b. Trade name, model, or catalog designation.
- c. Product data including performance and test data, drawings with dimensions, specifications, catalog cut-sheets, electrical requirements and schematic diagrams, materials of construction of all components, reference standards, and technical descriptions of material, product, or equipment. Include color samples and samples of available finishes as appropriate.
- d. Detailed comparison with specified products including performance capabilities, warranties, maintenance schedule, and test results. Any deviations to the specified product requirements shall be noted.
- e. Other pertinent data including data requested by the Designer to confirm product equality. This may include examples of the substitutes in use on other projects along with performance records. The Contractor shall demonstrate that the Substitution will function equally or better than the specified product, taking into account the Owner's need of standardization and compatibility with other infrastructure components.
- f. Listing of spare parts to be included with Substitution.
- g. A comparison of the impact on the Contractor's schedule between using the proposed Substitution item and the specified product.

If a proposed material, product, or equipment substitution is deemed adequate by the Designer, all Bidders of record will be notified by Addendum.

6. BULLETINS AND ADDENDA

Any addenda to specifications issued prior to the bid opening shall be considered covered in the Proposal and in closing a Contract they will become a part thereof. Addenda may include, but are not limited to, answers to questions, clarifications, and amendments of the Contract Documents. It shall be the Bidder's responsibility to ascertain prior to bid time the addenda issued and to see that his bid includes any changes thereby required.

Should the Bidder find discrepancies, errors, conflicts, ambiguities, or omissions from the drawings or documents; conflicts between Bidder's observations and the Contract

Documents; or should he be in doubt as to the meaning of the Contract Documents; he shall at once notify the Designer or Owner who will provide written instructions in the form of addenda. The Bidder shall submit all questions or requests for clarifications in writing (email or fax is acceptable) no later than ten (10) days prior to the bid date. The Notice to Bidders indicates the contact person for submittal of questions. Notification of addenda shall be issued by the Owner approximately seven (7) days prior to the date set for receipt of bids. Neither the Owner nor the Designer will be responsible for any oral instructions.

In the event that discrepancies, errors, conflicts, ambiguities, or omissions are discovered by the Bidder and have not been resolved by the Designer or Owner prior to submitting the bid, the Bidder shall include in the bid the greater quantity or better quality of Work, or compliance with the more stringent requirement resulting in greater cost. Such greater cost shall be included in the bid.

All addenda shall be acknowledged by the Bidder(s) on the Form of Proposal.

7. BID SECURITY

Each proposal shall be accompanied by a cash deposit or a certified check drawn on some bank or trust company insured by the Federal Deposit Insurance Corporation, or a bid bond in an amount equal to not less than five percent (5%) of the Bidder's maximum bid price, said deposit to be retained by the Owner as liquidated damages in event of failure of the successful Bidder to execute the Contract within ten (10) days after the award or to give satisfactory surety as required by law (NCGS 143-129).

Bid bond shall be conditioned that the surety will, upon demand, forthwith make payment to the obligee upon said bond if the Bidder fails to execute the Contract. The Owner may retain bid securities of any Bidder(s) who may have a reasonable chance of award of Contract until the 101st day after the bid opening. Other bid securities may be released sooner, at the discretion of the Owner. All bid securities (cash or certified checks) shall be returned to the Bidders within ten (10) days after award of Contract. Standard Form of Bid Bond is included in these specifications.

8. RECEIPT OF BIDS

Bids shall be received in accordance with requirements of the General Statutes of North Carolina and Brunswick County policy. Bid security shall be required as prescribed by statute. Prior to the deadline for receipt of bids, the Bidder will be permitted to change or withdraw his bid.

9. OPENING OF BIDS

Upon opening, all bids shall be read aloud. Once any bid is opened, there shall not be any withdrawal of bids by any Bidder and no bids may be returned by the Designer to any Bidder. After the bid opening, a Bidder may request that his bid be withdrawn from consideration without forfeiture of his bid security in accordance with the provisions of the NCGS 143-129.1. In accordance with NCGS 143-129.1, a request for withdrawal of a bid must be made in writing to the Owner within seventy-two (72) hours after the bid opening (excluding Saturdays, Sundays, Brunswick County holidays, and other days in which the Brunswick County government offices are closed). Except under the provisions of NCGS 143-129.1, all bids shall remain valid a minimum of ninety (90) days from the opening of bids. Approval of the proposal by the Brunswick County Board of Commissioner's at a public meeting or a signed "Notice of Award" shall constitute acceptance of the bidder's proposal. Should the successful Bidder default and fail to execute a Contract, the Contract may be awarded to the next lowest and responsible Bidder. The Owner

reserves the unqualified right to reject any and all bids. Reasons for rejection may include, but shall not be limited to, the following:

- a. If the Form of Proposal furnished to the Bidder is not used or is altered.
- b. If the Bidder fails to insert a price for all bid items, alternate and unit prices requested.
- c. If the Bidder adds any provisions reserving the right to accept or reject any award.
- d. If there are unauthorized additions or conditional bids, or irregularities of any kind which tend to make the proposal incomplete, indefinite, or ambiguous as to its meaning.
- e. If the Bidder fails to complete the proposal form where information is requested so the bid may be properly evaluated by the Owner.
- f. If the unit prices contained in the bid schedule are unacceptable to the Owner.
- g. If the Bidder fails to comply with other instructions stated herein.
- h. If the Owner suspects the Bidders of collusion.
- i. If the Bidder does not submit all the required proposal forms.
- j. If the Bidder does not execute the complete Contract (with performance and payment bonds) within ten (10) days of receipt of the Notification of Award.

10. BID EVALUATION AND BIDDER QUALIFICATIONS

The award of the Contract will be made to the lowest responsible Bidder as soon as practical. The Owner may award on the basis of the base bid, unit prices, any alternates the Owner chooses, as well as meeting the requirements for consideration as a responsible Bidder. Discrepancies on the Bidder's proposal shall be resolved based on the Owner's inspection and interpretation of the proposal as a whole. In cases where it is not evident what portion of a proposal is errant, discrepancies shall be resolved as follows:

- Words shall take precedence over numerical symbols.
- Unit prices shall take precedence over the associated extended price (quantity multiplied by the unit price).
- The correct sum of any column of figures shall take precedence over the indicated sum.

Before awarding a Contract, the Owner may require the apparent low Bidder to qualify himself to be a responsible Bidder by furnishing any or all of the following data:

- a. The latest financial statement showing assets and liabilities of the company or other information satisfactory to the Owner.
- b. A listing of completed projects of similar size and type.

- c. Project references.
- d. Permanent name and address of place of business.
- e. The number of regular employees of the organization and length of time the organization has been in business under present name.
- f. The name and home office address of the surety proposed and the name and address of the responsible local claim agent.
- g. The names of members of the firms who hold appropriate trade licenses, together with license numbers and the corporate officer who will give his personal attention to the Work.
- h. Qualifications and references of the resident project superintendent.
- i. Other commitments scheduled within the project's projected timeframe.
- j. The Contractor shall perform Work amounting to at least fifty percent (50%) of the Contract using his own personnel and equipment (owned). No portion of the Contract shall be sublet, assigned, or otherwise disposed of without the expressed written consent of the Owner. If the Contractor fails to demonstrate to the Owner that he has the ability to perform the specified percentage of the Work with his own personnel and equipment, his bid may be considered nonresponsive.
- k. An experience statement with pertinent information as to similar projects and other evidence of the qualifications for each subcontractor, person, equipment manufacturer, or organization that will furnish labor or materials. If the Owner or Designer, after investigation, has reasonable objection to any such entity, he may request an acceptable substitute without any increase in the bid price. This does not remove any responsibilities for the substitute to comply with the Contract specifications.

Requested information shall be furnished to the Owner within five (5) days after bid opening. Failure or refusal to furnish any of the above information, if requested, shall constitute a basis for disqualification of any Bidder.

In determining the lowest responsible, responsive Bidder, the Owner shall take into consideration the Bidder's compliance with the requirements of NCGS 143-128.2(c) and County policy, the past performance of the Bidder on construction Contracts for the County with particular concern given to completion times, quality of Work, cooperation with other Contractors, and cooperation with the Designer and Owner. Failure of the low Bidder to furnish affidavit and/or documentation as required by NCGS 143-128.2(c) may constitute a basis for disqualification of the bid.

If the Owner determines that the apparent low Bidder is not the lowest responsible, responsive Bidder by virtue of the above information, said apparent low Bidder will be so notified and his bid security shall be returned to him.

11. CONTRACT, PERFORMANCE BOND, PAYMENT BOND, INSURANCE, E-VERIFY

The successful Bidder, within ten (10) days of receipt of the “Notice of Award,” shall sign and deliver the required number of Contract counterparts, a performance bond in an amount equal to one hundred percent (100%) of the Contract Price, a payment bond in an amount equal to one hundred percent (100%) of the Contract Price, and all necessary certificates of insurance. Contractor shall comply with the requirements of Article 2 of Chapter 64 of the General Statutes. Further, if Contractor utilizes a subcontractor, Contractor shall require the subcontractor to comply with the requirements of Article 2 of Chapter 64 of the General Statutes. An additional performance guarantee with the North Carolina Department of Transportation may be required for work performed in the right-of-way. In this event, the successful Bidder, within ten (10) days of receipt of the “Notice of Award,” shall supply the Owner with a copy of the executed performance guarantee and evidence of acceptance by the NCDOT. See the Supplementary General Conditions and General Conditions sections “Terminology and Intent of Documents,” “Execution of Documents,” “Performance Bond and Payment Bond,” and “Minimum Insurance Requirements”.

12. PAYMENTS

Payments to the successful Bidders (Contractors) will be made on the basis of monthly estimates. See “Requests for Payment,” General Conditions.

13. MINORITY BUSINESS PARTICIPATION

Bidders are notified that NCGS 143-128.2 and the “Brunswick County Minority Enterprise Policy” shall be observed in receiving and awarding Contracts. As noted in this document under the heading “PROPOSALS,” appropriate forms and affidavits must be submitted with the bids. The state document entitled “Guidelines for Recruitment and Selection of Minority Businesses for Participation in State Construction Contracts” may be used for reference. It may be obtained from the State Construction Office website (<http://www.nc-sco.com>). A listing of Historically Underutilized Businesses may be obtained through the North Carolina Department of Administration Office for Historically Underutilized Businesses at <http://www.doa.state.nc.us/HUB/>. Brunswick County promotes the notification and use of Brunswick County based businesses. The “Brunswick County Minority Enterprise Policy” follows:

BRUNSWICK COUNTY MINORITY ENTERPRISE POLICY

RESOLUTION APPROVING AND ADOPTING A VERIFIABLE FIVE PERCENT (5%) GOAL FOR PARTICIPATION BY MINORITY BUSINESSES IN THE TOTAL VALUE OF WORK FOR EACH PROJECT IN BRUNSWICK COUNTY EXCEEDING ONE HUNDRED THOUSAND DOLLARS (\$100,000.00) FOR WHICH A CONTRACT OR CONTRACTS ARE AWARDED AFTER RECEIVING BIDS FOR SAID PROJECT BY EITHER A MULTI-PRIME OR A SINGLE-PRIME APPROACH

The Brunswick County Board of Commissioners in regular session duly assembled on December 18, 1989, does hereby resolve as follows:

THAT WHEREAS, North Carolina General Statute 143-128(c), effective June 28, 1989 requires the public body of each county in the State of North Carolina to adopt an appropriate verifiable percentage goal for participation by minority businesses in the total value of work for which a contract or contracts exceeding One Hundred Thousand Dollars (\$100,000.00) are awarded on either a multi-prime or single-prime basis; and

WHEREAS, the term “minority business” is defined by Statute to mean a business;

- a. In which at least fifty-one percent (51%) is owned by one or more minority persons, or in the case of a corporation in which at least fifty-one percent (51%) of the stock is owned by one of more minority persons; and
- b. Of which the management and daily business operations are controlled by one or more of the minority persons who own it; and

WHEREAS, the term “minority person” is defined by Statute to mean a person who is a citizen or lawful permanent resident of the United States and who is:

- a. Black, that is, a person having origins in any of the black racial groups in Africa; or
- b. Hispanic, that is, a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race; or
- c. Asian American, that is, a person having origins in any of the original peoples of the Far East, Southeast Asia and Asia, the Indian subcontinent, the Pacific Islands; or
- d. American Indian or Alaskan Native, that is, a person having origins in any of the original peoples of North America; or
- e. Female; and

WHEREAS, the term “verifiable goal” is defined by Statute to mean for purposes of the separate prime contract system, that the awarding authority has adopted written guidelines specifying the actions that will be taken to ensure a good faith effort in the recruitment and selection of minority businesses for participation in contracts awarded under N.C.G.S. 143-128; and

WHEREAS, the term “verifiable goal” is defined by Statute to mean for purposes of the single-prime contract system, that the awarding authority has adopted written guidelines specifying the actions that the prime contractor must take to ensure a good faith effort in the contracts awarded under N.C.G.S. 143-128; and

WHEREAS, the Brunswick County Board of Commissioners, pursuant to public notice duly given, has held a public hearing on establishing an appropriate verifiable percentage goal for participation by minority businesses in public construction contracts awarded by the County by either multi-prime or single-prime contracts, and the Board of Commissioners has considered the comments of persons who requested to be heard; and

WHEREAS, the Board of Commissioners desires to adopt a verifiable percentage goal as heretofore defined for Brunswick County.

NOW, THEREFORE, BE IT RESOLVED, AS FOLLOWS:

1. That the appropriate verifiable percentage goal for participation by minority businesses in the total value of work for each project in Brunswick County which is awarded pursuant to and in compliance with N.C.G.S. 143-128 shall be five percent (5%).
2. That for the purposes of the separate prime (or multi-prime) contract system, the County shall be responsible for ensuring a good faith effort in the recruitment and selection of minority businesses for participation in contracts awarded.
3. That in order to demonstrate this good faith effort, the County shall take the following actions in awarding contracts pursuant to a separate prime system:
 - a. Advertise the project for bids both locally, regionally and state-wide, stating in each advertisement for bids that the County is seeking minority business participation of at least five percent (5%);
 - b. Cause this Resolution to be forwarded to the North Carolina Association of County Commissioners and supervising and/or administrative agencies of the State of North Carolina to apprise those agencies of Brunswick County’s goal and to seek their assistance in the recruitment of minority businesses; and
 - c. Award all public contracts as required by N.C.G.S. 143-128 without regard to race, religion, color, creed, national origin, sex, age or handicapped condition, as defined by N.C.G.S. 168A-3.
4. That for the purposes of the single-prime contract system, it shall be the responsibility of the prime contractor to ensure to the County by written documentation that it has made a good faith effort in the recruitment and selection of minority businesses for participation in contracts awarded.

5. That in order to demonstrate the good faith effort of the single-prime contractor, the contractor shall by written documentation notify the County on its bid that it has taken the following steps:
 - a. Actively sought the participation of minority businesses by contracting known minority businesses who may be interested in participation in a Brunswick County project.
 - b. Verify that it has contacted minority-business subcontractors whose work on the project would represent ten percent (10%) of the total value of work, in order to achieve the five percent (5%) goal.
 - c. Verify to the County the names and addresses of the minority-businesses contacted and their respective bids on the sub-contract work sought.
6. Notwithstanding the above, the County or the single-prime contractor shall not be required to award contracts or subcontracts to or to make purchases of materials or equipment from minority-business contractors or minority-business subcontractors who do not submit the lowest responsible bid or bids or who do not comply with the provisions of the Request For Bids or the applicable statutory provisions.
7. The Clerk to the Board is hereby authorized and directed to provide a certified copy of the Resolution to the North Carolina Association of County Commissioners, North Carolina Commissioner of Labor, North Carolina Commissioner of Insurance, and the State Licensing Board for General Contractors.
8. This Resolution shall take effect upon its passage.

This the 18th day of December, 1989.

BRUNSWICK COUNTY BOARD OF
COMMISSIONERS

s/ L. E. Pinkerton, Chairman

ATTEST:

s/ Regina W. Alexander, Clerk

BRUNSWICK COUNTY, NORTH CAROLINA



GENERAL CONDITIONS OF

THE CONTRACT

Version date – July 2019

This document is intended for use on Brunswick County capital construction projects and shall not be used on any project that is not reviewed and approved by Brunswick County. Extensive modification to the General Conditions by means of “Supplementary General Conditions” is strongly discouraged.

The use or reproduction of this document or any part thereof is authorized for and limited to use on projects of Brunswick County, North Carolina, and is distributed by, through, and at the discretion of Brunswick County, for that distinct and sole purpose.

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ARTICLE 1 – DEFINITIONS

Addenda shall mean written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

Approval means written or imprinted acknowledgement that materials, equipment, or methods of construction are acceptable for use in the Work.

Asbestos is any material that contains more than one percent (1%) asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

Bid shall mean the offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

Bidding Documents shall mean the Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

Bidding Requirements shall mean the Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, MBE forms, and the Proposal form with any supplements.

Bonds shall mean performance and payment bonds and other instruments of security.

Change Order, as used herein, shall mean a written order to the Contractor subsequent to the signing of the contract authorizing a change in the contract (addition, deletion, or revision to Contract Price or Time of Completion). The change order shall be signed by the Contractor, Designer, and the Owner, and approved by the County Commissioners, in that order (see Article “Changes in the Work”).

Claim shall mean a demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Time of Completion, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

Clarification or Request for Information (RFI) is a request from the Contractor seeking an interpretation or clarification by the Designer relative to the contract documents. The RFI, which shall be labeled (RFI), shall clearly and concisely set forth the issue or item requiring clarification or interpretation and why the response is needed. The RFI must set forth the Contractor’s interpretation or understanding of the contract documents requirements in question, along with reasons for such an understanding.

Contract, as used herein, is the written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

Contract Documents consist of the Invitation to Bid; Notice to Bidders; Instructions to Bidders; General Conditions of the Contract; special conditions if applicable; Supplementary General Conditions; the drawings and specifications, including all bulletins, addenda or other modifications of the drawings and specifications incorporated into the documents prior to their execution; the accepted proposal; the contract; the performance bond; the payment bond; insurance certificates; MBE forms; power of attorney; Notice to Proceed; Written Directives; Work Change Directives; Change Orders; Certificates of Substantial Completion; Notice of Final Completion and Acceptance; and approval of County Commissioners. All of these items together form the contract. Approved shop drawings are **not** contract documents.

Contract Price shall mean the moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents.

Contractor, as referred to hereinafter, shall be deemed to be either of the several contracting parties called the "Party of the First Part" in either of the several contracts in connection with the total project. Where, in special instances hereinafter, a particular Contractor is intended, an adjective precedes the word "Contractor," as "general," "heating," etc. For the purposes of a single prime contract, the term "Contractor" shall be deemed to be the single contracting entity identified as the "Party of the First Part" in the single Construction Contract. Any references or adjectives that name or infer multiple prime Contractors shall be interpreted to mean the single prime Contractor.

Day shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

Defective, when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to the Designer's recommendation of final payment.

Designer(s) are those referred to within this contract, or their authorized representatives. The Designer(s), as referred to herein, shall mean architect and/or Engineer or other professional. They will be referred to hereinafter as if each were of the singular number, masculine gender. In instances where the Owner performs functions typically done by the Designer, references to the Designer may also refer to the Owner.

Drawings shall mean that part of the Contract Documents prepared or approved by Designer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

Effective Date of the Contract shall mean the date indicated in the Contract on which it becomes effective, but if no such date is indicated, it means the date on which the Contract is signed and delivered by the last of the two parties to sign and deliver.

"Equal to" or "Approved Equal" or "Or-Equal" shall mean materials, products, equipment, assemblies, or installation methods considered equal by the Owner in all characteristics (physical, functional, and aesthetic) to those specified in the contract documents.

Hazardous Environmental Condition shall mean the presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

Hazardous Waste shall have the meaning provided in the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

Inspection shall mean examination or observation of Work completed or in progress to determine its compliance with contract documents.

Laws and Regulations; Laws or Regulations shall mean any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

Liens, as used herein, shall mean charges, security interests, or encumbrances upon Project funds, real property, or personal property.

Liquidated Damages, as stated in the contract documents, is an amount reasonably estimated in advance to cover the losses incurred by the Owner by reason of failure of the Contractor(s) to complete the Work within the time specified.

Milestone, as used herein, shall mean a principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

Notice of Award shall mean the Approval of the proposal by the Brunswick County Board of Commissioner's at a public meeting or a signed "Notice of Award" form stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, Owner will execute the Contract.

Notice to Proceed shall mean a written notice given by Owner to Contractor fixing the date on which the time of completion will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

Owner is Brunswick County or any entity or department thereof. Typically, references to Owner shall refer to the County department responsible for overseeing the Work. However, the context may indicate the specific entity of the County referred to. The "County Commissioners" refers to the specific board in its official duty that governs County affairs and, based on context, may also be synonymous with the term "Owner."

Partial Utilization is use by Owner of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

PCBs are polychlorinated biphenyls.

Petroleum, including crude oil or any fraction thereof, which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

Project is the total construction Work to be performed under the contract documents by the several contractors.

Project Expediter, as used herein, is an entity stated in the contract documents, designated to effectively facilitate scheduling and coordination of work activities. See Articles "Construction Supervision" and "Schedule" for responsibilities of a Project Expediter. **For the purposes of a single prime contract, the single prime Contractor shall be designated as the Project Expediter.**

Project Manual shall mean the bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

Radioactive Material shall mean source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

Request for Payment shall mean the form acceptable to Designer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

Routine Written Communications Between the Designer and the Contractor are any communication other than a “request for information” provided in letter, memo, or transmittal format, sent by mail, courier, electronic mail, hand delivery, or facsimile. Written directives are included in this definition. Such communications cannot be identified as a “request for information.”

Samples are physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

Shop Drawings are all drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

Site means lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

Specifications are that part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

Subcontractor, as the term is used herein, shall be understood to be one who has entered into a direct contract with a Contractor or another Subcontractor, and includes one who furnishes materials worked to a special design in accordance with plans and specifications covered by the contract, but does not include one who only sells or furnishes materials not requiring work so described or detailed.

Substantial Completion is the time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Designer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

“Substitution” or “Substitute” shall mean materials, products, equipment, assemblies, or installation methods deviating in at least one characteristic (physical, functional, or aesthetic) from those specified or deviating from the specific manufacturers listed in the Technical Specifications when “Only” the specific manufacturer is indicated as being acceptable. Substitutions shall, in the opinion of the bidder, improve competition and/or enhance the finished installation.

Supplementary Conditions are that part of the Contract Documents which amend or supplement these General Conditions.

Supplier is a manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

Surety, as used herein, shall mean the bonding company or corporate body which is bound with and for the Contractor, and which engages to be responsible for the Contractor and his acceptable performance of the Work.

Time of completion, as stated in the contract documents, is to be interpreted as consecutive calendar days measured from the date established in the written Notice to Proceed, or such other date as may be established herein (Article "Time of Completion, Delays, Extension of Time").

Underground Facilities are all underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

Unit Price Work is Work to be paid for on the basis of unit prices.

Work, as used herein as a noun, is intended to be the completed construction including materials, labor, and workmanship of the appropriate Contractor as required by the contract documents.

Work Change Directive, as used herein, shall mean a written statement to Contractor issued on or after the Effective Date of the Contract and signed by Owner and recommended by Designer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Time of Completion but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Time of Completion.

Written Notice or Written Directive shall be defined as notice in writing delivered in person to the Contractor, or to a partner of the firm in the case of a partnership, or to a member of the contracting organization, or to an officer of the organization in the case of a corporation, or sent to the last known business address of the contracting organization.

ARTICLE 2 – TERMINOLOGY AND INTENT OF DOCUMENTS

- A. The contract documents are complementary; what is called for by one is as binding as if called for by all. The intent of the contract documents is to establish the scope of all labor, materials, transportation, equipment, and any and all other things necessary to provide a complete job. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the contract documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to the Owner.
- B. In case of discrepancy or disagreement in the contract documents, the order of precedence shall be: Form of Contract, Instructions to Bidders, Notice to Bidders, Invitation to Bid, Instructions to Bidders, Supplementary General Conditions, Specifications, General Conditions, large-scale drawings, small-scale drawings.
- C. The wording of the specifications shall be interpreted in accordance with common usage of the language except that words having a commonly used technical or trade meaning shall be so interpreted in preference to other meanings.

D. Intent of Certain Terms or Adjectives

Whenever in the Contract Documents the terms “as allowed,” “as approved,” or terms of like effect or import are used, or the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Designer as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to Designer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of the Article “Designer’s Status” or any other provision of the Contract Documents.

E. Furnish, Install, Perform, Provide

- 1. “Furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
- 2. “Install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
- 3. “Perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
- 4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

ARTICLE 3 – EXECUTION OF DOCUMENTS

The Contractor shall execute each copy of the proposal, contract, performance bond and payment bond as follows:

- A. If the documents are executed by a sole owner, that fact shall be evidenced by the word "Owner" appearing after the name of the person executing them.
- B. If the documents are executed by a partnership, that fact shall be evidenced by the word "Co-Partner" appearing after the name of the partner executing them.
- C. If the documents are executed on the part of a limited liability company, they shall be executed by a Manager with authority to commit the company to the contract and the title of the office of such person shall appear after their signature.
- D. If the documents are executed on the part of a corporation, they shall be executed by either the president or the vice president and attested by the secretary or assistant secretary in either case, and the title of the office of such persons shall appear after their signatures. The seal of the corporation shall be impressed on each signature page of the documents.
- E. If the documents are made by a joint venture, they shall be executed by each member of the joint venture in the above form for sole owner, partnership, company, or corporation, whichever form is applicable to each particular member.
- F. All signatures shall be properly witnessed.
- G. If the Contractor's license is held by a person other than an owner, partner or officer of a firm, then the licensee shall also sign and be a party to the contract. The title "Licensee" shall appear under his/her signature.
- H. The bonds shall be executed by an attorney-in-fact. There shall be attached to each copy of the bond a certified copy of power of attorney properly executed and dated.
- I. Each copy of the bonds shall be countersigned by an authorized individual agent of the bonding company licensed to do business in North Carolina. The title "Licensed Resident Agent" shall appear after the signature.
- J. The seal of the bonding company shall be impressed on each signature page of the bonds.
- K. The Contractor's signature on the performance bond and the payment bond shall correspond with that on the contract.

ARTICLE 4 – REVIEW OF CONTRACT DOCUMENTS AND CLARIFICATIONS

- A. **Contractor's Review of Contract Documents:** Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Designer any conflict, error, ambiguity, omission, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Designer before proceeding with any Work affected thereby; however, Contractor shall not be liable to Owner or Designer for failure to report any conflict, error, ambiguity, omission, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.
- B. In such cases where the nature of the Work requires clarification by the Designer, such clarification shall be furnished by the Designer with reasonable promptness by means of written instructions or detail drawings, or both. Clarifications and drawings shall be consistent with the intent of contract documents, and shall become a part thereof.
- C. The Contractor(s) and the Designer shall prepare, if deemed necessary, a schedule fixing dates upon which foreseeable clarifications will be required. The schedule will be subject to addition or change in accordance with progress of the Work. The Designer shall furnish drawings or clarifications in accordance with that schedule. The Contractor shall not proceed with the Work without such detail drawings and/or written clarifications.
- D. Where needed specifications or details are omitted from the contract documents the Contractor shall promptly report such omissions to the Designer and wait for clarification before proceeding with the work. Brunswick County details and specifications, latest versions, will be used to determine work description, materials, construction methods, and method of measurement, unless directed otherwise by the Designer.

ARTICLE 5 – SITE DOCUMENTATION

The Contractor is required to provide detailed video or photo documentation of site conditions prior to mobilization. The extents of the project site shall be video/photo documented including, but not limited to: all access roads into and out of the site, haul roads, existing utilities, staging and stockpile areas, culverts, bridges, drainage features, adjacent driveways, adjacent structures, existing facilities, stream and floodplains adjacent and immediately downstream of the project area, and any other areas that might potentially be impacted by construction. Videos and photos shall have the dates and times taken digitally indicated.

ARTICLE 6 – REFERENCE TO STANDARDS, CODES, LAWS, AND REGULATIONS

- A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
- B. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Designer, or any of their Subcontractors, consultants, agents, or employees from those

set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to Owner, Designer, or any of Designer's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

- C. If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall report it to Designer in writing at once. Contractor shall not proceed with the Work affected thereby (except in an emergency) until an amendment or supplement to the Contract Documents has been issued.
- D. The Contractor shall give all notices and comply with all laws, ordinances, codes, encroachment agreements, rules and regulations bearing on the conduct of the Work under this contract. Any necessary changes required after contract award shall be made by change order in accordance with Article "Changes in the Work." If the Contractor performs any work knowing it to be contrary to such laws, ordinances, codes, encroachment agreements, rules and regulations, and without such notice to the Designer, he shall bear all cost arising therefrom. Additional requirements implemented after bidding will be subject to equitable negotiations.
- E. All work under this contract shall conform to the North Carolina State Building Code and other State, local and national codes as are applicable. The cost of all required inspections and permits shall be the responsibility of the Contractor.

ARTICLE 7 – PERMITS

Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening Bids, or, if there are no Bids, on the Effective Date of the Contract. Contractor shall pay all charges of utility owners for connections to the Work.

ARTICLE 8 – COPIES OF DESIGN DRAWINGS AND SPECIFICATIONS

The Designer shall furnish free of charge to the Contractors copies of plans and specifications as follows:

- A. General Contractor and single-prime Contractor - Up to five (5) sets of general Contractor drawings and specifications. One of these sets shall be used by the Contractor to clearly and legibly record all work-in-place that is at variance with the contract documents.
- B. Each other Contractor - Up to five (5) sets of the appropriate drawings and specifications. One of these sets shall be used by the Contractor to clearly and legibly record all work-in-place that is at variance with the contract documents.
- C. Additional sets shall be furnished at cost, including mailing, to the Contractor upon request by the Contractor.

ARTICLE 9 – APPROVING SUBSTITUTES AND “OR EQUAL” ITEMS

A. Products are generally specified by ASTM or other reference standard and/or by manufacturer's name and model number or trade name. When specified only by reference standard, the Contractor may select any product meeting this standard, by any manufacturer. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the general style, type, character, function, appearance, and quality required. Equivalent products are acceptable and bidders are not restricted to the specific brand, make, manufacturer or specific name unless the specification indicates that “only” the specific manufacturer is acceptable or the description contains words reading that no like, equivalent, or substitution is permitted. Other items of material or equipment or material or equipment of other Suppliers may be submitted to Designer for review under the circumstances described below and as outlined in the Instructions to Bidders Article “Substitutions”.

1. **“Or-Equal” Items:** In cases where the technical specification indicate a specific brand, if in the Designer’s and Owner’s discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Designer as an “or-equal” item, in which case review and approval of the proposed item may, in Designer’s discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph a proposed item of material or equipment will be considered functionally equal to an item so named if:

- a. in the exercise of reasonable judgment Designer determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;
- b. Contractor certifies that: (i) there is no increase in cost to the Owner; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

2. **Substitute Items**

- a. If in Designer’s and Owner’s discretion an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item under the paragraph above, it will be considered a proposed substitute item.
- b. Request for substitution of materials, items, or equipment shall be submitted to the Designer for approval or disapproval ten days prior to the opening of bids. Substitution submittals made after this point shall be reviewed at the discretion of the Designer.
- c. Contractor shall submit sufficient information as provided below and as stated in the Instructions to Bidders to allow Designer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of

proposed substitute items of material or equipment will not be accepted by Designer from anyone other than prime bidders.

- d. By making requests for substitutions, the Contractor:
 - i. Represents that he has personally investigated the proposed substitute product and determined that it is of equal or superior in all aspects to that specified;
 - ii. Represents that he will provide, at minimum, the same warranty for the substitute that he would for that specified.
 - iii. Certifies that the cost of data presented is complete and includes all related costs under this Contract but excludes costs under separate contracts, and excludes the Designers redesign costs, and waives all claims for additional costs related to the substitution which subsequently becomes apparent; and
 - iv. Will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

B. Preferred Brands: In accordance with the provisions of NCGS 133-3 the Contract Documents may list one or more preferred brands to provide overall cost savings to the Owner and/or to maintain or improve the functioning of any process or system affected by the preferred item or items. The use of Preferred Brands on the project is at the sole discretion of the Owner. In the event that the Contractor's Proposal does not indicate an increased cost for the use of Preferred Brands, the Contractor shall use Preferred Brands on the project, unless notified otherwise in writing by the Owner. The Owner's preference of Preferred Brands for specific items shall be stated in the Contract Documents, typically on an Approved Products List in the Supplementary General Conditions, the Proposal Form, or in the Technical Specifications. A bid alternate may be used on the Proposal Form to determine the cost difference between Preferred Brands and other products meeting the performance specification. Where there is a cost differential between a Preferred Brand item and the other equivalent item, the Contractor shall provide a listing of the equivalent item type, manufacturer, model, item number, and cost savings compared to using a Preferred Brand item. When Preferred Brands are indicated in the Contract Documents for specific items, but the Owner chooses not to require the use of Preferred Brands for a specific item, the Contractor is advised that any product submitted for use on the project must still be approved in accordance with the section "Or-equal Items".

C. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Designer. Contractor shall submit sufficient information to allow Designer, in Designer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents.

- D. **Designer's Evaluation:** Designer will be allowed a reasonable time within which to evaluate each proposal or submittal. Designer will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed, or utilized until Designer's review is complete, which will be evidenced by either a Directive for a substitute or an approved Shop Drawing for an "or-equal." Designer will advise Contractor in writing of any negative determination.
- E. **Special Guarantee:** Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- F. **Contractor's Expense:** Contractor shall provide all data, including any required engineering, in support of any proposed substitute or "or-equal" at Contractor's expense.

ARTICLE 10 – SHOP DRAWINGS, SUBMITTALS, SAMPLES, DATA

- A. Within ten (10) consecutive calendar days after the notice to proceed, each prime Contractor shall submit a schedule for anticipated submittal of all shop drawings, product data, samples, and similar submittals to the Project Expediter and the Designer. This schedule shall indicate the items, relevant specification sections, other related submittal, data, and the date when these items will be furnished to the Designer.
- B. The Contractor shall review, approve and submit to the Designer all Shop or Setting Drawings, Product Data, Samples, Color Charts, and similar submittal data required or reasonably implied by the Contract Documents. Shop drawing submittals shall be made using the "Contractor Submittal" form and shall be made in accordance with the project schedule. Required Submittals shall bear the Contractor's stamp of approval and any exceptions to the Contract Documents shall be noted on the submittals. A minimum of three (3) copies of each submittal shall be submitted to the Designer to retain and the Contractor shall supply, at the request of the Designer, additional copies as needed. Submittals shall be presented to the Designer with reasonable promptness and time so as to cause no delay in the activities of the Owner or of separate Contractors.
- C. Shop drawing submittals shall be complete with respect to quantities, dimensions, drawings, specified performance, design criteria, and materials and shall be detailed sufficiently to enable the Designer to determine compliance with the contract documents.
- D. The Designer shall review required submittals promptly, noting desired corrections if any, and returning a copy of the annotated shop drawings to the Contractor not later than twenty (20) days from the date of receipt by the Designer. When resubmittals are required, the submittal procedure shall be the same as for the original submittals. The Contractor shall not be entitled to any Time of Completion extension for review and approval of shop drawings by the Designer.
- E. Approval of shop drawings by the Designer shall not be construed as relieving the Contractor from responsibility for compliance with the design or terms of the contract documents nor from responsibility of errors of any sort in the shop drawings, unless such lack of compliance or errors first have been called in writing to the attention of the Designer by the Contractor.
- F. The Owner may assess the Contractor the cost of shop drawing review for shop drawing submittals in excess of three for any one item.

ARTICLE 11 – REFERENCE POINTS AND CONSTRUCTION SURVEYING

- A. Engineering surveys shall be provided to establish reference points for construction which in Designer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without prior written approval. Contractor shall report to Designer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by a registered professional surveyor.
- B. The Contractor shall be responsible for all of the field horizontal layout and vertical control of the facilities. Construction Surveying shall include, but not be limited to, furnishing personnel, all surveying equipment, stakes, layout drawings, calculations, stakeout records, all materials necessary to perform the surveying work, staking clearing limits, staking centerlines, miscellaneous staking necessary for construction, locating reference points and benchmarks, and any other survey incidental to construction. Unless directed otherwise by the Designer, Survey personnel shall be under the direct supervision of a North Carolina Registered Professional Land Surveyor in conformance with NCGS 89C. Benchmarks and reference points shall be indicated by a metal monument cap set on a minimum 36" long #5 reinforcing bar with an adjacent carsonite witness stake and shall be permanently preserved.
- C. Upon completion of the stakeout and prior to beginning construction, the Contractor shall give the Designer a 48-hour notice in order to inspect the construction staking. The Designer's review of the Contractor's work in no way relieves the Contractor of responsibility for conformance with the contract documents. Failure by the Designer to point out unsatisfactory work, from lack of discovery or for any other reason, in no way prevents later rejection or corrections to the unsatisfactory work, when discovered, at no cost to the Owner. No claims will be allowed for losses suffered due to any necessary removal or repairs resulting from the unsatisfactory work. When requested by the Designer, the accuracy of the stakeout will be checked by the Contractor.
- D. When surveying is required that could not have been reasonably anticipated, the Contractor shall notify the Designer in writing prior to beginning such work and will proceed according to the General Conditions of the Contract for "Claims for Extra Cost."

ARTICLE 12 – RECORD DRAWINGS AND SPECIFICATIONS AT THE JOB SITE

The Contractor shall maintain, in readable and secure condition at his job office, one complete set of the contract documents including record drawings, specifications, addenda, change orders, written directives, work change directives, and written interpretations and clarifications. Additionally, a copy of all shop drawings and the project manual shall be maintained at the job office. These materials shall be annotated to show changes made during construction. The Contractor shall maintain at the job office, a day-to-day record of work-in-place that is at variance with the contract documents. Such materials shall be made available for use by the Owner, Designer, or his authorized representative and shall be submitted to the Owner upon project completion and prior to final payment.

ARTICLE 13 – AS-BUILT DRAWINGS

Unless otherwise indicated in the Supplementary General Conditions, the Contractor is responsible for furnishing certified “As-Built” Drawings in the form of signed and sealed (professional surveyor or professional engineer) plans per the North Carolina Board of Engineers and Surveyors guidelines. Electronic copies (Acrobat PDF file format and either MicroStation or Autocad format) and two (2) sets of photographic mylars or vellums shall be furnished to the Owner prior to final payment. As-built drawings shall verify or adjust elevations, dimensions, locations, and materials incorporated into the completed work.

ARTICLE 14 – OWNERSHIP OF DRAWINGS AND SPECIFICATIONS

All drawings and specifications (including electronic media) are instruments of service and remain the property of the Owner. The use of these instruments on work other than this contract without permission of the Owner is prohibited. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with Owner: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Designer or Designer’s Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes or for furnishing as-built drawings.

ARTICLE 15 – MATERIALS, EQUIPMENT, EMPLOYEES

- A. The Contractor shall, unless otherwise specified, supply and pay for all labor, transportation, materials, tools, apparatus, lights, power, heat, sanitary facilities, water, scaffolding and incidentals necessary for the completion of his work, and shall install, maintain and remove all equipment of the construction, other utensils or things, and be responsible for the safe, proper and lawful construction, maintenance and use of same, and shall construct in the best and most workmanlike manner, a complete job and everything incidental thereto, as shown on the plans, stated in the specifications, or reasonably implied therefrom, all in accordance with the contract documents.
- B. All materials shall be new and of quality specified, except where reclaimed material is authorized herein and approved for use. Workmanship shall at all times be of a grade accepted as the best practice of the particular trade involved, and as stipulated in written standards of recognized organizations or institutes of the respective trades except as exceeded or qualified by the specifications.
- C. Upon notice, the Contractor shall furnish evidence as to quality of materials.
- D. Each Contractor shall obtain written approval from the Designer for the use of products, materials, equipment, assemblies or installation methods claimed as equal to those specified. Such approvals must be obtained as soon after contract awards as possible and before any materials are ordered. Applications for approvals shall be made by the Contractor and not by Subcontractors or material Suppliers within thirty (30) days following award of contract. When the submittal schedule provided under Article “Shop Drawings, Submittals, Samples, Data” Paragraph (A) is approved, no further substitutions

will be permitted except in unusual or extenuating circumstances. If no list is submitted, the Contractor shall supply materials specified.

- E. The Designer is the judge of equality for proposed substitution of products, materials or equipment.
- F. If at any time during the construction and completion of the Work covered by these contract documents, the conduct of any workman of the various crafts be adjudged a nuisance to the Owner or Designer, or if any workman be considered detrimental to the Work, the Contractor shall order such parties removed immediately from grounds.

ARTICLE 16 – EQUAL OPPORTUNITY CLAUSE

The non-discrimination clause contained in Section 202 (Federal) Executive Order 11246, as amended by Executive Order 11375, relative to equal employment opportunity for all persons without regard to race, color, religion, sex or national origin, and the implementing rules and regulations prescribed by the Secretary of Labor, are incorporated herein.

ARTICLE 17 – EMPLOYMENT OF THE HANDICAPPED

The Contractor(s) agree not to discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices.

ARTICLE 18 – ROYALTIES, LICENSES, AND PATENTS

It is the intention of the contract documents that the Work covered herein will not constitute in any way infringement of any patent whatsoever unless the fact of such patent is clearly evidenced herein. The Contractor shall protect and save harmless the Owner against suit on account of alleged or actual infringement. The Contractor shall pay all royalties and/or license fees required on account of patented articles or processes, whether the patent rights are evidenced hereinafter.

ARTICLE 19 – USE OF PREMISES

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities.
- B. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.
- C. The Contractor(s) shall confine his apparatus, the storage of materials and the operations of his workmen to limits indicated by law, ordinances, permits or directions of the Designer and shall not exceed those established limits in his operations.

- D. The Contractor(s) shall not load or permit any part of any structure or property to be loaded with a weight that will endanger its safety or that of subsurface facilities.
- E. The Contractor(s) shall enforce the Designer's instructions regarding signs, advertisements, fires and smoking.
- F. No firearms, any type of alcoholic beverages, or drugs (other than those prescribed by a physician) will be permitted at the job site.

ARTICLE 20 – SUBSURFACE AND PHYSICAL CONDITIONS

- A. The project manual may contain reports, explorations, tests, or drawings of subsurface conditions and subsurface structures at or contiguous to the site. Contractor may rely upon the general accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Project Manual. Except for such reliance on such “technical data,” Contractor may not rely upon or make any Claim against Owner, Designer, or any Designer’s Consultants with respect to:
 - 1. The completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. Other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions, or information.

B. Differing Subsurface or Physical Conditions

- 1. **Notice:** If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:
 - a. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as indicated above is materially inaccurate; or
 - b. is of such a nature as to require a change in the Contract Documents; or
 - c. differs materially from that shown or indicated in the Contract Documents;
or
 - d. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency), notify Owner and Designer in writing about such condition. Contractor shall not further disturb

such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

- C. **Designer's Review:** After receipt of written notice as required by above, Designer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Designer's findings and conclusions.

D. **Possible Price and Times Adjustments**

1. The Contract Price or the Time of Completion, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described above under "Differing Subsurface or Physical Conditions" and
 - b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Unit Price Work.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Time of Completion if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner in respect of Contract Price and Time of Completion by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
 - c. Contractor failed to give the written notice within the time and as required by the section "Differing Subsurface of Physical Conditions."
3. NOTE ON TRENCHLESS EXCAVATION (Horizontal Directional Drill, Bore & Jack, etc.) – Encountering rock or other hardened material during the installation of pipe by trenchless excavation methods shall not be considered a "Differing Subsurface Condition or Physical Condition" and no adjustment to the Contract Price or Time of Completion shall be approved. The Contractor is hereby notified that rock and other hardened material is routinely encountered in and around Brunswick County, NC. Per the "Instructions To Bidders", the Contractor is required to satisfy himself as to the nature of subsurface conditions and the Owner recommends that the Contractor perform subsurface investigation prior to submitting a bid.
4. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Time of Completion, or both, a Claim may be made therefor as provided elsewhere in the General Conditions. However, Owner, Designer, and Designer's Consultants shall not be liable to Contractor for any claims, costs, losses, or damages (including but not

limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

ARTICLE 21 – UNDERGROUND FACILITIES

A. Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Designer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary General Conditions:

1. Owner and Designer shall not be responsible for the accuracy or completeness of any such information or data; and
2. the cost of all the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all such information and data,
 - b. locating all Underground Facilities shown or indicated in the Contract Documents and maintaining all utility markings (paintings, stakes, etc.) until the Owner provides written acceptance of the project.
 - c. coordination of the Work with the owners of such Underground Facilities, including Owner, prior to and during construction, and
 - d. the safety and protection of Underground Facilities and repairing any damage resulting from the Work inclusive of required relocations, and
 - e. the Contractor will be responsible for coordinating and obtaining approval for utility interruptions caused by the Work and for all costs associated with the repair and disruption of any underground utility facility.

B. Not Shown or Indicated

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency) identify the owner of such Underground Facility and give written notice to that owner and to Owner and Designer. Designer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Designer concludes that a change in the Contract Documents is required, a Work Change Directive or written directive, as applicable, will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Time of Completion, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not

shown or indicated in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Time of Completion, Owner or Contractor may make a Claim therefore as provided elsewhere in the General Conditions.

ARTICLE 22 – CUTTING, PATCHING, AND DIGGING

- A. The Contractor shall do all cutting, fitting or patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of other contractors shown upon or reasonably implied by the drawings and specifications for the completed structure, as the Designer may direct.
- B. Any cost brought about by defective or ill-timed work shall be borne by the party responsible therefore.
- C. No Contractor shall endanger any work of another Contractor by cutting, digging or other means. No Contractor shall cut or alter the Work of any other Contractor without the consent of the Designer and the affected Contractor(s).
- D. All areas within the project limits, limits of disturbance (LOD), and easement areas are subject to being cleared and grubbed of vegetative material and trees. Landscaped areas, vegetative plantings, ornamental trees, and trees in excess of 24” diameter (DBH) shall not be removed without prior authorization from the Engineer. The Contractor shall remove all trees or vegetation that, in the opinion of the Engineer, are necessary to facilitate the construction.

ARTICLE 23 – UTILITIES, STRUCTURES, SIGNS

- A. The Project Expediter shall provide necessary and adequate facilities for water, electricity, gas, oil, sewer, and other utility services, which may be necessary and required for completion of the project. Any permanent meters installed shall be listed in the Project Expediter's name until his work is fully accepted by the Owner. As stipulated in the Supplementary General Conditions, the Owner may: (1) pay utilities cost directly, (2) have the Project Expediter to pay all utilities cost, (3) or reimburse the Project Expediter for the actual cost of utilities. The Owner or Project Expediter, as applicable, may recover actual costs of metered utilities from the responsible party should delays occur in project completion.
- B. Meters shall be relisted in the Owner's name on the day following completion and acceptance of the Project Expediter's work, and the Owner shall pay for services used after that date.
- C. The Owner shall be reimbursed for all metered utility charges after the meter is relisted in the Owner's name and prior to completion and acceptance of the Work of **all** contractors. Reimbursement shall be made by the Contractor whose work has not been completed and accepted. If the Work of two or more contractors has not been completed and accepted, reimbursement to the Owner shall be paid by the Contractors involved on the basis of assessments by the Designer.

- D. Prior to the operation of permanent systems, the Project Expediter will provide temporary power, lighting, water, and heat to maintain space temperature above freezing, as required for construction operations.
- E. All contractors shall have any permanent building systems in sufficient readiness for furnishing temporary climatic control at the time a building is enclosed and secured. The HVAC systems shall maintain climatic control throughout the enclosed portion of the building sufficient to allow completion of the interior finishes of buildings. A building shall be considered enclosed and secured when windows, doorways (exterior, mechanical, and electrical equipment rooms), and hardware are installed; and other openings have protection which will provide reasonable climatic control. The appropriate time to start the mechanical systems and climatic condition shall be jointly determined by the Contractor(s) and the Designer. Use of the equipment in this manner shall in no way affect the warranty requirements of the Contractor(s).
- F. The Electrical Contractor shall have any building's permanent power wiring distribution system in sufficient readiness to provide power as required by the HVAC Contractor for temporary climatic control.
- G. The Electrical Contractor shall have any building's permanent lighting system ready at the time the general Contractor begins interior painting and shall provide adequate lighting in those areas where interior painting and finishing is being performed.
- H. Each prime Contractor shall be responsible for his permanently fixed service facilities and systems in use during progress of the Work. The following procedures shall be strictly adhered to:
 - 1. Prior to acceptance of work by the Owner, each Contractor shall remove and replace any parts of the permanent building systems damaged through use during construction.
 - 2. Temporary filters shall be installed in each of the heating and air conditioning units and at each return grille during construction. New filters shall be installed in each unit prior to the Owner's acceptance of the Work.
 - 3. Extra effort shall be maintained to keep the building and the site adjacent to the building clean and under no circumstances shall air systems be operated if finishing and site work operations are creating dust in excess of what would be considered normal if the building were occupied.
 - 4. It shall be understood that any warranty on equipment presented to the Owner shall extend from the day of final acceptance by the Owner. The cost of warranting the equipment during operation in the finishing stages of construction shall be borne by the Contractor whose system is utilized.
 - 5. The Electrical Contractor shall have all lamps in proper working condition at the time of final project acceptance.
- I. The Project Expediter shall provide, if required and where directed, a shed for toilet facilities and shall furnish and install in this shed all water closets required for a complete and adequate sanitary arrangement. These facilities will be available to other contractors on the job and shall be kept in a neat and sanitary condition at all times. Chemical toilets are acceptable.

- J. The Project Expediter shall, if required by the Supplementary General Conditions and where directed, erect a temporary field office, complete with lights, telephone, heat and air conditioning. A portion of this office shall be partitioned off, of sufficient size, for the use of a resident inspector, unless otherwise directed by the Designer.

- K. On multi-story construction projects, the Project Expediter shall provide temporary elevators, lifts, or other special equipment for the general use of all contractors. The cost for such elevators, lifts or other special equipment and the operation thereof shall be included in the Project Expediter's bid.

- L. The Project Expediter will erect one sign on the project, unless otherwise directed by the Designer. The sign shall be of sound construction neatly lettered with black letters on white background in accordance with Brunswick County standard details. The sign shall bear the name of the project, and the names of prime Contractors on the project, and the name of the Designer and consultants. Directional signs may be erected on the Owner's property subject to approval of the Owner with respect to size, style, and location of such directional signs. Such signs may bear the name of the Contractor and a directional symbol. No other signs will be permitted except by permission of the Owner.

ARTICLE 24 – HAZARDOUS ENVIRONMENTAL CONDITIONS

- A. The project manual may contain reports, explorations, tests, or drawings of known hazardous environmental conditions at or contiguous to the site. Contractor may rely upon the general accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Project Manual. Except for such reliance on such “technical data,” Contractor may not rely upon or make any Claim against Owner, Designer, or any Designer's Consultants with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions, or information.

- B. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

- C. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby

(except in an emergency); and (iii) notify Owner and Designer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Designer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

- D. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Time of Completion, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim as provided elsewhere in the General Conditions.
- E. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Time of Completion as a result of deleting such portion of the Work, then either party may make a Claim as provided elsewhere in the General Conditions. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article "Owners Right to Do Work."
- F. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner, Designer, Designer's Consultants, and the officers, directors, partners, employees, agents, other consultants, and Subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this paragraph shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- G. The Owner has attempted to address all asbestos-containing materials that are to be disturbed in the project. However, there may be other asbestos-containing materials in the Work areas that are not to be disturbed and do not create an exposure hazard. Contractors are reminded of the requirements of instructions under Instructions to Bidders and General Conditions of the Contract, titled Examination of Conditions. Statute 130A, amended August 3, 1989, established the Asbestos Hazard Management Program that controls asbestos abatement in North Carolina. The latest edition of *Guideline Criteria for Asbestos Abatement* available from the NC State Construction Office is to be incorporated in all asbestos abatement projects for the Capital Improvement Program.

ARTICLE 25 – PROTECTION OF WORK AND PROPERTY

- A. The Contractors shall be jointly responsible for the entire site and the building or construction of the same and provide all the necessary protections, as required by the Owner or Designer, and by laws or ordinances governing such conditions. They shall be responsible for any damage to the Owner's property, or of that of others on the job, by them, their personnel, or their Subcontractors, and shall make good such damages. They shall be responsible for and pay for any damages caused to the Owner. All contractors shall have access to the project at all times.
- B. The Contractor shall provide cover and protect all portions of the structure when the Work is not in progress, provide and set all temporary roofs, covers for doorways, sash and windows, and all other materials necessary to protect all the Work on the building, whether set by him, or any of the Subcontractors. Any work damaged through the lack of proper protection or from any other cause, shall be repaired or replaced without extra cost to the Owner.
- C. No fires of any kind will be allowed inside or around the operations during the course of construction without special permission from the Designer and Owner.
- D. The Contractor shall protect all trees and shrubs designated to remain in the vicinity of the operations by building substantial boxes around same. All ornamental trees and landscaping shall be protected, whether such protection is indicated or not within the Contract Documents. If ornamental trees and landscaping plantings are in the way of construction, the contractor shall remove, maintain, and reinstall at locations designated by the Designer. Any ornamental trees and landscaping plantings damaged or that die within the warranty period shall be replaced by the Contractor at the Contractor's expense. Where equipment must cross walks, landscaping areas, or ramps, the Contractor shall provide steel plates or minimum 3/4" plywood sheets for protection of these areas.
- E. The Contractor shall barricade all walks, roads, etc., and any areas directed by the Designer to keep the public away from the construction. All trenches, excavations or other hazards in the vicinity of the Work shall be well barricaded and properly lighted at night.
- F. In the event of emergency affecting the safety of life, the protection of work, or the safety of adjoining properties, the Contractor is hereby authorized and is obligated to act at his own discretion, without further authorization from anyone, to prevent such threatened injury or damage. Any compensation claimed by the Contractor on account of such action shall be determined as provided for under Article "Changes in the Work," Paragraph (B).

ARTICLE 26 – SAFETY

- A. The Contractor shall be solely responsible for initiating, maintaining, providing, and supervising all necessary safety precautions, safety programs, and safety measures for the protection of all persons on the job, including the requirements of the A.G.C. *Accident Prevention Manual in Construction*, as amended, and shall fully comply with all state laws or regulations and North Carolina State Building Code requirements to prevent accident or injury to persons on or about the location of the Work. He shall clearly mark or post signs warning of hazards existing, and shall barricade excavations, elevator shafts,

stairwells and similar hazards. He shall protect against damage or injury resulting from falling materials and he shall maintain all protective devices and signs throughout the progress of the Work.

- B. The Contractor shall adhere to the rules, regulations and interpretations of the North Carolina Department of Labor relating to Occupational Safety and Health Standards for the Construction Industry (Title 29, Code of Federal Regulations, Part 1926, published in Volume 39, Number 122, Part II, June 24, 1974, *Federal Register*), and revisions thereto as adopted by General Statutes of North Carolina 95-126 through 155.
- C. The Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the site in accordance with laws or regulations.
- D. The Contractor shall designate a qualified and experienced member of his organization as safety inspector, whose duties shall include accident prevention on the Work project. The name of the safety inspector shall be made known to the Designer at the time the Work is started.

ARTICLE 27 – TRAFFIC CONTROL

- A. The Contractor will be required to maintain traffic within the limits of the project, including all existing roadways that cross or intersect the project. To the extent dependent on the Contractor, the Contractor shall be responsible for maintaining in a safe, passable, and convenient condition all roads used by him during construction of the project. Traffic shall be maintained from the time the Contractor begins work on the project site until acceptance of the project, including any periods during which the Contractor's operations are suspended. The Contractor shall conduct his work in a safe manner that will create a minimum amount of inconvenience to traffic.
- B. The Contractor shall be responsible for determining, utilizing, and maintaining traffic control measures as outlined in the *Manual on Uniform Traffic Control Devices (MUTCD)*, latest version. Unless otherwise directed by the Designer, the Contractor is required to have an English copy of the *Manual on Uniform Traffic Control Devices (MUTCD)*, latest version, on the project site.
- C. During the progress of any work within road right-of-ways, mark all hazards with well-maintained signs, barricades, drums, or other warning or channelizing devices. At each location where work is started which creates a safety hazard, continue the Work until completed to the extent that the safety hazard is eliminated. If the Work is not completed in a continuous manner to the extent that the safety hazard is eliminated, the Designer will not allow any other work on the project to be performed until the existing safety hazard is eliminated. During the process of excavating in a travelway or in the clear zone of a travelway where traffic is to be later maintained, make provisions to backfill and repair any excavated or damaged pavement before allowing traffic to proceed over the affected lanes. If not otherwise specified, the clear zone is the immediate area within 30' of the outside edge of lane. In low speed areas (35 MPH or less) metal plates may be used to cover excavated areas. Continuous, safe vehicular access shall be maintained to all residences, businesses, schools, police stations, fire stations, hydrants, other emergency services, hospitals, and mailboxes. Operations shall be conducted in a manner that limits inconvenience to property owners. When work is not in progress, keep all personnel, equipment, machinery, tools, construction debris and supplies at least

40 feet away from active travel lanes. Personal vehicles shall not be parked adjacent to travelways in road right-of-ways.

- D. During lane closures, all equipment and personnel shall operate within the designated work area. Traffic control devices for lane closures shall be installed with the traffic flow, beginning with devices on the upstream side of traffic. Traffic control devices for lane closures shall be removed against the traffic flow, beginning with devices on the downstream side of traffic.

ARTICLE 28 – SEDIMENTATION POLLUTION CONTROL ACT OF 1973

- A. Any land-disturbing activity performed by the Contractor(s) in connection with the project shall comply with all erosion control measures set forth in the contract documents and any additional measures which may be required in order to ensure that the project is in full compliance with the Sedimentation Pollution Control Act of 1973, as implemented by Title 15, North Carolina Administrative Code, Chapter 4, Sedimentation Control, Subchapters 4A, 4B and 4C, as amended (15 N.C.A.C. 4A, 4B and 4C). The Owner makes no representation as to the type and intensity of rainfall or storms that shall occur during the life of the project. Southeastern North Carolina is in an area susceptible to hurricanes, severe rainfall, and storm events; these events are not uncommon to the area. No additional compensation shall be made for compliance with the Sedimentation Pollution Control Act of 1973 and NCDENR permits due to severe rainfall and storm events.
- B. Upon receipt of notice that a land-disturbing activity is in violation of said act, the Contractor(s) shall be responsible for ensuring that all steps or actions necessary to bring the project in compliance with said act are promptly taken.
- C. The Contractor(s) shall be responsible for defending any legal actions instituted pursuant to NCGS 113A-64 against any party or persons described in this article.
- D. To the fullest extent permitted by law, the Contractor(s) shall indemnify and hold harmless the Owner, the Designer and the agents, consultants and employees of the Owner and Designer, from and against all claims, damages, civil penalties, losses and expenses, including, but not limited to, attorneys' fees, arising out of or resulting from the performance of work or failure of performance of work, provided that any such claim, damage, civil penalty, loss or expense is attributable to a violation of the Sedimentation Pollution Control Act. Such obligation shall not be construed to negate, abridge or otherwise reduced any other right or obligation of indemnity which would otherwise exist as to any party or persons described in this article. Any claim, damage, civil penalty, loss or expense levied on or incurred by the Owner may be paid in a timely manner by the Owner and deducted from the monies owed to the Contractor(s).
- E. The Contractor shall comply with the following requirements:
 - 1. Equipment utilized during the construction activity on a site must be operated and maintained in such a manner as to prevent the potential or actual pollution of the surface or ground waters of the state. Fuels, lubricants, coolants, and hydraulic fluids, or any other petroleum products, shall not be discharged on to the ground or into surface waters. Spent fluids shall be disposed of in a manner so as not to enter the waters, surface or ground, of the state and in accordance with applicable state and federal disposal regulations. Any spilled fluids shall be cleaned up to the extent

practicable and disposed of in a manner so as not to allow their entry into the waters, surface of ground, of the state.

2. Herbicide, pesticide, and fertilizer usage during the construction activity shall be restricted to those materials approved by EPA and shall be in accordance with label restrictions.
3. All wastes composed of building materials shall be disposed of in accordance with North Carolina General Statutes, Chapter 130A, Article 9 - Solid Waste Management, and rules governing the disposal of solid waste (North Carolina Administrative Code Section 15A NCAC 13B).
4. All sedimentation and erosion control of facilities shall be inspected by the Contractor at least once every seven calendar days and within 24 hours after any storm event of greater than 0.1 inches of rain per 24-hour period or any day that has been claimed by the Contractor as a rain delay.
5. The Contractor shall submit to the Owner a written report of weekly inspections. Visible sedimentation found off the site shall be recorded with a brief explanation as to the measures taken to prevent future releases as well as any measures taken to clean up the sediment that has left the site. This record shall be made available to DENR or authorized agent upon request.
6. The Contractor shall be fully responsible for growing and maintaining a vegetative cover on all areas of the site in accordance with DENR Land Quality requirements.

ARTICLE 29 – INSPECTION OF THE WORK

- A. It is a condition of this contract that the Work shall be subject to inspection by the Designer, Owner, designated official representatives of the Owner, and those persons required by state law to test special work for official approval. The Contractor shall therefore provide safe access to the Work at all times for such inspections.
- B. All instructions to the Contractor will be made only by or through the Designer, Owner, or the Designer or Owner's designated project representative. Observations made by official representatives of the Owner shall be conveyed to the Designer for review and coordination when the Designer is acting as the construction administrator/inspector.
- C. Should any work be covered up or concealed prior to inspection and approval by the Designer, such work shall be uncovered or exposed for inspection, if so requested by the Designer in writing. Inspection of the Work will be made promptly upon notice from the Contractor. All cost involved in uncovering, repairing, replacing, recovering and restoring to design condition the Work that has been covered or concealed will be paid by the Contractor involved.
- D. Prompt notice of all defective work of which Owner or Designer has actual knowledge shall be given to the Contractor.
- E. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor

to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

- F. The presence of the Designer, Owner, or Inspector at the work site shall in no way lessen the Contractor's responsibility for conformity with the contract documents. Should the Designer, Owner, or Inspector, prior to or during construction, fail to point out or reject materials or work that does not conform with plans and specifications, whether from lack of discovery or from any other reason, it shall in no way prevent later rejection or correction to the unsatisfactory materials or work when discovered. The Contractor shall have no claim for losses suffered due to any necessary removals or repairs resulting from the unsatisfactory work.
- G. The Contractor shall notify the Inspector a minimum of 24 hours in advance of the Contractor's intent not to work any given day, or in the event of weather conditions prohibiting execution of the work, by 9 a.m. the day of the abnormal weather.

ARTICLE 30 – TESTING

- A. Where special inspection or testing is required by virtue of any state laws, instructions of the Designer, specifications or codes, the Contractor shall give written notice a minimum of 48 hours in advance to the designated official representatives of the Owner, of the time set for such inspection or test. Such special tests or inspections will be made in the presence of the official representatives of the Owner, and it shall be the Contractor's responsibility to serve ample notice of such tests. The Contractor shall furnish the official representatives of the Owner with all certificates of inspection or approval. Work performed without proper testing may be ordered for removal and replacement at no additional cost to the Owner.
- B. The Contractor shall employ and pay for the services of an independent testing firm to perform all inspections, tests, or approvals required by the contract documents including, but not limited to, mix designs, soil tests, compaction tests, concrete tests, foundation tests, piling testing and inspection, and all other required material tests. The Contractor shall provide the Owner with a schedule of values for all tests to be performed on the project. The values presented shall be all-inclusive; no separate payment shall be made for labor, materials, travel, meals, lodging, etcetera. Prior to any testing being performed, the Contractor must receive written approval from the Owner approving the selected testing firm.
- C. Testing shall be performed by licensed, professional personnel according to the standards referenced in the technical specifications, or in the absence thereof, according to applicable ASTM standards or other applicable industry standards. On a daily basis, personnel performing the tests shall provide the Contractor and Owner a list of all tests performed including, at a minimum, the date, time, location, temperature, project identifier, and tester's name.

- D. If a unit price line item for "Testing Allowance" is included in the proposal, the price will be adjusted in accordance with article "Unit Price Work." The established cost of work for the unit price line item "Testing Allowance" shall be 105% of the required testing performed and billed by the independent testing firm that is documented by actual invoices submitted to the Designer from the Contractor.
- E. Payment shall not be made for failing tests, tests performed in the absence of the owner's inspector (unless prior written authorization from the owner's inspector has been granted), tests unable to be verified by the daily test list, or any costs incurred due to poor scheduling.

ARTICLE 31 – CONSTRUCTION SUPERVISION

- A. Throughout the progress of the Work, each Contractor shall keep at the job site, a competent superintendent or supervisory staff satisfactory to the Designer. The superintendent shall not be changed without the consent of the Designer unless said superintendent ceases to be employed by the Contractor or ceases to be competent. The superintendent shall have authority to act on behalf of the Contractor, and instructions, directions or notices given to him shall be as binding as if given to the Contractor.
- B. The Contractor shall examine and study the contract documents and fully understand the project design, and shall provide constant, competent, and efficient supervision to the Work. Should he discover any discrepancies of any sort in the drawings or specifications, he shall report them to the Designer without delay. He will not be held responsible for discrepancies in the drawings and/or specifications, but shall be held responsible to report them should they become known to him.
- C. All Contractors shall be required to cooperate and consult with each other during the construction of the project. Prior to installation of work, all Contractors shall jointly prepare coordination drawings, showing locations of various ductworks, piping, motors, pumps, and other mechanical or electrical equipment, in relation to the structure, walls and ceilings. These drawings shall be submitted to the Designer through the Project Expediter for information only. Each Contractor shall lay out and execute his work to cause the least delay to other contractors. Each Contractor shall be financially responsible for any damage to other Contractor's work and for undue delay caused to other contractors on the project.
- D. The Contractor is required to attend monthly job site progress conferences as directed by the Designer. Home office representatives may be required at these meetings. Contractor representatives shall have authority to act on behalf of the Contractor. These meetings shall be open to Subcontractors, material Suppliers and any others who can contribute toward maintaining required job progress. It shall be the principal purpose of these meetings, or conferences, to effect coordination, cooperation and assistance in every practical way toward the end of maintaining progress of the project on schedule and to complete the project within the specified Contract Time. Each Contractor shall be prepared to assess progress of the Work as required in his particular contract and to recommend remedial measures for correction of progress as may be appropriate. The Designer or his authorized representative shall be the coordinator of the conferences and shall preside as chairman.

- E. The Designer shall designate a Project Expediter on projects involving two or more prime contracts and shall designate such in the Supplementary General Conditions. **For the purposes of a single prime contract, the single prime Contractor shall be designated as the Project Expediter.** The Project Expediter shall have the following responsibilities:
1. Prepare the project construction schedule and shall allow all prime Contractors (multi-prime contract) and Subcontractors (single-prime contract) performing general, plumbing, HVAC, and electrical work equal input into the preparation of the initial construction schedule.
 2. Maintain a project progress schedule for all contractors.
 3. Give adequate notice to all contractors to ensure efficient continuity of all phases of the Work.
 4. Notify the Designer of any changes in the project schedule.
 5. Recommend to the Designer whether payment to a Contractor or Subcontractor should be approved.

ARTICLE 32 – SCHEDULE

- A. It shall be the responsibility of the Project Expediter to cooperate with and obtain from all prime Contractors and Subcontractors on the job, their respective work activities and integrate these activities into a project construction schedule in form of a detailed bar chart or Critical Path Method (CPM), schedule. Each prime Contractor shall provide work activities within fourteen (14) days of request by the Project Expediter. A “work activity,” for scheduling purposes, shall be any component or contractual requirement of the project requiring at least one (1) day, but not more than fourteen (14) days, to complete or fulfill. The project construction schedule shall graphically show all salient features of the Work required to construct the project from start to finish and within the allotted time established in the contract. The time (in days) between the Contractor’s early completion and contractual completion dates is part of the project total float time; and shall be used as such, unless amended by a change order. On a multi-prime project, each prime Contractor shall review the proposed construction schedule and approve same in writing. The Project Expediter shall submit the proposed construction schedule to the Designer for comments. The complete Project construction schedule shall be of the type set forth in the Supplementary General Conditions or Subparagraph (a) or (b) below, as appropriate:
1. For a project with total contracts of \$500,000 or less, a bar chart schedule will satisfy the above requirement. The schedule shall indicate the estimated starting and completion dates for each major element of the Work, as well as **cost values** associated with each element.
 2. For a project with total contracts over \$500,000, a Critical Path Method (CPM) schedule shall be utilized to control the planning and scheduling of the Work. The CPM schedule shall be the responsibility of the Project Expediter and shall be paid for by the Project Expediter.

- B. **Bar Chart Schedule:** Where a bar chart schedule is required, it shall be time-scaled in weekly increments, shall indicate the estimated starting and completion dates for each major element of the Work by trade and by area, level, or zone, and shall schedule dates for all salient features, including but not limited to the placing of orders for materials, submittal of shop drawings and other Submittals for approval, approval of shop drawings by designers, the manufacture and delivery of material, the testing and the installation of materials, supplies and equipment, and all Work activities to be performed by the Contractor. The Contractor shall allow sufficient time in his schedule for all required inspections, reviews (punch lists), and correction of punch list items. Each Work activity will be assigned a time estimate by the Contractor. One day shall be the smallest time unit used.
- C. **CPM Schedule:** Where a CPM schedule is required, it shall be in time-scaled precedence format using the Project Expediter's logic and time estimates. The CPM schedule shall be drawn or plotted with activities grouped or zoned by Work area or subcontract as opposed to a random (or scattered) format. The CPM schedule shall be time-scaled on a weekly basis and shall be drawn or plotted at a level of detail and logic which will schedule all salient features of the Work to be performed by the Contractor including but not limited to the placing of orders for materials, submittal of shop drawings and other Submittals for approval, approval of shop drawings by designers, the manufacture and delivery of material, and the testing and the installation of materials, supplies and equipment. The Contractor shall allow sufficient time in his schedule for all required inspections, reviews (punch lists), and correction of punch list items. Each Work activity will be assigned a time estimate by the Contractor. One day shall be the smallest time unit used.
- D. The CPM schedule will identify and describe each activity, state the duration of each activity, the calendar dates for the early and late start and the early and late finish of each activity, and clearly highlight all activities on the critical path. "Total float" and "free float" shall be indicated for all activities. Float time shall be considered for the exclusive use or benefit of the Owner. Extensions to the Contract Time, when granted by Change Order, will be granted only when equitable time adjustment exceeds the Total Float in the activity or path of activities affected by the change. Extensions to the Contract Time shall only be granted for activities on the critical path. **The CPM schedule shall also show what part of the Contract Price is attributable to each activity on the schedule, the sum of which for all activities shall equal the total Contract Price.**
- E. **Early Completion of Project:** The Contractor may attempt to complete the project prior to the Contract Completion Date. However, such planned early completion shall be for the Contractor's convenience only and shall not create any additional rights of the Contractor or obligations of the Owner under this Contract, nor shall it change the Time for Completion or the Contract Completion Date. The Contractor shall not be required to pay liquidated damages to the Owner because of its failure to complete by its planned earlier date. Likewise, the Owner shall not pay the Contractor any additional compensation for early completion nor will the Owner owe the Contractor any compensation should the Owner, its officers, employees, or agents cause the Contractor not to complete earlier than the date required by the Contract Documents.
- F. The proposed project construction schedule shall be presented to the Designer no later than ten (10) days after the project start date for projects with a total Contract Price of \$500,000 or less and no later than thirty (30) days after the project start date for projects with a total Contract Price in excess of \$500,000. No Request for Payment will be processed until this schedule is **accepted** by the Owner.

- G. Acceptance of the schedule shall not impose on the Designer or Owner responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's responsibility thereof.
- H. The approved project construction schedule shall be distributed to all contractors and displayed at the job site by the Project Expediter.
- I. The several contractors shall be responsible for their work activities and shall notify the Project Expediter of any necessary changes or adjustments to their work. The Project Expediter shall maintain the project construction schedule, making monthly adjustments, updates, corrections, etc., that are necessary to finish the project within the Contract Time, keeping all contractors and the Designer fully informed. Copy of a bar chart schedule annotated to show the current progress shall be submitted by the Contractor(s) to the Designer, along with monthly request for payment. For project requiring CPM schedule, the Contractor shall submit a monthly report of the status of all activities. The bar chart schedule or monthly status report shall show the actual Work completed to date in comparison with the original Work scheduled for all activities. If any activities of the Work of several contractors are behind schedule, the Contractor must indicate in writing, what measures will be taken to bring each such activity back on schedule and to ensure that the Contract Completion Date is not exceeded. A plan of action and recovery schedule shall be developed and submitted to the Designer by the Project Expediter, when (1) the Contractor's monthly report indicates delays, that are in the opinion of the Designer or the Owner, of sufficient magnitude that the Contractor's ability to complete the Work by the scheduled completion is brought into question; (2) the updated construction schedule is thirty (30) days behind the planned or baseline schedule and no legitimate time extensions are in process; and (3) the Contractor desires to make changes in the logic (sequencing of work) or the planned duration of future activities of the CPM schedule which, in the opinion of the Designer or the Owner, are of a major nature. The plan of action, when required shall be submitted to the Owner for review within two (2) business days of the Contractor receiving the Owner's written demand. The recovery schedule, when required, shall be submitted to the Owner within five (5) calendar days of the Contractor's receiving the Owner's written demand. Failure to provide an updated construction schedule or a recovery schedule may be grounds for rejection of payment requests or withholding of funds as set forth in Article "Payments Withheld."
- J. The Project Expediter shall notify each Contractor of such events or time frames that are critical to the progress of the job. Such notice shall be timely and reasonable. Should the progress be delayed due to the Work of any of the several contractors, it shall be the duty of the Project Expediter to immediately notify the Contractor(s) responsible for such delay, the Designer, the Owner and other prime Contractors. The Designer shall determine the Contractor(s) who caused the delays and notify the bonding company of the responsible Contractor(s) of the delays; and shall make a recommendation to the Owner regarding further action.
- K. Designation as Project Expediter entails an additional project control responsibility and does not alter in any way the responsibility of the Contractor so designated, or the responsibility of the other contractors involved in the project.

ARTICLE 33 – WORKING HOURS

Except as otherwise required for the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise stated in the contract documents, all work at the site shall be performed during regular working hours, and Contractor will not permit the performance of work on Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to the Designer. The regular working hours shall be established by the Owner. In lieu of a directive by the Owner, working hours shall be 7:30 a.m. until 6 p.m., Monday through Friday, excluding holidays.

ARTICLE 34 – SEPARATE CONTRACTS AND CONTRACTOR RELATIONSHIPS

- A. Effective from January 1, 2002, NCGS Chapter 143, Article 8, was amended, to allow public contracts to be bid in single-prime, dual (single-prime and separate-prime), construction manager at risk, and alternative contracting method as approved by the State Building Commission. The Owner reserves the right to prepare separate specifications, receive separate bids, and award separate contracts for such other major items of work as may be in the best interest of the County.
- B. All contractors shall cooperate with each other in the execution of their work, and shall plan their work in such manner as to avoid conflicting schedules or delay of the Work. See Articles "Construction Supervision" and "Schedule."
- C. If any part of Contractor's work depends upon the Work of another Contractor, defects which may affect that work shall be reported to the Designer in order that prompt inspection may be made and the defects corrected. Commencement of work by a Contractor where such condition exists will constitute acceptance of the other Contractor's work as being satisfactory in all respects to receive the Work commenced, except as to defects which may later develop. The Designer shall be the judge as to the quality of work and shall settle all disputes on the matter between contractors.
- D. Any mechanical or electrical work such as sleeves, inserts, chases, openings, penetrations, etc., which is located in the Work of the general Contractor shall be built in by the general Contractor. The respective mechanical and electrical contractors shall set all sleeves, inserts and other devices that are to be incorporated into the structure in cooperation and under the supervision of the general Contractor. The responsibility for the exact location of such items shall be that of the mechanical and/or Electrical Contractor.
- E. The Designer and the Owner shall have access to the Work at all times. The Contractor shall provide facilities for such access so the Designer may perform his functions under the contract documents.
- F. Should a Contractor cause damage to the Work or property of another Contractor, he shall be directly responsible, and upon notice, shall promptly settle the claim or otherwise resolve the dispute.

ARTICLE 35 – SUBCONTRACTS AND SUBCONTRACTORS

- A. Within thirty (30) days after award of the contract, the Contractor shall submit to the Designer and to the Owner a list giving the names and addresses of Subcontractors and equipment and material Suppliers he proposes to use, together with the scope of their respective parts of the Work. The contractor shall not employ any subcontractor or other person or organization, either directly or indirectly, whether initially or as a substitute, against whom either the Designer or the Owner has an objection. The Designer shall act promptly in the approval of Subcontractors, and when approval of the list is given, no changes of Subcontractors will be permitted except for cause or reason considered justifiable by the Designer.
- B. The Prime Contractor shall not allow first-tier Subcontractors to sublet any portion of the sub-contracted work without written approval from the Designer. Circumvention of this requirement by a first-tier Subcontractor using the device of “hiring” the employees and/or “renting” the equipment of a second-tier subcontractor shall be a violation of the contract and shall subject the Prime Contractor to penalties associated with violation of the contract. The Designer may require the Prime Contractor to provide behavioral, financial, relationship, ownership, and other documentation to support claims that work is indeed being performed by an approved, first-tier subcontractor. Unless waived by the Designer, at least 75% of the equipment utilized by a first-tier subcontractor to perform the work shall be owned by the first-tier subcontractor and at least 75% of the subcontractor’s employees performing work on the project shall have been regular, continuous, full time employees of the company for at least six months prior to performing work on the project.
- C. The Designer will furnish to any Subcontractor, upon request, evidence regarding amounts of money paid to the Contractor on account of the Subcontractor's work.
- D. The Prime Contractor will furnish to the Designer, upon request, evidence regarding amounts of money paid and due to Subcontractors for their work.
- E. The Contractor is and remains fully responsible for his own acts or omissions as well as those of any Subcontractor or of any employee of either. The Contractor agrees that no contractual relationship exists between the Subcontractor and the Owner in regard to the contract, and that the Subcontractor acts on this work as an agent or employee of the Contractor.
- F. The Owner reserves the right to limit the amount of portions of work to be subcontracted. Pipe installation using trenchless technology (Horizontal Directional Drill, Bore & Jack, etc.) must be performed by the Prime Contractor or first-tier Subcontractor using their own equipment and permanent, full-time employees.

ARTICLE 36 – CONTRACTOR AND SUBCONTRACTOR RELATIONSHIPS

The Contractor agrees that the terms of these contract documents shall apply equally to each Subcontractor, regardless of tier, as to the Contractor, and the Contractor agrees to take such action as may be necessary to bind each Subcontractor to these terms. The Contractor further agrees to conform to the Code of Ethical Conduct as adopted by the Associated General Contractors of America, Inc., with respect to Contractor-Subcontractor relationships, and that payments to Subcontractors shall be made in accordance with the provisions of NCGS 143-134.1 titled *Interest on final payments due to prime Contractors: payments to Subcontractors*.

- A. The balance due prime Contractors shall be paid in full within forty-five (45) days after respective prime contracts of the project have been accepted by the Owner, certified by the architect, Engineer or Designer to be completed in accordance with terms of the plans and specifications, or occupied by the Owner and used for the purpose for which the project was constructed, whichever occurs first. Provided, however, that whenever the architect or consulting Designer in charge of the project determines that delay in completion of the project in accordance with terms of the plans and specifications is the fault of the Contractor, the project may be occupied and used for the purposes for which it was constructed without payment of any interest on amounts withheld past the 45 day limit. No payment shall be delayed because of the failure of another prime Contractor on such project to complete his contract. Should final payment to any prime Contractor beyond the date such contracts have been certified to be completed by the Designer or architect, accepted by the Owner, or occupied by the Owner and used for the purposes for which the project was constructed, be delayed by more than forty-five (45) days, said prime Contractor shall be paid interest, beginning on the 46th day, at the rate of one percent (1%) per month or fraction thereof unless a lower rate is agreed upon on such unpaid balance as may be due. In addition to the above final payment provisions, periodic payments due a prime Contractor during construction shall be paid in accordance with the payment provisions of the contract documents or said prime Contractor shall be paid interest on any such unpaid amount at the rate stipulated above for delayed final payments. Such interest shall begin on the date the payment is due and continue until the date on which payment is made. Such due date may be established by the terms of the contract. Where a conditional acceptance of a contract exists, and where the Owner is retaining a reasonable sum pending correction of such conditions, interest on such reasonable sum shall not apply.
- B. Within seven (7) days of receipt by the prime Contractor of each periodic or final payment, the prime Contractor shall pay the Subcontractor based on work completed or service provided under the subcontract. Should any periodic or final payment to the Subcontractor be delayed by more than seven (7) days after receipt of periodic or final payment by the prime Contractor, the prime Contractor shall pay the Subcontractor interest, beginning on the eighth day, at the rate of one percent (1%) per month or fraction thereof on such unpaid balance as may be due.
- C. The percentage of retainage on payments made by the prime Contractor to the Subcontractor shall not exceed the percentage of retainage on payments made by the Owner to the prime Contractor. Any percentage of retainage on payments made by the prime Contractor to the Subcontractor that exceeds the percentage of retainage on payments made by the Owner to the prime Contractor shall be subject to interest to be paid by the prime Contractor to the Subcontractor at the rate of one percent (1%) per month or fraction thereof.

- D. Nothing in this section shall prevent the prime Contractor at the time of application and certification to the Owner from withholding application and certification to the Owner for payment to the Subcontractor for unsatisfactory job progress; defective construction not remedied; disputed work; third-party claims filed or reasonable evidence that claim will be filed; failure of Subcontractor to make timely payments for labor, equipment and materials; damage to prime Contractor or another Subcontractor; reasonable evidence that subcontract cannot be completed for the unpaid balance of the subcontract sum; or a reasonable amount for retainage not to exceed the initial percentage retained by Owner.

ARTICLE 37 – DESIGNER'S STATUS

- A. The Designer shall provide general administration of the performance of construction contracts, including liaison and necessary inspection of the Work to ensure compliance with plans and specifications. He is the agent of the Owner only for the purpose of constructing this work and to the extent stipulated in the contract documents. He has authority to stop work or to order work removed, or to order corrections of faulty work where such action may be necessary to assure successful completion of the Work.
- B. The Designer, when employed in a construction inspection/administration role, is the impartial interpreter of the contract documents, and, as such, he shall exercise his powers under the contract to enforce faithful performance by both the Owner and the Contractor. The Designer shall issue written clarifications or interpretations of the requirements of the contract documents with reasonable promptness. The Designer may authorize minor variations in the Work that are different from the requirements of the contract documents which do not involve an adjustment of Contract Price or Time of Completion as long as such variation is compatible with the design concept of the project.
- C. The Designer will make periodic inspections of the project at intervals appropriate to the stage of construction. He will inspect the progress, the quality and the quantity of the Work. The Designer will not be required to make exhaustive or continuous inspections on the site to check the quality or quantity of the Work.
- D. The Designer and the Owner shall have access to the Work whenever it is in preparation and progress. The Contractor shall provide facilities for such access so the Designer may perform his functions under the contract documents.
- E. Based on the Designer's inspections and evaluations of the project, the Designer shall issue interpretations, directives and decisions as may be necessary to administer the project. His decisions relating to artistic effect and technical matters shall be final, provided such decisions are within the limitations of the contract.
- F. The Designer will determine the actual quantities and classifications of unit price work performed by the Contractor.
- G. The Designer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with laws and regulations applicable to the performance of the Work.

ARTICLE 38 – CHANGES IN THE WORK

- A. The Owner may have changes made in the Work covered by the contract. These changes will not invalidate and will not relieve or release the Contractor from any guarantee given by him pertinent to the contract provisions. These changes will not affect the validity of the guarantee bond and will not relieve the surety or sureties of said bond. All extra work shall be executed under conditions of the original contract.
- B. Except in an emergency endangering life or property, **NO CHANGE SHALL BE MADE BY THE CONTRACTOR EXCEPT UPON RECEIPT OF APPROVED CHANGE ORDER OR WRITTEN WORK CHANGE DIRECTIVE FROM THE DESIGNER, COUNTERSIGNED BY THE OWNER AUTHORIZING SUCH CHANGE. NO CLAIM FOR ADJUSTMENTS OF THE CONTRACT PRICE SHALL BE VALID UNLESS THIS PROCEDURE IS FOLLOWED.**

A WORK CHANGE DIRECTIVE, TRANSMITTED BY FAX OR HAND DELIVERED, MAY BE USED WHERE THE CHANGE INVOLVED IMPACTS THE CRITICAL PATH OF THE WORK. A FORMAL CHANGE ORDER SHALL BE ISSUED WITHIN THE TIME STATED ON THE WORK CHANGE DIRECTIVE.

In the event of emergency endangering life or property, the Contractor may be directed to proceed on a time and material basis whereupon the Contractor shall proceed and keep accurately on such form as may be required, a correct account of costs together with all proper invoices, payrolls and supporting data. Upon completion of the Work the change order will be prepared as outlined under either Method "C 1." or Method "C 2." or both.

- C. In determining the values of changes, either additive or deductive, Contractors are restricted to the use of the following methods:
1. Where the extra work involved is covered by unit prices quoted in the proposal, the value of the change shall be computed by application of unit prices based on quantities, estimated or actual as agreed of the items involved. Unit prices shall include all direct and indirect present or future cost, all time and all overhead and profit for each unit.
 2. The contracting parties shall negotiate and agree upon the equitable value of the change prior to issuance of the change order, and the change order shall stipulate the corresponding lump sum adjustment to the Contract Price.
- D. Under Paragraph (B) and Methods (C 2.) above, the allowances for overhead and profit combined shall not exceed twenty percent (20%) of **net cost**. Under Method "C 1." no additional allowances shall be made for overhead and profit. In the case of deductible change orders, under Method (C 2.) and Paragraph (B) above, the Contractor shall include no less than five percent (5%) profit, but no allowances for overhead. Overhead shall include all conditions of the contract, "Extended General Conditions", and all general requirements including, but not limited to, project management, scheduling, home office expense, job site overhead, layout, reproduction of drawings, document processing and coordination (shop drawings, change orders, RFI's, etc.), supervision, small tools, temporary facilities, safety provisions, as built drawings, estimating, and general overhead.

- E. The term "net cost" as used herein shall mean the difference between all proper cost additions and deductions. The "cost" as used herein shall be limited to the following:
1. The actual costs of materials and supplies incorporated or consumed as part of the project.
 2. The actual costs of labor expended on the project site.
 3. The actual costs of labor burden, limited to the costs of social security (FICA) and Medicare/Medicaid taxes; unemployment insurance costs; health/dental/vision insurance premiums; paid employee leave for holidays, vacation, sick leave, and/or petty leave, not to exceed a total of thirty (30) days per year; retirement contributions; worker's compensation insurance premiums; and the costs of general liability insurance when premiums are computed based on payroll amounts. The total labor burden shall not exceed forty percent (40%) of the actual costs of labor.
 4. The actual costs of rental for equipment; machinery; temporary facilities; and tools, excluding hand tools, required for the project.
 5. The actual costs of premiums for bonds, insurance, permit fees, and sales or use taxes related to the project.
 6. Overtime and extra pay for holidays and weekends may be a cost item only to the extent approved by the Owner.
- F. Should concealed conditions be encountered in the performance of the Work below grade, or should concealed or unknown conditions in an existing structure be at variance with the conditions indicated by the contract documents, the contract sum and time for completion may be equitably adjusted by change order upon claim by either party made within thirty (30) days after the condition has been identified. The cost of such change shall be arrived at by one of the foregoing methods.

**ALL CHANGE ORDERS SHALL BE SUPPORTED BY A
BREAKDOWN SHOWING METHOD OF ARRIVING AT NET
COST AS DEFINED ABOVE.**

- G. The Contractor may solicit a change using the "Change Proposal" form or may submit a "Change Proposal" form when the Designer requests costs for potential changes in the work. However, no work is to be performed until a properly executed change order or work change directive is provided to the Contractor. The Contractor shall provide the "Change Proposal" and supporting data in a form suitable to the Designer and Owner. The Designer shall verify correctness. Within fourteen (14) days after receipt of the "Change Proposal," the Designer shall respond, in writing, to the Contractor's proposal. If the Designer deems that the Proposal is in the best interest of the Owner, the Designer shall prepare a change order or work change directive and forward to the Contractor for his signature. Within seven (7) days after receipt of the change order or work change directive executed by the Contractor, the Designer shall certify the document by his signature, and forward the document and all supporting data to the Owner for the Owner's signature. The Owner's representative shall execute the document and, if necessary, forward to the County Commissioners for final approval. Upon approval by the Owner's representative and County Commissioners, one copy remains with the County Commissioners, and the remaining original is sent to the Designer for distribution to the

Contractor(s). A copy is sent to the Surety. In case of emergency or extenuating circumstances, approval of changes may be obtained verbally by telephone or work change directives approved by all parties, then shall be substantiated in writing as outlined under normal procedure.

- H. At the time of signing a change order, the Contractor shall be required to certify as follows:

"I certify that my bonding company will be notified forthwith that my contract has been changed by the amount of this change order, and that a copy of the approved change order will be mailed upon receipt by me to my surety."

- I. A change order, when issued, shall be full compensation, or credit, for the Work included, omitted or substituted. It shall show on its face the adjustment in time for completion of the project as a result of the change in the Work.
- J. If, during the progress of the Work, the Owner requests a change order and the Contractor's terms are unacceptable, the Owner may require the Contractor to perform such work on a time and material basis in accordance with Paragraph (B) above. Without prejudice, nothing in this paragraph shall preclude the Owner from performing or to have performed that portion of the Work requested in the change order.
- K. If a unit price line item for "Change Order Allowance" or similar is included in the proposal, the price will be adjusted in accordance with article "Unit Price Work." The established cost of work for the unit price line item "Change Order Allowance" shall be one hundred percent (100%) of approved Change Orders, either additive or deductive.

ARTICLE 39 – UNIT PRICE WORK

- A. The project is "lump sum" and payment of the lump sum bid price shall be full compensation for all work indicated in the contract documents. Unit Price items included in the proposal shall be included as part of the lump sum bid. These items are indicated in the proposal and may have an associated quantity. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item. When indicated, the estimated quantities of items of unit price work are not guaranteed and are solely for the purpose of comparison of bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of unit price work included in the lump sum bid that is performed by the Contractor will be made by the Designer. The Designer shall issue a change order, either additive or deductive, at the close of the project for any variation between the actual quantity and the estimated quantities of the unit price work indicated in the contract documents. No payment shall be made to the Contractor for re-stocking of materials.
- B. The quantities shown on the proposal form are for the base bid only unless the contract documents specifically indicate that the item(s), or any portion thereof, are part of an alternate bid element. It is the responsibility of the Contractor to apportion the cost of unit price items to the base bid and any alternates listed in the Proposal using information in the Contract Documents. In the event that the Owner selects an alternate that clearly increases or decreases the estimated quantity of a unit price item shown on the proposal form, after selection of the Contractor, the Contractor shall be provided an updated list of estimated unit price quantities reflective of the alternates chosen. This updated list shall

be used in determining any variation between the actual quantities and the estimated quantities of the unit price work. An estimated unit price quantity shall be updated only in the event that the Contract Documents clearly indicate that the unit price item was indeed part of the Owner-selected alternate. The cost for all unit price items shall be included within either the base bid or an alternate, as applicable.

- C. In situations where a particular unit price item overruns, or the Contractor expects such overrun, of an estimated quantity by more than twenty-five percent (25%), the Contractor shall notify the Designer in writing and shall not install the overrun item in excess of twenty-five percent (25%) until the Contractor has received written authorization from the Designer. The aforesaid notification from the Contractor shall include any requests for modification of the unit price due to an actual quantity overrun greater than twenty-five percent (25%). The Engineer may solicit a reduction in the unit price due to a sufficient increase in the actual quantity installed of a unit price item. A reduction, regardless of the amount, of the actual installed quantity of a unit price item shall not warrant a change in the unit price.
- D. The Contractor is responsible for maintaining all documentation pertaining to the actual quantities of unit price items. This will be remitted to the Designer upon request. No payment shall be made for the quantity of unit price items that cannot be verified.
- E. There will be no measurement for lump sum bid items by this contract, as payment of the lump sum price shall include all equipment, labor, materials, and incidentals necessary to perform the Work required.
- F. Extensions to the Contract Time shall not entitle the Contractor to an increase to any unit price.

ARTICLE 40 – ALLOWANCE ITEMS

The Contract Price includes the allowance items indicated on the bid proposal. Allowances cover the costs for portions of the work that cannot be specified with sufficient particularity at the time of bid. The Contractor shall provide product recommendations and associated costs to the Owner for allowance items, but shall not incorporate into the work without consent from the Owner. The allowance items may be utilized and specified by the Owner in its sole and absolute discretion within a reasonable time prior to the date on which the Contractor shall be required to utilize such items. The amount shown for each allowance item shall include, and may be used by the Owner for, the cost of the material, equipment, or service for the allowance item. All other costs associated with installing an allowance item, including without limitation the cost of all labor, overhead, and profit, are otherwise included in the Contract Price and shall not be paid for with the amount allocated to each allowance item. The sole exception being additive Changes in the Work approved and designated by the Owner to be paid for out of a “Change Order Allowance”; the value of such Changes in the Work shall be determined according to the Article “Changes in the Work” section C. 2. The amount paid to the Contractor for an allowance item shall be adjusted based on the actual value attributable to the particular allowance item. The Designer shall issue a change order, either additive or deductive, at the close of the project for any variation between the actual value of an allowance item and the estimated value of the allowance item shown on the Form of Proposal. If an allowance item is not utilized by the Owner, the Contract Price shall be reduced by the amount allocated to the item and a reasonable amount for the unused labor and overhead and unearned profit associated therewith. Allowance items designated on the bid proposal may or may not be indicated on the project plans or specifications.

ARTICLE 41 – CLAIMS FOR EXTRA COST

- A. Should the Contractor consider that as a result of any instructions given in any form by the Designer, he is entitled to extra cost above that stated in the contract, he shall give written notice thereof to the Designer within seven (7) days without delay, and shall not proceed with the Work affected until further advised, except in emergency involving the safety of life or property, which condition is covered in Article “Changes in the Work,” Paragraph (B) and Articles “Protection of Work and Property” and “Safety.” No claims for extra compensation will be considered unless the claim is so made. The Designer shall render a written decision within seven (7) days of receipt of claim.
- B. **THE CONTRACTOR SHALL NOT ACT ON INSTRUCTIONS RECEIVED BY HIM FROM PERSONS OTHER THAN THE DESIGNER, AND ANY CLAIMS FOR EXTRA COMPENSATION OR EXTENSION OF TIME ON ACCOUNT OF SUCH INSTRUCTION WILL NOT BE HONORED.** The Designer will not be responsible for misunderstandings claimed by the Contractor of verbal instructions which have not been confirmed in writing, and in no case shall instructions be interpreted as permitting a departure from the contract documents unless such instruction is confirmed in writing and supported by a properly authorized change order.
- C. Should a claim for extra compensation by the Contractor be denied by the Designer or Owner, and cannot be resolved by the County Commissioners, the Contractor may request mediation in connection with “Rules Implementing Mediated Settlement Conferences in North Carolina Public Construction Projects” as outlined herein. If the Contractor is unable to resolve its claim as a result of mediation, the Contractor may institute a civil action for the sum he claims to be entitled to under the contract by filing a verified complaint and the issuance of a summons in the Superior Court of Brunswick County. The procedure shall be the same as in all civil actions except that all issues shall be tried by the judge, without a jury.

RULES IMPLEMENTING MEDIATED
SETTLEMENT CONFERENCES IN
NORTH CAROLINA CONSTRUCTION PROJECTS

Adopted
February 26, 2002

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RULE

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RULE 1. INITIATING MEDIATED SETTLEMENT CONFERENCES

A. Purpose of Mandatory Settlement Conferences. Pursuant to NCGS 143-128(g) 143-135.26 (11), these Rules are promulgated to implement a system of settlement events which are designated to focus the parties' attention on settlement rather than on claim preparation and to provide a structured opportunity for settlement negotiations to take place. Nothing herein is intended to limit or prevent the parties from engaging in settlement procedures voluntarily at any time prior to or during commencement of the dispute resolution process.

B. Initiating the Dispute Resolution Process

1. Any party to a public construction contract governed by Article 8. Ch. 143 of the General Statutes and identified in NCGS 143-128(g) and who is a party to a dispute arising out of the construction process in which the amount in controversy is at least \$15,000 may submit a written request to the public owner for mediation of the dispute.
2. Prior to submission of a written request for mediation to the public owner, the parties requesting mediation,
 - a. If a prime Contractor, must have first submitted its claim to the Project Designer for review as set forth in Exhibit A. If the dispute is not resolved through the Project Designer's instructions, then the dispute becomes ripe for mediation in the Formal Dispute Resolution Process, and the party may submit his written request for mediation to the public owner.
 - b. If the party requesting mediation is a Subcontractor, it must first have submitted its claim for mediation to the prime Contractor with whom it has a contract. If the dispute is not resolved through the prime Contractor's involvement, then the dispute becomes ripe for mediation in the Formal Dispute Resolution Process, and the party may submit its written request for mediation to the public owner.
 - c. If the party requesting mediation is the Project Designer, then it must first submit its claim to the public owner to resolve. If the dispute is not resolved with the public owner's involvement, then the Project Designers' dispute is eligible for mediation in the Formal Dispute Resolution Process, and the Project Designer may submit its written request to the public owner for mediation.

RULE 2. SELECTION OF MEDIATOR

A. Selection of Certified Mediator by Agreement of the Parties. The parties may select a mediator certified pursuant to the Rules by agreement within twenty-one (21) days of requesting mediation. The requesting party shall file with the State Construction Office (herein after referred to as "SCO) or public owner if not a non-state project a Notice of Selection of Mediator by Agreement within ten (10) days of the request; however, any party may file the notice. Such notice shall state the name, address and telephone number of the mediator selected; state the rate of compensation of the mediator; state that the mediator and the opposing counsel have agreed upon the selection and rate of compensation; and state that the mediator is certified pursuant to these Rules.

- B. **Nomination and Public Owner Approval of a Non-Certified Mediator.** The parties may select a mediator who does not meet the certification requirements of these Rules but who, in the opinion of the parties and the SCO or public owner, is otherwise qualified by training or experience to mediate the action.

If the parties select a non-certified mediator, the requesting party shall file with the SCO a Nomination of Non-Certified Mediator within ten (10) days of the request. Such nomination shall state the name, address and telephone number of the mediator; state the training, experience, or other qualifications of the mediator; state the rate of compensation of the mediator; and state that the mediator and opposing counsel have agreed upon the selection and rate of compensation.

The SCO shall rule on said nomination, shall approve or disapprove of the parties' nomination, and shall notify the parties of its decision.

- C. **Appointment of Mediator by the SCO.** If the parties cannot agree upon the selection of a mediator, either the party or party's attorney shall notify the SCO or public owner and request, on behalf of the parties, that the SCO or public owner appoint a mediator. The request for appointment must be filed within 10 days after request to mediate and shall state that the parties have had a full and frank discussion concerning the selection of a mediator and have been unable to agree. The request shall state whether any party prefers a certified attorney mediator, and if so, the SCO or public owner shall appoint a certified attorney mediator. If no preference is expressed, the SCO or public owner may appoint a certified attorney mediator or a certified non-attorney mediator.
- D. **Mediator Information Directory.** To assist the parties in the selection of a mediator by agreement, the parties are free to utilize the list of certified mediators maintained in any county participating in the Superior Court Mediation Settlement Conference Program.
- E. **Disqualification of Mediator.** Any party may request replacement of the mediator by the SCO or public owner for good cause. Nothing in this provision shall preclude mediators from disqualifying themselves.

RULE 3. THE MEDIATED SETTLEMENT CONFERENCE

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

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

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

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

A. Attendance

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

B. Finalizing Agreement. If an agreement is reached in the conference, parties to the agreement shall reduce its terms to writing and sign it along with their counsel.

C. The mediation fee shall be paid in accordance with NCGS 143-128(g).

D. Failure to compensate mediator. Any party's failure to compensate the mediators in accordance with NCGS 143-128(g) shall subject that party to a withholding of said amount of money from the party's monthly payment by the public owner.

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

RULE 5. AUTHORITY AND DUTIES OF MEDIATORS

A. Authority of Mediator

- 1. **Control of Conference.** The mediator shall at all times be in control of the conference and the procedures to be followed.
- 2. **Private Consultation.** The mediator may communicate privately with any participant or counsel prior to and during the conference. The fact that private

communications have occurred with a participant shall be disclosed to all other participants at the beginning of the conference.

3. **Scheduling the Conference.** The mediator shall make a good faith effort to schedule the conference at a time that is convenient with the participants, attorneys and mediator. In the absence of agreement, the mediator shall select the date for the conference.

B. Duties of Mediator

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

RULE 6. COMPENSATION OF THE MEDIATOR

- A. **By Agreement.** When the mediator is stipulated by the parties, compensation shall be as agreed upon between the parties and the mediator provided that the provision of NCGS 143-128(g) are observed.

- B. By Appointment.** When the mediator is appointed by the SCO or public owner, the parties shall compensate the mediator for mediation services at the rate in accordance with the rate charged for Superior Court mediation. The parties shall also pay to the mediator a one-time per case administrative rate in accordance with the rate charged for Superior Court mediation, which is due upon appointment.

RULE 7. MEDIATOR CERTIFICATION

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

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

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

RULE 8. RULE MAKING

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

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

RULE 9. DEFINITIONS

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

RULE 10. TIME LIMITS

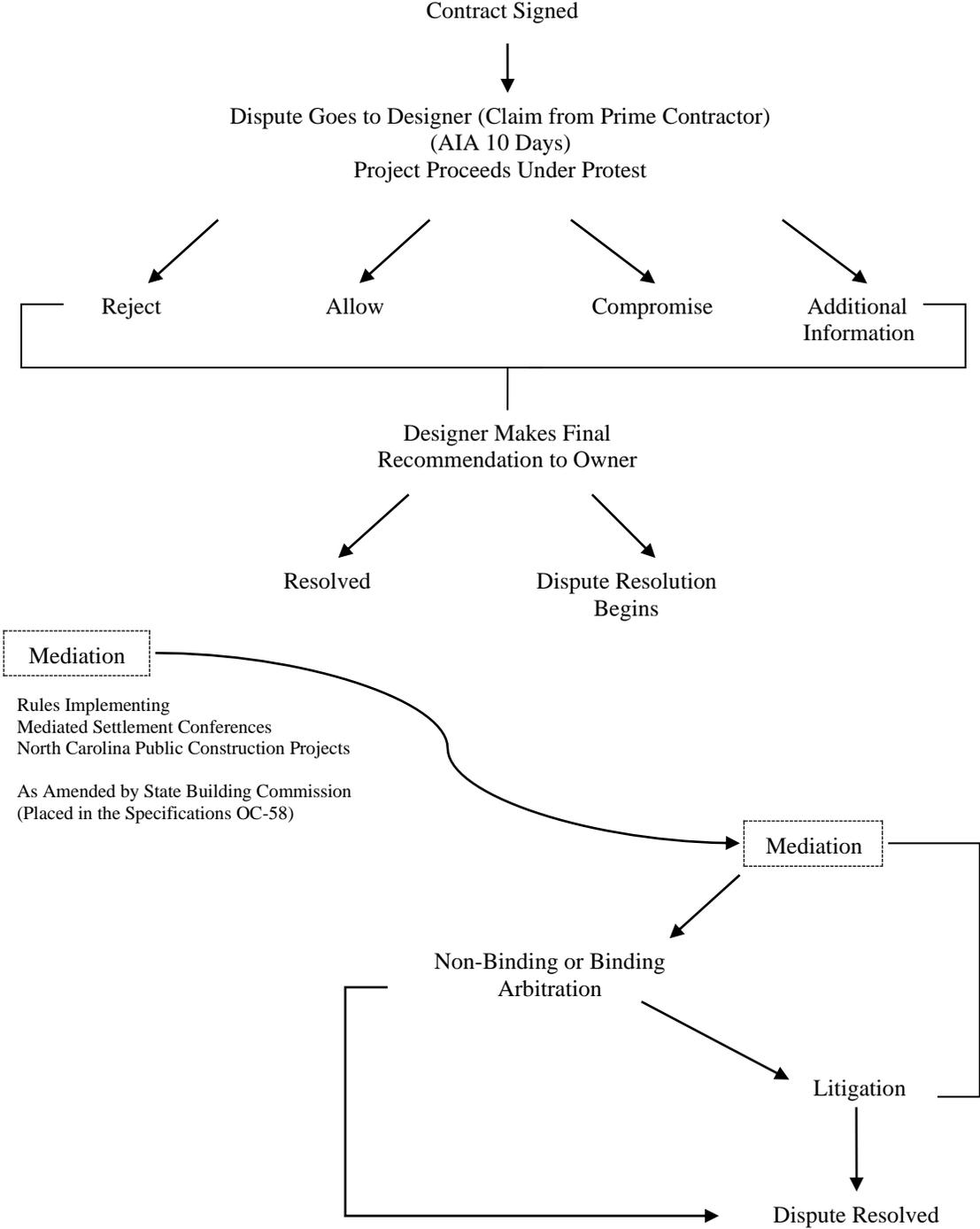
On state contracts, any time limit provided for by these Rules may be waived or extended by the SCO for good cause shown.

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

Exhibit A

DISPUTE RESOLUTION

Non-State/Public Projects



ARTICLE 42 – MINOR CHANGES IN THE WORK

The Designer will have the authority to order minor changes in the Work not involving an adjustment in the contract sum or time of completion, and not inconsistent with the intent of the contract documents. Such changes shall be effected by written order and shall be binding on the Owner and the Contractor.

ARTICLE 43 – TIME OF COMPLETION, DELAYS, EXTENSION OF TIME

The time of completion is stated in the Notice to Bidders and in the Form of Construction Contract. The Project Expediter, upon notice of award of contract, shall prepare a construction schedule to complete the project within the time of completion as required by the Article "Schedule."

- A. The Contractors shall commence work to be performed under this agreement and the time of completion shall commence to run on the thirtieth day after the effective date of the contract, or if a Notice to Proceed is given, on the date specified in a written Notice to Proceed. The Contractor shall fully complete all work hereunder within the time of completion stated. A Notice to Proceed may be given at any time within thirty (30) days after the effective date of the contract.
- B. No work shall be performed until the Owner receives and accepts fully executed contracts, performance bonds, payment bonds, and certificates of insurance.
- C. For each calendar day in excess of the time of completion, the Contractor(s) shall pay the Owner the sum stated as liquidated damages (see Notice to Bidders) reasonably estimated in advance to cover the losses to be incurred by the Owner by reason of failure of said Contractor(s) to complete the Work within the time specified, such time being in the essence of this contract and a material consideration thereof.
- D. The Designer shall be the judge as to the division of responsibility between the Contractor(s), based on the construction schedule, weekly reports and job records, and shall apportion the amount of liquidated damages to be paid by each of them, according to delay caused by any or all of them.
- E. If the Contractor is delayed in the progress of critical path activities by any act or negligence of the Owner or the Designer, or by any employee of either; by any separate Contractor employed by the Owner; by changes ordered in the Work; by labor disputes at the project site; by abnormal weather conditions not reasonably anticipated for the locality where the Work is performed; by unavoidable casualties; by any causes beyond the Contractor's control; or by any other causes which the Designer and Owner determine may justify the delay, then the Contract Time may be extended by change order for the time which the Designer and Owner may determine is reasonable. However, such delays **must** be on critical path activities that cause the anticipated project construction time to exceed the Time of Completion. Extensions to the Contract Time, when granted by Change Order, will be granted only when equitable time adjustment exceeds the Total Float in the activity or path of activities affected by the change.
- F. Time extensions granted for a portion of the work shall not obligate the Owner to grant time extensions for portions of the work not affected by the delay. The Engineer may establish an extended Time of Completion for work affected by delays while still maintaining the overall Time of Completion for the work not affected by delays.

Liquidated Damages may be assessed for any portion of the work not completed within any Time of Completion term set by the Engineer, though the daily Liquidated Damage rate may not exceed that indicated within the Contract Documents.

- G. Time extensions will not be granted for rain, wind, snow or other natural phenomena of **normal intensity** for the locality where work is performed. Based on National Oceanic and Atmospheric Administration (NOAA) National Weather Service records between 1971 and 2000 for weather stations in the Brunswick County area (Wilmington, NC and Myrtle Beach, SC) the average annual days for precipitation equal to or exceeding 0.1 inch is 75. This is further broken down by month as follows:

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
7	6	6	5	6	7	9	8	6	4	5	6

For the purposes of determining time extensions based on weather, **normal intensity** weather conditions is defined on a monthly basis as noted in the chart above. For any given month, if the actual number of days in which precipitation exceeds 0.1 inch is greater than that listed in the chart; the Contractor may request a time extension for the difference. However, days in which the precipitation exceeds 0.1 inch but the Contractor is not mobilized to the site or actively working on site are excluded from the calculation. Actively working on-site is evidenced by onsite work operations the normally scheduled working day prior to and after the day of precipitation. Time extensions will not be given for days in which the precipitation is less than 0.1 inch. For the purpose of determining the extent of delay attributable to unusual weather phenomena, the Normal Intensity weather conditions shall be compared to NOAA National Weather Service data from the station nearest the project. In the event that a contract begins or ends in the middle of the month, the Normal Intensity days shall be prorated based on the number of contract days within the partial month. Time extensions for weather delays do not entitle the Contractor to "extended overhead" recovery.

- H. Request for extension of time shall be made in writing within thirty (30) days following cause of delay. In case of continuing cause for delay, the Contractor shall notify the Designer of the delay within thirty (30) days of the beginning of the delay and only one claim is necessary.
- I. The Contractor shall notify his surety in writing of extension of time granted.
- J. No claim shall be allowed on account of failure of the Designer to furnish drawings or instructions until twenty (20) days after demand for such drawings and/or instructions. See Article "Shop Drawings, Submittals, Samples, Data."
- K. The Contractor shall carry on the Work and adhere to the schedule during all disputes or disagreements with the Owner or Designer. No work shall be delayed or postponed pending resolution of any disputes or disagreements unless agreed to by both the Owner and Contractor in writing.
- L. In no event shall the Owner or Designer be liable to Contractor, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from delays within the control of the Contractor or delays beyond the control of both the Owner and Contractor, including

fires, floods, epidemics, abnormal weather conditions, acts of God, or acts of neglect by utility owners or other contractors performing other work.

- M. Time extensions granted to the Contractor shall cover all work delays for work items that may run concurrently. For example, if the Contractor is due a time extension for unusual weather phenomena and due a time extension for other delays to a critical path activity, the new project completion date shall be based on the longer of the individually approved time extensions. The time extension granted for multiple delays shall **not** be additive. The only exception to this is where the Contractor can demonstrate to the satisfaction of the Engineer that the individual work items cannot run concurrently.

ARTICLE 44 – PARTIAL UTILIZATION/SUBSTANTIAL COMPLETION

- A. The Owner may desire to occupy or utilize all or a portion of the project when the Work is substantially complete on all or a portion of the project.
- B. Prior to the final payment, the Owner may request the Contractor(s) in writing, through the Designer if applicable, to permit him to use a specified part of the project which he believes he may use without significant interference with construction of the other parts of the project. If the Contractor(s) agree, the Designer will schedule a substantial completion inspection, with the approval of the Owner, after which the Designer may issue a certificate of substantial completion on all or a portion of the project. The certificate shall include the following documentation:
1. Date of substantial completion.
 2. Portion of project determined to be substantially complete.
 3. A tentative list of items to be completed or corrected before final payment.
- C. The Owner shall have the right to exclude the Contractor from any part of the project which the Designer has so certified to be substantially complete, but the Owner will allow the Contractor reasonable access to complete or correct work to bring it into compliance with the contract.
- D. Occupancy by the Owner under this article will in no way relieve the Contractor from his contractual requirement to complete the project within the specified time. The Contractor will not be relieved of liquidated damages because of use or occupancy by the Owner.

ARTICLE 45 – FINAL INSPECTION, ACCEPTANCE, AND PROJECT CLOSEOUT

- A. Upon written notification from the Contractor(s) that the project is complete and ready for inspection, the Designer shall make a preliminary final inspection to verify that the project is complete and ready for final inspection. Prior to final inspection, the Contractor(s) shall complete all items requiring corrective measures noted at the preliminary inspection. The Designer shall schedule a final inspection at a time and date acceptable to the Owner and Contractor(s).
- B. When contractors finish their work prior to completion by other contractors, these contracts shall be closed out through the final inspection, acceptance and final payment process on recommendation of the Designer and approval of the Owner.

- C. At the final inspection, the Designer shall, if job conditions warrant, record a list of items that are found to be incomplete or not in accordance with the contract documents. At the conclusion of the final inspection, the Designer and Owner shall make one of the following determinations:
1. That the project is completed and accepted. The “Date of Final Acceptance” is coincident with the date of the final inspection.
 2. That the project is complete subject to the list of discrepancies (punch list). All punch list items must be completed within thirty (30) days of acceptance or the Owner may invoke the Article “Owner's Right to Do Work.” The “Date of Final Acceptance” shall be no earlier than the date that the project representative certifies completion of the punch list items.
 3. That the project is not complete. The contractor must establish another date for a final inspection when project is deemed incomplete.
- D. Within fourteen (14) days of acceptance as noted above or within fourteen (14) days after completion of punch list as noted above, the Designer shall certify the Work and issue applicable certificate(s) of compliance with the “Date of Final Acceptance” noted thereon.
- E. Any discrepancies listed or discovered after the date of final inspection and acceptance as noted above shall be handled in accordance with Article “Guarantee.”
- F. The “Date of Final Acceptance” as indicated on the Certificate of Compliance will establish the following:
1. The beginning of guarantees and warranties period.
 2. The date on which the Contractor's insurance coverage for public liability, property damage and builder's risk may be terminated.
 3. That no liquidated damages (if applicable) shall be assessed after this date.
 4. The termination date of utility cost to the Contractor.
- G. Contractor’s obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor’s obligation to perform the Work in accordance with the Contract Documents.
1. observations by Designer;
 2. recommendation by Designer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any acceptance by Owner or any failure to do so;

6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Designer;
 7. any inspection, test, or approval by others; or
 8. any correction of defective Work by Owner.
- H. Acceptance of the work, or any portion of the work, by the Owner does not relieve the Contractor from acquiring acceptance of the work from the North Carolina Department of Transportation or any other such regulatory agency having approval authority over any portion of the project. Furthermore, acceptance of the work or any portion of the work by the North Carolina Department of Transportation or any other such regulatory agency having approval authority does not obligate the Owner to grant acceptance of the work.

ARTICLE 46 – CORRECTION OF WORK BEFORE FINAL PAYMENT

- A. Any work, materials, fabricated items or other parts of the Work which have been condemned or declared not in accordance with the contract by the Designer shall be promptly removed from the Work site by the Contractor, and shall be immediately replaced by new work in accordance with the contract at no additional cost to the Owner. Work or property of other contractors or the Owner, damaged or destroyed by virtue of such faulty work, shall be made good at the expense of the Contractor whose work is faulty.
- B. Correction of condemned work described above shall commence within twenty-four (24) hours after receipt of notice from the Designer, and shall make satisfactory progress until completed.
- C. Should the Contractor fail to proceed with the required corrections, then the Owner may complete the Work in accordance with the provisions of Article “Owner’s Right to Do Work.”

ARTICLE 47 – CORRECTION OF WORK AFTER FINAL PAYMENT

See Article “Performance Bond and Payment Bond,” and Article “Guarantee.” Neither the final certificate, final payment, occupancy of the premises by the Owner, nor any provision of the contract, nor any other act or instrument of the Owner, nor the Designer, shall relieve the Contractor from responsibility for negligence, or faulty material or workmanship, or failure to comply with the drawings and specifications. He shall correct or make good any defects due thereto and repair any damage resulting therefrom, which may appear during the guarantee period following final acceptance of the Work except as stated otherwise under Article “Guarantee.” The Owner will report any defects as they may appear to the Contractor and establish a time limit for completion of corrections by the Contractor. The Owner will be the judge as to the responsibility for correction of defects.

ARTICLE 48 – ACCEPTANCE OF DEFECTIVE WORK

If instead of requiring correction or removal and replacement of defective or faulty Work, Owner prefers to accept it, Owner may do so. Contractor shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Designer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

ARTICLE 49 – OWNER'S RIGHT TO DO WORK

- A. If, during the progress of the Work or during the period of guarantee, the Contractor fails to prosecute the Work properly or to perform any provision of the contract, the Owner, after fifteen (15) days' written notice sent by certified mail, return receipt requested, to the Contractor from the Designer, may perform or have performed that portion of the Work. If the Work is deemed to be an emergency, the Owner may dispense with the fifteen day's written notice and proceed with the Work immediately. The cost of the Work may be deducted from any amounts due or to become due to the Contractor. Should the cost of such action of the Owner exceed the amount due or to become due the Contractor, then the Contractor or his surety, or both, shall be liable for and shall pay to the Owner the amount of said excess. The Contractor shall not be allowed an extension of Time of Completion (or milestones) because of any delay in the performance of the Work attributable to the exercise by the Owner of Owner's rights and remedies.
- B. In exercising the rights and remedies under this paragraph, Owner shall proceed expeditiously. In connection with such corrective and remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Designer and Designer's Consultants access to Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. The Owner may have other work performed at the site by Owner's employees, contractors, or utility owners. Contractor shall afford each other Contractor who is a party to such other work proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs.

ARTICLE 50 – ANNULMENT OF CONTRACT

- A. If the Contractor fails to begin the Work under the contract within the time specified, or the progress of the Work is not maintained on schedule, or the Work is not completed within the time above specified, or fails to perform the Work with sufficient workmen and equipment or with sufficient materials to ensure the prompt completion of said work, or shall perform the Work unsuitably or shall discontinue the prosecution of the Work, or if the Contractor shall become insolvent or be declared bankrupt or commit any act of bankruptcy or insolvency, or allow any final judgment to stand against him unsatisfied for a period of forty-eight (48) hours, or shall make an assignment for the benefit of creditors, or disregards laws, regulations, or direction of the Designer, or for any other cause whatsoever shall not carry on the Work in an acceptable manner, the Owner may give notice in writing, sent by certified mail, return receipt requested, to the Contractor and his surety of such delay, neglect or default, specifying the same, and if the Contractor within a period of fifteen (15) days after such notice shall not proceed in accordance therewith, then the Owner shall, declare this contract in default, and, thereupon, the surety shall promptly take over the Work and complete the performance of this contract in the manner and within the time frame specified. In the event the surety shall fail to take over the Work to be done under this contract within fifteen (15) days after being so notified and notify the Owner in writing, sent by certified mail, return receipt requested, that he is taking the same over and stating that he will diligently pursue and complete the same, the Owner shall have full power and authority, without violating the contract, to take the prosecution of the Work out of the hands of said Contractor, to appropriate or use any or all contract materials and equipment on the grounds as may be suitable and acceptable and may enter into an agreement, either by public letting or negotiation, for the completion of said contract according to the terms and provisions thereof or use such other methods as in his opinion shall be required for the completion of said contract in an acceptable manner. All costs and charges incurred by the Owner, together with the costs of completing the Work under contract, shall be deducted from any monies due or which may become due said Contractor and surety. In case the expense so incurred by the Owner shall be less than the sum which would have been payable under the contract, if it had been completed by said Contractor, then the said Contractor and surety shall be entitled to receive the difference, but in case such expense shall exceed the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the Owner the amount of said excess.
- B. Upon fifteen (15) days' written notice to Contractor and Designer, Owner may, without cause and without prejudice to any other right or remedy of Owner, elect to terminate the Contract. In such case, Contractor shall be paid (without duplication of any items):
1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 4. for reasonable expenses directly attributable to termination.

- C. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

ARTICLE 51 – CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE THE CONTRACT

- A. Should the Work be stopped by order of a court having jurisdiction, or by order of any other public authority for a period of three (3) months, due to cause beyond the fault or control of the Contractor, or if the Owner, without cause, should fail or refuse to make payment based on a request for payment approved by the Designer within forty-five (45) days after receipt of same, then the Contractor, after fifteen (15) days' written notice sent by certified mail, return receipt requested, to the Owner and the Designer, may suspend operations on the Work or terminate the contract.
- B. In the event that the contract is terminated due to cause beyond the fault or control of the Contractor, the Owner shall be liable to the Contractor for the cost of all materials delivered and work performed on this contract as determined according to the Article "Changes in the Work". The Designer shall be the judge as to the correctness of such payment.

ARTICLE 52 – REQUESTS FOR PAYMENT

- A. Not later than the fifth day of the month, the Contractor shall submit to the Designer a request for payment for work done during the previous month. The request shall be in the form "Request for Payment" in the contract documents and shall show substantially the value of work done and materials delivered to the site during the period since the last payment, and shall sum up the financial status of the contract with the following information:
 - 1. Total of contract including approved change orders.
 - 2. Value of work completed to date and properly stored on-site materials.
 - 3. Less five percent (5%) retainage, provided however, that after fifty percent (50%) of the Contractor's work has been satisfactorily completed on schedule, with written consent of the surety, the owner shall not require any additional retainage. If the owner determines the contractor's performance is unsatisfactory, the owner may reinstate retainage for each subsequent payment. There shall be no retainage on contracts with a bid amount less than \$100,000.
 - 4. Less previous payments.
 - 5. Current amount due.
- B. The Contractor, upon request of the Designer, shall substantiate the request with invoices of vouchers or payrolls or other evidence.
- C. The Contractor shall submit a fully completed "Periodic Payment Itemized Tax Statement" and "Periodic Payment Tax Certification" form with each Request for Payment.

- D. Prior to submitting the first request, the Contractor shall prepare for the Designer a schedule showing a breakdown of the Contract Price into values of the various parts of the Work, so arranged as to facilitate payments to Subcontractors in accordance with Article "Contractor and Subcontractor Relationships." The Contractor(s) shall list the value of each Subcontractor and Supplier, identifying each minority business Subcontractor and Supplier as listed in Affidavit C, if applicable.
- E. Payment for Mobilization in excess of 3% of the initial contract value shall be made with the Final Payment.
- F. Twenty percent (20%) of the payment for installed underground piping may be withheld until the installed piping has passed all necessary testing requirements and the required vegetative cover has been established, or at the discretion of the Owner, seeding and mulching has been performed. A separate line item for "Testing and Vegetative Cover over Piping" may be shown on the schedule that reflects a cost of at least 25% of the underground piping cost.
- G. When payment is made on account of stored materials and equipment, such materials must be stored on the Owner's property, and the requests for payments shall be accompanied by invoices or bills of sale or other evidence to establish the Owner's title to such materials and equipment. Responsibility for such stored materials and equipment shall remain with the Contractor regardless of ownership title. Such stored materials and equipment shall not be removed from the Owner's property. Should the space for storage on-site be limited, the Contractor, at his option, shall be permitted to store such materials and/or equipment in a suitable space off-site. Should the Contractor desire to include any such materials or equipment in his Request for Payment, they must be stored in the name of the Owner in a commercial warehouse approved by the Designer and the Owner and located as close to the site as possible. The warehouse selected must be approved by the Contractor's bonding and insurance companies; the material to be paid for shall be assigned to the Owner and shall be inspected by the Designer. Upon approval by the Designer of the storage facilities and materials and equipment, payment therefore will be certified. Responsibility for such stored materials and equipment shall remain with the Contractor. Such stored materials and equipment shall not be moved except for transportation to the project site. Under certain conditions, the Designer may approve storage of materials at the point of manufacture, which conditions shall be approved by the Designer and the Owner prior to approval for the storage and shall include an agreement by the storing party which unconditionally gives the Owner absolute right to possession of the materials at anytime. Bond, security and insurance protection shall continue to be the responsibility of the Contractor(s).
- H. Along with each request for payment, the Contractor shall submit evidence to the Designer showing that all record drawings are up to date.
- I. Along with each request for payment, the Contractor shall submit either a statement indicating that no claims for extension of time due to weather is to be made during the billing period OR shall make claims for extension of time for the billing period in accordance with the article "Time of Completion, Delays, Extension of Time."

ARTICLE 53 – APPROVAL OF PAYMENTS AND FINAL PAYMENT

- A. Within ten (10) days from receipt of request for payment from the Contractor, the Designer shall issue and forward to the Owner the approved request for payment. This request for payment shall indicate the amount requested or as approved by the Designer. If the request is not approved by the Designer, he shall state in writing to the Contractor and the Owner his reasons for withholding payment. In the latter case, the Contractor may make the necessary corrections and resubmit the request for payment.
- B. No approval of a request for payment or payment made shall constitute an acceptance of the Work or any part thereof. The making and acceptance of final payment shall constitute a waiver of all claims by the Owner except:
 - 1. Claims arising from unsettled liens or claims against the Contractor.
 - 2. Faulty work or materials appearing after final payment.
 - 3. Failure of the Contractor to perform the Work in accordance with drawings and specifications, such failure appearing after payment.
 - 4. As conditioned in the performance bond and payment bond.
- C. The making and acceptance of final payment shall constitute a waiver of all claims by the Contractor except those claims previously made and remaining unsettled (Article “Claims for Extra Cost”).
- D. Prior to submitting final request for payment to the Designer for approval, the Contractor shall fully comply with all requirements specified in Article “Final Inspection, Acceptance, and Project Closeout.” These requirements include, but are not limited to the following:
 - 1. Submittal of Product and Operating Manuals, Warranties and Bonds, Guarantees, Maintenance Agreements, properly certified As-Built Drawings, Record Drawings, Certificates of Inspection or Approval from agencies having jurisdiction. (The Designer must approve the Manuals prior to delivery to the Owner).
 - 2. Transfer of required stock material and all keys in an organized manner.
 - 3. Record of Owner’s training.
 - 4. Resolution of any final inspection discrepancies.
- E. The Contractor shall forward to the Designer, the final request for payment along with the following documents:
 - 1. List of minority business Subcontractors and material Suppliers showing breakdown of contracts amount.
 - 2. Contractor’s Affidavit of Release of Liens.

3. "Final Tax Certification" form with all fully completed "Periodic Payment Itemized Tax Statement" and "Periodic Payment Tax Certification" forms corresponding to each Request for Payment.
 4. Affidavit of Contractor's payment to material Suppliers and Subcontractors. (See Article "Contractor's Affidavit").
 5. Consent of Surety to Final Payment.
 6. Certificates of state agencies required by state law.
 7. Record Drawings
 8. As-Built Drawings
- F. The Designer will not authorize final payment until the Work under contract has been certified by Designer, certificates of compliance issued, and the Contractor has complied with the closeout requirements. The Designer shall forward the Contractor's final request for payment to the Owner along with respective certificate(s) of compliance required by law.
- G. After the request for final payment by the Contractor, all quantities of materials installed on the project shall be reviewed for accuracy and any errant or outdated quantity information supplied on previously submitted Pay Applications, or any other source, shall be rectified on the Final Pay Application to reflect the actual quantity of materials installed on the project.

ARTICLE 54 – PAYMENTS WITHHELD

- A. The Designer, with the approval of the Owner, may withhold payment for the following reasons:
1. Faulty work not corrected.
 2. The unpaid balance on the contract is insufficient to complete the Work in the judgment of the Designer.
 3. To provide for sufficient contract balance to cover liquidated damages that will be assessed.
 4. Missing or improperly completed documentation required by the contract documents.
- B. In addition to the reasons noted above, the Owner may authorize the withholding of payment for the following reasons:
1. Claims filed against the Contractor or evidence that a claim will be filed.
 2. Evidence that Subcontractors have not been paid.
- C. When grounds for withholding payments have been removed, payment will be released. Delay of payment due the Contractor without cause will make Owner liable for payment of interest to the Contractor as provided in NCGS 143-134.1.

ARTICLE 55 – ACCESS TO PERSONS AND RECORDS

The State Auditor and the using agency's internal auditors shall have access to persons and records as a result of all contracts or grants entered into by State agencies or political subdivisions in accordance with General Statute 147-64.7 and Session Law 2010-194, Section 21 (i.e., the State Auditors and internal auditors may audit the records of the contractor during the term of the contract to verify accounts and data affecting fees or performance).

ARTICLE 56 – TAXES

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the laws and regulations of the location of the project which are applicable during the performance of the Work. Specific guidelines include the following:
- B. Federal excise taxes do not apply to materials entering into state work (Internal Revenue Code, Section 3442(3)).
- C. Federal transportation taxes do not apply to materials entering into state work (Internal Revenue Code, Section 3475(b) as amended).
- D. North Carolina sales tax and use tax, as required by law, do apply to materials entering into state work and such costs shall be included in the bid proposal and contract sum.
- E. Local option sales and use taxes, as required by law, do apply to materials entering into state work as applicable and such costs shall be included in the bid proposal and contract sum.
- F. **The Amount of County Sales and Use Tax Paid Per Contractor's Statements**
 - 1. Contractors shall give the Owner a signed statement containing the information listed in NCGS 105-164.14(e).
 - 2. The Contractor shall submit a certified statement setting forth the project, date, the type of property and the cost of the property purchased from each vendor, the county in which the vendor made the sale and the amount of local sales and use taxes paid thereon. If the property was purchased out-of-state, the county in which the property was delivered shall be listed. Sales receipts shall be included with the statement. The Contractor is hereby notified that the certified statement may be subject to audit.
 - 3. In the event the Contractors make several purchases from the same vendor, such certified statement must indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices, the counties, and the county sales and use taxes paid thereon.
 - 4. Name of taxing county: The position of a sale is the retailer's place of business located within a taxing county where the vendor becomes contractually obligated to make the sale. Therefore, it is important that the county tax be reported for the county of sale rather than the county of use.

5. When property is purchased from out-of-state vendors and the county tax is charged, the county should be identified where delivery is made when reporting the county tax.
6. Such statement must also include the cost of any tangible personal property withdrawn from the Contractor's warehouse stock and the amount of county sales or use tax paid thereon by the Contractor.
7. Similar certified statements by his Subcontractors must be obtained by the general Contractor and furnished to the claimant.
8. Contractors are not to include any tax paid on supplies, tools and equipment which they use to perform their contracts and should include only those building materials, supplies, fixtures and equipment which actually become a part of or annexed to the Work.
9. Contractor shall provide a completed "Final Tax Certification" form, including copies of all Periodic Payment Tax Certifications, with the application for final payment.

ARTICLE 57 – MINIMUM INSURANCE REQUIREMENTS

The Work under this contract shall not commence until the Contractor has obtained all required insurance and verifying certificates of insurance have been approved in writing by the Owner. The Contractor shall provide and maintain, during the life of the contract, comprehensive general liability insurance, including coverage for premises operations, independent contractors, completed operations, products and contractual exposures, as shall protect such contractors from claims arising out of any bodily injury, including accidental death, as well as from claims for property damages which may arise from operations under this contract, whether such operations be by the Contractor or by any Subcontractor, or by anyone directly or indirectly employed by either of them. The Contractor shall purchase and maintain property insurance during the life of this contract, upon the entire work at the site to the full insurable value thereof that shall include the interests of the Owner, the Contractor, the Subcontractors in the Work and shall insure against the perils of fire, extended coverage, and vandalism and malicious mischief. If the Owner is damaged by failure of the Contractor to purchase or maintain such insurance, then the Contractor shall bear all reasonable costs properly attributable thereto; the Contractor shall effect and maintain similar property insurance on portions of the Work stored off the site when request for payment per articles so includes such portions. The Contractor shall ensure that all Subcontractors are insured to at least the same extent required of the Contractor. Unless modified by the "Notice to Bidders," the minimum insurance requirements are as outlined below.

A. Contractor's Liability Insurance

1. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

- a. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - b. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
 - c. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 - d. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or (ii) by any other person for any other reason;
 - e. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 - f. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle.
2. The policies of insurance so required by this paragraph to be purchased and maintained shall:
- a. with respect to insurance required by Paragraphs (A.1.c) through (A.1.f) inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) Owner, Designer, Designer's Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and Subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
 - b. include at least the specific coverages and be written for not less than the limits of liability provided in the paragraph below Notice to Bidders, or required by Laws or Regulations, whichever is greater;
 - c. include completed operations insurance;
 - d. include contractual liability insurance covering Contractor's indemnity obligations;
 - e. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least thirty (30) days' prior written notice has been given to by certified mail/return receipt requested to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued;
 - f. remain in effect at least until written project acceptance and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work; and

- g. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least three (3) years after final payment.

B. Property Insurance

1. Unless otherwise provided in the Notice to Bidders, Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof. This insurance shall:
 - a. include the interests of Owner, Contractor, Subcontractors, Designer, Designer's consultants, and any other individuals or entities identified in the Notice to Bidders and the officers, directors, partners, employees, agents, and other consultants and Subcontractors of each and any of them, each of whom is deemed to have an insurable interest;
 - b. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Notice to Bidders;
 - c. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of Designers);
 - d. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Request for Payment recommended by Designer;
 - e. allow for partial utilization of the Work by Owner;
 - f. include testing and startup; and
 - g. be maintained in effect until final acceptance is made unless otherwise agreed to in writing by Owner, Contractor, and Designer with thirty (30) days' written notice to each other additional insured.
2. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained will contain a provision or endorsement that the coverage afforded will not be cancelled or materially changed or renewal refused until at least thirty (30) days prior to written notice has been given to Owner and Contractor and to each other additional insured.
3. Owner shall not be responsible for purchasing and maintaining any property insurance to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

4. If Contractor requests in writing that other special insurance be included in the property insurance policies, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

C. Deductible

Any deductible, if applicable to loss covered by insurance provided, is to be borne by the Contractor.

D. Proof of Carriage

The Contractor shall furnish the Owner with satisfactory proof of carriage of the insurance required before written approval is granted by the Owner.

E. Limits of Liability

Worker's Compensation

1. State: Statutory
2. Applicable Federal (e.g. Longshoreman's): Statutory
3. Employer's Liability: \$500,000

Automobile Liability

1. Bodily Injury:
 - \$1,000,000 Each Person
 - \$1,000,000 Each Accident
 Property Damage
 - \$1,000,000 Each Accident
- or**
2. Combined Single Limit (Bodily Injury and Property Damage)
 - \$1,000,000 Each Accident

Employer's Other Liability

1. Gen. Aggregate (except Products- Completed Operations): \$2,000,000
2. Products- Completed Operations \$2,000,000
3. Personal & Advertising Injury (per person/organization): \$1,000,000
4. Each Occurrence (Bodily Injury & Property Damages): \$1,000,000
5. Excess Liability
 - a. General Aggregate: \$2,000,000
 - b. Each Occurrence: \$2,000,000
6. Property damage liability insurance will provide Explosion, Collapse, and Underground coverage where applicable.
7. Pollution Liability: \$1,000,000 per occurrence
8. Professional Liability: \$1,000,000 per occurrence

F. Receipt and Application of Insurance Proceeds

1. Any insured loss under the policies of insurance will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause. Owner shall deposit in a separate account any money so received and shall distribute it in

accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

2. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen (15) days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If so such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

ARTICLE 58 – PERFORMANCE BOND AND PAYMENT BOND

- A. Each Contractor shall furnish a performance bond and payment bond executed by a surety company authorized to do business in North Carolina. The bonds shall be at least equal to the full contract amount. Bonds shall be executed in the form bound with these specifications. The bonds shall be delivered with the executed contract. These bonds shall remain in effect at least through the warranty period, but in no case less than one year after the date of Owner acceptance of the project.
- B. All bonds shall be countersigned by an authorized agent of the bonding company who is licensed to do business in North Carolina and shall include a certified copy of such agent's authority to act.
- C. If the surety on any Bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located, Contractor shall within twenty (20) days thereafter substitute another Bond and surety.
- D. An additional performance guarantee with the North Carolina Department of Transportation may be required for work performed in the right-of-way. In this event, the Contractor, within ten (10) days of receipt of the "Notice of Award," shall supply the Owner with a copy of the executed performance guarantee and evidence of acceptance by the NCDOT. The Contractor shall perform all work within the right-of-way in accordance with the "Policies and Procedures for Accommodating Utilities on Highway Rights of Way" and the provisions of the Encroachment Agreement. Any necessary guarantees and agreements between the Contractor and NCDOT must be in place prior to the Contractor performing any construction activities within the NCDOT right-of-way. Failure of the Contractor to receive concurrence from the NCDOT allowing the Contractor to work within the right of way shall not be grounds for extension of the Contract Time.
- E. The Owner reserves the right to not release the Performance Bond until the NCDOT has approved the portion of the completed work within the NCDOT right-of-way stipulated in the project encroachment agreement.

ARTICLE 59 – CONTRACTOR'S AFFIDAVIT

The final payment of retained amount due the Contractor on account of the contract shall not become due until the Contractor has furnished to the Owner through the Designer an affidavit signed, sworn and notarized to the effect that all payments for materials, services or subcontracted work in connection with his contract have been satisfied, and that no claims or liens exist against the Contractor in connection with this contract. In the event that the Contractor cannot obtain similar affidavits from Subcontractors to protect the Contractor and the Owner from possible liens or claims against the Subcontractor, the Contractor shall state in his affidavit that no claims or liens exist against any Subcontractor to the best of his (the Contractor's) knowledge, and if any appear afterward, the Contractor shall save the Owner harmless.

ARTICLE 60 – ASSIGNMENTS

The Contractor shall not assign any portion of this contract nor subcontract in its entirety. Except as may be required under terms of the performance bond or payment bond, no funds or sums of money due or become due the Contractor under the contract may be assigned.

ARTICLE 61 – CLEANING UP

- A. The Contractors shall keep the project, buildings, and surrounding area reasonably free from rubbish at all times, and shall remove debris from the site on a timely basis or when directed to do so by the Designer or Project Expediter. The Project Expediter shall provide an on site refuse container(s) for the use of all Contractors. Each Contractor shall remove their rubbish and debris from the building on a daily basis. Disposal of waste material, rubbish, and other debris shall conform to applicable laws and regulations. The Project Expediter shall broom clean the building as required to minimize dust and dirt accumulation.
- B. The Project Expediter shall provide and maintain suitable all-weather access to buildings.
- C. Before final inspection and acceptance of buildings, each Contractor shall clean his portion of the Work, including glass, hardware, fixtures, masonry, tile and marble (using no acid), clean and wax all floors as specified, and completely prepare the building for use by the Owner, with no cleaning required by the Owner.
- D. Prior to substantial completion of the Work, Contractor shall clean the site and make it ready for utilization by Owner. At the completion of the Work, Contractor shall remove from the site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the contract documents.
- E. All material including construction debris, etc., which is not to be used at the project site must be legally disposed of off the project site at the Contractor's expense. Survey stakes are not considered debris and shall be removed only at the direction of the Designer.

- F. All Contractors are responsible for maintaining streets, parking lots, walks and grounds connecting to the project area which shall be protected from deposits of mud, sand, stone, litter or debris of any form. All mud collected on vehicle wheels must be cleaned off by spraying each tire and the underside of vehicle before leaving the construction site. Should any mud or debris from the construction project collect on the streets, this shall be removed immediately.

ARTICLE 62 – GUARANTEE

- A. The Contractor warrants and guarantees to Owner, Designer, and Designer’s consultants that all work shall be in accordance with the contract documents and will not be defective.
- B. All warranties and guarantees shall expressly run to the benefit of the Owner.
- C. The Contractor shall unconditionally guarantee materials and workmanship against patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve (12) months following the date of final acceptance of the Work and shall replace such defective materials or workmanship without cost to the Owner.
- D. Where items of equipment or material carry a manufacturer's warranty for any period in excess of twelve (12) months, then the manufacturer's warranty shall apply for that particular piece of equipment or material. The Contractor shall replace such defective equipment or materials, without cost to the Owner, within the manufacturer's warranty period.
- E. All warranties shall be construed under and in accordance with the State of North Carolina.
- F. All materials and equipment incorporated into the Work shall be good quality and new, unless specified otherwise.
- G. Additionally, the Owner may bring an action for latent defects caused by the negligence of the Contractor which is hidden or not readily apparent to the Owner at the time final acceptance in accordance with applicable law.
- H. Additional guarantees for roof, equipment, materials, and supplies may be stipulated in the specifications sections governing such roof, equipment, materials, or supplies.
- I. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instruction of the applicable Supplier or manufacturer.
- J. If required by the Designer, the Contractor shall provide satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- K. Any defective materials or workmanship replaced or repaired during the initial warranty period shall extend the warranty period for a period of twelve (12) months following Owner acceptance of the replacement material or workmanship.

ARTICLE 63 – INDEMNIFICATION

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner, Designer, Designer’s Consultants, and the officers, directors, partners, employees, agents, and other consultants and Subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:
1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and
 2. is caused in whole or in part by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.
- B. In any and all claims against Owner or Designer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work of anyone for whose acts any of them may be liable, the indemnification obligation above shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers’ compensation acts, disability acts, or other employee benefit acts.

ARTICLE 64 – CONTRACTOR EVALUATION

The Contractor’s overall work performance on the project shall be fairly evaluated for determining qualifications to bid on future County capital improvement projects. In addition to final evaluation, interim evaluation may be prepared during the progress of the project. Evaluations shall be performed by the Owner and Designer. The Owner may request the Contractor’s comments to evaluate the Designer.

BRUNSWICK COUNTY, NORTH CAROLINA



SUPPLEMENTARY GENERAL CONDITIONS

Extensive modification to the General Conditions by means of “Supplementary General Conditions” is strongly discouraged. The Supplementary General Conditions contain changes and additions to the "Instructions to Bidders" and “General Conditions of the Contract.”

ARTICLE 13 – AS-BUILT DRAWINGS

- Remove “**ARTICLE 13 – AS-BUILT DRAWINGS.**”

ARTICLE 31 – CONSTRUCTION SUPERVISION

The general construction Contractor is the Project Expediter.

ARTICLE 32 – SCHEDULE

- A Bar Chart Schedule, as indicated in “**ARTICLE 32 – SCHEDULE**” shall be used regardless of the project Contract value.

ARTICLE 57 – MINIMUM INSURANCE REQUIREMENTS

- In accordance with A. 2. a., the Contractor shall include as additional insureds on insurance policies, the following:
 - Owner – Brunswick County

PREFERRED BRANDS

The following Approved Products List details specific brands for certain items preferred by the Owner in order to provide an overall cost savings and/or to maintain or improve the functioning of processes or systems affected by specific items:

FORM OF PROPOSAL

To: **BRUNSWICK COUNTY**

From: *Bidder* _____

Address _____

Tele./Fax _____

Date of Bid _____

The undersigned, as bidder, hereby declares that the only person or persons interested in this proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this proposal or in the Contract to be entered into; that this proposal is made without connection with any other person, company, or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud. By signing this proposal, the bidder affirms they are not listed and will not utilize a subcontractor or vendor listed on the Final Divestment List created by the State Treasurer pursuant to NCGS 143-6A-4, Iran Divestment Act Certification. The Bidder further declares that he has examined the site of the work and the Contract Documents relative thereto, and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed.

The Bidder proposes and agrees if this proposal is accepted to Contract with **Brunswick County** in the form of Contract specified below, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation, supplies, labor, etc. necessary to complete the construction of:

211 WTP Gravity Sand Filter Demolition and Replacement

in full in complete accordance with the plans, specifications, and Contract Documents, to the full and entire satisfaction of **Brunswick County** and their representatives with a definite understanding that no money will be allowed for extra work except as set forth in the General Conditions and the Contract Documents, for the sum of:

SINGLE PRIME CONTRACT:

Base Bid:

(All work covered in the Contract Documents **including** unit price items, allowance items, testing allowance, change order allowance, and the use of Preferred Brands.)

_____ Dollars(\$)

ATTACHED DOCUMENTS

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

- Bid Security
- Identification of Minority Business Participation form
- MBE Affidavit A (Listing of Good Faith Efforts) or Affidavit B (Intent to Perform Contract with Own Workforce)

UNIT PRICES

Unit prices quoted and accepted shall apply throughout the life of the Contract, except as otherwise specifically noted. Unit prices shall be applied, as appropriate, to compute the total value of changes in the scope of the work all in accordance with the Contract Documents. Bidder acknowledges that quantities are approximate only and are given as the basis for comparison of Bids. The Owner may increase or decrease the quantity of any item or portion of the work as may be deemed necessary or expedient. An increase or decrease in the quantity of any item will not be regarded as sufficient ground for an increase or decrease in the unit prices, nor in the time allowed for the completion of the work, except as provided for in the General Conditions. The quantities shown on the proposal form are for the base bid only unless the contract documents specifically indicate that the item(s), or any portion thereof, are part of an alternate bid element. It is the responsibility of the Contractor to apportion the cost of unit price items to the base bid and any alternates listed in the Proposal using information in the Contract Documents. In the event that the Owner selects an alternate that clearly increases or decreases the estimated quantity of a unit price item shown on the proposal form, after selection of the Contractor, the Contractor shall be provided an updated list of estimated unit price quantities reflective of the alternates chosen. This updated list shall be used in determining any variation between the actual quantities and the estimated quantities of the unit price work. An estimated unit price quantity shall be updated only in the event that the Contract Documents clearly indicate that the unit price item was indeed part of the Owner-selected alternate. The cost for all unit price items shall be included within either the base bid or an alternate, as applicable.

The bidder further proposes and agrees hereby to commence work under this Contract on a date to be specified in a written order of the Designer and shall fully complete all work thereunder within the time specified in the Notice to Bidders. Applicable liquidated damages amount is also stated in the Notice to Bidders (see General Conditions "Time of Completion, Delays, Extension of Time".)

UNIT PRICES - SINGLE PRIME GENERAL

NOTES TO CONTRACTOR:

-PAY ITEMS WITH "Not Applicable" SHOWN IN THE "Unit Price" COLUMN ARE NOT PRESENT ON THE PROJECT.
 THE CONTRACTOR SHOULD NOT SUPPLY A UNIT BID PRICE FOR THESE ITEMS.

PAY ITEM	Spec. Section	Pay Item Description	Unit	Estimated Quantity	Unit Price
1	GC 38 K.	Change Order Allowance	EA	1	\$ 75,000.00
2	GC 30	Testing Allowance	EA	1	\$ 20,000.00
3	EP	Manufacturer Special Inspection (Erection Procedure)	EA	1	\$ 22,000.00
4	GC 20	Existing Pipe Repair	EA	1	\$ 20,000.00
5					
					\$ -

MINORITY BUSINESS PARTICIPATION REQUIREMENTS:

Provide with the bid - Under NCGS 143-128.2(c) the undersigned Bidder shall identify **on its bid** (Identification of Minority Business Participation Form) the minority businesses that it will use on the project with the total dollar value of the bids that will be performed by the minority businesses. **Also** list the good faith efforts (Affidavit **A**) made to solicit minority participation in the bid effort.

NOTE: A Contractor that performs all of the work with its own workforce may submit an Affidavit **B** to that effect in lieu of Affidavit **A** required above. The Minority Business Participation Form must still be submitted even if there is zero participation.

After the bid opening - The Owner will consider all bids and alternates and determine the lowest responsible, responsive bidder. Upon notification of being the apparent low Bidder, the Bidder shall then file within seventy-two (72) hours of the notification of being the apparent lowest Bidder, the following:

An Affidavit **C** that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total Contract price, which is equal to or more than the goal established as indicated in the Notice to Bidders. This affidavit shall give rise to the presumption that the Bidder has made the required good faith effort and Affidavit **D** is not necessary;

OR

If less than the goal, Affidavit **D** of its good faith effort to meet the goal shall be provided. The document must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations, and other specific actions demonstrating recruitment and selection of minority businesses for participation in the Contract.

Note: Bidders must always submit with their bid the Identification of Minority Business Participation Form listing all Minority Business contractors, vendors, and suppliers that will be used. If there is no Minority Business participation, then enter none or zero on the form. Affidavit A **or** Affidavit B, as applicable, also must be submitted with the bid. Failure to file a required affidavit or documentation with the bid or after being notified apparent low Bidder is grounds for rejection of the bid.

Proposal Signature Page

The undersigned further agrees that in the case of failure on his part to execute the said Contract, provide performance and payment bonds, and certificates of insurance within ten (10) consecutive calendar days after being given written notice of the award of Contract, the certified check, cash, or bid bond accompanying this bid shall be paid into the funds of the Owner's account set aside for the project, as liquidated damages for such failure; otherwise the certified check, cash, or bid bond accompanying this proposal shall be returned to the undersigned.

Respectfully submitted this day of _____

(Name of Firm or Corporation Making Bid)

WITNESS:

(Proprietorship, Partnership, or LLC)

By: _____
Signature

Name: _____
Print or Type

Title: _____
(Owner/Co-Partner/President/Vice President/Manager)

Address: _____

ATTEST:

By: _____

Title: _____
(Corp. Sec. or Asst. Sec. only)

License No. _____

Federal I.D. No. _____

(CORPORATE SEAL)

Addendum received and used in computing bid:

Addendum No. 1 _____ Addendum No. 3 _____ Addendum No. 5 _____ Addendum No. 7 _____

Addendum No. 2 _____ Addendum No. 4 _____ Addendum No. 6 _____ Addendum No. 8 _____

FORM OF BID BOND

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER:

Brunswick County
P. O. Box 249
Bolivia, NC 28422

BID

BID DUE DATE: _____

PROJECT (Brief Description Including Location):

BOND

BOND NUMBER: _____

DATE: (Not Later than Bid Due Date): _____

PENAL SUM: _____

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms of the Contract Documents, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative. THE CONDITION OF THE ABOVE OBLIGATION is such, that if the Bidder shall be awarded the Contract for which the bid is submitted and shall execute the Contract and give bond for the faithful performance thereof within ten (10) days after the award of same to the Bidder, then this obligation shall be null and void; but if the Bidder fails to so execute such Contract and give performance bond as required by NCGS 143-129, the surety shall, upon demand, forthwith pay to the Owner the penal sum amount set forth above. Provided further, that the bid may be withdrawn as provided by NCGS 143-129.1

BIDDER

SURETY

Bidder's Name and Corporate Seal (Seal)

Surety's Name and Corporate Seal (Seal)

By: _____
Signature and Title

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title

Attest: _____
Signature and Title

Note: (1) Above addresses are to be used for giving required notice.
(2) Any singular reference to Bidder, Surety, Owner, or other party shall be considered plural where applicable.

Brunswick County AFFIDAVIT A – Listing of Good Faith Efforts

(Name of Bidder)

Affidavit of _____

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

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

- 1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the Contractor, or available on State or local government-maintained lists, at least ten (10) days before the bid date and notified them of the nature and scope of the work to be performed.
- 2 – (10 pts)** Made the construction plans, specifications, and requirements available for review by prospective minority businesses, or providing these documents to them at least ten (10) days before the bids are due.
- 3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- 4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses that provide assistance in recruitment of minority businesses.
- 5 – (10 pts)** Attended pre-bid meetings scheduled by the owner.
- 6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for Subcontractors.
- 7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- 8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the Bidder's suppliers in order to help minority businesses in establishing credit.
- 9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- 10 – (20 pts)** Provided quick pay agreements and policies to enable minority Contractors and suppliers to meet cash-flow demands.
- 11 – (20 pts)** A minimum of two (2) or all, if only one (1) is indicated, of the MBE firms indicated on the "Identification of Minority Business Participation" form are **Brunswick County** based.

The undersigned, if apparent low Bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of Contract to be executed with the Owner. Substitution of Contractors must be in accordance with NCGS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the Contract.

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

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

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

Notary Public _____

My commission expires _____

Brunswick County AFFIDAVIT B – Intent to Perform Contract with Own Workforce

Affidavit of _____
(Name of Bidder)

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

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

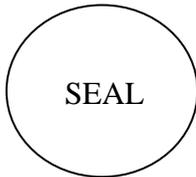
The Bidder agrees to provide any additional information or documentation requested by the Owner in support of the above statement.

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

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

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

Notary Public _____

My commission expires _____

Brunswick County **AFFIDAVIT C** – Portion of the Work to be Performed by Minority Firms

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

If the portion of the work to be executed by minority businesses as defined in NCGS143-128.2(g) is equal to or greater than the percentage goal listed in the Notice to Bidders of the Bidders total Contract price, then the Bidder must complete this affidavit. This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **seventy-two (72) hours** after notification of being low Bidder.

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

_____ (Project Name)

Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the Contract with Minority Business Enterprises. Minority businesses will be employed as construction Subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below.

Attach additional sheets if required

Name and Phone #	*Minority Category	Work Description	Dollar Value

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

Pursuant to NCGS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a Contract with the Owner. Failure to fulfill this commitment may constitute a breach of the Contract.

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

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



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

Brunswick County

AFFIDAVIT D – Good Faith Efforts

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

If the percentage goal of participation by minority business listed in the Notice to Bidders **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

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

_____ (Project Name)

Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the Contract with Minority Business Enterprises. Minority businesses will be employed as construction Subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone #	*Minority Category	Work Description	Dollar Value

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

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

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

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

Pursuant to NCGS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a Contract with the Owner. Failure to fulfill this commitment may constitute a breach of the Contract.

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

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

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

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

Notary Public _____

My commission expires _____

NOTICE OF AWARD

Dated _____, 20 ____

To: _____
(BIDDER)

Address: _____

Owner: **BRUNSWICK COUNTY**

Owner's Contract No. N/A

Project: _____

(Insert Name of Contract as it Appears in the Construction Documents)

You are hereby notified that your bid dated _____, 20 ____ for the above described project has been considered and has been accepted by the Owner.

The amount of your Contract is: _____
_____ Dollars (\$_____)

Enclosed with this Notice of Award are the following:

Form of Performance Bond, Form of Payment Bond, and Certificate of Insurance.

You must comply with the following conditions precedent within twelve (12) days of the date of this Notice of Award, that is by:
_____, 20 ____

1. You must execute the contract by electronic signature. A Docu-sign email with an electronic form of construction contract has been/will be sent to you for electronic signature.
2. You must deliver to the Owner 2 each of the fully executed Performance Bond, Payment Bond, and Form of Insurance. Each of the Documents must bear your signature.
3. List other condition precedents:

None

Do not submit with bid
Failure to comply with these conditions within the time specified will entitle Owner to consider your bid in default, to annul this Notice of Award and to declare your Bid Security forfeited.

After you have satisfactorily complied with the above conditions, Owner will return to you a fully signed copy of the Contract.

BRUNSWICK COUNTY

(OWNER)

By: _____

(AUTHORIZED SIGNATURE)

(TITLE)

ACCEPTANCE OF AWARD

(CONTRACTOR)

By: _____

(AUTHORIZED SIGNATURE)

(TITLE)

(DATE)

COPY to ENGINEER
(Use Certified Mail, Return Receipt Requested)

Name:
Address:

NORTH CAROLINA

**CONSTRUCTION OR REPAIR AGREEMENT
[Standard]**

BRUNSWICK COUNTY

THIS CONSTRUCTION OR REPAIR AGREEMENT (hereinafter referred to as the “Agreement” or “Contract”) is made and entered into by and between Brunswick County, a body politic and corporate of the State of North Carolina, (hereinafter referred to as “County” or “Owner”), party of the first part, and {Vendor Name}, (hereinafter referred to as “Contractor”), party of the second part.

WITNESSETH:

1. PROJECT; FEES

Contractor shall furnish and deliver all materials and perform all work in the manner and form as provided by enumerated plans, specifications and documents, including, without limitation and as applicable: the Invitation to Bid; Notice to Bidders; Instructions to Bidders; General Conditions; Supplementary General Conditions; Specifications; Addenda; Accepted Proposal; Notice to Proceed; Performance Bond; Payment Bond; MBE forms; Power of Attorney; Workers’ Compensation, Public Liability, Property Damage and Builder’s Risk Insurance Certificates; Approval by the Board of Commissioners; Tax Statement and Certification; Notice of Substantial Completion; Notice of Final Completion and Acceptance; and Drawings (hereinafter referred to collectively as the “Bid Documents”) titled:

Project: {Project Title} _____

Consisting of the following sheets **{Sheet Labels}** _____

dated **{Sheet Date or Dates}** _____

And the following addenda:

Addendum No. <u>{Addendum No. 1}</u>	Dated: <u>{Date of Addendum No. 1}</u>
Addendum No. <u>{Addendum No. 2}</u>	Dated: <u>{Date of Addendum No. 2}</u>
Addendum No. <u>{Addendum No. 3}</u>	Dated: <u>{Date of Addendum No. 3}</u>
Addendum No. <u>{Addendum No. 4}</u>	Dated: <u>{Date of Addendum No. 4}</u>
Addendum No. <u>{Addendum No. 5}</u>	Dated: <u>{Date of Addendum No. 5}</u>
Addendum No. <u>{Addendum No. 6}</u>	Dated: <u>{Date of Addendum No. 6}</u>

The Bid Documents are incorporated by reference and made an integral part of this Agreement. To the extent the terms of such documents conflict with the terms of this Agreement, the terms of this Agreement shall prevail.

2. TERM OF AGREEMENT

The term of this Agreement begins upon issuance of the Notice to Proceed by Brunswick County (the “Effective Date”) and continues in effect for **{Number of Days - Alpha} ({Number of Days - Numeric})** consecutive calendar days, unless extended or sooner terminated as provided for in the Brunswick County General Conditions of the Contract.

3. BRUNSWICK COUNTY GENERAL CONDITIONS OF THE CONTRACT

This Agreement, in addition to any construction documents prepared hereunder, shall be subject to the Brunswick County, North Carolina General Conditions of the Contract (for construction contracts), unless the County directs otherwise. In the event of a conflict between the General Conditions of the Contract and this Agreement, this Agreement shall prevail.

4. NONAPPROPRIATION

If the Board of County Commissioners does not appropriate the funding needed by the County to make payments under this Agreement for a given fiscal year, the County will not be obligated to pay amounts due beyond the end of the last fiscal year for which funds were appropriated. In such event, the County will promptly notify the Contractor of the non-appropriation and this Agreement will be terminated at the end of the last fiscal year for which funds were appropriated. No act or omission by the County which is attributable to non-appropriation of funds shall constitute a breach of or default under this Agreement.

5. COMPENSATION

The County agrees to pay Contractor the total amount of **{Contract Amount - Alpha} Dollars** (**{Contract Amount - Numeric}**) for the Project. Payment shall be subject to additions and deductions as provided in the specifications or Bid Documents. County shall make monthly progress payments to Contractor on the basis of a duly certified and approved estimate of work performed during a given calendar month, less five percent (5%) of the amount of such estimate which is to be retained by County until all work has been performed strictly in accordance with this Agreement and such work has been accepted by County. The County shall not require further retainage after fifty percent (50%) of the work has been satisfactorily completed on schedule as more fully set forth in the General Conditions included with the Bid Documents. County shall make full and final payment to Contractor within thirty (30) days after completion of the Project and acceptance of such work by County and upon Contractor’s submittal of satisfactory evidence that all payrolls, material bills and other costs incurred in connection with the Project have been paid in full. Notwithstanding the foregoing, County will not pay late fees on any charges under this Agreement. If County disputes any portion of the charges, the County shall inform Contractor in writing of the disputed charges.

6. INDEPENDENT CONTRACTOR

Both County and Contractor agree that Contractor shall act as an independent contractor and shall not represent itself as an agent or employee of the County for any purpose in the performance of its duties under this Agreement. Contractor represents that it has or will secure, at its own expense, all personnel required in performing the work under this Agreement. Accordingly, Contractor shall be responsible for payment of all federal, state and local taxes arising out of its activities in accordance with this Agreement, including, without limitation, federal and state income tax, social security tax, unemployment insurance taxes and any other taxes or business license fees as required. Contractor shall not be entitled to participate in any plans, arrangements or distributions by the County pertaining to or in connection with any pension, stock, bonus, profit sharing or other benefit extended to County employees.

In the event the Internal Revenue Service should determine that Contractor is, according to Internal Revenue Service guidelines, an employee subject to withholding and social security contributions, then Contractor hereby acknowledges that all payments hereunder are gross payments, and the Contractor is responsible for all income taxes and social security payments thereon.

7. CONTRACTOR REPRESENTATIONS

- (1) Contractor is a duly organized entity or corporation qualified to do business and in good standing under the laws of the State of North Carolina;
- (2) Contractor has all requisite corporate power and authority to execute, deliver and perform its obligations under this Agreement;
- (3) No approval, authorization or consent of any governmental or regulatory authority is required to be obtained or made by it in order for Contractor to enter into and perform its obligations under this Agreement;
- (4) Contractor shall not violate any agreement with any third party by entering into or performing the work under this Agreement;
- (5) Contractor will perform all work in conformity with the specifications and requirements of this Agreement;
- (6) Unless otherwise agreed by the parties, Contractor agrees that all materials will be new and of good quality;
- (7) The work provided by Contractor under this Agreement will not violate, infringe or misappropriate any patent, copyright, trademark or trade secret rights of any third party, or any other third-party rights (including without limitation non-compete agreements);

- (8) Contractor will perform the work in a professional and workmanlike manner exercising reasonable care and diligence and will ensure that it adheres to the highest generally accepted standards in the industry when performing said work;
- (9) Contractor acknowledges that if any specific licenses, certifications or related credentials are required in its performance of the work, it will ensure that such credentials remain current and active and not in a state of suspension or revocation; and
- (10) Contractor shall ensure that whenever its employees or agents are on County property, they will strictly abide by all instructions and directions issued by the County with respect to rules, regulations, policies and security procedures applicable to work on the County's premises. Such rules, regulations, policies and security procedures shall include, but not be limited to: (i) not possessing any controlled substances; (ii) smoking only in designated smoking areas, if any; and (iii) not possessing weapons, except for weapons possessed by law enforcement officials.

8. NON-ENDORSEMENT AND PUBLICITY

County is not endorsing Contractor or its work, and Contractor is not permitted to reference this Agreement or County in any manner without the prior written consent of County. Notwithstanding the foregoing, the parties agree that Contractor may list the County as a reference in response to requests for proposals and may identify County as a customer in presentations to potential customers.

9. NON-EXCLUSIVITY

Contractor acknowledges that County is not obligated to contract solely with Contractor for the work covered under this Agreement.

10. DIVESTMENT FROM COMPANIES THAT BOYCOTT ISRAEL

Contractor hereby certifies that it has not been designated by the North Carolina State Treasurer as a company engaged in the boycott of Israel pursuant to N.C.G.S. § 147-86.81.

11. DEBARMENT

Contractor hereby certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this Agreement by any governmental department or agency. Contractor must notify County within thirty (30) days if debarred by any governmental entity during this Agreement.

12. MINORITY BUSINESS ENTERPRISES

Contractor will make a good faith effort to utilize Minority Business Enterprises (MBEs) per N.C. Gen. Stat. 143-128 as subcontractors in the performance of this Agreement.

13. WORKERS' COMPENSATION

To the extent required by law, Contractor shall comply with the North Carolina Workers' Compensation Act and shall provide for the payment of workers' compensation to its employees in the manner and to the extent required by such Act. In the event Contractor is excluded from the requirements of such Act and does not voluntarily carry workers' compensation coverage, Contractor shall carry or cause its employees to carry adequate medical/accident insurance to cover any injuries sustained by its employees or agents while fulfilling Contractor's obligations under this Agreement. Contractor agrees to furnish County proof of compliance with said Act or adequate medical/accident insurance coverage upon request.

14. TAXES

Contractor shall be responsible for paying all taxes, fees, assessments and premiums of any kind payable on its employees and operations. Contractor shall substantiate, on demand by the County, that all taxes and other charges are being properly paid.

15. COMPLIANCE WITH E-VERIFY PROGRAM

Pursuant to N.C.G.S. § 143-133.3, Contractor understands that it is a requirement of this Agreement that Contractor and its subcontractors must comply with the provisions of Article 2 of Chapter 64 of the North Carolina General Statutes. In doing so, Contractor agrees that, unless it is exempt by law, it shall verify the work authorization of its employees utilizing the federal E-Verify program and standards as promulgated and operated by the United States Department of Homeland Security, and Contractor shall require its subcontractors to do the same. Upon request, Contractor agrees to provide County with an affidavit of compliance or exemption.

16. CONFIDENTIAL INFORMATION

For purposes of this Agreement, the party disclosing Confidential Information is the "Discloser," and the party receiving Confidential Information is the "Recipient." "Confidential Information" shall mean any nonpublic information concerning the parties' respective businesses including, but not limited to, all tangible, intangible, visual, electronic, present or future information such as: (a) trade secrets; (b) financial information, including pricing; (c) technical information, including research, development, procedures, algorithms, data, designs and know-how; (d) business information, including operations, planning, marketing interests and products; and (e) the terms of any agreement between the parties and the discussions, negotiations and proposals related thereto. Confidential Information disclosed to the other party must be clearly identified. Written Confidential Information must be clearly marked in a conspicuous place with an appropriate legend identifying the information as "Confidential." Confidential Information that is not written must be identified as confidential at the time of disclosure and confirmed in writing delivered to Recipient within fifteen (15) days of disclosure.

The restrictions regarding the use and disclosure of Confidential Information do not apply to information that is:

- (1) in the public domain through no fault of the Recipient;
- (2) within the legitimate possession of the Recipient, with no confidentiality obligations to a third party;
- (3) lawfully received from a third party having rights in the information without restriction, and without notice of any restriction against its further disclosure;
- (4) independently developed by the Recipient without breaching this Agreement or by parties who have not had, either directly or indirectly, access to or knowledge of the Confidential Information;
- (5) disclosed with the prior written consent of the Discloser; or
- (6) required to be disclosed by law, regulation or court or governmental order, specifically including requests pursuant to the Public Records Laws of North Carolina contained in Chapter 132 of the North Carolina General Statutes. In the event Recipient receives such a request, it shall notify Discloser and Discloser shall have the opportunity to defend against production of such records at Discloser's sole expense.

17. NO ASSIGNMENT WITHOUT CONSENT

Neither party shall assign this Agreement (or assign any right or delegate any obligation contained herein whether such assignment is of service, of payment or otherwise) without the prior written consent of the other party hereto. Any such assignment without the prior written consent of the other party hereto shall be void. An assignee shall acquire no rights, and County shall not recognize any assignment in violation of this provision.

18. GOVERNING LAW AND VENUE

This Agreement shall be governed by applicable federal law and by the laws of the State of North Carolina without regard for its choice of law provisions. All actions relating in any way to this Agreement shall be brought in the General Court of Justice of the State of North Carolina in Brunswick County or in the Federal District Court for the Eastern District of North Carolina, Wilmington division.

19. DISPUTE RESOLUTION

Should a dispute arise as to the terms of this Agreement, both parties agree that neither may initiate binding arbitration. The parties may agree to non-binding mediation, as more fully set forth in the General Conditions of the Contract.

20. GOVERNMENTAL IMMUNITY

County, to the extent applicable, does not waive its governmental immunity by entering into this Agreement and fully retains all immunities and defenses provided by law with regard to any action based on this Agreement.

21. NON-WAIVER

Failure by County at any time to require the performance by Contractor of any of the provisions of this Agreement shall in no way affect County's right hereunder to enforce the same, nor shall any waiver by County of any breach be held to be a waiver of any succeeding breach or a waiver of this Section.

22. ENTIRE AGREEMENT

This Agreement constitutes the entire agreement between the parties with respect to the subject matter herein. There are no other representations, understandings or agreements between the parties with respect to such subject matter. This Agreement supersedes all prior agreements, negotiations, representations and proposals, written or oral, related specifically to the Project herein.

23. HEADINGS

The headings in this Agreement are for convenience of reference only and shall not define or limit any of the terms or provisions hereof.

24. SEVERABILITY

The invalidity of one or more of the phrases, sentences, clauses or sections contained in this Agreement shall not affect the validity of the remaining portion of the Agreement so long as the material purposes of this Agreement can be determined and effectuated. If a provision of this Agreement is held to be unenforceable, then both parties shall be relieved of all obligations arising under such provision, but only to the extent that such provision is unenforceable, and this Agreement shall be deemed amended by modifying such provision to the extent necessary to make it enforceable while preserving its intent.

25. AMENDMENTS

Amendments or changes to this Agreement shall not be valid unless in writing and signed by authorized agents of both Contractor and County.

26. NOTICES

- (1) **DELIVERY OF NOTICES.** Unless otherwise specified in the General Conditions, any notice, consent or other communication required or contemplated by this Agreement shall be in writing, and shall be delivered in person, by U.S. mail, by overnight courier, by electronic mail or by facsimile to the intended recipient at the address set forth below.
- (2) **EFFECTIVE DATE OF NOTICES.** Any notice shall be effective upon the date of receipt by the intended recipient; provided that any notice which is sent by facsimile or electronic mail shall also be simultaneously sent by mail deposited with the U.S. Postal Service or by overnight courier.
- (3) **NOTICE ADDRESS.**
 - a. Communications that relate to any breach, default, termination, amendment or waiver of any provision of this Agreement shall be sent to:

For the County: Brunswick County Attorney
P.O. Box 249
Bolivia, NC 28422

With a copy to: {County Contact for Notices}
{County Contact Title}
{Contact Address}
{Contact City}, {Contact State} {Contact Zip}

- b. Communications that relate to any delay in performance, prevention of performance, modification or extension of this Agreement shall be sent to:

For the County: {County Contact for Notices}
{County Contact Title}
{Contact Address}
{Contact City}, {Contact State} {Contact Zip}

- c. All communications to Contractor shall be sent to:

For the Contractor: {Vendor Name}
{Vendor Address}
{Vendor City}, {Vendor State or Territory} {Vendor Zip}

27. SIGNATURES

This Agreement, together with any amendments or modifications, may be executed in one or more counterparts, each of which shall be deemed an original and all of which shall be considered one and the same agreement. This Agreement may also be executed electronically. By signing electronically, the parties indicate their intent to comply with the Electronic Commerce in Government Act (N.C.G.S § 66-358.1 et seq.) and the Uniform Electronic Transactions Act (N.C.G.S § 66-311 et seq.). Delivery of an executed counterpart of this Agreement by either electronic means or by facsimile shall be as effective as a manually executed counterpart.

ATTEST:

BRUNSWICK COUNTY

Clerk to the Board

By: _____
Frank Williams
Chairman

[SEAL]

{VENDOR NAME}

By: _____

Printed Name: { Vendor Signatory Name }

Title: { Vendor Signatory Title }

Date: _____

“This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.”

Julie A. Miller, Finance Director
Brunswick County, North Carolina

APPROVED AS TO FORM

Brunswick County Attorney/Asst Attorney

FORM OF PERFORMANCE BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal:
(Contractor) _____

Name of Surety: _____

Name of Contracting
Body: _____

Amount of Bond: _____

Project: _____

KNOW ALL MEN BY THESE PRESENTS, that we, the PRINCIPAL and SURETY above named, are held and firmly bound unto the above named contracting body, hereinafter called the contracting body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind, ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain Contract with the contracting body, identified as shown above and hereto attached:

NOW, THEREFORE, if the principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said Contract during the original term of said Contract and any extensions thereof that may be granted by the contracting body, with or without notice to the surety, and during the life of any guaranty required under the Contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in _____ counterparts.

Witness:

(Proprietorship or Partnership)

Attest: (Corporation)

By: _____

Title: _____
(Corp. Sec. or Asst. Sec. Only)

(Corporate Seal)

Contractor: (Trade or Corporate Name)

By: _____

Title: _____
(Owner, Partner, or Corp.
President or Vice President Only)

(Surety Company)

Witness:

By: _____

Title: _____
(Attorney in Fact)

Countersigned:

(Surety Corporate Seal)

(N.C. Licensed Resident Agent)

(Name and Address-Surety Agency)

(Surety Company Name and N.C.
Regional or Branch Office Address)

FORM OF PAYMENT BOND

Date of Contract: _____
Date of Execution: _____
Name of Principal
(Contractor) _____
Name of Surety: _____
Name of Contracting
Body: _____
Amount of Bond: _____
Project: _____

KNOW ALL MEN BY THESE PRESENTS, that we, the PRINCIPAL and SURETY above named, are held and firmly bound unto the above named contracting body, hereinafter called the contracting body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain Contract with the contracting body identified as shown above and hereto attached:

NOW, THEREFORE, if the principal shall promptly make payment to all persons supplying labor/material in the prosecution of the work provided for in said Contract, and any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in _____ counterparts.

Witness:

(Proprietorship or Partnership)

Attest: (Corporation)

By: _____

Title: _____
(Corp. Sec. or Asst. Sec. Only)

(Corporate Seal)

Contractor: (Trade or Corporate Name)

By: _____

Title: _____
(Owner, Partner, or Corp.
Pres. or Vice Pres. only)

(Surety Company)

Witness:

By: _____

Title: _____
(Attorney in Fact)

Countersigned:

(Surety Corporate Seal)

(N.C. Licensed Resident Agent)

(Name and Address - Surety Agency)

(Surety Company Name and N.C.
Regional or Branch Office Address)

Do not submit with bid Do not submit with bid Do not submit with bid Do not submit with bid
CERTIFICATE OF INSURANCE (Workmen's Compensation and Liability)

This certificate of insurance neither affirmatively nor negatively amends, extends, or alters the coverage afforded by the policy(ies) listed on this certificate.

Project _____ **Location** _____

Owner Brunswick County **Address** P. O. Box 249; Bolivia, NC 28422
Contractor (Insured) _____ **Address** _____

The undersigned hereby certifies that the following policies, subject to their terms, conditions, and exclusions have been issued by the named companies to the above insured and are presently in full force and effect:

A. WORKMEN'S COMPENSATION:

Policy No. _____ **Expiration Date** _____
Insurance Co. _____ **Address** _____

COVERAGE: Statutory Workmen's Compensation. Employers Liability Limit \$ _____ Each Accident.

Locations Covered: _____

B. COMPREHENSIVE GENERAL LIABILITY & PROPERTY DAMAGE:

Policy No. _____ **Expiration Date** _____
Insurance Co. _____ **Address** _____

LIMITS:

Bodily Injury, including Personal Injury.		Property Damage	\$ _____	Each Occurrence
\$ _____	Each Person		\$ _____	Aggregate
\$ _____	Each Occurrence	Other		
\$ _____	Aggregate			

COVERAGE PROVIDED (Check Applicable Squares):

	Yes	No	Property Damage Liability Includes:	Yes	No
Premises Operations	<input type="checkbox"/>	<input type="checkbox"/>	Damage Due to Blasting (explosion)	<input type="checkbox"/>	<input type="checkbox"/>
Subcontractor Operations	<input type="checkbox"/>	<input type="checkbox"/>	Damage Due to Collapse	<input type="checkbox"/>	<input type="checkbox"/>
Personal Injury	<input type="checkbox"/>	<input type="checkbox"/>	Damage to Underground Facilities	<input type="checkbox"/>	<input type="checkbox"/>
Completed Operations	<input type="checkbox"/>	<input type="checkbox"/>	Broad Form Property Damage:	<input type="checkbox"/>	<input type="checkbox"/>
Contractual Liability (Per Spec)	<input type="checkbox"/>	<input type="checkbox"/>	Operations of Contractor	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	Contractual	<input type="checkbox"/>	<input type="checkbox"/>

C. COMPREHENSIVE AUTOMOBILE LIABILITY & PROPERTY DAMAGE:

Policy No. _____ **Expiration Date** _____
Insurance Co. _____ **Address** _____

LIMITS:

Bodily Injury		Property Damage	\$ _____	Each Occurrence
\$ _____	Each Person		\$ _____	Aggregate
\$ _____	Each Occurrence	Other		
\$ _____	Aggregate			

COVERAGE PROVIDED - for operation of all owned, non-owned, and hired vehicles.

D. UMBRELLA EXCESS LIABILITY:

Policy No. _____ **Expiration Date** _____
Insurance Co. _____ **Address** _____

LIMITS: Single Limit Bodily Injury and Property Damage \$ _____ Each Occurrence.

COVERAGE PROVIDED - applies in excess of the coverages listed above for Employer's Liability, Comprehensive General, Automotive, and Property Damage Coverage.

The undersigned further certifies that in the event of cancellation or any material change in any of the above policies, thirty (30) days prior written notice of such cancellation or change shall be delivered by registered or certified mail to the above Owner.

BRUNSWICK COUNTY, ITS OFFICERS, AGENTS AND EMPLOYEES ARE INCLUDED AS ADDITIONAL INSURED UNDER CONTRACTOR'S GENERAL LIABILITY INSURANCE

Name of Agency _____ **Address** _____
Date _____ **By** _____

NOTICE TO PROCEED

Dated _____, 20 ____

To: _____
(CONTRACTOR)

Address: _____

Owner: **BRUNSWICK COUNTY**

Owner's Contract No. **N/A**

Project: _____

(Insert Name of Contract as it Appears in the Bidding Documents)

You are notified that the Contract times under the above Contract will commence to run on:

_____.
By that date, you are to start performing your obligations under the Contract Documents. Your Contract completion date is therefore:_____.

The Contract provides for the assessment of liquidated damages for each consecutive calendar day that the work remains incomplete after the above established completion date.

Before you may start any Work at the site, you must deliver the required certificates of insurance to the Owner.

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

Brunswick County
(OWNER)

By: _____
(AUTHORIZED SIGNATURE)

(TITLE)

Project:
Date:
Brunswick County

Contractor Submittal

Submittal #: _____

ATTENTION: _____
TO (Designer): _____
ADDRESS: _____

ATTENTION: _____
FROM (Contractor): _____
ADDRESS: _____

WE ARE SENDING YOU:

First Submittal Re-submittal # _____

Shop Drawings O&M Manuals Specifications Samples Or-Equal Item Substitution Item Other _____

MANUFACTURER	COPIES	SPEC. SECTION #	SCHEDULED SUBMITTAL DATE	DESCRIPTION

THESE ARE TRANSMITTED AS CHECKED BELOW:

For approval For your use As Requested For review and comment

"I certify that I have reviewed the Contract Documents and that the information herein submitted meets the requirements outlined in the Contract Documents except as specifically stated on this submittal form."

(Affix Contractor's Stamp of Approval Above)

REMARKS (Include any exceptions to the Contract Documents):

COPY TO: _____

SIGNED: _____

*Directive/Written Notice/Correspondence/Order/Minor Change in the Work
Brunswick County*

Date: _____ **Time:** _____ a.m./p.m. **Project Name:** _____

Designer: _____ **Contractor:** _____

Designer Rep: _____ **Contractor Rep:** _____

In accord with the Article "Construction Supervision" of the General Conditions, the Contractor, by signing below, 1) acknowledges receipt of this correspondence, and 2) acknowledges that, unless noted otherwise under Contractor's comments, he/she agrees that the correspondence contained herein does **not** constitute a "Change In The Work" or an "Extra Cost" (as defined in the General Conditions) that would require additional compensation or an extension of the Contract time.

Contractor's Comments:

(The Contractor is directed to the General Conditions when making "Claims for Extra Cost." If the Contractor views instructions from the Designer as requiring additional compensation or an extension of the Contract time, the contractor shall not proceed with the work affected until further advised.)

Signature/Date: _____ **Print Name:** _____

Representing: _____ **Position:** _____

*Work Change Directive
Brunswick County*

Date: _____ Time: _____ a.m./p.m. Project Name: _____
Designer: _____ Contractor: _____
Designer Rep: _____ Contractor Rep: _____

Directive:

Reason for Change:

The preceding directive requires the following actions by the Contractor before
(Date):

CONTRACTOR:

The total lump sum cost for the change noted above shall not exceed \$ _____.

OR

The estimated quantities, maximum unit prices, and maximum extended prices for each item are as follows:

<u>Item</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Extended Price</u>
-------------	---------------------------	-------------------	-----------------------

The total change to the Time of Completion shall be an increase/decrease of _____ days.

DESIGNER:

The work change noted above is in the best interests of the owner. The price and Contract Time adjustment have been evaluated and are reasonable. The changes will be effected by a final adjusting change order at the close of the project **or** by _____(date), whichever is sooner.

OWNER:

The Owner agrees to the change as being in the Owner's best interest.

SIGNATURES:

Contractor

Date

Designer

Date

Owner

Date

Original Designer

Yellow Contractor

Pink Owner

*Change Proposal
Brunswick County*

Date: _____
Designer: _____
Designer Rep: _____

Project Name: _____
Contractor: _____
Contractor Rep: _____

The Contractor recommends the following change to the project with associated changes to the Time of Completion and/or total project cost:

This change will: ADD SUBTRACT NOT CHANGE (circle as appropriate) the total project cost by \$_____.

The total change to the Time of Completion shall be an: INCREASE DECREASE (circle as appropriate) of _____ days.

A breakdown of the proposed work is attached. No work shall be commenced until authorized by the Owner. All work shall be in accordance with the terms, stipulations, and conditions of the Contract Documents.

SIGNATURES:

Contractor

Date

Designer's Action: Recommend Do Not Recommend
 Recommend with the following changes

Designer

Date

BRUNSWICK COUNTY
CHANGE ORDER NO.

FOR BC USE ONLY

- OR Owner Request
- CR Contractor Request
- DR Designer Request
- CC Concealed Condition
- DE Design Error
- DO Design Omission
- SC Schedule Change
- OT Other

PROJECT:
ORIG. TIME OF COMP.
ORIG. DATE OF COMP.

CAUSE CODE:

Under the terms of the Contract and without invalidating the original provisions thereof, the following change(s) in work is(are) authorized for the change in Contract amount herein set forth: (Description of change order with detailed breakdown attached)

The Time of Completion including previous orders is _ calendar days and shall be (increased) (decreased) (unchanged) by calendar days by this change order for a revised Contract date of completion of _____. (Detailed analysis supporting the requirements for a change in duration is attached)

CONTRACT COST SUMMARY

					TOTALS
1. Original Contract Amount					\$
2. Amount of Previous Orders	ADD	\$0	Deduct	\$0	
3. Amount of This Order:	ADD	\$0	Deduct	\$0	
4. Total additions lines 2 & 3			Minus Total Deducts:	\$0	\$
(Line 4 shall show the net amount to be added or [deducted] from the original Contract amount.)					
5. Revised Contract Total Amount					\$

I certify that my Bonding Company will be notified forthwith that my Contract has been changed by the amount of this change order, and that a copy of the approved change order will be mailed upon receipt by me to my surety.

(Contractor)	By:		By:		By:	(Date)
(Designer)	By:		By:		By:	(Date)
(Owner)	By:		By:		By:	(Date)
(County Commissioners)	By:		By:	Frank Williams, Chairman	By:	(Date)

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.

Approved as to Form

Brunswick County Finance Officer

Brunswick County Attorney

DISTRIBUTION: 1 original to Owner 1 original to Contractor

DESIGNER'S REQUEST FOR AUTHORIZATION TO CHANGE

DATE:

REQUEST NO.:

PROJECT NAME:

OWNER:

CONTRACTOR:

DESIGNER:

CONTRACT FOR:

REASON FOR CHANGE:

SUMMARY REVIEW OF CONTRACTOR'S ESTIMATE FOR TIME AND COST: (Attach Contractor's detailed cost breakdown of labor and materials)

DESIGNER SUMMARY:

1. Schedule items affected by this change:
2. Can Contractor mitigate the change without requiring a Contract time extension?
3. Will the change require a Contract time extension for other Contractors? Which?
4. Are additional costs indicated by reason of the time extension If so they must be included in 5 & 6 Below.

	<u>CONTRACTOR'S ESTIMATE</u>	<u>DESIGNER'S ESTIMATE</u>
5. Estimated cost of change:	_____	_____
6. Estimated time extension field cost (if any):	_____	_____

DESIGNER RECOMMENDATION AND CERTIFICATION:

I certify that I have reviewed all aspects of this change order and have determined that it is in the best interest of the Owner to have the work accomplished. I have also determined that the cost and time allotment are fair and equitable, and I recommend acceptance by the Owner.

Approved by: _____ Date: _____

Title: _____

**Minority Business Enterprise (MBE) Documentation for Contract Payments
Brunswick County**

Project Name: _____ **Period: From** _____ **to** _____.

(1st day of month to last day of month)

Designer: _____ **Contractor:** _____.

The following is a list of payments made to Minority Business Enterprises on this project for the above-mentioned period.

MBE FIRM NAME	* INDICATE TYPE OF MBE	AMOUNT PAID THIS MONTH	TOTAL PAYMENTS TO DATE	TOTAL AMOUNT COMMITTED

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

Date: _____ Approved/Certified By: _____
(Contractor) Name

Title

Signature

CONTRACTOR TO SUBMIT WITH EACH REQUEST FOR PAYMENT & REQUEST FOR FINAL PAYMENT

**Rain Day Record
Brunswick County**

Project Name: _____ **Period: From** _____ **to** _____.
(1st Day of month to last day of month)

Designer: _____ **Contractor:** _____.

Designer Rep: _____ **Contractor Rep:** _____.

The Contractor shall submit this form with each pay request. Extension of the Time of Completion shall be made in accordance with the Article "Time of Completion, Delays, Extension of Time" in the General Conditions. Rain days noted on this form shall be used as a means of determining the validity of requests for extensions to the Time of Completion but shall not be construed to mean that all days herein itemized shall lead to an extension of the Time of Completion. Time extensions shall not be granted for rain, wind, snow, or other natural phenomena of normal intensity.

"During the normal work days of this period, no delays were incurred due to rain or wet conditions at the site."

OR

"During the normal work days of this period, no substantial work could be performed on the project due to rain or wet conditions during the following days":

_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____

_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____
_____, 20____

SIGNATURES:

Contractor Date

Inspector Comments (Note agreement/disagreement): _____

Resident Inspector Date

**BRUNSWICK COUNTY
 PERIODIC PAYMENT TAX CERTIFICATION
 COUNTY SALES AND USE TAX**

CONTRACTOR: _____

Page _____ of _____

PROJECT: _____

FOR PERIOD: _____

	TOTAL FOR COUNTY OF:	TOTAL ALL COUNTIES					
CONTRACTOR							
SUBCONTRACTOR(S)*							
COUNTY TOTAL							

* Attach subcontractor(s) report(s)

NOTE: Totals above must balance with Detail Sheet(s)

I certify that the above figures include only tax paid on supplies, materials, fixtures, and equipment that actually became a part of or annexed to the constructed facilities. I certify that, to the best of my knowledge, the information provided here is true, correct, and complete.

Sworn to and subscribed before me,

This the _____ day of _____, 20____

 Signed

 Notary Public

My Commission Expires: _____

 Print or Type Name of Above

Seal

NOTE:
 This certified statement may be subject to audit

BRUNSWICK COUNTY
 PERIODIC PAYMENT ITEMIZED TAX STATEMENT
 COUNTY SALES AND USE TAX

CONTRACTOR: _____

Page _____ of _____

SUBCONTRACTOR _____

FOR PERIOD: _____

PROJECT: _____

PURCHASE DATE	VENDOR NAME	INVOICE NUMBER	TYPE OF PROPERTY	INVOICE TOTAL	TOTAL TAXABLE AMOUNT	COUNTY TAX PAID	COUNTY OF SALE *
				\$	\$	\$	
TOTAL:				\$	\$	\$	

* If this is an out-of-state vendor, the County of Sale should be the county to which the merchandise was shipped.

*Contractor's Affidavit of Release of Liens
Brunswick County*

State of _____

County of _____

_____, _____
(Name) (Title)

of _____, being first duly sworn, deposes and says that:

1. The undersigned is authorized to execute this Affidavit, Release, and Waiver of Claim on behalf of the Contractor and has personal knowledge of all facts set forth herein;
2. This Affidavit, Release, and Waiver of Claim is made concerning the construction of the following project _____;
3. All payrolls, material bills, sales tax, social security, state and federal unemployment insurance, and all other liabilities and taxes owed by the Contractor and arising in any manner from the above-described Project have been paid in full;
4. No claim or lien exists in favor of any supplier of materials or labor or in favor of any Subcontractor furnishing materials or labor on the above-described Project;
5. Notwithstanding the foregoing, if the Owner or property of the Owner is subjected to any claim or lien which arises in any manner from the failure of the Contractor to pay any liability described above, the Contractor will indemnify and hold the Owner harmless for any amount which the Owner is required to pay to discharge such lien or settle such claim and further will pay the Owner's expenses, costs, and attorney fees incurred in connection therewith;
6. All claims, suits, and proceedings of every name, description, or nature as arising out of the Project against the Owner, its officers, employees, and agents have been settled;
7. The Contractor releases and waives any and all claims of every type and description which the Contractor may have against the Owner arising in any manner from the construction of the above-described Project.

Title _____

Date _____

Sworn to and subscribed before me this the _____ day of _____, 20____.

Notary Public

My Commission expires: _____

**Certificate of Compliance
Brunswick County**

PROJECT:
LOCATION:
DATE OF FINAL ACCEPTANCE
CONTRACTOR:

I (we) certify that the work on the above-referenced Project has been inspected in accordance with Chapter 133, Article 1, of the General Statutes, and that:

- (1) The inspections of the construction, repairs, or installations have been conducted with the degree of care and professional skill and judgment ordinarily exercised by a member of my (our) profession; and

- (2) to the best of my (our) knowledge, and in my (our) professional opinion as an architect or engineer, the Contractor has fulfilled the obligations of such plans, specifications and Contract.

Signed this _____ day of _____

(SEAL)

Designer

Title

State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20__.

Notary Public: _____ (SEAL)

My Commission Expires: _____

**Certificate of Completion
Brunswick County**

PROJECT _____

LOCATION _____

DATE _____

OWNER _____

DESIGNER _____

PRIME CONTRACTOR _____

I (we), as Designer, certify that all work on the above referenced project has been completed according to the plans, specifications, addenda and approved change orders and that the project is ready for owner occupancy.

The final inspection was made on _____, 20___. The guarantee period begins on _____, 20___, and shall terminate on _____, 20___.

The contractors report that final payments have been made to all material suppliers, employees and subcontractors, and copies of their lien waivers are attached.

Builder's risk insurance was cancelled as of _____, 20___, and a copy of the cancellation notice is attached hereto.

The total time for completion as allowed in the contract plus granted time extensions is _____ days. The actual time required for completion was _____ days, and the contractor(s) is/is not (are/are not) liable for liquidated damages. The contractor(s) has (have) been notified of any proposed assessments of liquidated damages. Copies of each notification and my (our) letter of recommendations as to the amount of liquidated damages are attached.

Copies of the following items are attached as indicated below:

Written guarantees:

Affidavits:

—

—

—

—

—

Consent of surety company to final payment: _____

Manuals of operation instructions:

—

—

—

—

—

Final report _____

As-built drawings _____

Other required closing papers of the contractor:

—

—

—

—

—

There are no unsettled disputes between the Owner and Contractor, Owner and Designer, or the Designer and Contractor at this time.

Signed this _____ day of _____ 20__.

(SEAL)

Designer _____

Title

CONTRACTOR EVALUATION

Phase - Performance Category

Scale - Mark at any point on line.

1 _____ 3 _____ 5
(Low) _____ (High)

PRE-CONSTRUCTION (IF UTILIZED)

Attendance at Pre-Bid Conference 1 _____ 3 _____ 5
 Site Visit 1 _____ 3 _____ 5

CONTRACT AWARD PHASE

Timely Submission of Documents 1 _____ 3 _____ 5
 Accuracy of Documents 1 _____ 3 _____ 5

CONSTRUCTION PHASE

Job Site Mobilization 1 _____ 3 _____ 5
 Job Site Organization 1 _____ 3 _____ 5
 Job Schedule Completeness 1 _____ 3 _____ 5
 Job Schedule Timeliness 1 _____ 3 _____ 5
 Job Schedule Management 1 _____ 3 _____ 5
 Quality of Field Supervision 1 _____ 3 _____ 5
 Sub-Contractor Management 1 _____ 3 _____ 5
 Cooperation with other Contractors, Owner, Designer 1 _____ 3 _____ 5
 Shop Drawing Processing 1 _____ 3 _____ 5
 Change Order Management 1 _____ 3 _____ 5
 Job Site Safety 1 _____ 3 _____ 5
 Project Expediter Function (if assigned) 1 _____ 3 _____ 5
 Quality of Construction 1 _____ 3 _____ 5
 Timeliness of Completion 1 _____ 3 _____ 5
 Adherence to Plans/Specifications 1 _____ 3 _____ 5
 Knowledge and Compliance with Applicable Codes 1 _____ 3 _____ 5
 Environmental Protection 1 _____ 3 _____ 5

POST CONSTRUCTION PHASE

Punch List Size 1 _____ 3 _____ 5
 Punch List Complexity 1 _____ 3 _____ 5
 Submission of Close Out Data 1 _____ 3 _____ 5

OVERALL PERFORMANCE

Subcontractors/Suppliers

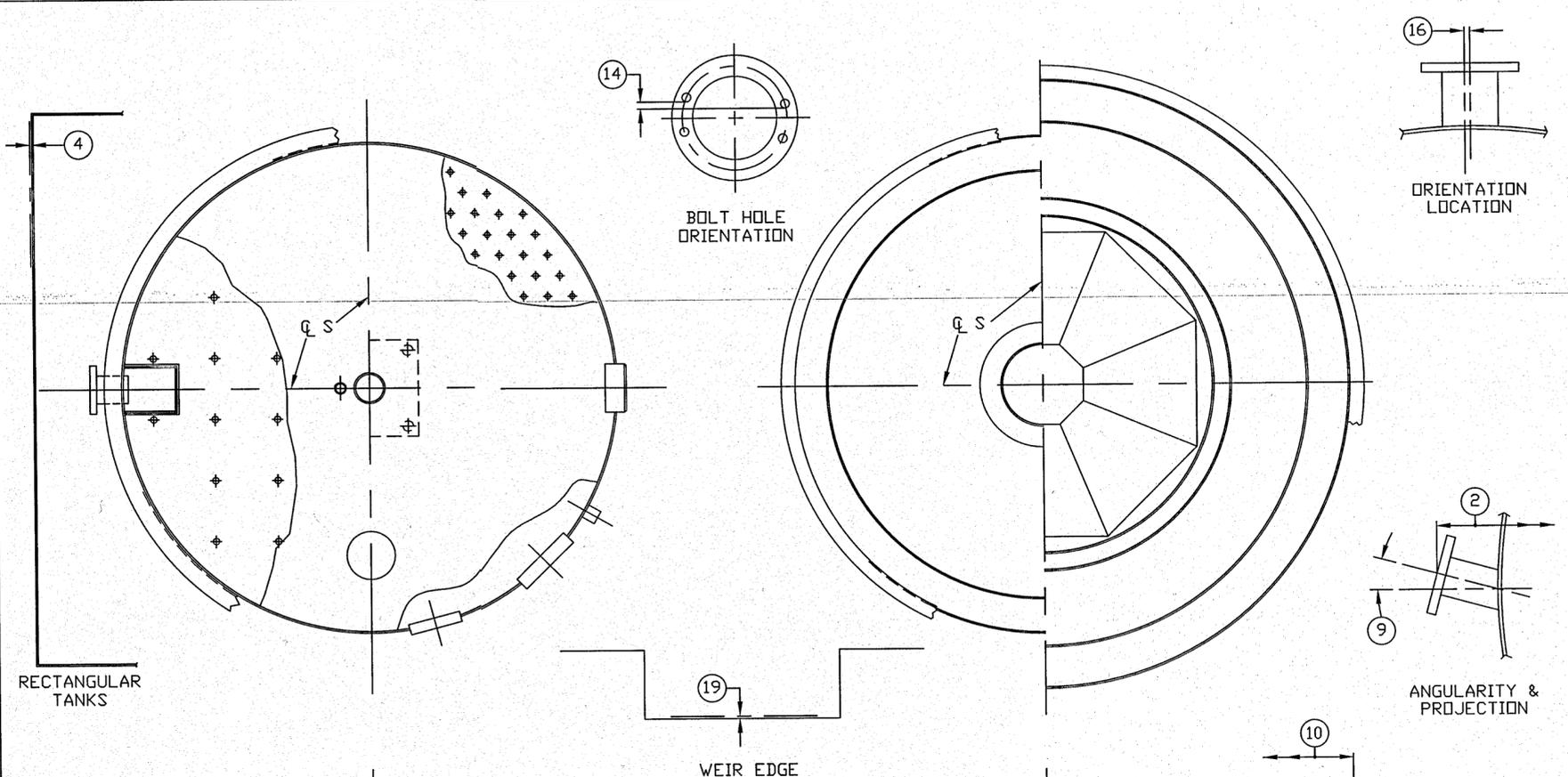
Name _____ 1 _____ 3 _____ 5
 Name _____ 1 _____ 3 _____ 5

POST OCCUPANCY EVALUATION (OPTIONAL)

Warranty Management 1 _____ 3 _____ 5
 Nature of Defect 1 _____ 3 _____ 5

***OVERALL RATING** 1 _____ 3 _____ 5

COMMENTS:

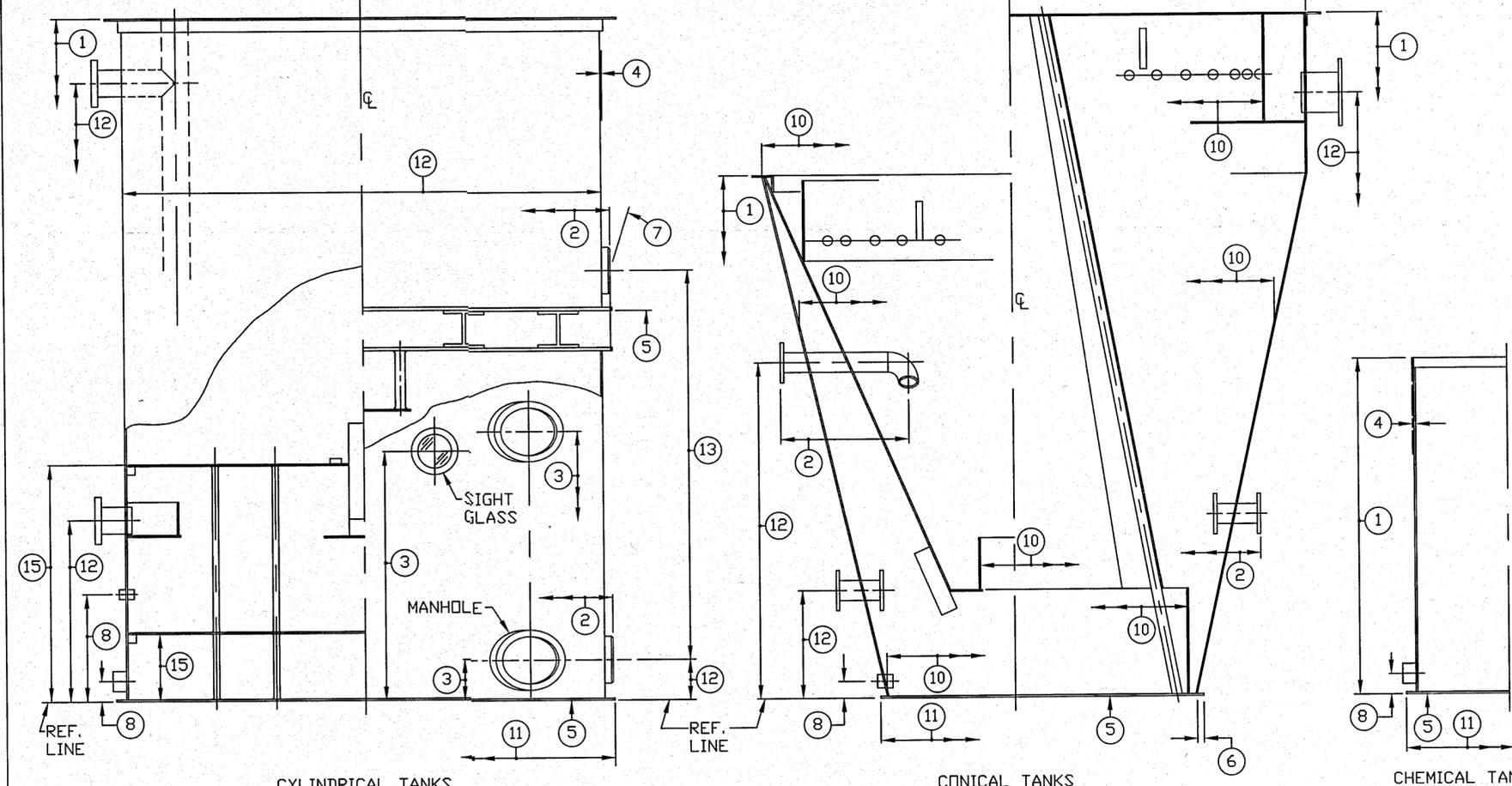


TOLERANCES

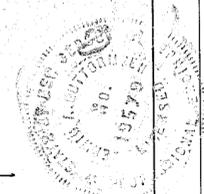
1. DISTANCE BETWEEN REF. LINE AND TOP RIM: $\pm 1/32"$ PER FOOT.
- * 2. DISTANCE BETWEEN ϕ TANK AND FACE OF FLANGE: $\pm 1/4"$
3. LOCATION OF MANHOLE & SIGHT WINDOW FROM REF. LINE: $\pm 1/2"$
4. MAX. SHELL DEVIATION FROM STRAIGHT: $1/8"$ PER 10 FEET
- * 5. OUT-OF-LEVEL OF BASE OVER ANY DIAMETER:
 $\pm 1/4"$ FOR TANK DIA. UP TO 10'-0"
 $\pm 3/8"$ FOR TANK DIA. OVER 10'-0"
- * 6. MINIMUM PROJECTION OF BASE TO BE $1/2"$
7. TILT OF NOZZLE FLG. FACE VERTICAL OR HORIZONTAL $\pm 1^\circ$
8. LOCATION OF COUPLING FROM REF. LINE: $\pm 1/4"$
9. ANGULARITY OF NOZZLES FROM RADIAL $\pm 1^\circ$
10. OUT-OF-ROUNDNESS OF CYLINDRICAL OR CONICAL TANKS:
 $\pm 1/4"$ FOR TANK DIA. UP TO 10'-0"
 $\pm D/400$ FOR TANK DIA. 10'-0" AND OVER
11. DIAMETER OF BASE PLATE: $+1/2" -0"$
12. DISTANCE FROM REF. LINE TO CENTERLINE NOZZLE: $\pm 1/8"$
- * 13. DISTANCE FROM REF. CENTERLINE OF TANK TO CENTERLINE NOZZLES: $\pm 1/8"$
- * 14. BOLT HOLE ORIENTATION: $\pm 1/16"$
15. OUT-OF-LEVEL OF STRAINER & CONICAL PLATE SUPPORT RING OVER ANY DIA.
 $1/32"$ PER FOOT DIA. WITHIN THE FOLLOWING LIMITS:
 $1/4"$ MAX. FOR TANK DIA. 12'-0" AND UNDER
 $3/8"$ MAX. FOR TANK DIA. OVER 12'-0"
- * 16. NOZZLE ORIENTATION LOCATION: $\pm 1/4"$ MEASURED CIRCUMFERENTIALLY DATUM ϕ
- * 17. DISTANCE FROM CENTERLINE OF NOZZLE TO CLIP SUPPORT: $\pm 1/16"$
18. DEVIATION OF NOZZLE AXIS FROM CENTERLINE OF CLIP: $\pm 1/8"$
19. OUT-OF-LEVEL OF WEIR EDGE: $\pm 1/64"$ PER FOOT

NOTES

- A. ITEMS MARKED WITH AN ASTERISK (*) ARE CONSIDERED CRITICAL AND THE TOLERANCES MUST NOT BE EXCEEDED.
- B. UPON APPROVAL, THE FABRICATOR MAY SELECT AN ALTERNATE REFERENCE LINE.
- C. TOLERANCES SHALL NOT ACCUMULATE TO THE EXTENT THAT INTERFERENCE BETWEEN INTERNAL AND EXTERNAL PARTS WOULD EXIST, OR THAT THE INTENDED FUNCTION OF ANY PART WOULD BE RESTRICTED.
- D. TOLERANCES FOR PARTS NOT SHOWN ON THIS STANDARD MAY BE SHOWN ON THE TANK DRAWING WHEN A SPECIFIC TOLERANCE IS REQUIRED.
- E. TANKS UNUSUALLY LARGE OR COMPLEX MAY BE EXCLUDED WHEN THE TOLERANCES SHOWN ARE UNREASONABLE. FABRICATOR'S TOLERANCES AND LIMITS MUST THEN BE SUBMITTED FOR APPROVAL.
- F. TOLERANCES ON CONSECUTIVE DIMENSIONS MAY BE CUMULATIVE EXCEPT WHERE PROHIBITED BY THE TOLERANCE ON THE OVERALL DIMENSION.
- G. CONSTRUCTION OF TANK TO BE PER SPECIFICATION 106



Berwin Pittman



REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN	DESIGNER	DATE	TITLE
A	ECN 2632 D	4-11-75	RM				E.M.	5-23-69	GRAVITY TANK TOLERANCES
--	ECN 2632 B	7-11-69	FDC						
							CHECKER	DATE	CLIENT
							ENGINEER	DATE	
							MANAGER	DATE	
							MATERIAL:		
							SCALE: NONE		

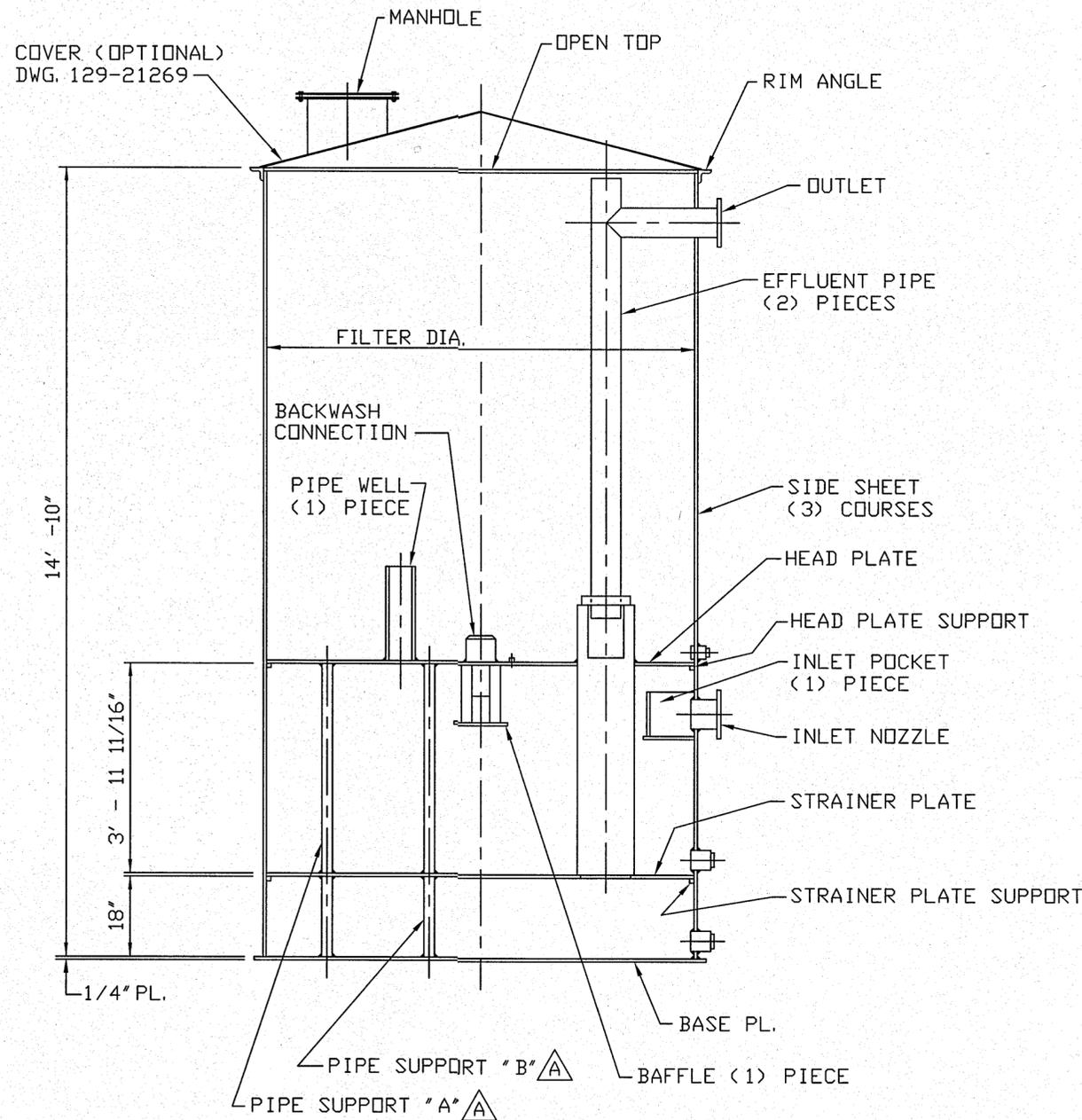
COMPANY CONFIDENTIAL
 THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF THE USER AND/OR ITS AFFILIATES (USF). THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO USF AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY LOANED. THEY MUST NOT BE DISCLOSED, REPRODUCED, LOANED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF USF. IN NO EVENT SHALL THEY BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF USF. ALL PATENT RIGHTS ARE RESERVED. UPON THE DEMAND OF USF, THIS DOCUMENT, ALONG WITH ALL COPIES AND EXTRACTS, AND ALL RELATED NOTES AND ANALYSES, MUST BE RETURNED TO USF OR DESTROYED AS INSTRUCTED BY USF. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.

PROJECT: 184-14980
 INTERNAL DWG. NO.: 184-14980
 DRAWING: 1 OF 1
 SHEET: A

TANK DIA.	SIDE SHEET	HEAD PLATE	HEAD PLATE SUPPORT	STRAINER PLATE	STRAINER PLATE SUPPORT	BASE PLATE	COVER PLATE	RIM	PIPE SUPPORTS	
									"A"	"B"
12'-0"	6	2	2	2	2	2	2	2	24	24
13'-0"	9	2	2	2	2	2	2	2	32	32
14'-0"	9	2	3	2	3	2	2	3	32	32
15'-0"	9	2	3	2	3	2	2	3	44	44
16'-0"	9	3	3	3	3	3	3	3	44	44
18'-0"	9	3	3	3	3	3	3	3	60	60
20'-0"	12	3	4	3	4	3	3	4	76	76
22'-0"	12	5	4	5	4	5	5	4	96	96
25'-0"	12	6	5	6	5	6	6	5	120	120

NOTES:

1. EVOQUA SPEC. NO. 106 APPLIES IN ADDITION TO BUT NOT SUPERSEDING ANY OTHER CODE REQUIREMENTS SPECIFIED IN THE EVOQUA PURCHASE ORDER.
2. MAXIMUM NUMBER OF PIECES FOR SHIPMENT MUST NOT EXCEED TOTAL INDICATED ON DRAWING. AT FABRICATORS OPTION, FEWER PIECES WILL BE ACCEPTABLE PROVIDED THE PIECE SIZE AND WEIGHT IS WITHIN LIMITS, CONFORMING TO ACCEPTED INDUSTRY PRACTICES AS TO ERECTION AND SHIPMENT. IF ABOVE OPTION IS EXERCISED, EVOQUA IS TO BE ADVISED AS TO DIMENSIONS AND WEIGHT OF LARGEST PIECE.
3. ALL NOZZLE CONNECTIONS TO BE SHIPPED LOOSE WITH FLANGES, WHERE REQUIRED, SHOP WELDED TO NOZZLE.
4. ALL PIPE ASSEMBLIES TO BE SHIPPED AS INDICATED.
5. LOCATION OF ALL NOZZLES, MANHOLE RINGS AND OTHER TANK CONNECTIONS TO BE MARKED AND CENTER PUNCHED ONLY, ALL OPENINGS FOR ABOVE TO BE FIELD CUT, AFTER ERECTOR CHECKS LOCATION.
6. COVER SHIPPED IN PIECES NOTED ABOVE, PIECES ARE FLAT. WHEN WELDED TOGETHER THEY FORM A CIRCULAR PLATE WITH A PIE CUTOUT. RAISING WITH LIFT IS NECESSARY TO FORM CONICAL SHAPE.
7. NOTE TO ERECTING CONTRACTOR- IN THE EVENT OF DEFICIENCIES, NOTIFY EVOQUA IN ADVANCE OF TAKING CORRECTIVE ACTION. APPROVAL OF CORRECTIVE ACTIONS MUST BE MADE BY EVOQUA IN WRITING BEFORE PROCEEDING.



REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN	INT. REF. DWG.:	SCALE:	PROJECT	INTERNAL DWG. NO.	DRAWING	SHEET	REV
B	REDRAWN	7-5-78	JBU					NONE				1 OF 1	B
A	ECN 3408AK	12-1-76	WIN										
	ECN 3408AC	5-1-74	FDC										

DESIGNER: FDC DATE: 11-12-73
 CHECKER: DATE:
 ENGINEER: DATE:
 INT. REF. DWG.:
 SCALE: NONE

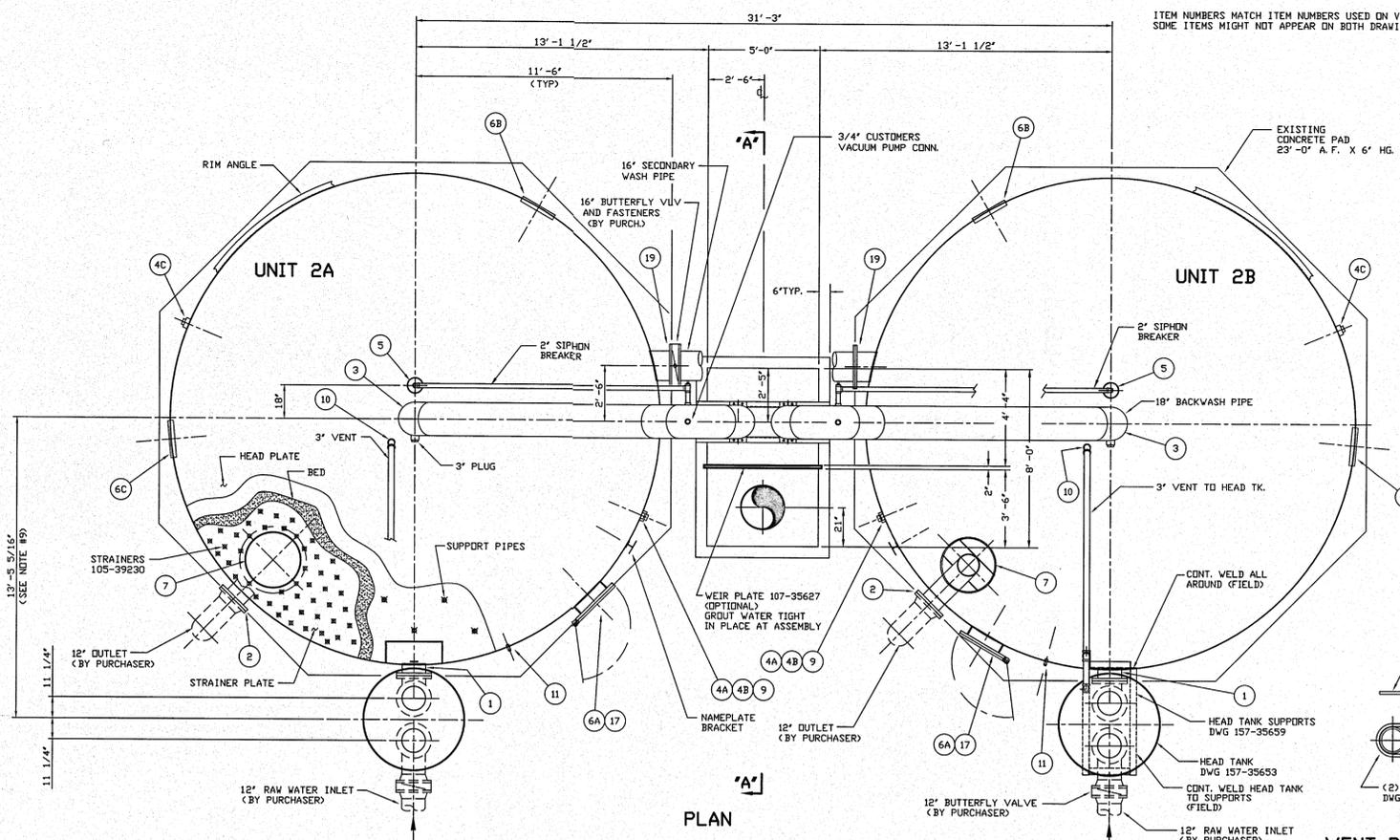
TITLE: STEEL CUTTING DETAILS FOR AVGF KNOCKED-DOWN UNITS (INDUSTRIALS)
 CLIENT:

EVOQUA Water Technologies
 PERMUTIT PRODUCTS-UNION, NJ
 (800) 631-0878

PROJECT: INTERNAL DWG. NO. 129-22614 DRAWING SHEET 1 OF 1 REV B



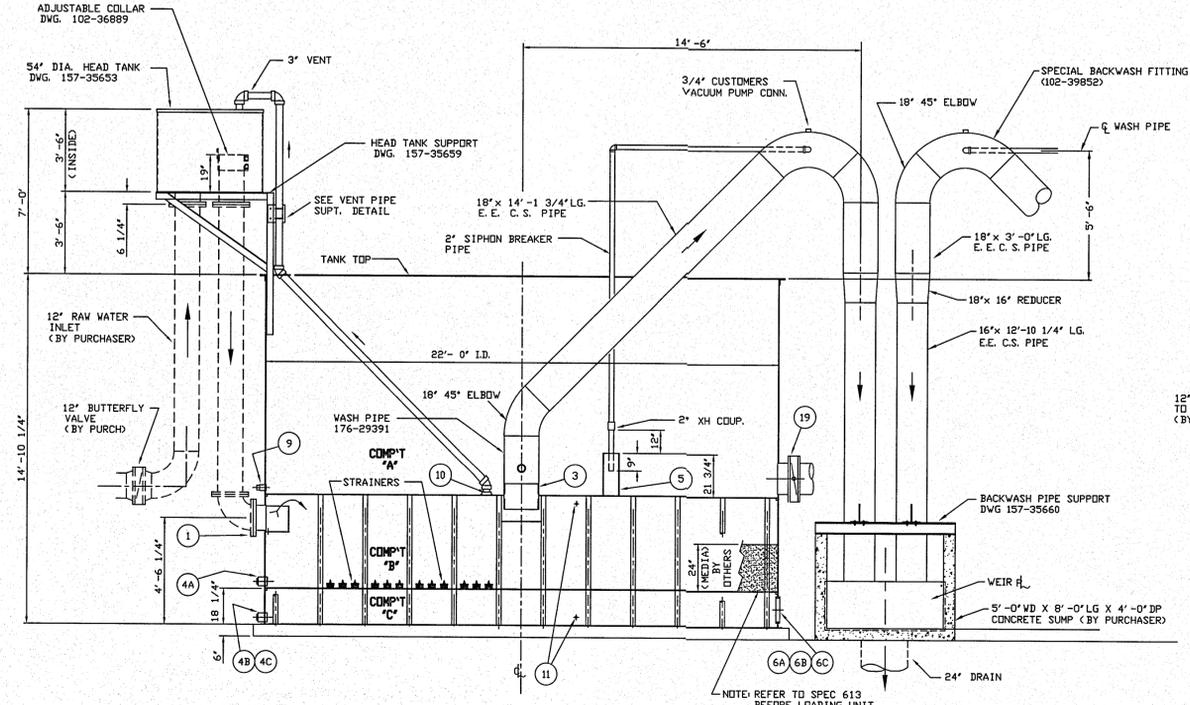
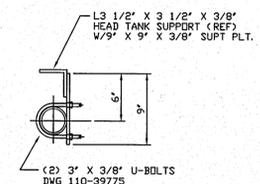
Berwin Whitman



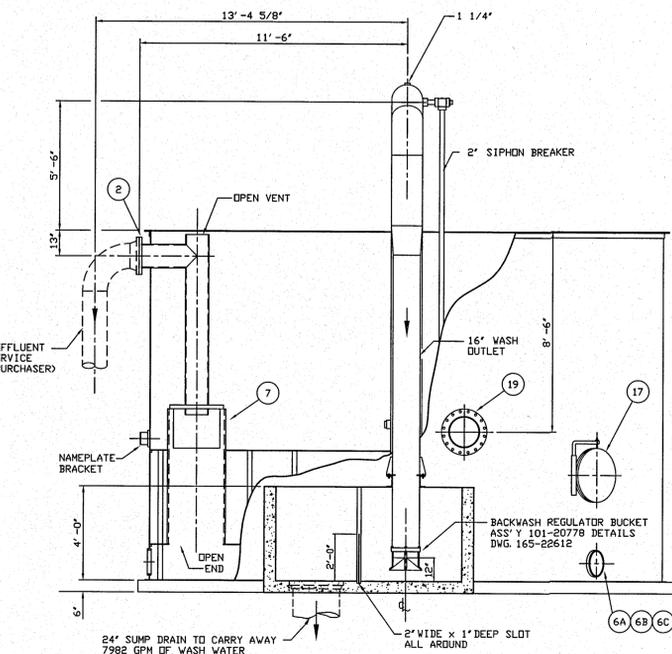
NOZZLES & TANK ATTACHMENTS (PER TANK)							
ITEM	REQ.D.	SIZE	RATING	TYPE CONN.	PIPE SCH.	DESCRIPTION	
1	1	12"	150#	SLIP-ON, FF FLG.	STD WT	INLET	
2	1	12"	150#	SLIP-ON, RF FLG.	STD WT	OUTLET	
3	1	18"	-	PIPE, B.O.E.	STD WT	BACKWASH	
4A	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	CLEANOUT, W/BRASS PLUG (COMP.T. "B")	
4B	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BRASS PLUG (COMP.T. "C")	
4C	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BRASS PLUG (COMP.T. "C")	
5	1	8"	-	PIPE P.E.	SCH 40	SYPHON SEAL WELL	
6	3	14"x18"	-	-	-	RING TYPE PRESSED STEEL MANHOLES, MAJOR DIA. TO BE HORIZ. WITH COVER, YOKES, BOLTS 3/16" THK. 45 DUROMETER RUBBER GASKET & HANDGRIP IN MANHOLE COVER.	
7	1	30"	-	PIPE, P.E.	STD WT	INTERNAL CONDUIT	
9	1	2"	3000# F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BRASS PLUG (COMP.T. "A")	
10	1	3"	3000# F.S.	SCRD. HALF CPLG.	-	VENT (SEE ORIENTATION FOR LOC.)	
11	2	1/4"	3000# F.S.	SCRD. FULL CPLG.	-	TEST CONNS, W/ BR. PLUG (COMP.T. "B" & "C")	
17	1	20"	150#	SLIP-ON, RF FLG.	-	MANWAY W/DAVIT	
19	1	16"	150#	SLIP-ON, RF FLG.	STD WT	SECONDARY WASH	

- NOTES:
- ALL PIPING SHOWN IN DASHED LINES TO BE FURNISHED BY OTHERS.
 - ALL PIPING 10" AND SMALLER TO BE SCH. 40. PIPING LARGER THAN 10" TO HAVE 3/8" WALL.
 - WASH PIPE AND ALL CONNECTED PIPING TO BE FABRICATED AND INSTALLED AIRTIGHT.
 - ALL THREADED CONNECTIONS ARE TO BE SEALED AT THE TIME OF INSTALLATION WITH SEALANT PER SPEC. 187-10021.
 - ALL PIPE SUPPORTS ARE TO BE DESIGNED AND FURNISHED BY OTHERS.
 - FILTER OPERATING WEIGHT IS ESTIMATED TO BE 410,000 LBS (EACH).
 - PROVISION TO ISOLATE THE FILTER USING MANUAL ISOLATION VALVES IS BY OTHERS.
 - WASH PIPING IS FURNISHED BY EVOQUA CUT TO PROPER LENGTH FOR WELDING AT THE JOBSITE BY OTHERS.
 - THE FITTING BETWEEN THE HEAD TANK DOWNCOMER PIPING AND THE FILTER INLET WILL BE A CLASS 125 CAST IRON FLANGED ELBOW, AND DIMENSIONS ARE BASED ON THIS FITTING BEING USED.
 - MEDIA IS SUPPLIED BY OTHERS. PRIOR TO LOADING INSTALL STRAINERS PER FORM 4938W. INSTALL MEDIA PER SPEC 613.
 - ALL MATERIAL WILL HAVE MANUFACTURER'S STANDARD MILL FINISH.
 - FILTER TANK TO BE FURNISHED IN SECTIONS FOR FIELD ERECTION BY OTHERS.

VENT PIPE SUPT. DETAIL



SECTIONAL ELEVATION
(SEE PLAN FOR TRUE ORIENTATION)



SECTION 'A-A'

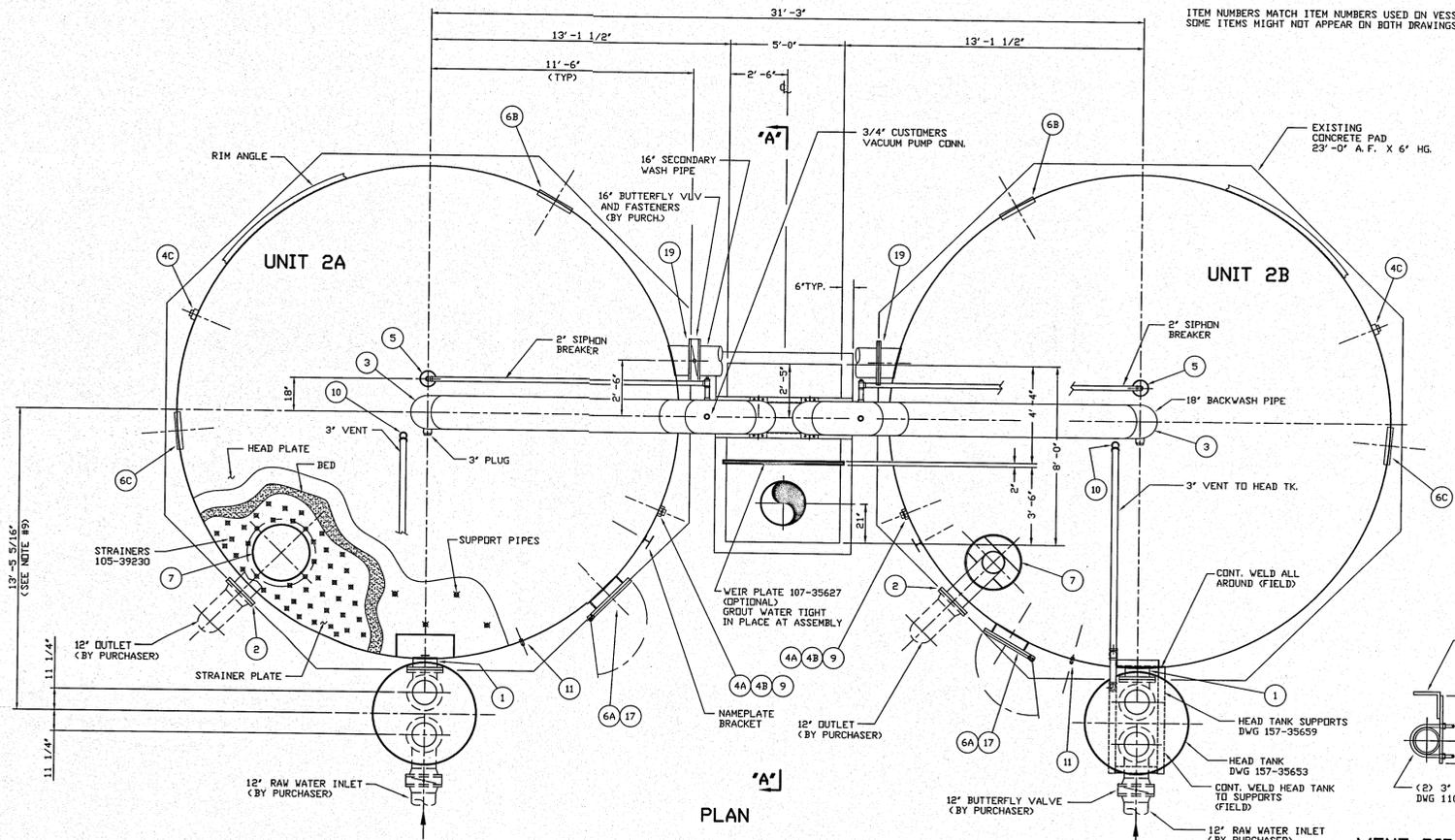
- REFERENCE DRAWINGS
- 185-24216 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2A AND 2B
 - 185-24217 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2C AND 2D
 - 185-24218 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2E
 - 185-24219 REV B, PLOT PLAN ARRANGEMENT
 - 156-21982 REV A, TANK ORIENTATIONS
 - 156-21983 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2A
 - 156-21985 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2B
 - 156-21996 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2C
 - 156-21997 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2D
 - 156-21998 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2E
 - 156-21999 REV B, SHTS 1-3, PIPING LAYOUT
 - 129-22614 REV B, STEEL CUTTING DETAILS FOR KD AVGF
 - 184-14980 REV A, GRAVITY TANK TOLERANCES
 - 157-22612 REV D, DETAIL, BACKWASH REGULATOR (P/N 167-22612)
 - 157-35653 REV A, TANK FABRICATION, HEAD TANK
 - 157-35659 REV 0, DETAILS, HEAD TANK SUPPORT
 - 157-35660 REV 0, BACKWASH PIPE SUPPORT DETAIL
 - 157-29391 REV D, DETAIL 18" WASH PIPE (P/N 176-29391)
 - 101-20778 REV 0, ASSEMBLY, BACKWASH REGULATOR
 - 102-39852 REV 0, SPECIAL BACKWASH FITTING
 - 102-35627 REV B, DETAIL, WEIR PLATE (P/N 107-35627)
 - 102-36889 REV 0, ADJUSTABLE COLLAR (P/N 103-36889)
 - 102-39230 REV D, SHTS 1-2, 316SS STRAINER ASSEMBLY (P/N) 105-39230
 - 102-39775 REV 0, U-BOLT DETAIL, 316SS (P/N) 110-39775
 - SPEC 106 REV E, FABRICATION OF STEEL GRAVITY VESSELS
 - SPEC 613 REV 0, LOADING FILTER SAND
 - SPEC 187-10021 REV C, THREAD SEALANT
 - FORM 4938W REV 0, STRAINER INSTALLATION

Beverly D. Pittman

REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN
B	ADDED VENT PIPING TO EVOQUA SCOPE. REV VENT FROM 2" TO 3". ADDED VENT AND BW PIPE SUPPORT.	10-18-19	BKJ	BG	MD	
A	CUST COMMENTS - HEAD TK VENT FROM 30" TO 42" HG, VAC PUMP CONN VENT FROM 1-1/4" TO 3/4".	10-3-19	BKJ	BG	MD	

DESIGNER	BKJ	DATE	9-17-19
CHECKER	BG	DATE	9-17-19
ENGINEER	MD	DATE	9-17-19

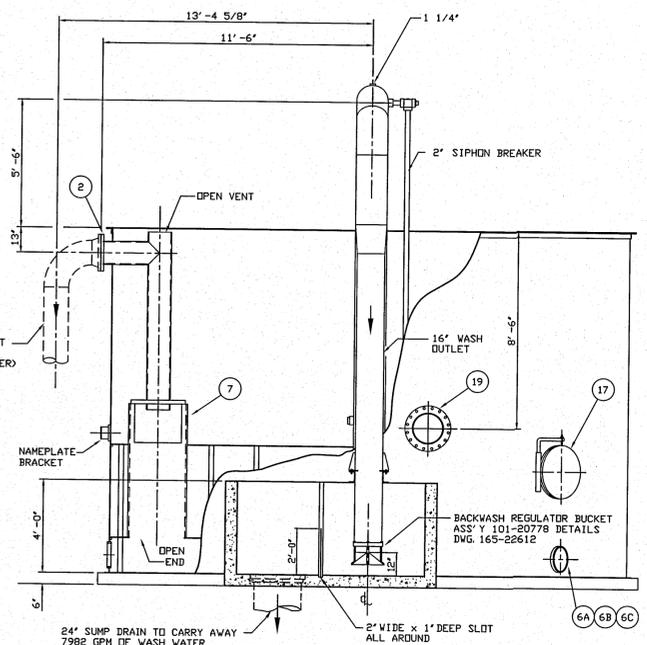
TITLE	PIPING AND GENERAL ARRANGEMENT 22'-0" DIA. x 14'-10" HIGH AVGF UNITS 2A & 2B		
CLIENT	BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC		
PROJECT	967113	INTERNAL DWG. NO.	185-24216
DRAWING	1	SHEET	1 OF 1
REV	B	SCALE	NDNE



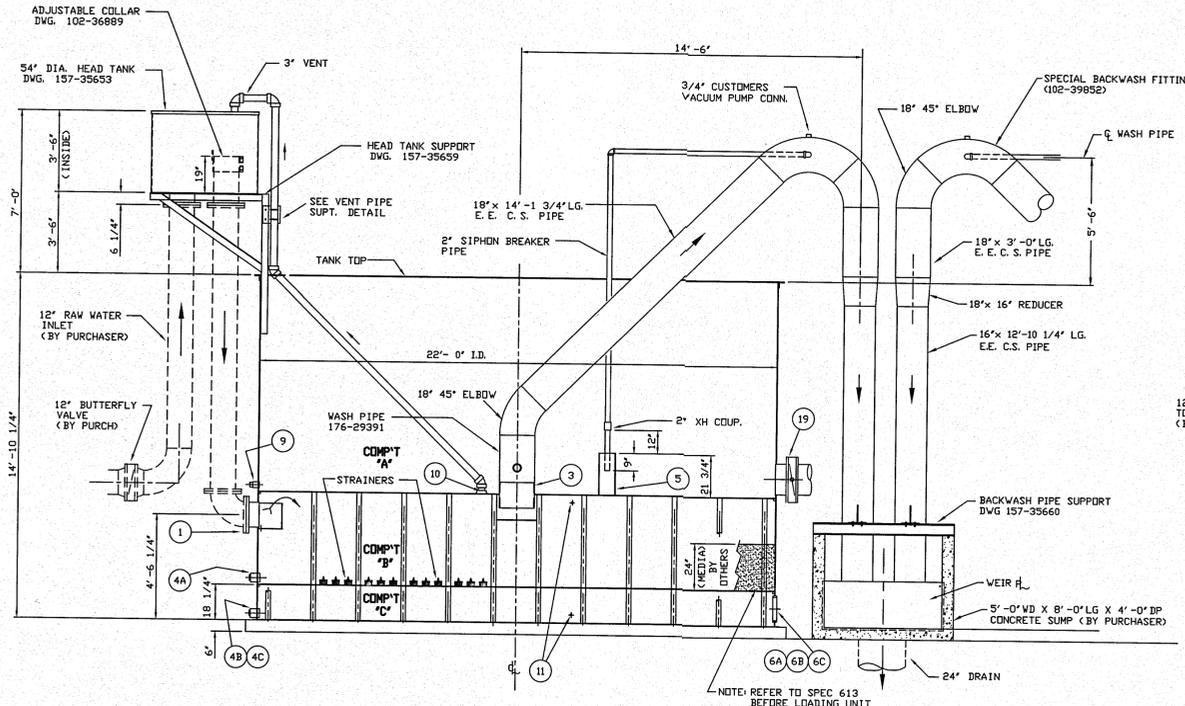
NOZZLES & TANK ATTACHMENTS (PER TANK)						
ITEM	REQ.D.	SIZE	RATING	TYPE CONN.	PIPE SCH.	DESCRIPTION
1	1	12"	150#	SLIP-ON, FF FLG.	STD WT	INLET
2	1	12"	150#	SLIP-ON, RF FLG.	STD WT	OUTLET
3	1	18"	-	PIPE, B.O.E.	STD WT	BACKWASH
4A	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	CLEANOUT, W/BRASS PLUG (COMPT. "B")
4B	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BRASS PLUG (COMPT. "C")
4C	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BRASS PLUG (COMPT. "C")
5	1	8"	-	PIPE P.E.	SCH 40	SYPHON SEAL WELL
6	3	14"x18"	-	-	-	RING TYPE PRESSED STEEL MANHOLES, MAJOR DIA. TO BE HORIZ. WITH COVER, YOKES, BOLTS 3/16" THK. 45 DURO-METER RUBBER GASKET & HANDGRIP IN MANHOLE COVER.
7	1	30"	-	PIPE, P.E.	STD WT	INTERNAL CONDUIT
9	1	2"	3000# F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BRASS PLUG (COMPT. "A")
10	1	3"	3000# F.S.	SCRD. HALF CPLG.	-	VENT (SEE ORIENTATION FOR LOC.)
11	2	1/4"	3000# F.S.	SCRD. FULL CPLG.	-	TEST CONNS, W/ BR. PLUG (COMPT. "B" & "C")
17	1	20"	150#	SLIP-ON, RF FLG.	-	MANWAY W/DAVIT
19	1	16"	150#	SLIP-ON, RF FLG.	STD WT	SECONDARY WASH

- NOTES:
- ALL PIPING SHOWN IN DASHED LINES TO BE FURNISHED BY OTHERS.
 - ALL PIPING 10" AND SMALLER TO BE SCH. 40. PIPING LARGER THAN 10" TO HAVE 3/8" WALL.
 - WASH PIPE AND ALL CONNECTED PIPING TO BE FABRICATED AND INSTALLED AIRTIGHT.
 - ALL THREADED CONNECTIONS ARE TO BE SEALED AT THE TIME OF INSTALLATION WITH SEALANT PER SPEC. 187-10021.
 - ALL PIPE SUPPORTS ARE TO BE DESIGNED AND FURNISHED BY OTHERS.
 - FILTER OPERATING WEIGHT IS ESTIMATED TO BE 410,000 LBS (EACH).
 - PROVISION TO ISOLATE THE FILTER USING MANUAL ISOLATION VALVES IS BY OTHERS.
 - WASH PIPING IS FURNISHED BY EVOQUA CUT TO PROPER LENGTH FOR WELDING AT THE JOBSITE BY OTHERS.
 - THE FITTING BETWEEN THE HEAD TANK DOWNCOMER PIPING AND THE FILTER INLET WILL BE A CLASS 125 CAST IRON FLANGED ELBOW, AND DIMENSIONS ARE BASED ON THIS FITTING BEING USED.
 - MEDIA IS SUPPLIED BY OTHERS. PRIOR TO LOADING INSTALL STRAINERS PER FORM 4938W. INSTALL MEDIA PER SPEC 613.
 - ALL MATERIAL WILL HAVE MANUFACTURER'S STANDARD MILL FINISH.
 - FILTER TANK TO BE FURNISHED IN SECTIONS FOR FIELD ERECTION BY OTHERS.

VENT PIPE SUPT. DETAIL



- REFERENCE DRAWINGS
- 185-24216 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2A AND 2B
 - 185-24217 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2C AND 2D
 - 185-24218 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2E
 - 185-24219 REV B, PLOT PLAN ARRANGEMENT
 - 156-21982 REV A, TANK ORIENTATIONS
 - 156-21983 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGF, UNIT 2A
 - 156-21984 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGF, UNIT 2B
 - 156-21985 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGF, UNIT 2C
 - 156-21986 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGF, UNIT 2D
 - 156-21987 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGF, UNIT 2E
 - 156-21988 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGF, UNIT 2E
 - 156-21989 REV B, SHTS 1-3, PIPING LAYOUT
 - 129-22814 REV B, STEEL CUTTING DETAILS FOR KD AVGF
 - 184-14980 REV A, GRAVITY TANK TOLERANCES
 - 157-22612 REV D, DETAIL, BACKWASH REGULATOR (P/N 167-22612)
 - 157-35653 REV A, TANK FABRICATION, HEAD TANK
 - 157-35659 REV 0, DETAILS, HEAD TANK SUPPORT
 - 157-35660 REV 0, BACKWASH PIPE SUPPORT DETAIL
 - 157-29391 REV D, DETAIL 18" WASH PIPE (P/N 176-29391)
 - 101-20778 REV 0, ASSEMBLY, BACKWASH REGULATOR
 - 102-39852 REV 0, SPECIAL BACKWASH FITTING
 - 102-35627 REV B, DETAIL, WEIR PLATE (P/N 107-35627)
 - 102-36889 REV 0, ADJUSTABLE COLLAR (P/N 103-36889)
 - 102-39230 REV D, SHTS 1-2, 318SS STRAINER ASSEMBLY (P/N 105-39230)
 - 102-39775 REV 0, U-BOLT DETAIL, 316SS (P/N 110-39775)
 - SPEC 106 REV E, FABRICATION OF STEEL GRAVITY VESSELS
 - SPEC 613 REV 0, LOADING FILTER SAND
 - SPEC 187-10021 REV C, THREAD SEALANT
 - FORM 4938W REV 0, STRAINER INSTALLATION



SECTIONAL ELEVATION
(SEE PLAN FOR TRUE ORIENTATION)

SECTION "A-A"

REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN
B	ADDED VENT PIPING TO EVOQUA SCOPE. REV VENT FROM 2" TO 3". ADDED VENT AND BW PIPE SUPPORT.	10-18-19	BKJ	BG	MD	
A	CUST COMMENTS - HEAD TK VENT FROM 30" TO 42" HG, VAC PUMP CONN WENT FROM 1-1/4" TO 3/4".	10-3-19	BKJ	BG	MD	

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DESIGNER: BKJ
CHECKER: BG
ENGINEER: MD

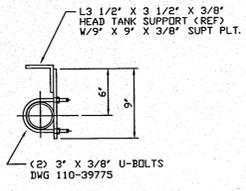
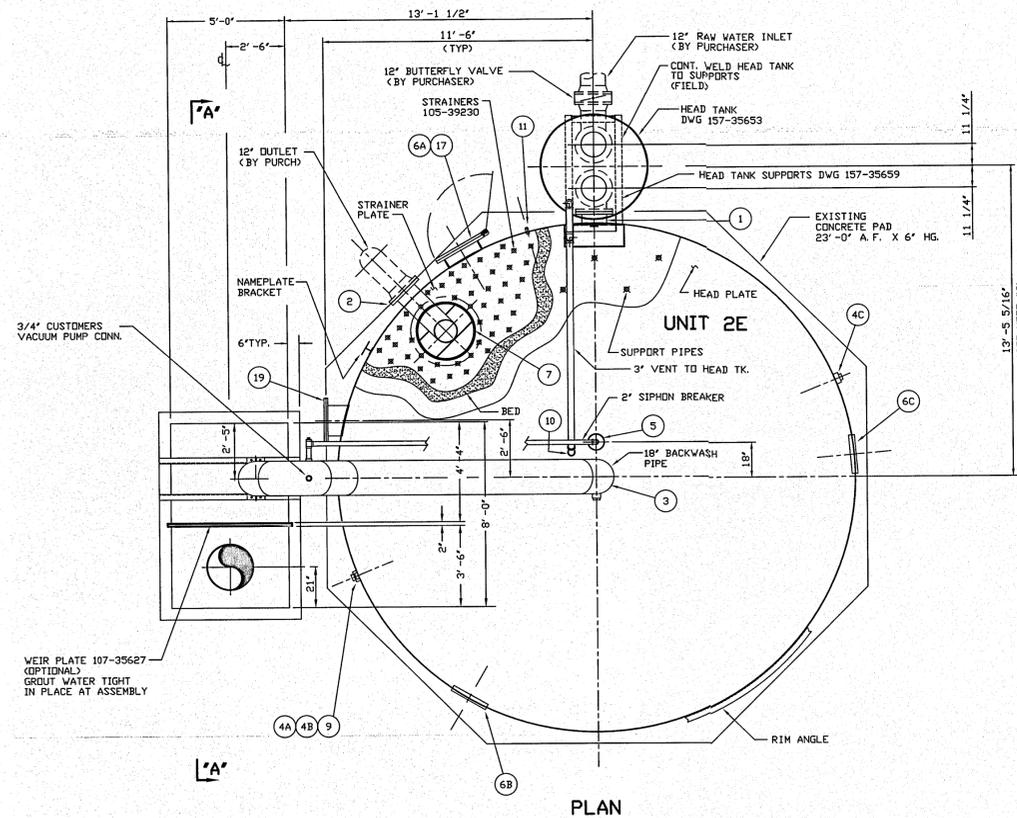
DATE: 9-17-19
DATE: 9-17-19
DATE: 9-17-19

TITLE: PIPING AND GENERAL ARRANGEMENT
22'-0" DIA. x 14'-10" HIGH
AVGF UNITS 2A & 2B

CLIENT: BRUNSWICK COUNTY PUBLIC UTILITIES
BOLIVIA, NC

EVOQUA WATER TECHNOLOGIES
PERMUTIT PRODUCTS-UNION, NJ
908-851-2277

PROJECT: 967113
INTERNAL DWG. NO.: 185-24216
DRAWING: 1 OF 1
SHEET: 1 OF 1
REV: B



VENT PIPE SUPT. DETAIL

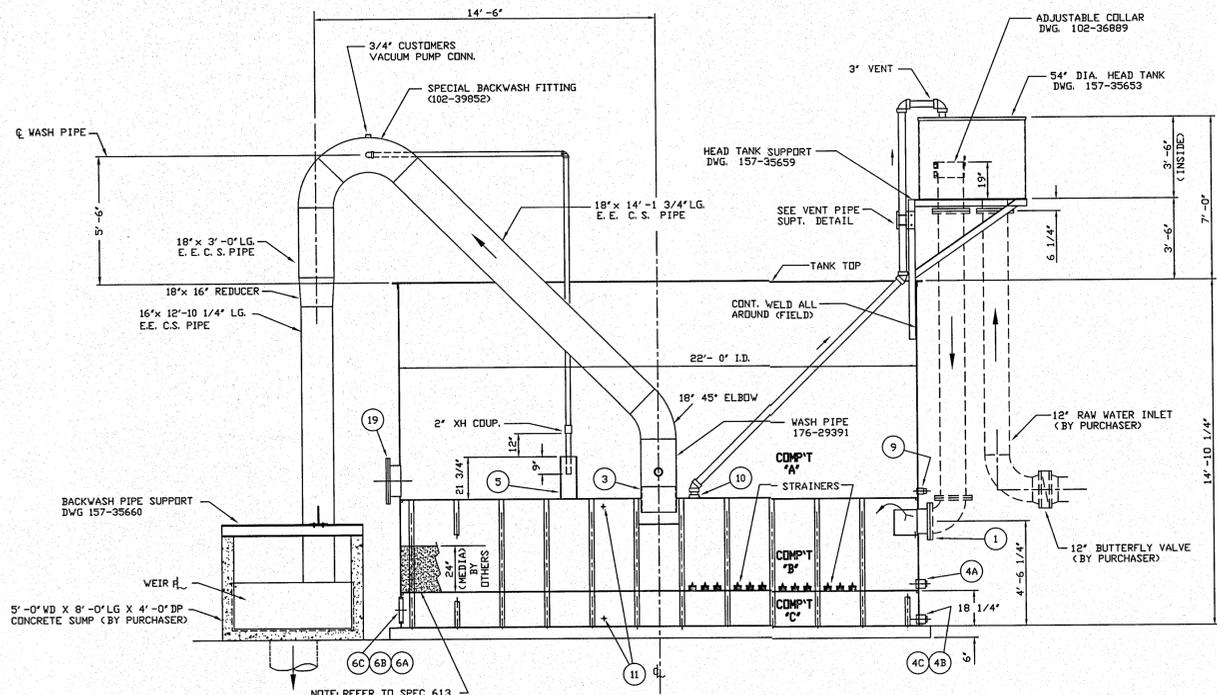
NOZZLES & TANK ATTACHMENTS (PER TANK)						
ITEM	REQ.D.	SIZE	RATING	TYPE CONN.	PIPE SCH.	DESCRIPTION
1	1	12"	150#	SLIP-ON, FF FLG.	STD WT	INLET
2	1	12"	150#	SLIP-ON, RF FLG.	STD WT	OUTLET
3	1	18"	-	PIPE, B.O.E.	STD WT	BACKWASH
4A	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	CLEANOUT, W/BRASS PLUG (COMP.T. "B")
4B	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BRASS PLUG (COMP.T. "C")
4C	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BRASS PLUG (COMP.T. "C")
5	1	8"	-	PIPE P.E.	SCH 40	SYPHON SEAL WELL
6	3	14"x18"	-	-	-	RING TYPE PRESSED STEEL MANHOLES, MAJOR DIA. TO BE HORIZ. WITH COVER, YOKES, BOLTS 3/16" THK. 45 DURO-METER RUBBER GASKET & HANDGRIP IN MANHOLE COVER.
7	1	30"	-	PIPE, P.E.	STD WT	INTERNAL CONDUIT
9	1	2"	3000# F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BRASS PLUG (COMP.T. "A")
10	1	3"	3000# F.S.	SCRD. HALF CPLG.	-	VENT (SEE ORIENTATION FOR LOC.)
11	2	1/4"	3000# F.S.	SCRD. FULL CPLG.	-	TEST CONNS, W/ BR. PLUG (COMP.T. "B" & "C")
17	1	20"	150#	SLIP-ON, RF FLG.	-	MANWAY W/DAVIT
19	1	16"	150#	SLIP-ON, RF FLG.	STD WT	SECONDARY WASH

NOTES:

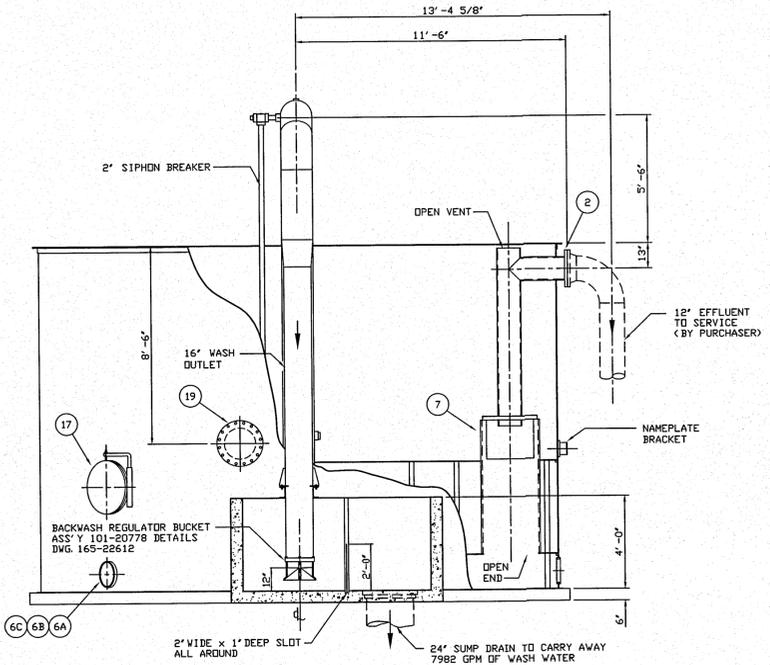
- ALL PIPING SHOWN IN DASHED LINES TO BE FURNISHED BY OTHERS.
- ALL PIPING 10" AND SMALLER TO BE SCH. 40. PIPING LARGER THAN 10" TO HAVE 3/8" WALL.
- WASH PIPE AND ALL CONNECTED PIPING TO BE FABRICATED AND INSTALLED AIRTIGHT.
- ALL THREADED CONNECTIONS ARE TO BE SEALED AT THE TIME OF INSTALLATION WITH SEALANT PER SPEC. 187-10021.
- ALL PIPE SUPPORTS ARE TO BE DESIGNED AND FURNISHED BY OTHERS.
- FILTER OPERATING WEIGHT IS ESTIMATED TO BE 410,000 LBS (EACH).
- PROVISION TO ISOLATE THE FILTER USING MANUAL ISOLATION VALVES IS BY OTHERS.
- WASH PIPING IS FURNISHED BY EVOQUA CUT TO PROPER LENGTH FOR WELDING AT THE JOBSITE BY OTHERS.
- THE FITTING BETWEEN THE HEAD TANK DOWNCOMER PIPING AND THE FILTER INLET WILL BE A CLASS 125 CAST IRON FLANGED ELBOW, AND DIMENSIONS ARE BASED ON THIS FITTING BEING USED.
- MEDIA IS SUPPLIED BY OTHERS. PRIOR TO LOADING INSTALL STRAINERS PER FORM 4938W. INSTALL MEDIA PER SPEC 613.
- ALL MATERIAL WILL HAVE MANUFACTURER'S STANDARD MILL FINISH.
- FILTER TANK TO BE FURNISHED IN SECTIONS FOR FIELD ERECTION BY OTHERS.

REFERENCE DRAWINGS

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- 185-24217 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2C AND 2D
- 185-24218 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2E
- 185-24219 REV B, PLOT PLAN ARRANGEMENT
- 156-21982 REV A, TANK ORIENTATIONS
- 156-21983 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGF, UNIT 2A
- 156-21996 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGF, UNIT 2B
- 156-21997 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGF, UNIT 2C
- 156-21998 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGF, UNIT 2D
- 156-21999 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGF, UNIT 2E
- 156-21999 REV B, SHTS 1-3, PIPING LAYOUT
- 129-22614 REV B, STEEL CUTTING DETAILS FOR KD AVGF
- 184-14980 REV A, GRAVITY TANK TOLERANCES
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- 157-35660 REV 0, BACKWASH PIPE SUPPORT DETAIL
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- 102-35627 REV B, DETAIL, WEIR PLATE (P/N 107-35627)
- 102-36889 REV 0, ADJUSTABLE COLLAR (P/N 103-36889)
- 102-39230 REV D, SHTS 1-2, 316SS STRAINER ASSEMBLY (P/N) 105-39230
- 102-39775 REV 0, U-BOLT DETAIL, 316SS (P/N) 110-39775
- SPEC 108 REV E, FABRICATION OF STEEL GRAVITY VESSELS
- SPEC 613 REV 0, LOADING FILTER SAND
- SPEC 187-10021 REV C, THREAD SEALANT
- FORM 4938W REV 0, STRAINER INSTALLATION

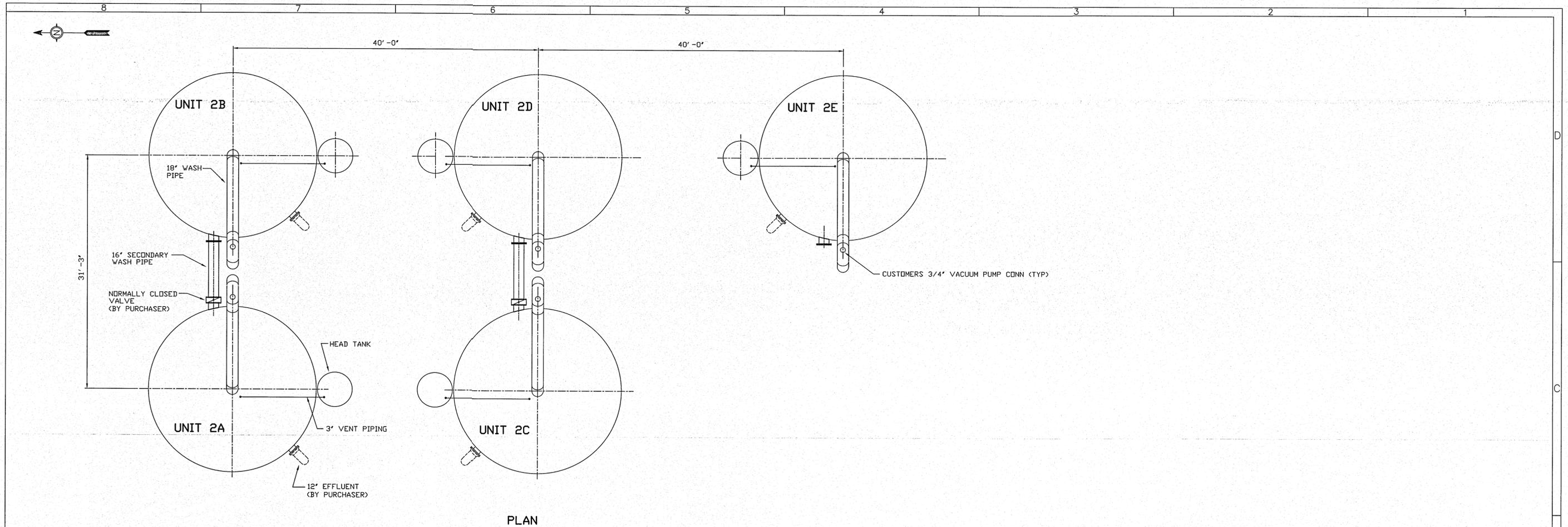


SECTIONAL ELEVATION
(SEE PLAN FOR TRUE ORIENTATION)

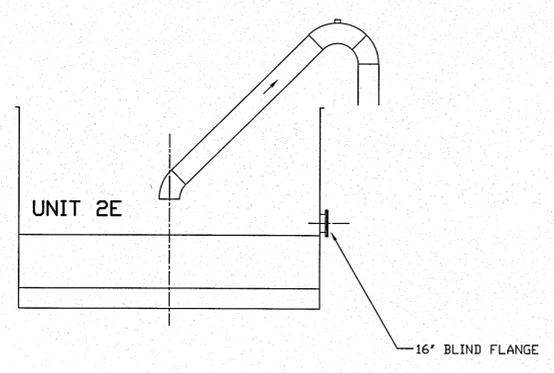
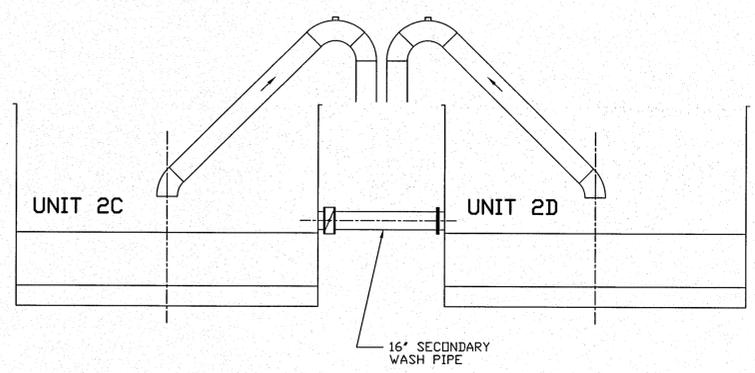
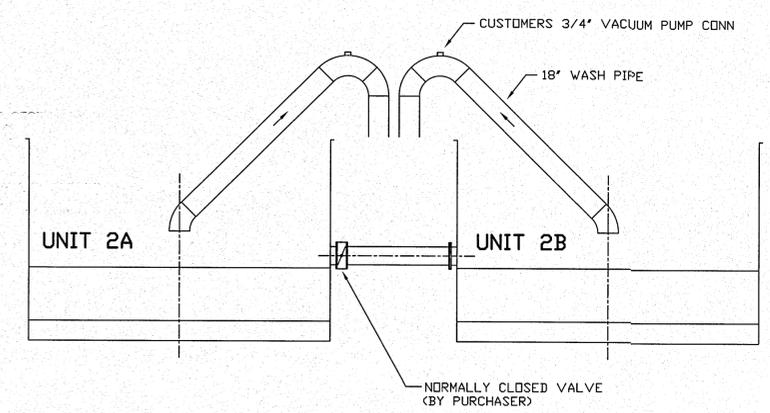


SECTION 'A-A'

REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN	DESIGNER	CHECKER	ENGINEER	DATE	TITLE	CLIENT	PROJECT	INTERNAL DWG. NO.	DRAWING	SHEET	REV
B	ADDED VENT PIPING TO EVOQUA SCOPE. REV VENT FROM 2" TO 3". ADDED VENT AND BW PIPE SUPPORT.	10-21-19	BKJ	BG	BG		BKJ	BG	MD	9-18-19	PIPING AND GENERAL ARRANGEMENT 22'-0" DIA, x 14'-10" HIGH AVGF UNIT 2E	BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC	967113	185-24218	1	OF 1	B
A	CUST COMMENTS - HEAD TK WENT FROM 30" TO 42" HG, VAC PUMP CONN WENT FROM 1-1/4" TO 3/4".	10-3-19	BKJ	BG	MD		BKJ	BG	MD	9-18-19							



PLAN

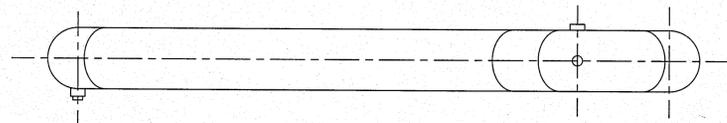


ELEVATION

<p>COMPANY CONFIDENTIAL THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF EVOQUA AND/OR ITS AFFILIATES. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO EVOQUA AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSES FOR WHICH THE DOCUMENT IS EXPRESSLY LOANED. THEY MUST NOT BE DISCLOSED, REPRODUCED, LOANED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF EVOQUA. IN NO EVENT SHALL THEY BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF EVOQUA. ALL PATENT RIGHTS ARE RESERVED. UPON THE DEMAND OF EVOQUA, THIS DOCUMENT, ALONG WITH ALL COPIES AND EXTRACTS, AND ALL RELATED NOTES AND ANALYSES, MUST BE RETURNED TO EVOQUA OR DESTROYED AS INSTRUCTED BY EVOQUA. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.</p>							DESIGNER BKJ	DATE 9-19-19	TITLE PLOT PLAN & SCHEMATIC ARRANGEMENT AVGF UNITS 2A, 2B, 2C, 2D & 2E				
							CHECKER BG	DATE 9-19-19	CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC				
							ENGINEER MD	DATE 9-19-19	WATER TECHNOLOGIES PERMUTIT PRODUCTS-UNION, NJ 908-851-2277				
B ADDED VENT PIPING 10-23-19 BKJ BG MD							INT. REF. DWG.:						
A REVISED VACUUM CONNECTION FROM 1-1/4" TO 3/4". 10-3-19 BKJ BG MD							SCALE: NONE		PROJECT 967113	INTERNAL DWG. NO. 185-24219	DRAWING	SHEET 1 OF 1	REV B

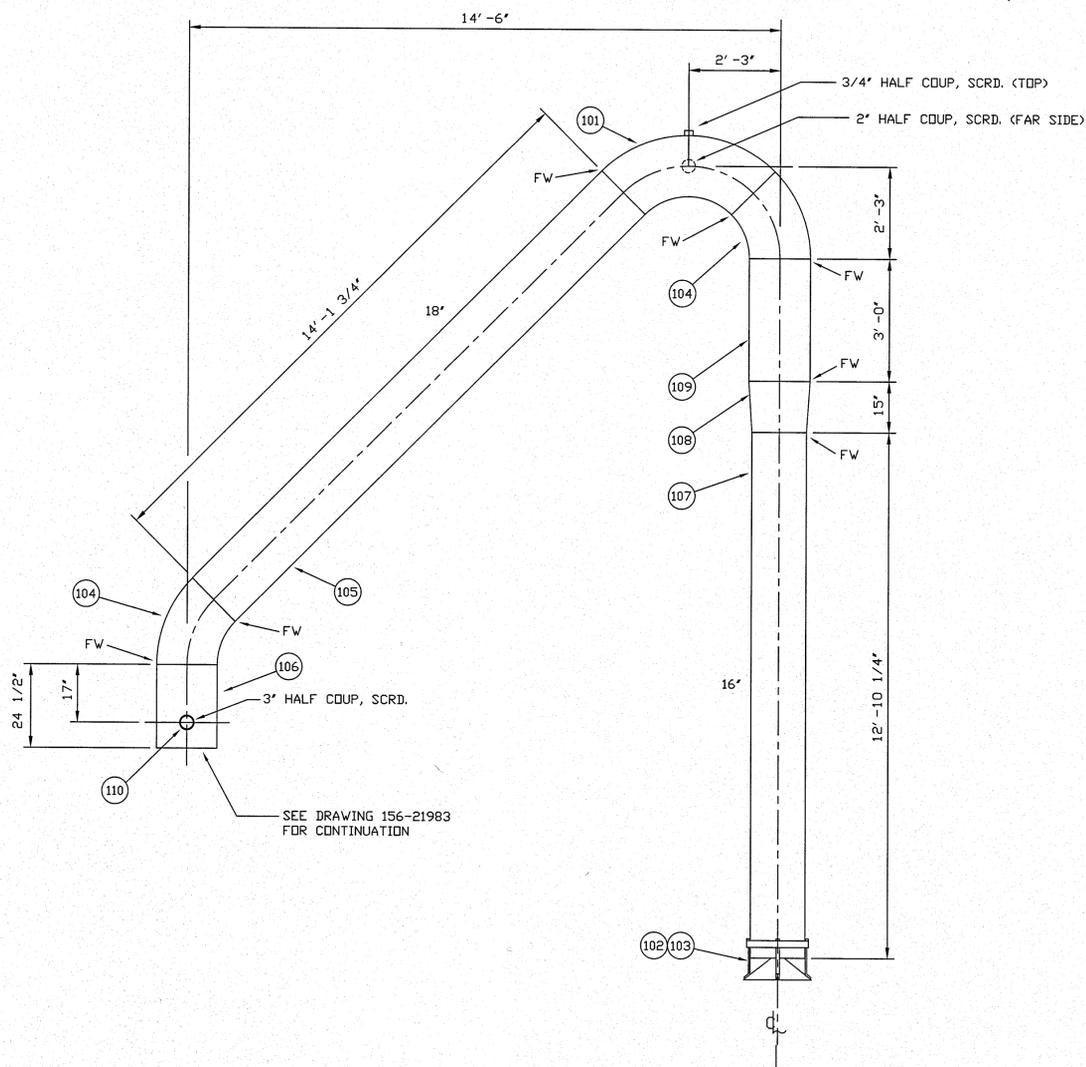


8 7 6 5 4 3 2 1



PLAN

"A"

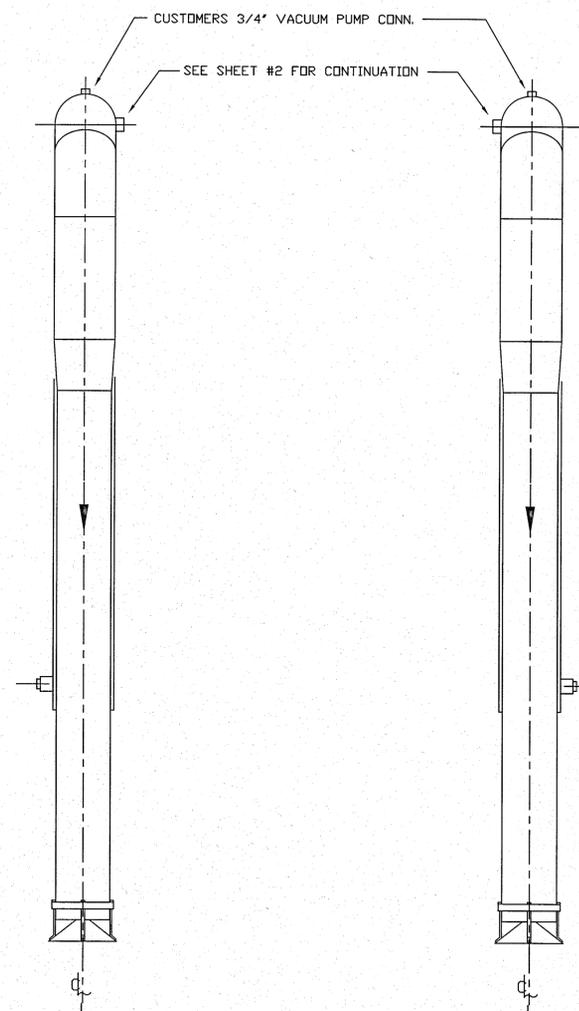


BACKWASH PIPING

"A"

ASSEMBLY LIST						
ITEM NO.	QTY	SIZE	DESCRIPTION	DWG. NO.	PART NO.	MAT'L.
101	1	18"	SPECIAL BACKWASH FITTING	102-39852	-	CS
102	-	16"	ASSEMBLY OF BACKWASH REGULATOR	101-20778	-	CS
103	1	16"	BACKWASH REGULATOR	157-22612	167-22612	CS
104	2	18"	45 DEG ELLBOW, BW, STD WT	-	-	CS
105	1	18"	PIPE, STD WT, 14'-1 3/4' LG, BEVEL ENDS	-	-	CS
106	1	18"	PIPE, STD WT, 2'-0 1/2' LG, BEVEL ENDS	157-29391	176-29391	CS
107	1	16"	PIPE, STD WT, 12'-10 1/4' LG, BEVEL ONE END	-	-	CS
108	1	18"x16"	CONC. REDUCER, BW, STD WT	-	-	CS
109	1	18"	PIPE, STD WT, 3'-0' LG, BEVEL ENDS	-	-	CS
110	1	3"	PIPE PLUG, SCR.D.	-	-	CI

NOTES:
 1. WORK THIS DRAWING WITH DRAWING 185-24216, 185-24217 AND 185-24218 PIPING AND GENERAL ARRANGEMENT.
 2. FW INDICATES FIELD WELD BY OTHERS.



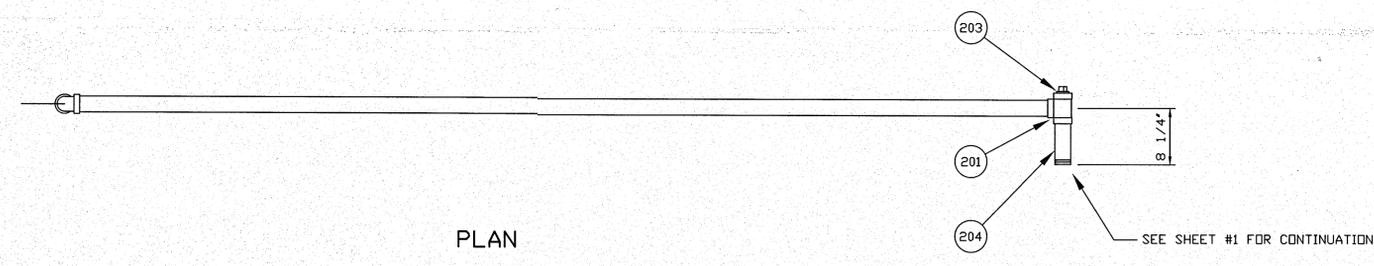
SECTION "A-A"
(2) REQUIRED

SECTION "A-A"
(3) REQUIRED
MIRROR IMAGE

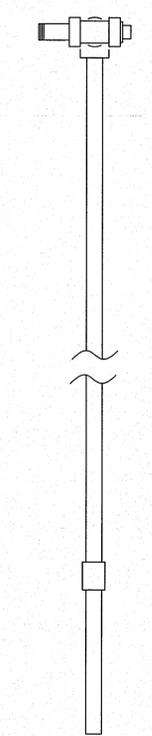
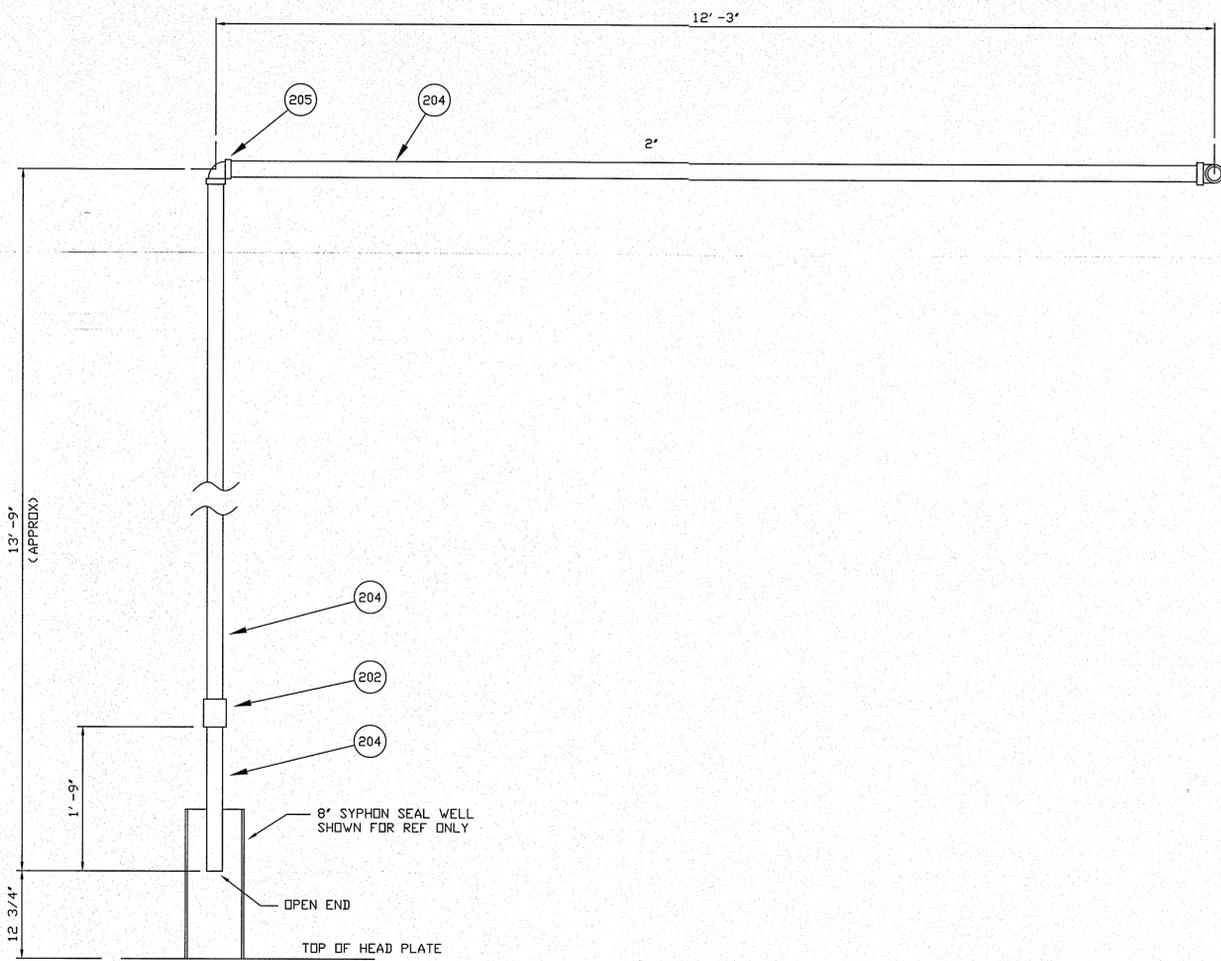
DESIGNER	BKJ	DATE	9-19-19	THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF EVOQUA AND/OR ITS AFFILIATES. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO EVOQUA AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE, AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY LOANED, AND MUST NOT BE REPRODUCED, REPRODUCED, LOANED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF EVOQUA. IN NO EVENT SHALL THEY BE USED IN ANY MANNER DEROGATORY TO THE INTEREST OF EVOQUA. ALL PATENT RIGHTS ARE RESERVED. UPON THE DEMAND OF EVOQUA, THIS DOCUMENT, ALONG WITH ALL COPIES AND EXTRACTS, AND ALL RELATED NOTES AND ANALYSES, MUST BE RETURNED TO EVOQUA OR DESTROYED, AS INSTRUCTED BY EVOQUA. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.			
CHECKER	BG	DATE	9-19-19				
ENGINEER	MD	DATE	9-19-19				
INT. REF. DWG.:		SCALE:	NONE				
PROJECT	967113	INTERNAL DWG. NO.	156-21999	TITLE PIPING LAYOUT 22'-0" DIA. X 14'-10" HIGH VALVELESS GRAVITY FILTER CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC WATER TECHNOLOGIES PERMUTIT PRODUCTS-UNION, NJ 908-851-2277			
REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN	PROJECT 967113 SHEET 1 OF 3 REV C

8 7 6 5 4 3 2 1

ASSEMBLY LIST						
ITEM NO.	QTY	SIZE	DESCRIPTION	DWG. NO.	PART NO.	MAT'L.
201	1	2"	TEE, SCR'D	-	-	MI
202	1	2"	PIPE COUPLING, EX HVY, SCR'D	-	-	CS
203	1	2"	PIPE PLUG, SCR'D	-	-	CI
204	1	2"	PIPE, SCH 40 X 30'-0" LG, CUT AND THD TO SUIT	-	-	CS
205	1	2"	90 DEG ELBDW, SCR'D	-	-	MI
206	1	-	LARGE TUBE OF CEMENT FOR SCR'D JOINTS	-	187-10021	-



NOTE:
WORK THIS DRAWING WITH DRAWING 185-24216, 185-24217 AND 185-24218 PIPING AND GENERAL ARRANGEMENT.



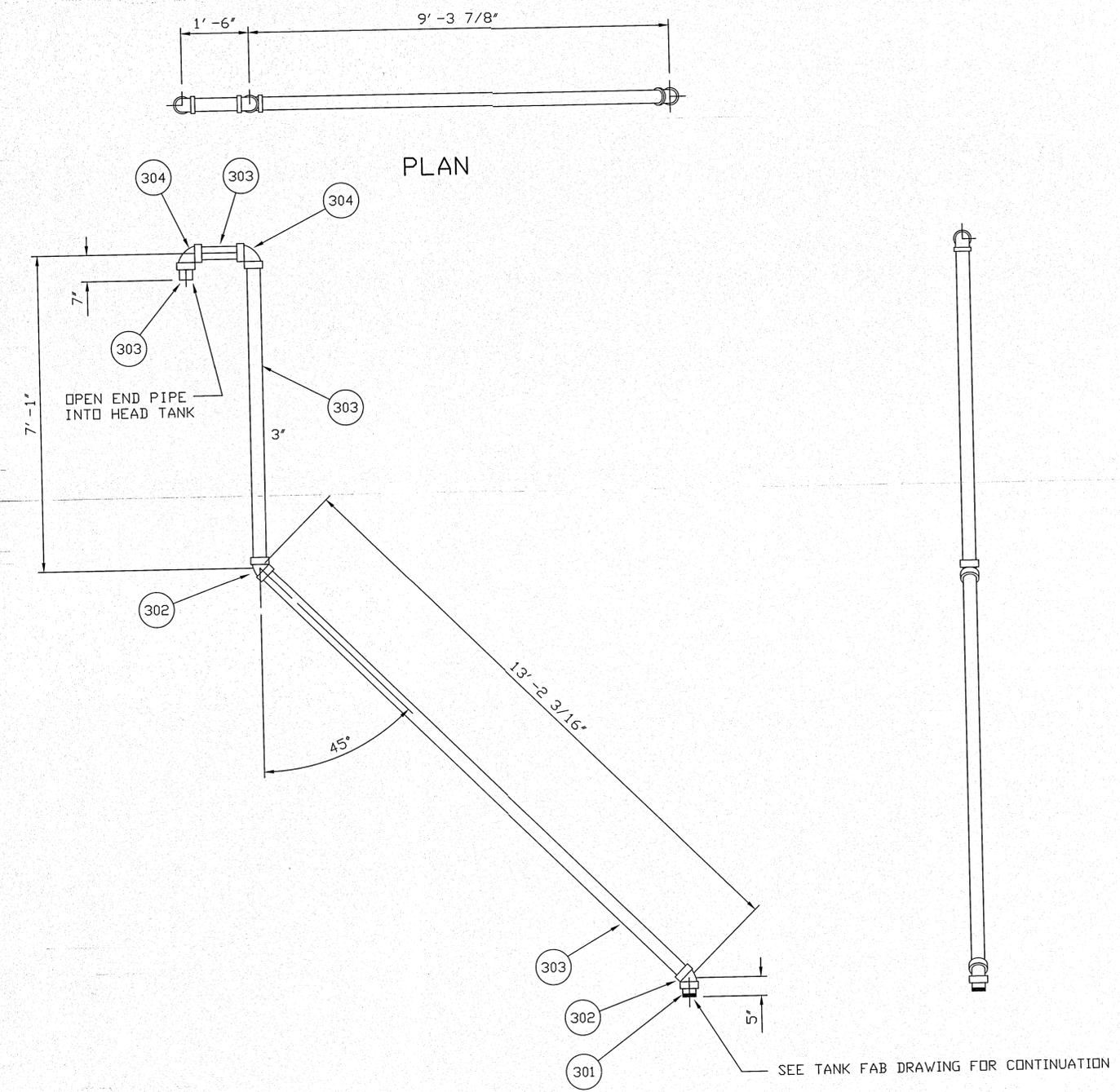
SYPHON BREAKER PIPING

<p>COMPANY CONFIDENTIAL THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF EVOQUA AND/OR ITS AFFILIATES. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO EVOQUA AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY LOANED. THEY MUST NOT BE DISCLOSED, REPRODUCED, LOANED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF EVOQUA. IN NO EVENT SHALL THEY BE USED IN ANY MANNER PERJURIAL TO THE INTEREST OF EVOQUA. ALL PATENT RIGHTS ARE RESERVED. UPON THE DEMAND OF EVOQUA, THIS DOCUMENT, ALONG WITH ALL COPIES AND EXTRACTS, AND ALL RELATED NOTES AND ANALYSES, MUST BE RETURNED TO EVOQUA OR DESTROYED, AS INSTRUCTED BY EVOQUA. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.</p>						<p>DESIGNER BKJ DATE 9-19-19</p>	<p>TITLE PIPING LAYOUT 22'-0" DIA. X 14'-10" HIGH VALVELESS GRAVITY FILTER</p>
						<p>CHECKER BG DATE 9-19-19</p>	<p>CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC</p>
						<p>ENGINEER MD DATE 9-19-19</p>	<p>WATER TECHNOLOGIES PERMIT PRODUCTS-UNION, NJ 908-851-2277</p>
						<p>INT. REF. DWG.: SCALE: NONE</p>	<p>PROJECT 967113</p>
						<p>INTERNAL DWG. NO. 156-21999</p>	<p>DRAWING SHEET 2 OF 3</p>
						<p>REV</p>	<p>REV 0</p>



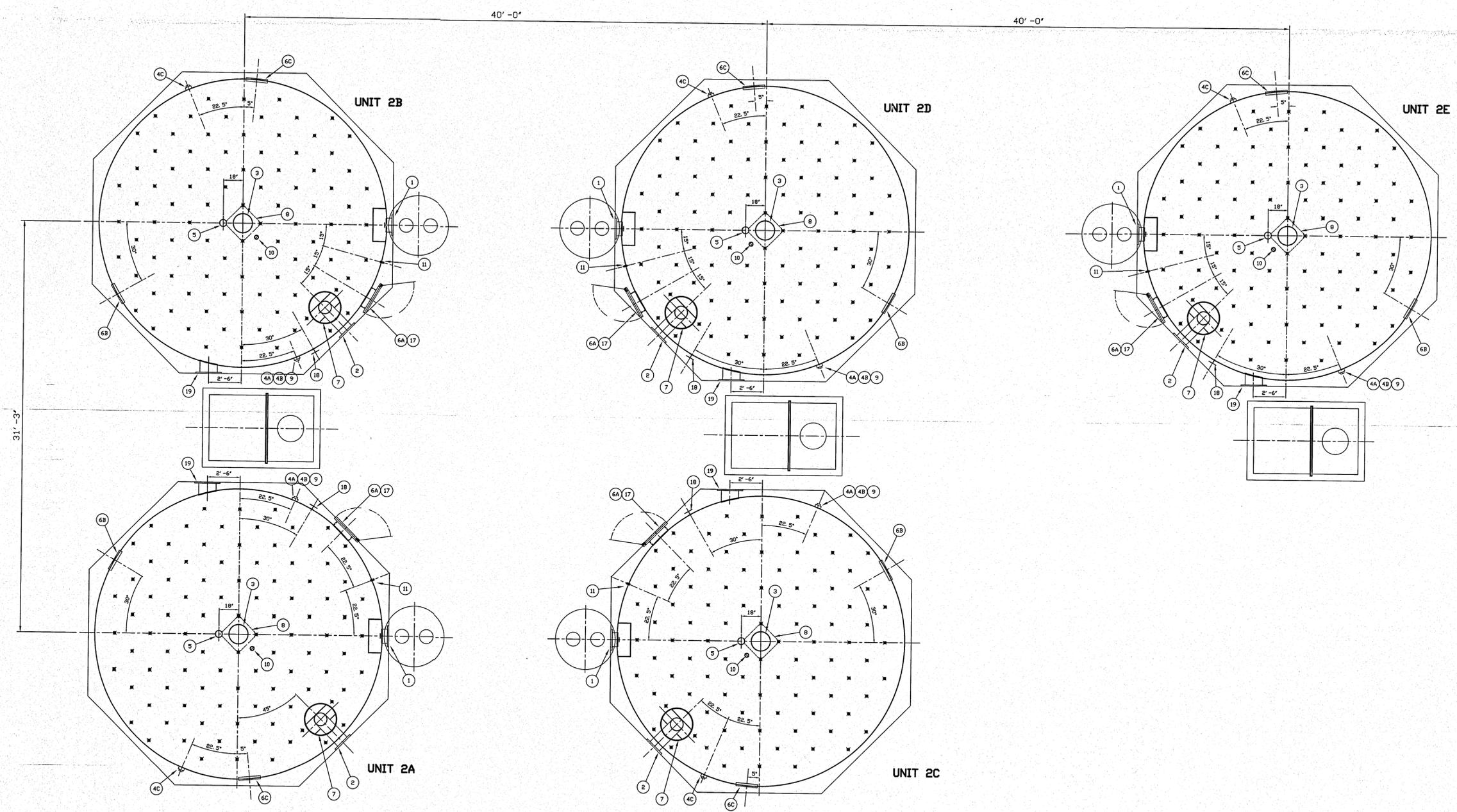
ASSEMBLY LIST						
ITEM NO.	QTY	SIZE	DESCRIPTION	DWG. NO.	PART NO.	MAT'L.
301	1	3"	NIPPLE, 3' LG TBE	-	-	CS
302	2	3"	45 DEG ELBOW, SCRD	-	-	MI
303	1	3"	PIPE, SCH 40 X 30'-0" LG, CUT AND THD TO SUIT	-	-	CS
304	2	3"	90 DEG ELBOW, SCRD	-	-	MI
305	1	-	LARGE TUBE OF CEMENT FOR SCRD JOINTS	-	187-10021	-

NOTE:
WORK THIS DRAWING WITH DRAWING 185-24216, 185-24217 AND 185-24218 PIPING AND GENERAL ARRANGEMENT.



VENT PIPING

<p>COMPANY CONFIDENTIAL THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF EVOQUA AND/OR ITS AFFILIATES. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO EVOQUA AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY LOANED. THEY MUST NOT BE REPRODUCED, REPRODUCED, LOANED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF EVOQUA. IN NO EVENT SHALL THEY BE USED IN ANY MANNER DEPREMIAL TO THE INTEREST OF EVOQUA. ALL PATENT RIGHTS ARE RESERVED. UPON THE DEMAND OF EVOQUA, THIS DOCUMENT, ALONG WITH ALL COPIES OF EVOQUA, THIS DOCUMENT, AND ALL RELATED NOTES AND EXTRACTS, AND ALL RELATED NOTES AND ANALYSES, MUST BE RETURNED TO EVOQUA OR DESTROYED, AS INSTRUCTED BY EVOQUA. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.</p>						DESIGNER BKJ	DATE 10-23-19	TITLE PIPING LAYOUT 22'-0" DIA. X 14'-10" HIGH VALVELESS GRAVITY FILTER										
						CHECKER BG	DATE 10-23-19	CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC										
						ENGINEER MD	DATE 10-23-19	WATER TECHNOLOGIES PERMUTIT PRODUCTS-UNION, NJ 908-851-2277										
						INT. REF. DWG.:	SCALE: NONE	<table border="1"> <tr> <td>PROJECT</td> <td>INTERNAL DWG. NO.</td> <td>DRAWING</td> <td>SHEET</td> <td>REV</td> </tr> <tr> <td>967113</td> <td>156-21999</td> <td></td> <td>3 OF 3</td> <td>0</td> </tr> </table>	PROJECT	INTERNAL DWG. NO.	DRAWING	SHEET	REV	967113	156-21999		3 OF 3	0
PROJECT	INTERNAL DWG. NO.	DRAWING	SHEET	REV														
967113	156-21999		3 OF 3	0														
REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN												



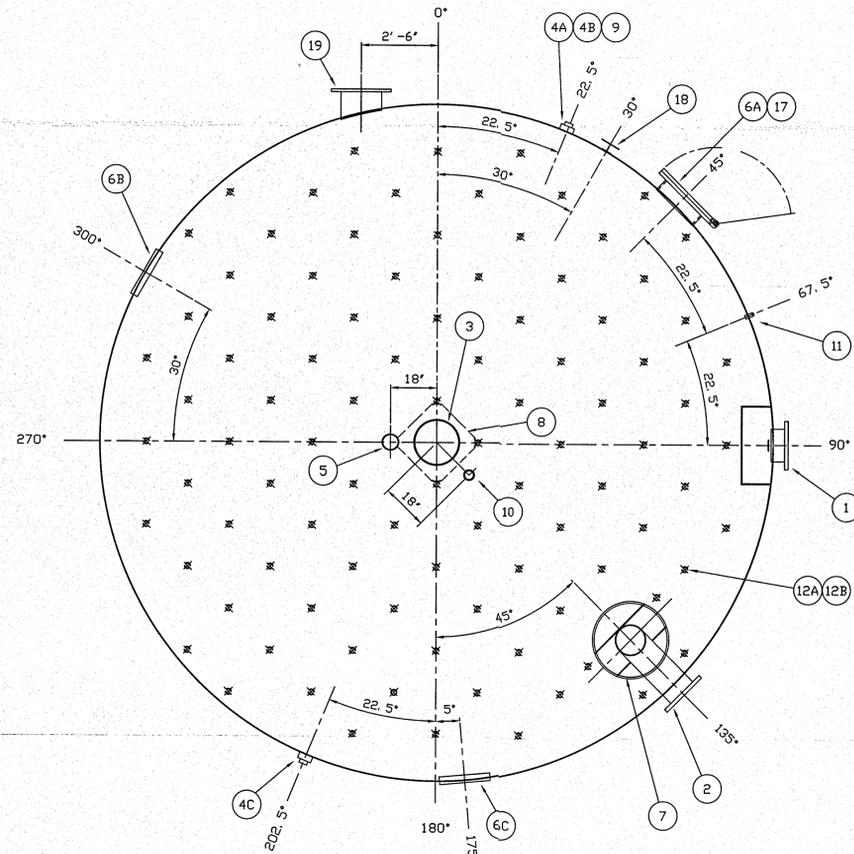
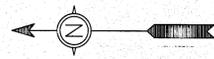
<p>COMPANY CONFIDENTIAL THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF EVOQUA AND/OR ITS AFFILIATES. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO EVOQUA AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY LOANED. THEY MUST NOT BE DISCLOSED, REPRODUCED, LOANED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF EVOQUA. IN NO EVENT SHALL THEY BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF EVOQUA. ALL PATENT RIGHTS ARE RESERVED. UPON THE SIGNING OF THIS DOCUMENT, THE USER AGREES TO RETURN TO EVOQUA, THIS DOCUMENT, ALONG WITH ALL COPIES AND EXTRACTS, AND ALL RELATED NOTES AND ANALYSES, MUST BE RETURNED TO EVOQUA OR DESTROYED AS INSTRUCTED BY EVOQUA. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.</p>						DESIGNER BKJ	DATE 9-6-19	TITLE TANK ORIENTATIONS 22'-0" DIA. X 14'-10" HIGH AVGF UNITS 2A, 2B, 2C, 2D AND 2E
						CHECKER BG	DATE 9-6-19	CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC
						ENGINEER MD	DATE 9-6-19	PROJECT 967113
						INT. REF. DWG.: SCALE: NONE		INTERNAL DWG. NO. 156-21982
								DRAWING SHEET 1 OF 1
								REV A

REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN
A	REVISED SIZE AND LOCATION OF ITEM #10.	10-23-19	BKJ	BG	MD	

C23445



Bruce B. Johnson



PLAN UNIT 2A

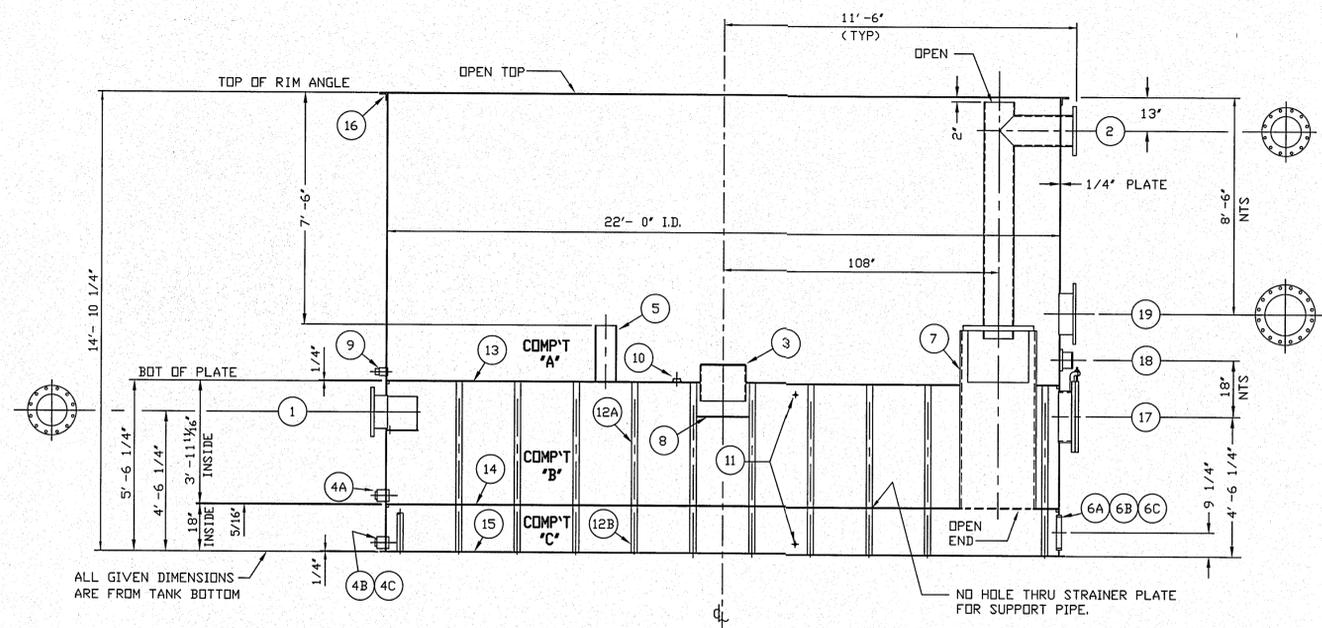
NOZZLES & TANK ATTACHMENT PARTS LIST						
ITEM	REQ.D.	SIZE	RATING		PIPE SCH.	DESCRIPTION
1	1	12"	-	SLIP-ON, FF FLG.	STD WT	INLET (DETAIL 'J')
2	1	12"	-	SLIP-ON, RF FLG.	STD WT	OUTLET (DETAIL 'D')
3	1	18"	-	PIPE, B.O.E.	STD WT	BACKWASH (DETAIL 'H')
4A	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	CLEANOUT, W/BR. PLUG (COMP'T. "B") (DETAIL 'B')
4B	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMP'T. "C") (DETAIL 'B')
4C	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMP'T. "C") (DETAIL 'B')
5	1	8"	-	PIPE P.E.	SCH 40	SYPHON SEAL WELL (DETAIL 'F')
6	3	14"x18"	-	-	-	RING TYPE PRESSED STEEL MANHOLES, MAJOR DIA. TO BE HORIZ. WITH COVER, YOKES, BOLTS 3/16" THK. 45 DURO- METER RUBBER GASKET & HANDGRIP IN MANHOLE COVER. (DETAIL 'E')
7	1	30"	-	PIPE, P.E.	STD WT	INTERNAL CONDUIT (DETAIL 'D')
8	1	24"SQ.	-	-	-	SQ. BAFFLE PLATE 1/4" THK. (DETAIL 'H')
9	1	2"	3000# F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMP'T. "A") (DETAIL 'B')
10	1	3"	3000# F.S.	SCRD. HALF CPLG.	-	VENT (SEE ORIENTATION FOR LOC.) (DETAIL 'H')
11	2	1/4"	3000# F.S.	SCRD. FULL CPLG.	-	TEST CONNS, W/ BR. PLUG (COMP'T. "B" & "C") (DETAIL 'A')
12A	96	2"	-	-	SCH 40	SUPPORT PIPE, 3'-11 11/16" LG. (DETAIL 'B')
12B	96	2"	-	-	SCH 40	SUPPORT PIPE, 18" LG. (DETAIL 'C')
13	1	-	-	-	-	HEAD PLATE, 1/4" THK. (SEE HEAD PLATE DETAIL)
14	1	-	-	-	-	STRAINER PLATE, 5/16" (SEE STRAINER PLATE DETAIL)
15	1	-	-	-	-	BASE PLATE, 1/4" THK. (SEE BASE PLATE DETAIL)
16	1	-	-	-	-	RIM ANGLE 3" x 3" x 1/4" THK.
17	1	20"	-	-	-	HINGED MANWAY (SEE NOTES) (DETAIL 'E')
18	1	-	-	-	-	NAMEPLATE AND BRACKET
19	1	16"	-	SLIP-ON, RF FLG.	STD WT	SECONDARY WASH

TANK FABRICATION NOTES:

- DESIGN, MATERIAL, FABRICATION AND WELDING TO BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF EVOQUA SPEC 106. TANK WILL BE FIELD ERRECTED BY OTHERS.
- THE FILTER SECTIONS WILL BE SHOP FABRICATED IN THE NUMBER OF PIECES PER DRAWING 129-22614 EXCEPT THAT THE OPTIONAL COVER IS NOT INCLUDED.
- THE FILTERS WILL BE FIELD ERRECTED, PIPED, LEAK TESTED, AND PAINTED BY OTHERS.
- FLANGE CONNECTIONS ARE TO BE CARBON STEEL CLASS 150 FF SO FLANGES. ALL PIPE AND FITTINGS ARE TO CONFORM TO ANSI STANDARDS. PIPING SHALL BE CARBON STEEL AND CONFORM TO A53B OR A106B WITH FLANGES TO A105.
- PIPING 3" AND SMALLER WILL BE SCH 40 WITH THREADED CAST IRON OR DUCTILE IRON FITTINGS. PIPING WILL BE SHIPPED IN RANDOM LENGTHS FOR CUTTING AND THREADING IN THE FIELD BY OTHERS.
- PIPING 4" AND LARGER WILL BE SHOP FABRICATED BY BUTTWELDING TO THE EXTENT SHOWN ON THE DRAWINGS. PIPE SIZES 4" TO 10" WILL BE SCH 40. PIPING LARGER THAN 10" WILL BE STD WALL.
- STRAINER INSTALLATION IS TO BE PERFORMED BY OTHERS PER FORM 4938W.
- FILTER MEDIA IS TO BE FURNISHED AND INSTALLED BY OTHERS PER SPEC 613.
- EACH FILTER TANK WILL BE EQUIPPED WITH THREE (3) 14" X 18" MANWAYS FOR COMPARTMENT "C" AND ONE 20" OD DAVITED MANWAY FOR COMPARTMENT "B". THE 20" MANWAY IS TO BE EQUIPPED WITH DAVIT, FASTENERS AND 1/8" THK FULL FACE EPDM GASKET.

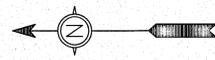
REFERENCE DRAWINGS

- 185-24216 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2A AND 2B
- 185-24217 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2C AND 2D
- 185-24218 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2E
- 185-24219 REV B, PLOT PLAN ARRANGEMENT
- 156-21982 REV A, TANK ORIENTATIONS
- 156-21983 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2A
- 156-21995 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2B
- 156-21996 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2C
- 156-21997 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2D
- 156-21998 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2E
- 156-21999 REV B, SHTS 1-3, PIPING LAYOUT
- 129-22614 REV B, STEEL CUTTING DETAILS FOR KD AVGF
- 184-44980 REV A, GRAVITY TANK TOLERANCES
- 157-22612 REV D, DETAIL, BACKWASH REGULATOR (P/N 167-22612)
- 157-35653 REV A, TANK FABRICATION, HEAD TANK
- 157-35659 REV 0, DETAILS, HEAD TANK SUPPORT
- 157-35960 REV 0, DETAILS, BACKWASH PIPE SUPPORT
- 157-29391 REV D, DETAIL 18" WASH PIPE (P/N 176-29391)
- 101-20778 REV 0, ASSEMBLY, BACKWASH REGULATOR
- 102-39852 REV 0, SPECIAL BACKWASH FITTING
- 102-35627 REV B, DETAIL, WEIR PLATE (P/N 107-35627)
- 102-36889 REV 0, ADJUSTABLE COLLAR (P/N 103-36889)
- 102-39230 REV D, SHTS 1-2, 316SS STRAINER ASSEMBLY (P/N) 105-39230)
- 102-39775 REV 0, U-BOLT DETAIL, 316SS (P/N) 110-39775
- SPEC 106 REV E, FABRICATION OF STEEL GRAVITY VESSELS
- SPEC 613 REV 0, LOADING FILTER SAND
- SPEC 187-10021 REV C, THREAD SEALANT
- FORM 4938W REV 0, STRAINER INSTALLATION

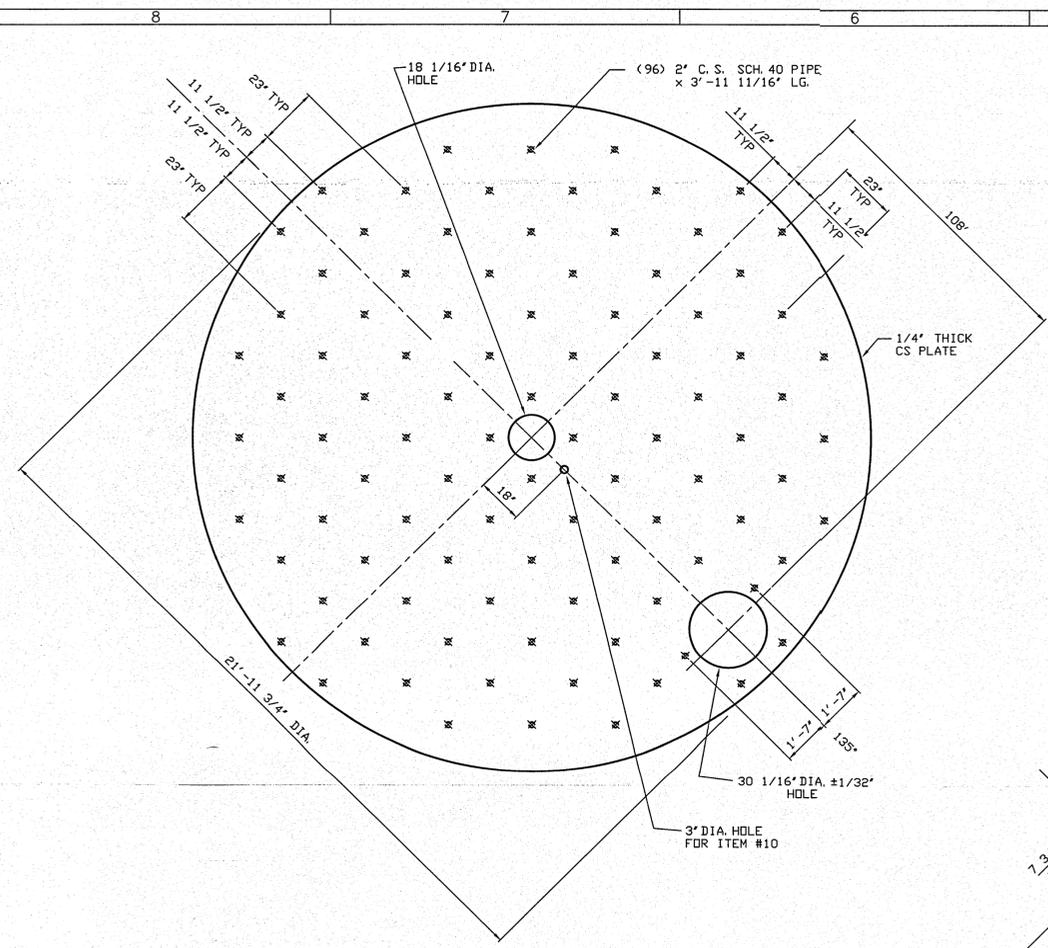


SECTIONAL ELEVATION UNIT 2A
SEE PLAN VIEW FOR TRUE ORIENTATION

<p>COMPANY CONFIDENTIAL THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF EVOQUA AND/OR ITS AFFILIATES. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO EVOQUA AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY LOANED. IT MUST NOT BE DISCLOSED, REPRODUCED, LOANED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF EVOQUA. IN NO EVENT SHALL THEY BE USED IN ANY MANNER DETRIMENTAL TO THE INTERESTS OF EVOQUA. ALL PATENT RIGHTS ARE RESERVED. UPON THE DEMAND OF EVOQUA, THIS DOCUMENT, ALONG WITH COPIES AND EXTRACTS, AND ALL RELATED NOTES AND ANALYSES, MUST BE RETURNED TO EVOQUA OR DESTROYED, AS INSTRUCTED BY EVOQUA. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.</p>						<p>DESIGNER BKJ DATE 9-19-19</p>	<p>TITLE TANK FABRICATION 22'-0" DIA. X 14'-10" HIGH AVGF "2A"</p>
<p>REVISOR B REVISED SIZE FROM 2" TO 3" AND LOCATION OF ITEM #10 (VENT). DATE 10-21-19 DWN BKJ CHKD BG APVD MD</p>						<p>CHECKER BG DATE 9-19-19</p>	<p>CUSTOMER BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC</p>
<p>REVISOR A UPDATED REFERENCE DRAWING LIST. DATE 10-3-19 DWN BKJ CHKD BG APVD MD</p>						<p>ENGINEER MD DATE 9-19-19</p>	<p>PROJECT 967113</p>
<p>SCALE: NONE</p>						<p>INTERNAL DWG. NO. 156-21983</p>	<p>DRAWING 1 OF 3</p>
<p>REV</p>						<p>SHEET 1 OF 3</p>	<p>REV B</p>

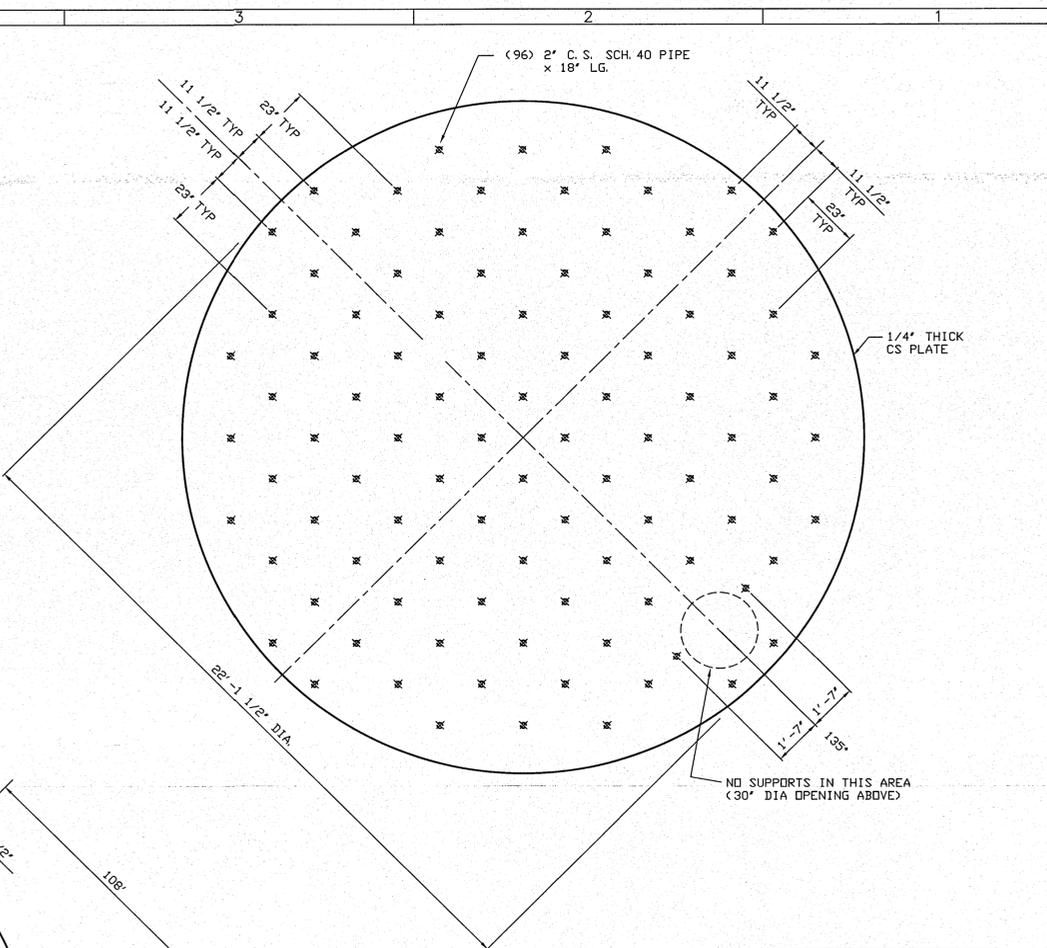


UNIT 2A



13 UNIT 2A
HEAD PLATE DETAIL
1/4" THK STEEL PLATE
WITH SUPPORT PIPES SHOWN

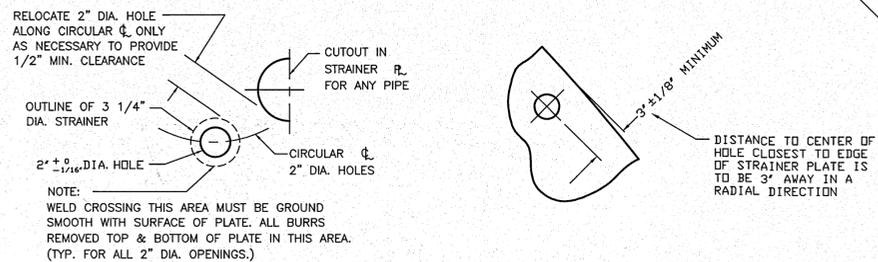
NOTE: DO NOT DRILL HOLES IN HEAD PLATE FOR PIPE SUPPORTS



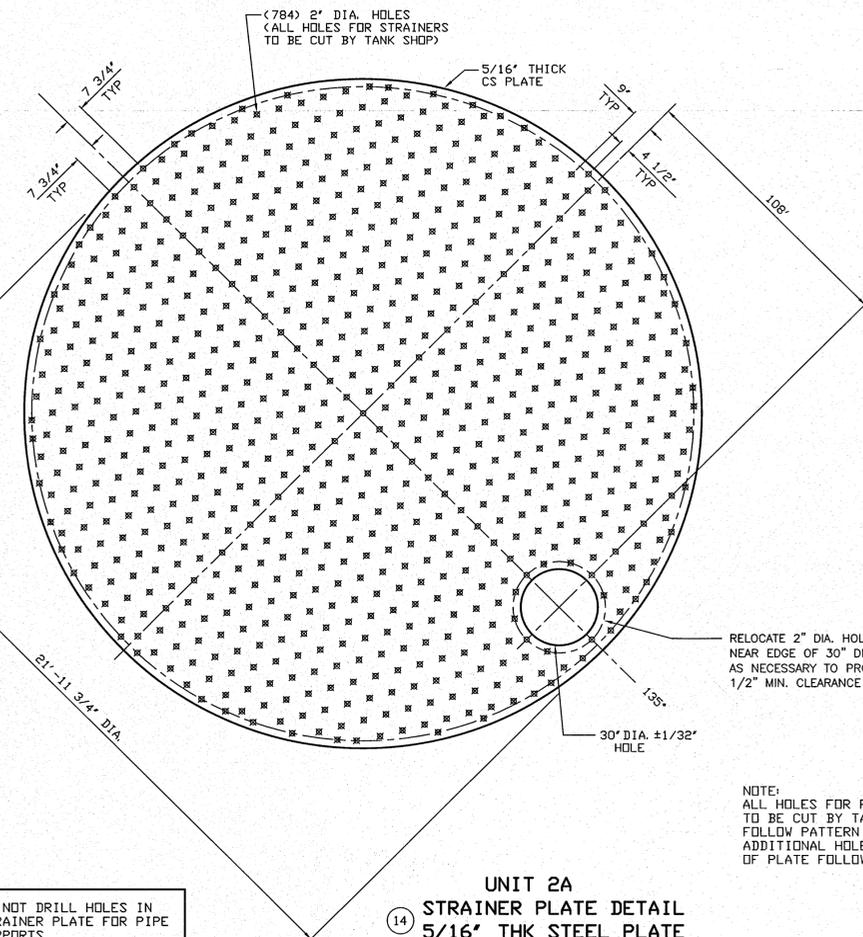
15 UNIT 2A
BASE PLATE DETAIL
1/4" THK STEEL PLATE
WITH SUPPORT PIPES SHOWN

NOTE: DO NOT DRILL HOLES IN BASE PLATE FOR PIPE SUPPORTS

NOTES:
EACH PLATE TO BE SHIPPED IN <3> SECTIONS.
SECTION LINES SHOULD CLEAR ALL HOLES IN PLATE.



STRAINER CLEARANCE DETAIL



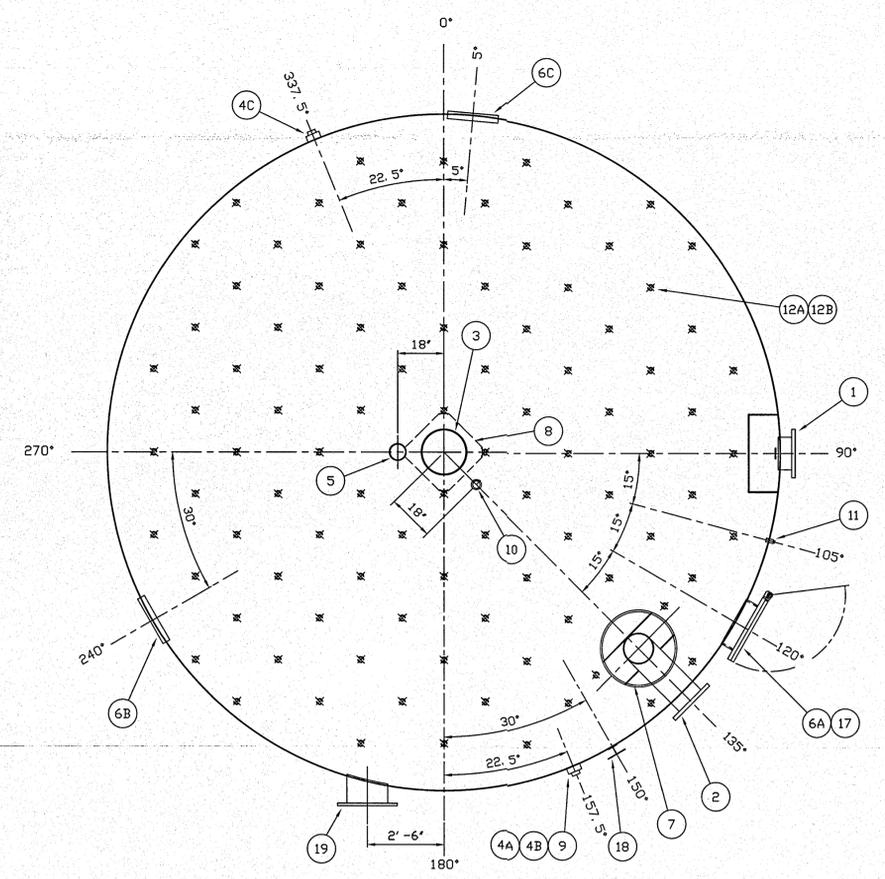
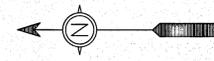
14 UNIT 2A
STRAINER PLATE DETAIL
5/16" THK STEEL PLATE

NOTE: DO NOT DRILL HOLES IN STRAINER PLATE FOR PIPE SUPPORTS

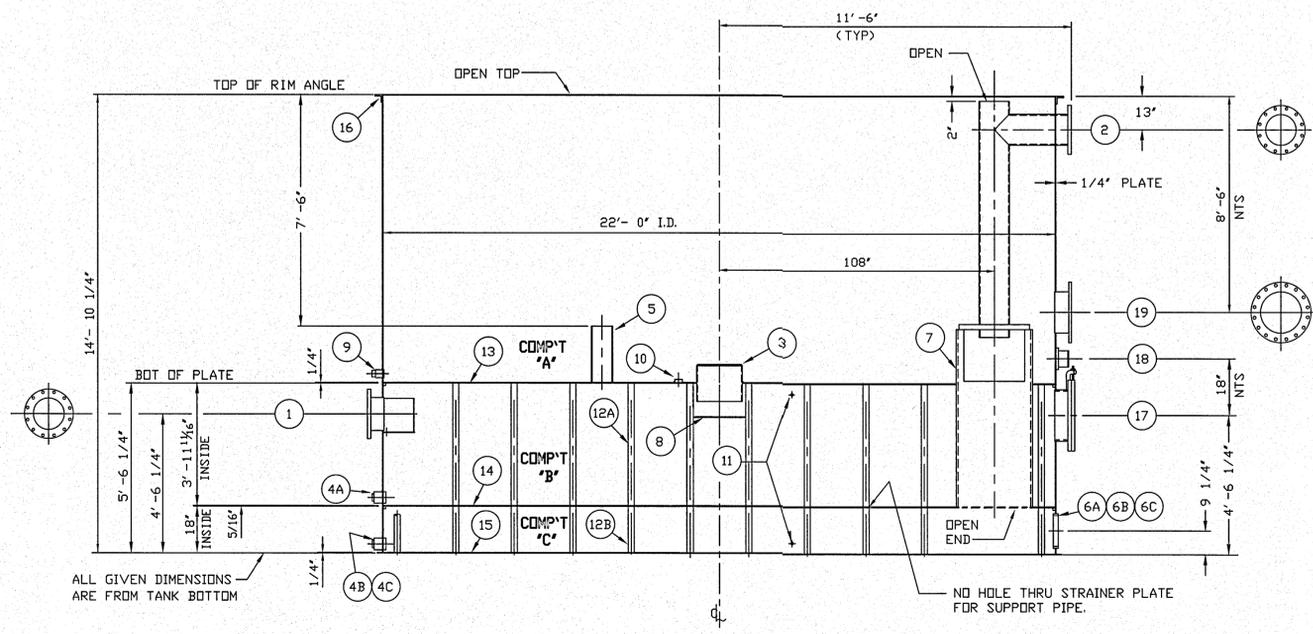
RELOCATE 2" DIA. HOLES NEAR EDGE OF 30" DIA OPENING AS NECESSARY TO PROVIDE 1/2" MIN. CLEARANCE

NOTE:
ALL HOLES FOR PIPE STRAINERS TO BE CUT BY TANK SHOP. FOLLOW PATTERN AND ADD ALL ADDITIONAL HOLES TO OUTSIDE EDGE OF PLATE FOLLOWING STRAINER CLEARANCE DETAIL.

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						CHECKER BG	DATE 9-4-19	CUSTOMER BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC				
						ENGINEER BG	DATE 9-4-19	EVOQUA WATER TECHNOLOGIES PERMIT PRODUCTS-UNION, NJ 908-851-2277				
REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN	INT. REF. DWG. NO. SCALE: NONE	PROJECT 967113	INTERNAL DWG. NO. 156-21983	DRAWING	SHEET 2 OF 3	REV A



ORIENTATION 2B



SECTIONAL ELEVATION UNIT 2B
SEE PLAN VIEW FOR TRUE ORIENTATION

NOZZLES & TANK ATTACHMENT PARTS LIST							
ITEM	REQ.D.	SIZE	RATING		PIPE SCH.		DESCRIPTION
1	1	12"	-	SLIP-ON, FF FLG.	STD WT	INLET	(DETAIL 'J')
2	1	12"	-	SLIP-ON, RF FLG.	STD WT	OUTLET	(DETAIL 'D')
3	1	18"	-	PIPE, B.O.E.	STD WT	BACKWASH	(DETAIL 'H')
4A	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	CLEANOUT, W/BR. PLUG (COMPT. "B")	(DETAIL 'B')
4B	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMPT. "C")	(DETAIL 'B')
4C	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMPT. "C")	(DETAIL 'B')
5	1	8"	-	PIPE P.E.	SCH 40	SYPHON SEAL WELL	(DETAIL 'F')
6	3	14"x18"	-	-	-	RING TYPE PRESSED STEEL MANHOLES, MAJOR DIA. TO BE HORIZ. WITH COVER, YOKES, BOLTS 3/16" THK. 45 DURO-METER RUBBER GASKET & HANDGRIP IN MANHOLE COVER.	(DETAIL 'E')
7	1	30"	-	PIPE, P.E.	STD WT	INTERNAL CONDUIT	(DETAIL 'D')
8	1	24"SQ.	-	-	-	SQ. BAFFLE PLATE 1/4" THK.	(DETAIL 'H')
9	1	2"	3000# F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMPT. "A")	(DETAIL 'B')
10	1	3"	3000# F.S.	SCRD. HALF CPLG.	-	VENT (SEE ORIENTATION FOR LOC.)	(DETAIL 'H')
11	2	1/4"	3000# F.S.	SCRD. FULL CPLG.	-	TEST CONNS, W/ BR. PLUG (COMPT. "B" & "C")	(DETAIL 'A')
12A	96	2"	-	-	SCH 40	SUPPORT PIPE, 3'-11 11/16" LG.	(DETAIL 'B')
12B	96	2"	-	-	SCH 40	SUPPORT PIPE, 18" LG.	(DETAIL 'C')
13	1	-	-	-	-	HEAD PLATE, 1/4" THK. (SEE HEAD PLATE DETAIL)	
14	1	-	-	-	-	STRAINER PLATE, 5/16" (SEE STRAINER PLATE DETAIL)	
15	1	-	-	-	-	BASE PLATE, 1/4" THK. (SEE BASE PLATE DETAIL)	
16	1	-	-	-	-	RIM ANGLE 3" x 3" x 1/4" THK.	
17	1	20"	-	-	-	HINGED MANWAY (SEE NOTES)	(DETAIL 'E')
18	1	-	-	-	-	NAMEPLATE AND BRACKET	
19	1	16"	-	SLIP-ON, RF FLG.	STD WT	SECONDARY WASH	

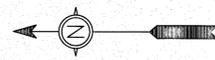
TANK FABRICATION NOTES:

- DESIGN, MATERIAL, FABRICATION AND WELDING TO BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF EVOQUA SPEC 106. TANK WILL BE FIELD ERCTED BY OTHERS.
- THE FILTER SECTIONS WILL BE SHOP FABRICATED IN THE NUMBER OF PIECES PER DRAWING 129-22614 EXCEPT THAT THE OPTIONAL COVER IS NOT INCLUDED.
- THE FILTERS WILL BE FIELD ERCTED, PIPED, LEAK TESTED, AND PAINTED BY OTHERS.
- FLANGE CONNECTIONS ARE TO BE CARBON STEEL CLASS 150 FF SO FLANGES. ALL PIPE AND FITTINGS ARE TO CONFORM TO ANSI STANDARDS. PIPING SHALL BE CARBON STEEL AND CONFORM TO A53B OR A106B WITH FLANGES TO A105.
- PIPING 3" AND SMALLER WILL BE SCH 40 WITH THREADED CAST IRON OR DUCTILE IRON FITTINGS. PIPING WILL BE SHIPPED IN RANDOM LENGTHS FOR CUTTING AND THREADING IN THE FIELD BY OTHERS.
- PIPING 4" AND LARGER WILL BE SHOP FABRICATED BY BUTTWELDING TO THE EXTENT SHOWN ON THE DRAWINGS. PIPE SIZES 4" TO 10" WILL BE SCH 40. PIPING LARGER THAN 10" WILL BE STD WALL.
- STRAINER INSTALLATION IS TO BE PERFORMED BY OTHERS PER FORM 4938W.
- FILTER MEDIA IS TO BE FURNISHED AND INSTALLED BY OTHERS PER SPEC 613.
- EACH FILTER TANK WILL BE EQUIPPED WITH THREE (3) 14" X 18" MANWAYS FOR COMPARTMENT "C" AND ONE 20" ODAVITED MANWAY FOR COMPARTMENT "B". THE 20" MANWAY IS TO BE EQUIPPED WITH DAVIT, FASTENERS AND 1/8" THK FULL FACE EPDM GASKET.

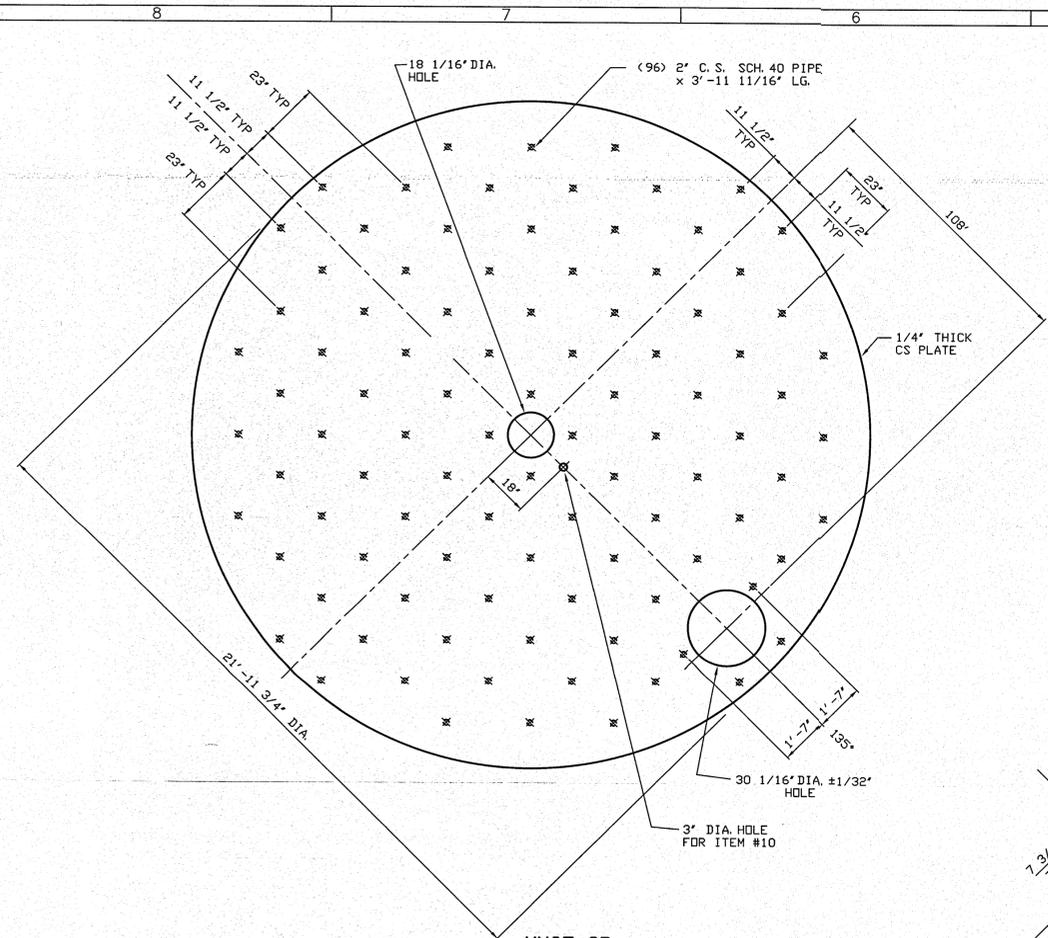
REFERENCE DRAWINGS

- 185-24216 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2A AND 2B
- 185-24217 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2C AND 2D
- 185-24218 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2E
- 185-24219 REV B, PLOT PLAN ARRANGEMENT
- 156-21982 REV A, TANK ORIENTATIONS
- 156-21983 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2A
- 156-21985 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2B
- 156-21986 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2C
- 156-21987 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2D
- 156-21988 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2E
- 156-21989 REV B, SHTS 1-3, PIPING LAYOUT
- 129-22614 REV B, STEEL CUTTING DETAILS FOR KD AVGF
- 184-14980 REV A, GRAVITY TANK TOLERANCES
- 157-22612 REV D, DETAIL, BACKWASH REGULATOR (P/N 167-22612)
- 157-35653 REV A, TANK FABRICATION, HEAD TANK
- 157-35659 REV 0, DETAILS, HEAD TANK SUPPORT
- 157-35960 REV 0, DETAILS, BACKWASH PIPE SUPPORT
- 157-29391 REV D, DETAIL 18" WASH PIPE (P/N 176-29391)
- 101-20778 REV 0, ASSEMBLY, BACKWASH REGULATOR
- 102-39852 REV 0, SPECIAL BACKWASH FITTING
- 102-35627 REV B, DETAIL, WEIR PLATE (P/N 107-35627)
- 102-36889 REV 0, ADJUSTABLE COLLAR (P/N 103-36889)
- 102-39230 REV D, SHTS 1-2, 316SS STRAINER ASSEMBLY (P/N) 105-39230)
- 102-39775 REV 0, U-BOLT DETAIL, 316SS (P/N) 110-39775
- SPEC 106 REV E, FABRICATION OF STEEL GRAVITY VESSELS
- SPEC 613 REV 0, LOADING FILTER SAND
- SPEC 187-10021 REV C, THREAD SEALANT
- FORM 4938W REV 0, STRAINER INSTALLATION

<p>THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF EVOQUA AND/OR ITS AFFILIATES. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO EVOQUA AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY LOANED. THEY MUST NOT BE REPRODUCED, LOANED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF EVOQUA. IN NO EVENT SHALL THEY BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF EVOQUA. ALL PATENT RIGHTS ARE RESERVED. UPON THE DEMAND OF EVOQUA, THIS DOCUMENT, ALONG WITH ALL COPIES AND EXTRACTS, AND ALL RELATED NOTES AND ANALYSES MUST BE RETURNED TO EVOQUA. IF DESTROYED, AS INSTRUCTED BY EVOQUA, ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.</p>						<p>DESIGNER BKJ</p>	<p>DATE 9-19-19</p>	<p>TITLE TANK FABRICATION 22'-0" DIA. X 14'-10" HIGH AVGF '2B'</p>				
<p>REVISED SIZE FROM 2" TO 3" AND LOCATION OF ITEM #10 (VENT).</p>						<p>CHECKER BG</p>	<p>DATE 9-19-19</p>	<p>CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC</p>				
<p>UPDATED REFERENCE DRAWING LIST.</p>						<p>ENGINEER MD</p>	<p>DATE 9-19-19</p>	<p>EVOQUA WATER TECHNOLOGIES PERMUT PRODUCTS-UNION, NJ 908-851-2277</p>				
REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN	<p>INT. REF. DWG.: SCALE: NONE</p>	<p>PROJECT 967113</p>	<p>INTERNAL DWG. NO. 156-21995</p>	<p>DRAWING</p>	<p>SHEET 1 OF 3</p>	<p>REV B</p>

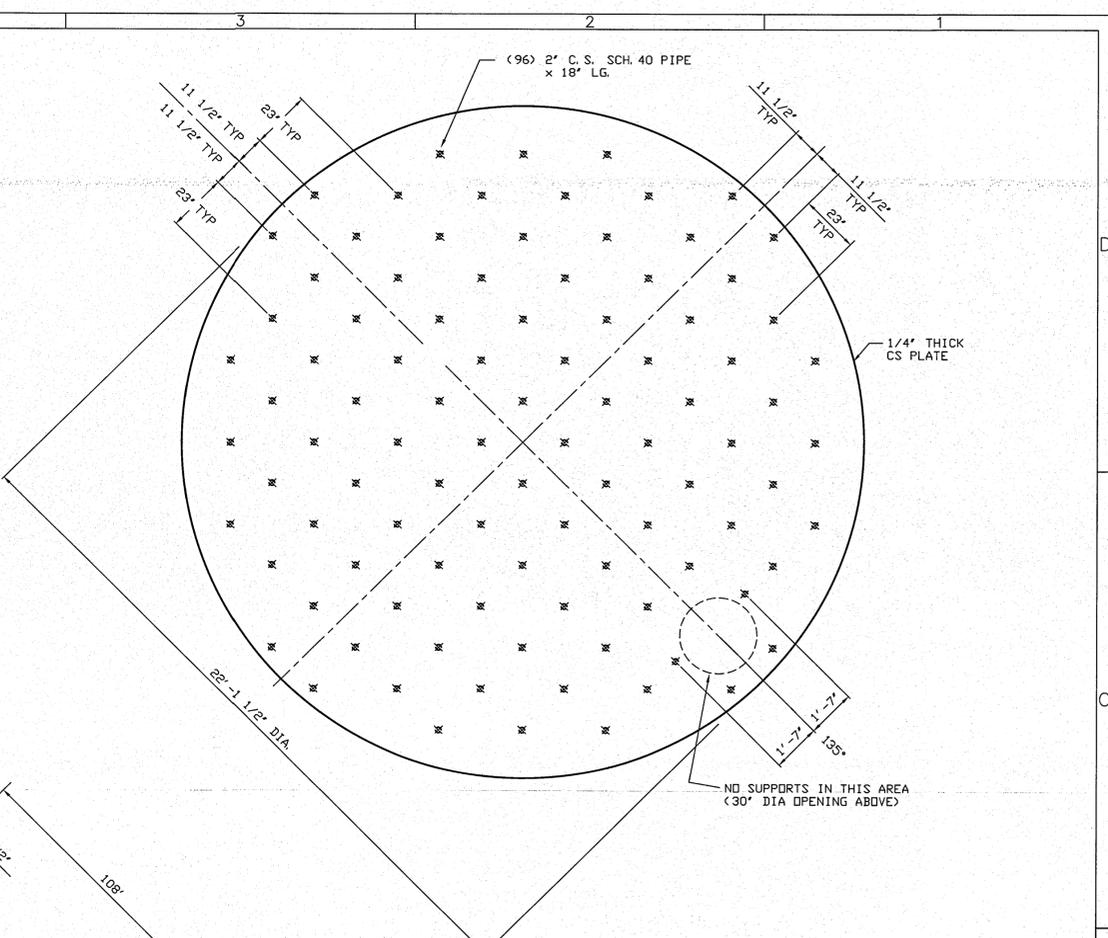


UNIT 2B



UNIT 2B
13 HEAD PLATE DETAIL
1/4" THK STEEL PLATE
WITH SUPPORT PIPES SHOWN

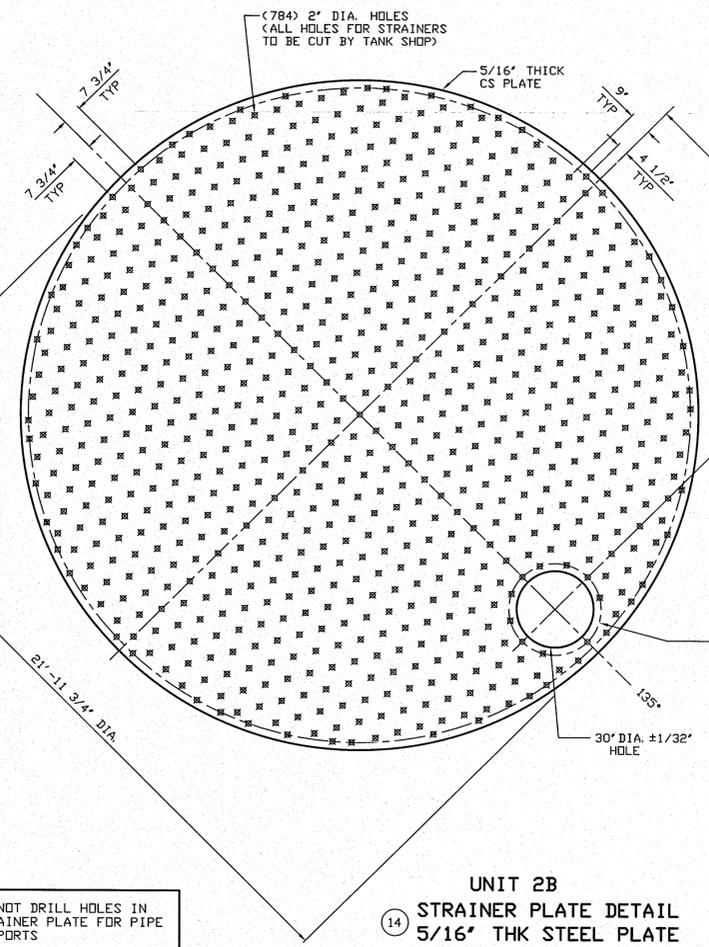
NOTE: DO NOT DRILL HOLES IN HEAD PLATE FOR PIPE SUPPORTS



UNIT 2B
15 BASE PLATE DETAIL
1/4" THK STEEL PLATE
WITH SUPPORT PIPES SHOWN

NOTE: DO NOT DRILL HOLES IN BASE PLATE FOR PIPE SUPPORTS

NOTES:
EACH PLATE TO BE SHIPPED IN (3) SECTIONS.
SECTION LINES SHOULD CLEAR ALL HOLES IN PLATE.

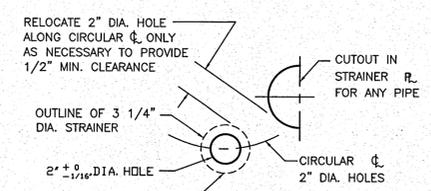


UNIT 2B
14 STRAINER PLATE DETAIL
5/16" THK STEEL PLATE

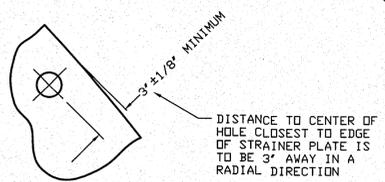
NOTE: DO NOT DRILL HOLES IN STRAINER PLATE FOR PIPE SUPPORTS

RELOCATE 2" DIA. HOLES NEAR EDGE OF 30" DIA OPENING AS NECESSARY TO PROVIDE 1/2" MIN. CLEARANCE

NOTE:
ALL HOLES FOR PIPE STRAINERS TO BE CUT BY TANK SHOP. FOLLOW PATTERN AND ADD ALL ADDITIONAL HOLES TO OUTSIDE EDGE OF PLATE FOLLOWING STRAINER CLEARANCE DETAIL.

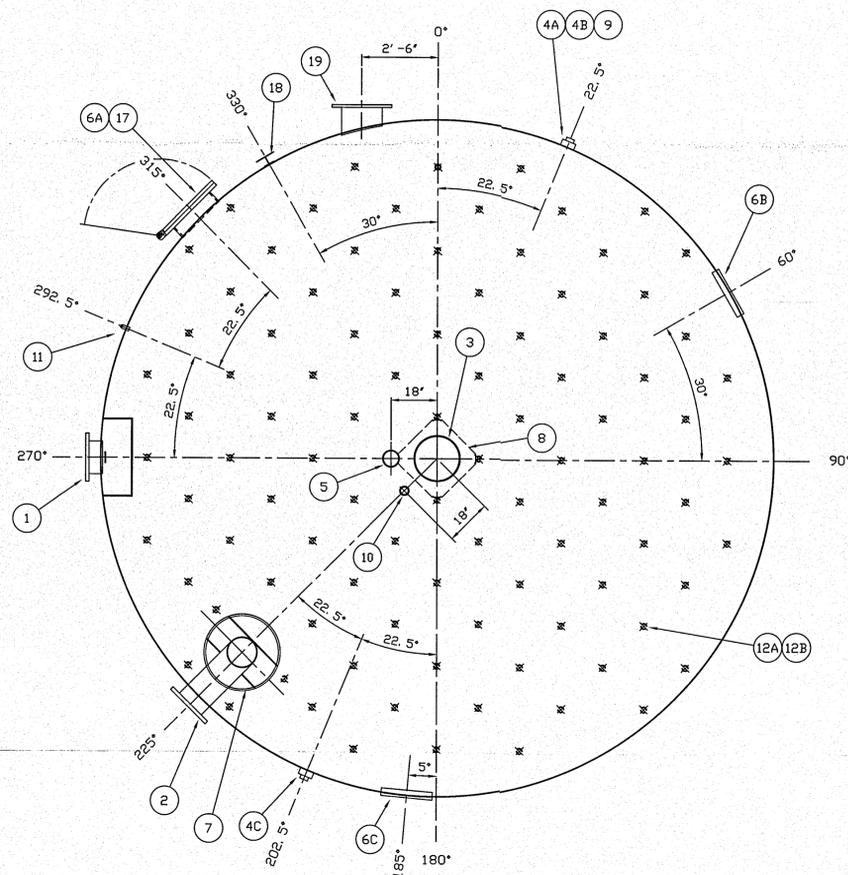
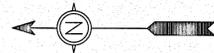


STRAINER CLEARANCE DETAIL

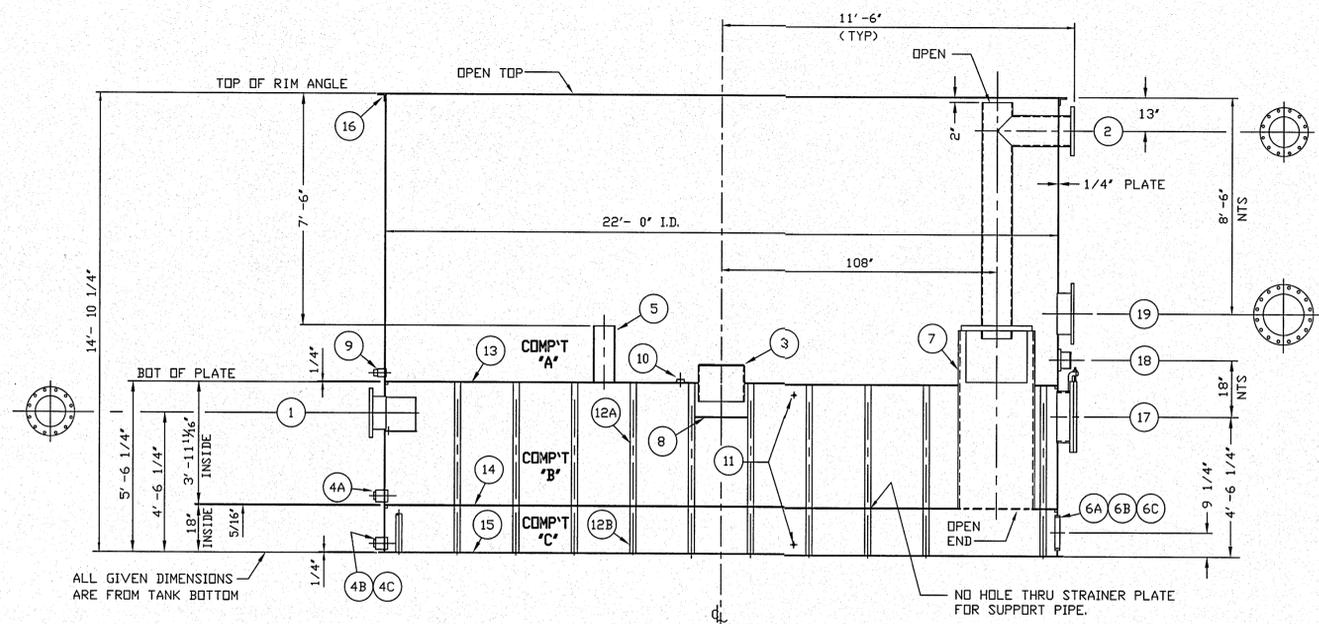


DISTANCE TO CENTER OF HOLE CLOSEST TO EDGE OF STRAINER PLATE IS TO BE 3' AWAY IN A RADIAL DIRECTION

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						CHECKER BG	DATE 9-6-19	CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC
						ENGINEER MD	DATE 9-6-19	PROJECT 967113
						INT. REF. DWG.:		INTERNAL DWG. NO. 156-21995
						SCALE: NONE		DRAWING
						SHEET		2 OF 3
						REV		A



PLAN UNIT 2C



SECTIONAL ELEVATION UNIT 2C
SEE PLAN VIEW FOR TRUE ORIENTATION

NOZZLES & TANK ATTACHMENT PARTS LIST									
ITEM	REQ.D.	SIZE	RATING		PIPE SCH.	DESCRIPTION			
1	1	12"	-	SLIP-ON, FF FLG.	STD WT	INLET (DETAIL 'J')			
2	1	12"	-	SLIP-ON, RF FLG.	STD WT	OUTLET (DETAIL 'D')			
3	1	18"	-	PIPE, B.O.E.	STD WT	BACKWASH (DETAIL 'H')			
4A	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	CLEANOUT, W/BR. PLUG (COMP'T. "B") (DETAIL 'B')			
4B	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMP'T. "C") (DETAIL 'B')			
4C	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMP'T. "C") (DETAIL 'B')			
5	1	8"	-	PIPE P.E.	SCH 40	SYPHON SEAL WELL (DETAIL 'F')			
6	3	14"x18"	-	-	-	RING TYPE PRESSED STEEL MANHOLES, MAJOR DIA. TO BE HORIZ. WITH COVER, YOKES, BOLTS 3/16" THK. 45 DURO-METER RUBBER GASKET & HANDGRIP IN MANHOLE COVER. (DETAIL 'E')			
7	1	30"	-	PIPE, P.E.	STD WT	INTERNAL CONDUIT (DETAIL 'D')			
8	1	24"SQ.	-	-	-	SQ. BAFFLE PLATE 1/4" THK. (DETAIL 'H')			
9	1	2"	3000# F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMP'T. "A") (DETAIL 'B')			
10	1	3"	3000# F.S.	SCRD. HALF CPLG.	-	VENT (SEE ORIENTATION FOR LOC.) (DETAIL 'H')			
11	2	1/4"	3000# F.S.	SCRD. FULL CPLG.	-	TEST CONNS, W/ BR. PLUG (COMP'T. "B" & "C") (DETAIL 'A')			
12A	96	2"	-	-	SCH 40	SUPPORT PIPE, 3'-11 11/16" LG. (DETAIL 'B')			
12B	96	2"	-	-	SCH 40	SUPPORT PIPE, 18" LG. (DETAIL 'C')			
13	1	-	-	-	-	HEAD PLATE, 1/4" THK. (SEE HEAD PLATE DETAIL)			
14	1	-	-	-	-	STRAINER PLATE, 5/16" (SEE STRAINER PLATE DETAIL)			
15	1	-	-	-	-	BASE PLATE, 1/4" THK. (SEE BASE PLATE DETAIL)			
16	1	-	-	-	-	RIM ANGLE 3" x 3" x 1/4" THK.			
17	1	20"	-	-	-	HINGED MANWAY (SEE NOTES) (DETAIL 'E')			
18	1	-	-	-	-	NAMEPLATE AND BRACKET			
19	1	16"	-	SLIP-ON, RF FLG.	STD WT	SECONDARY WASH			

TANK FABRICATION NOTES:

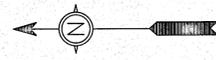
- DESIGN, MATERIAL, FABRICATION AND WELDING TO BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF EVOQUA SPEC 106. TANK WILL BE FIELD ERRECTED BY OTHERS.
- THE FILTER SECTIONS WILL BE SHOP FABRICATED IN THE NUMBER OF PIECES PER DRAWING 129-22614 EXCEPT THAT THE OPTIONAL COVER IS NOT INCLUDED.
- THE FILTERS WILL BE FIELD ERRECTED, PIPED, LEAK TESTED, AND PAINTED BY OTHERS.
- FLANGE CONNECTIONS ARE TO BE CARBON STEEL CLASS 150 FF SO FLANGES. ALL PIPE AND FITTINGS ARE TO CONFORM TO ANSI STANDARDS. PIPING SHALL BE CARBON STEEL AND CONFORM TO A53B OR A106B WITH FLANGES TO A105.
- PIPING 3" AND SMALLER WILL BE SCH 40 WITH THREADED CAST IRON OR DUCTILE IRON FITTINGS. PIPING WILL BE SHIPPED IN RANDOM LENGTHS FOR CUTTING AND THREADING IN THE FIELD BY OTHERS.
- PIPING 4" AND LARGER WILL BE SHOP FABRICATED BY BUTTWELDING TO THE EXTENT SHOWN ON THE DRAWINGS. PIPE SIZES 4" TO 10" WILL BE SCH 40. PIPING LARGER THAN 10" WILL BE STD WALL.
- STRAINER INSTALLATION IS TO BE PERFORMED BY OTHERS PER FORM 4938W.
- FILTER MEDIA IS TO BE FURNISHED AND INSTALLED BY OTHERS PER SPEC 613.
- EACH FILTER TANK WILL BE EQUIPPED WITH THREE (3) 14" X 18" MANWAYS FOR COMPARTMENT 'C' AND ONE 20" OD DAVITED MANWAY FOR COMPARTMENT 'B'. THE 20" MANWAY IS TO BE EQUIPPED WITH DAVIT, FASTENERS AND 1/8" THK FULL FACE EPDM GASKET.

REFERENCE DRAWINGS

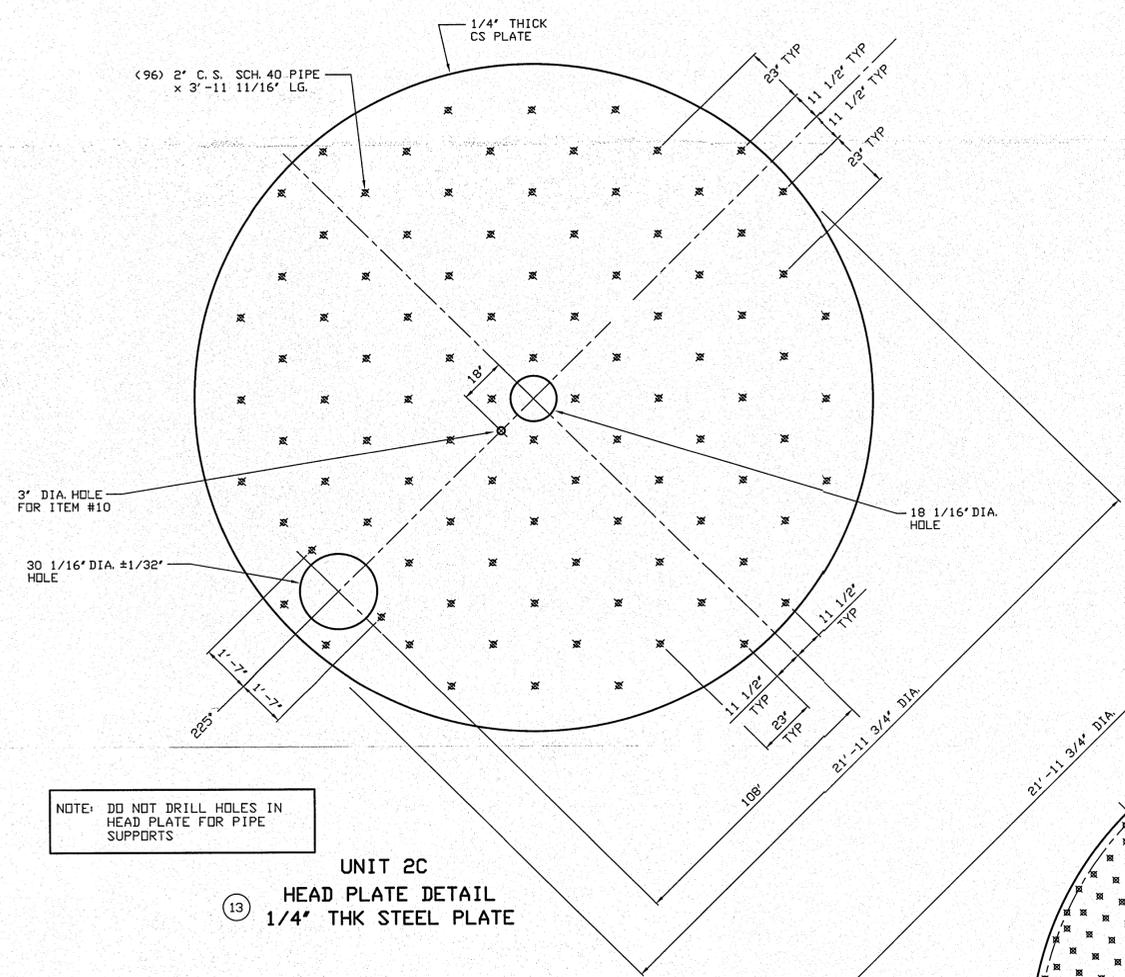
- 185-24216 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2A AND 2B
- 185-24217 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2C AND 2D
- 185-24218 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2E
- 185-24219 REV B, PLOT PLAN ARRANGEMENT
- 156-21982 REV A, TANK ORIENTATIONS
- 156-21983 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2A
- 156-21995 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2B
- 156-21996 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2C
- 156-21997 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2D
- 156-21998 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2E
- 156-21999 REV B, SHTS 1-3, PIPING LAYOUT
- 129-22614 REV B, STEEL CUTTING DETAILS FOR KD AVGF
- 184-14880 REV A, GRAVITY TANK TOLERANCES
- 157-22612 REV D, DETAIL, BACKWASH REGULATOR (P/N 167-22612)
- 157-35653 REV A, TANK FABRICATION, HEAD TANK
- 157-35659 REV 0, DETAILS, HEAD TANK SUPPORT
- 157-35960 REV 0, DETAILS, BACKWASH PIPE SUPPORT
- 157-29391 REV D, DETAIL 18" WASH PIPE (P/N 176-29391)
- 101-20778 REV 0, ASSEMBLY, BACKWASH REGULATOR
- 102-39852 REV 0, SPECIAL BACKWASH FITTING
- 102-35627 REV B, DETAIL, WEIR PLATE (P/N 107-35627)
- 102-36889 REV 0, ADJUSTABLE COLLAR (P/N 103-36889)
- 102-39230 REV D, SHTS 1-2, 316SS STRAINER ASSEMBLY (P/N) 105-39230)
- 102-39775 REV 0, U-BOLT DETAIL, 316SS (P/N) 110-39775
- SPEC 106 REV E, FABRICATION OF STEEL GRAVITY VESSELS
- SPEC 613 REV 0, LOADING FILTER SAND
- SPEC 187-10021 REV C, THREAD SEALANT
- FORM 4938W REV 0, STRAINER INSTALLATION

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REVISED SIZE FROM 2" TO 3" AND LOCATION OF ITEM #10 (VENT).					CHECKER BG	DATE 9-19-19	CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC			
UPDATED REFERENCE DRAWING LIST.					ENGINEER MD	DATE 9-19-19				
REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN	INT. REF. DWG.: SCALE: NDNE			
PROJECT: 967113							INTERNAL DWG. NO.: 156-21996	DRAWING	SHEET 1 OF 3	REV B

8 7 6 5 4 3 2 1

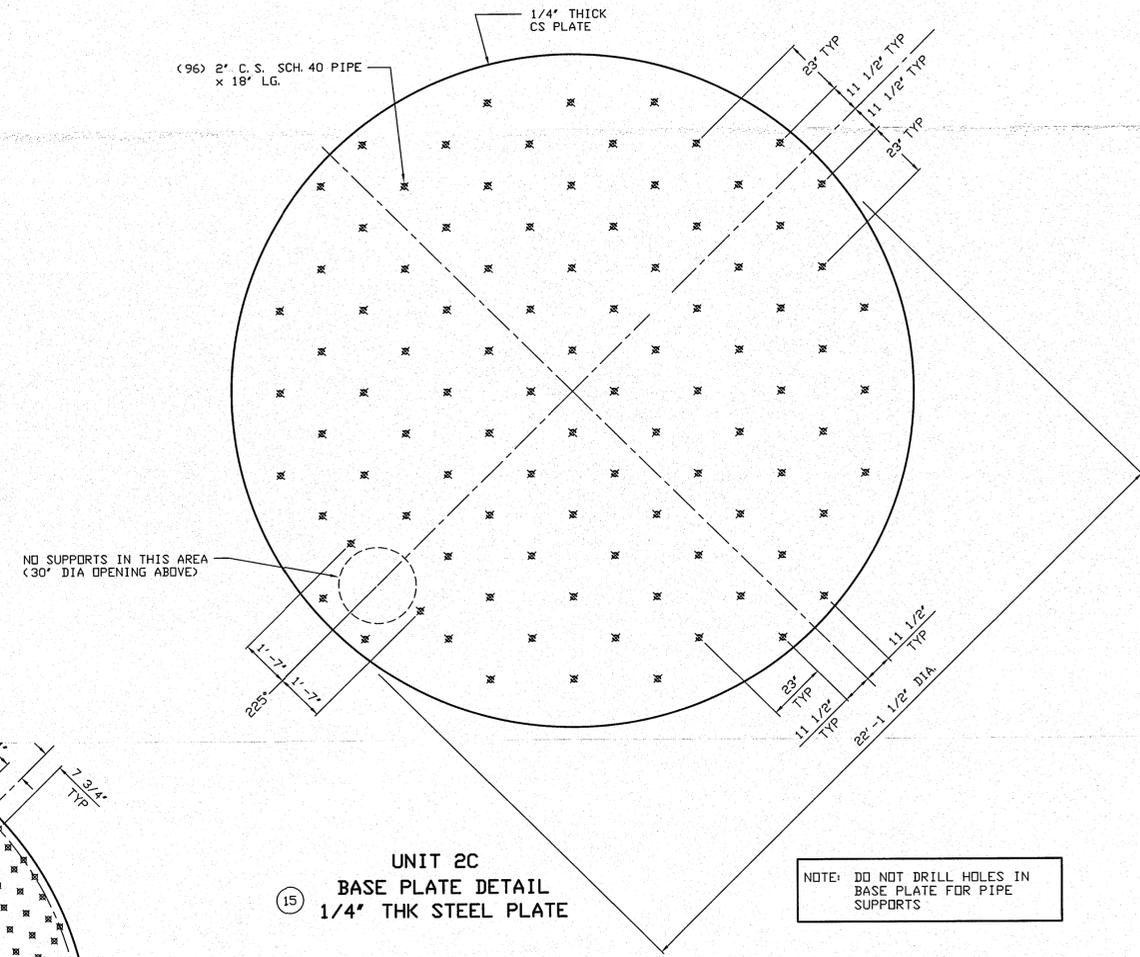


UNIT 2C



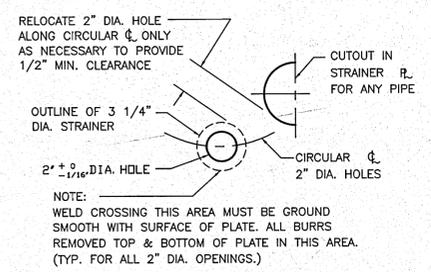
13 UNIT 2C HEAD PLATE DETAIL
1/4" THK STEEL PLATE

NOTE: DO NOT DRILL HOLES IN HEAD PLATE FOR PIPE SUPPORTS

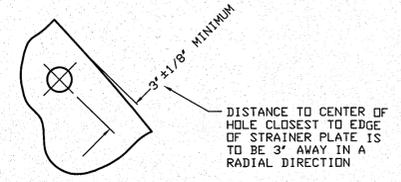


15 UNIT 2C BASE PLATE DETAIL
1/4" THK STEEL PLATE

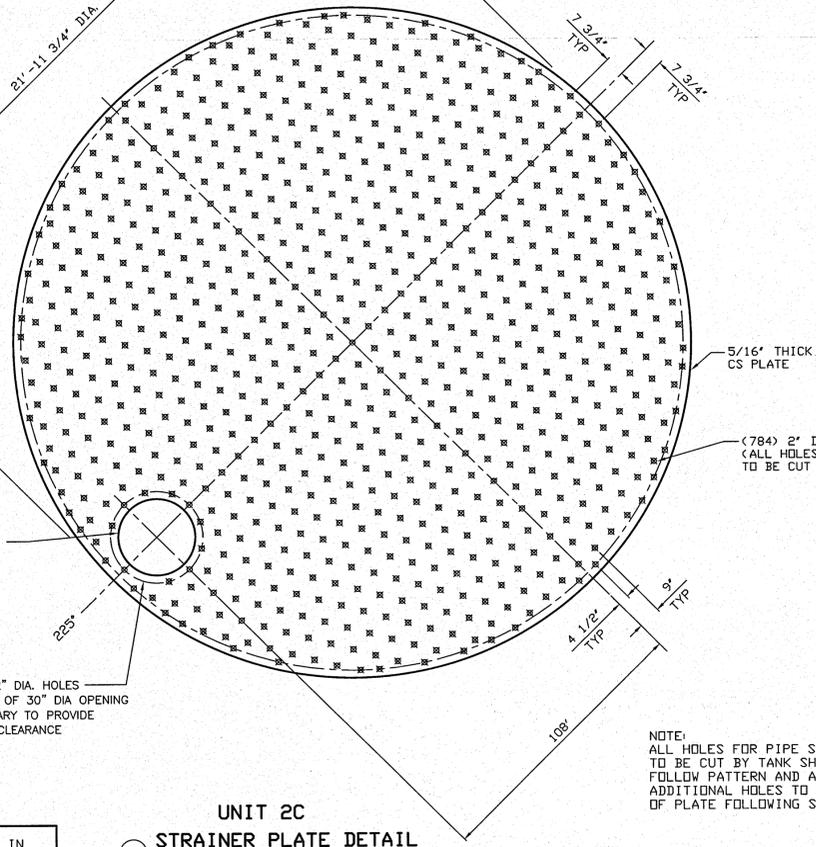
NOTE: DO NOT DRILL HOLES IN BASE PLATE FOR PIPE SUPPORTS



STRAINER CLEARANCE DETAIL



NOTE: DO NOT DRILL HOLES IN STRAINER PLATE FOR PIPE SUPPORTS

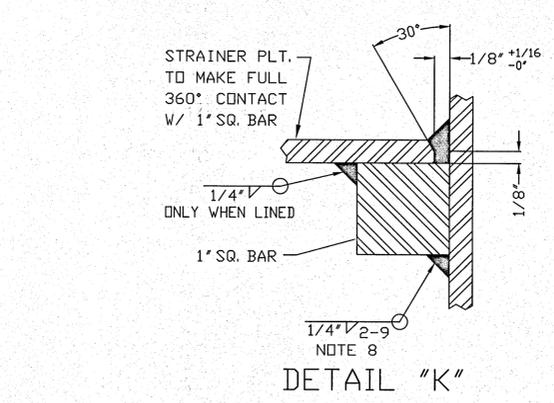
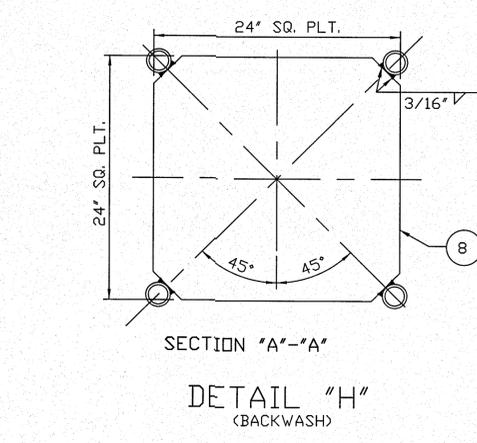
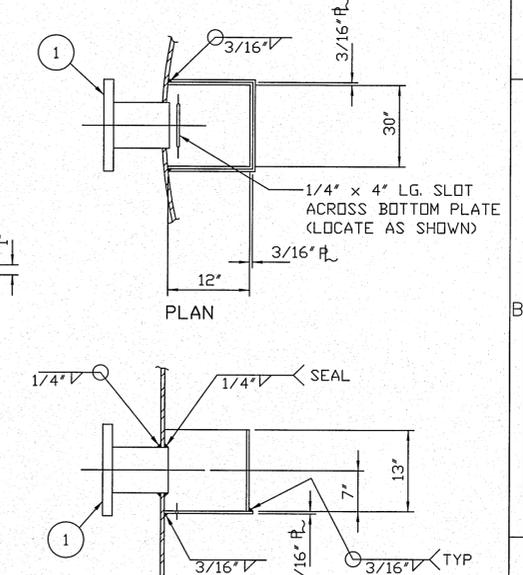
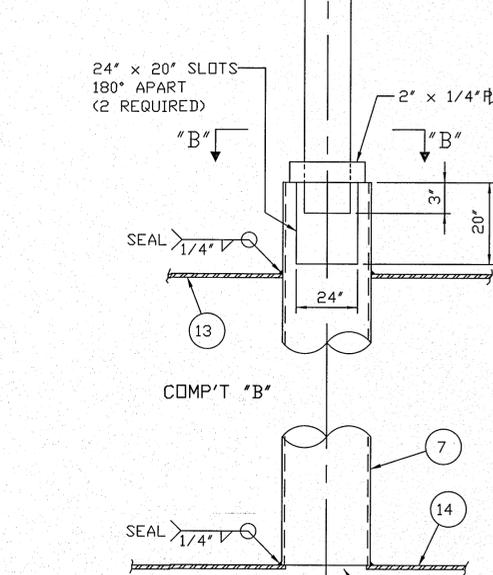
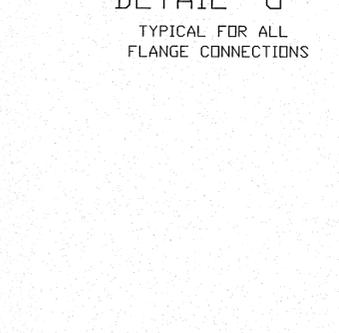
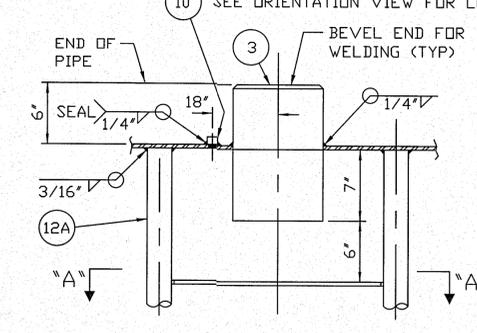
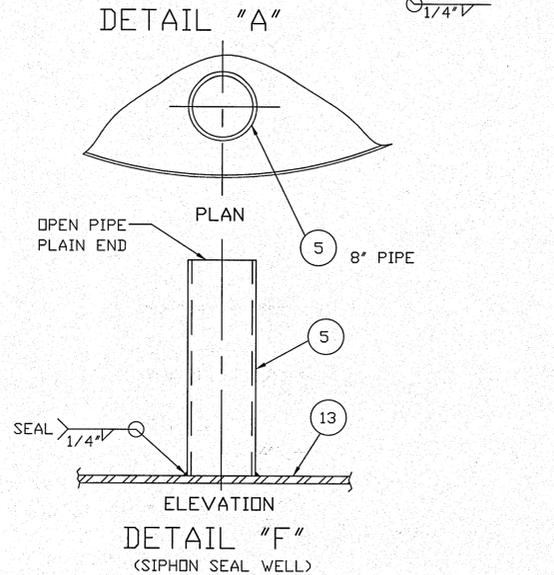
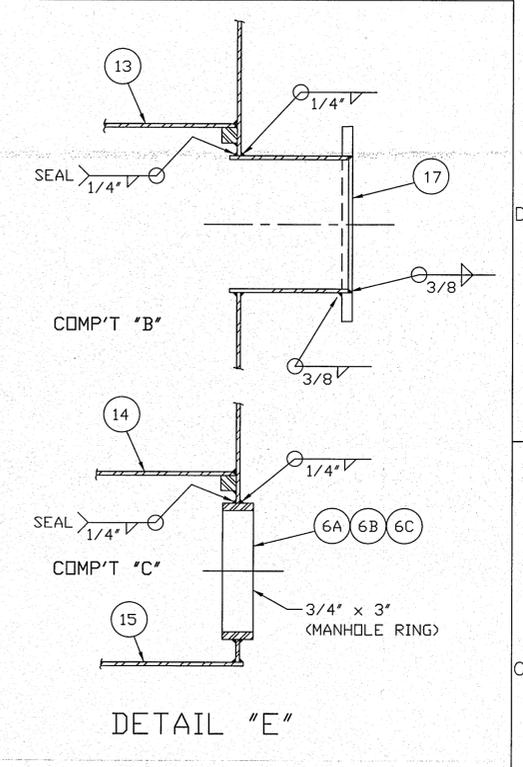
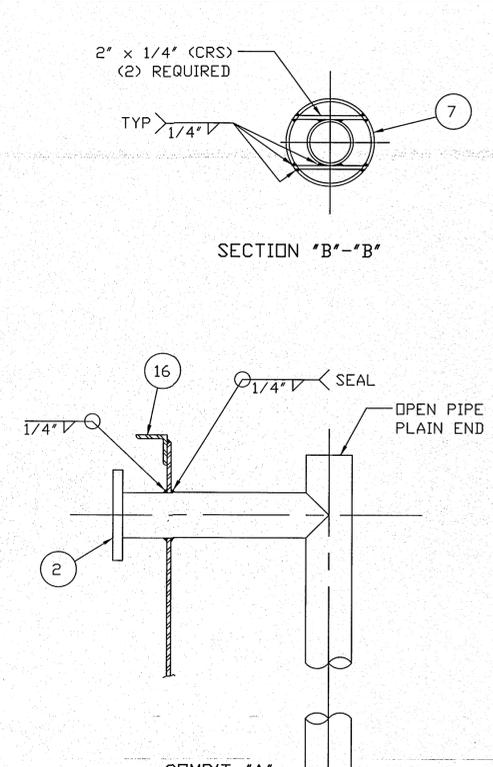
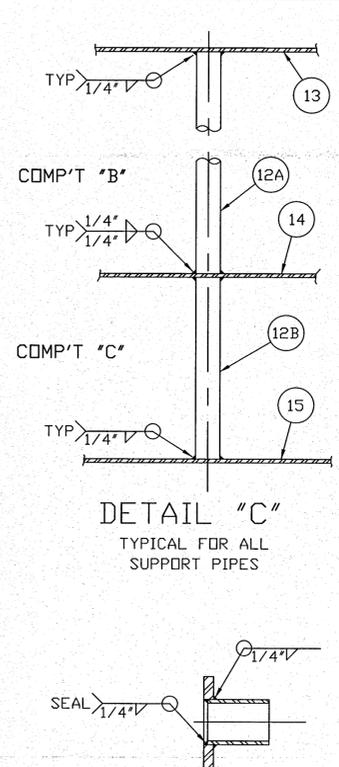
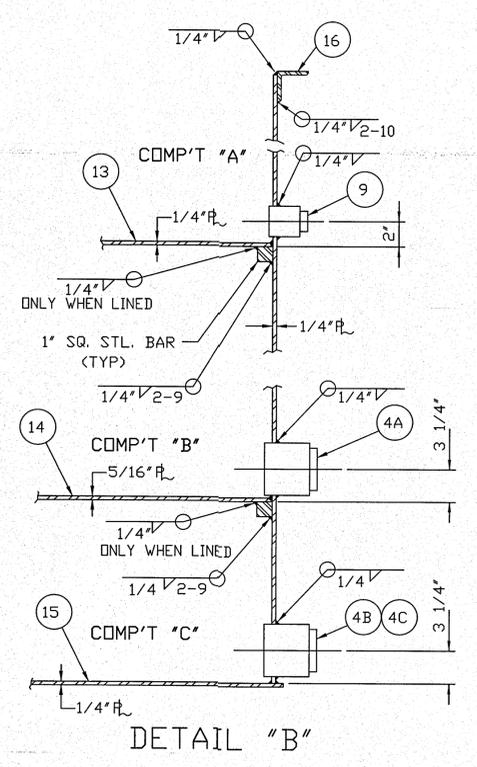
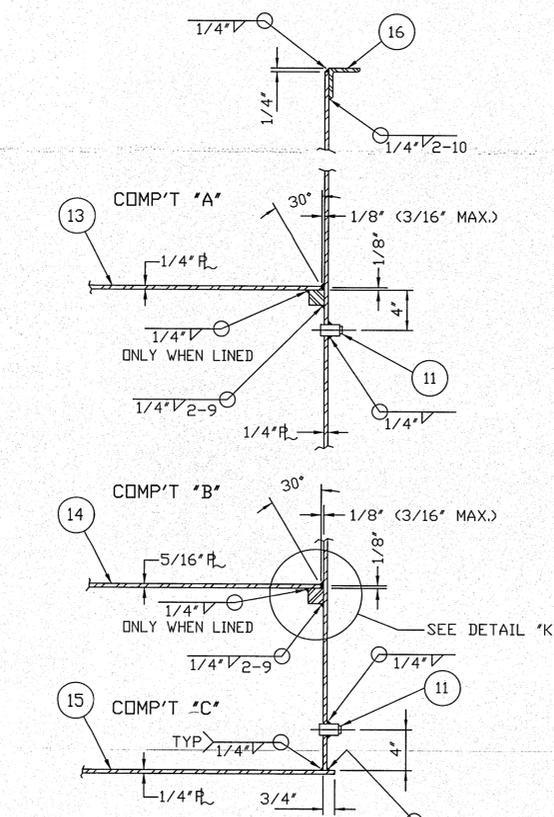


14 UNIT 2C STRAINER PLATE DETAIL
5/16" THK STEEL PLATE

NOTE: ALL HOLES FOR PIPE STRAINERS TO BE CUT BY TANK SHOP. FOLLOW PATTERN AND ADD ALL ADDITIONAL HOLES TO OUTSIDE EDGE OF PLATE FOLLOWING STRAINER CLEARANCE DETAIL.

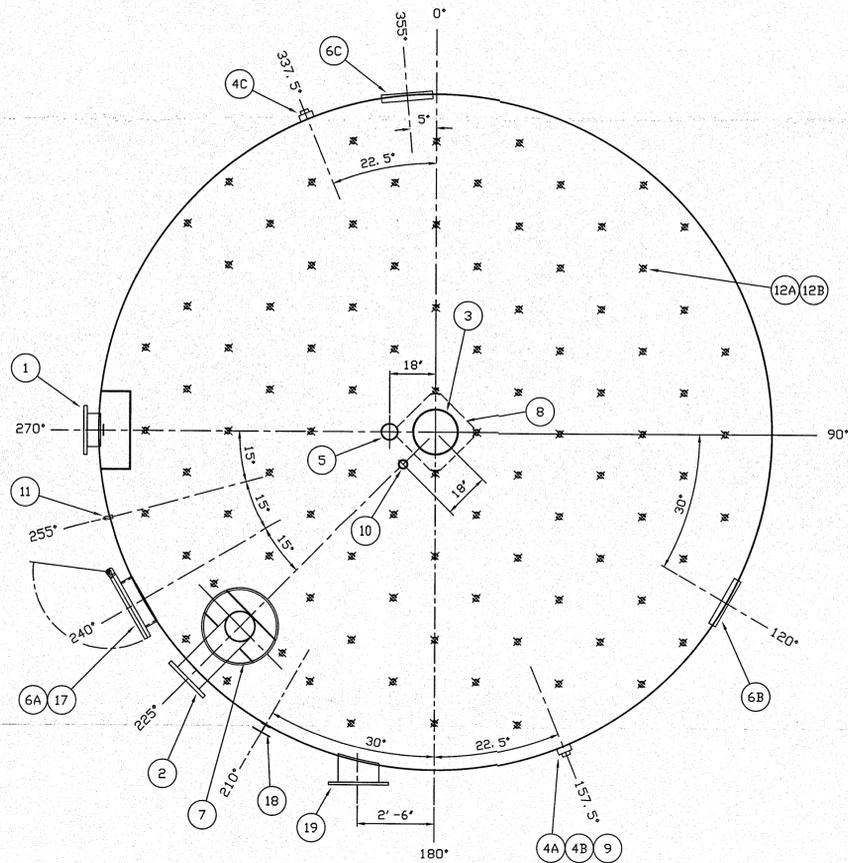
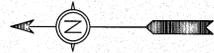
NOTES: EACH PLATE TO BE SHIPPED IN (3) SECTIONS. SECTION LINES SHOULD CLEAR ALL HOLES IN PLATE.

<p>COMPANY CONFIDENTIAL THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF EVOQUA AND/OR ITS AFFILIATES. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO EVOQUA AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY LOANED. THEY MUST NOT BE REPRODUCED, LOANED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF EVOQUA. IN NO EVENT SHALL THEY BE USED IN ANY MANNER RETRIBUTAL TO THE INTEREST OF EVOQUA. ALL PATENT RIGHTS ARE RESERVED. UPON THE DEMAND OF EVOQUA, THIS DOCUMENT, ALONG WITH ALL COPIES AND EXTRACTS, AND ALL RELATED NOTES AND ANALYSES, MUST BE RETURNED TO EVOQUA OR DESTROYED, AS INSTRUCTED BY EVOQUA. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.</p>						DESIGNER BKJ	DATE 9-4-19	TITLE TANK FAB PLATE DETAILS 22'-0" DIA. X 14'-10" HIGH AVGF "2C"		
						CHECKER BG	DATE 9-4-19	CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC		
						ENGINEER MD	DATE 9-4-19	<p>WATER TECHNOLOGIES PERMIT PRODUCTS-UNION, NJ 908-851-2277</p>		
A REVISED SIZE AND LOCATION OF ITEM #10						10-21-19	BKJ	BG	MD	<p>PROJECT 967113</p> <p>INTERNAL DWG. NO. 156-21996</p> <p>DRAWING 2 OF 3</p> <p>SHEET 2 OF 3</p> <p>REV A</p>
REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN	<p>SCALE: NONE</p>			



REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN
A	REVISED SIZE AND LOCATION OF ITEM #10.	10-21-19	BKJ	BG	MD	

COMPANY CONFIDENTIAL THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF EVOQUA AND/OR ITS AFFILIATES. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO EVOQUA AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY ISSUED. THEY MUST NOT BE DISCLOSED, REPRODUCED, LOANED, OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF EVOQUA. IN NO EVENT SHALL THEY BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF EVOQUA. ALL PATENT RIGHTS ARE RESERVED. UPON THE DEMAND OF EVOQUA, THIS DOCUMENT, ALONG WITH ALL COPIES AND EXTRACTS, AND ALL RELATED NOTES AND ANALYSES, MUST BE RETURNED TO EVOQUA OR DESTROYED, AS INSTRUCTED BY EVOQUA. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.	DESIGNER BKJ	DATE 9-6-19	TITLE TANK FABRICATION 22'-0" DIA. x 14'-10" HG. AVGF "2C"
CHECKER BG	DATE 9-6-19	CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC	
ENGINEER MD	DATE 9-6-19	EVOQUA WATER TECHNOLOGIES PERMUTIT PRODUCTS-UNION, NJ 908-851-2277	
INT. REF. DWG.:	SCALE: NONE	PROJECT 967113	INTERNAL DWG. NO. 156-21996
		DRAWING	SHEET 3 OF 3
			REV A



PLAN UNIT 2D

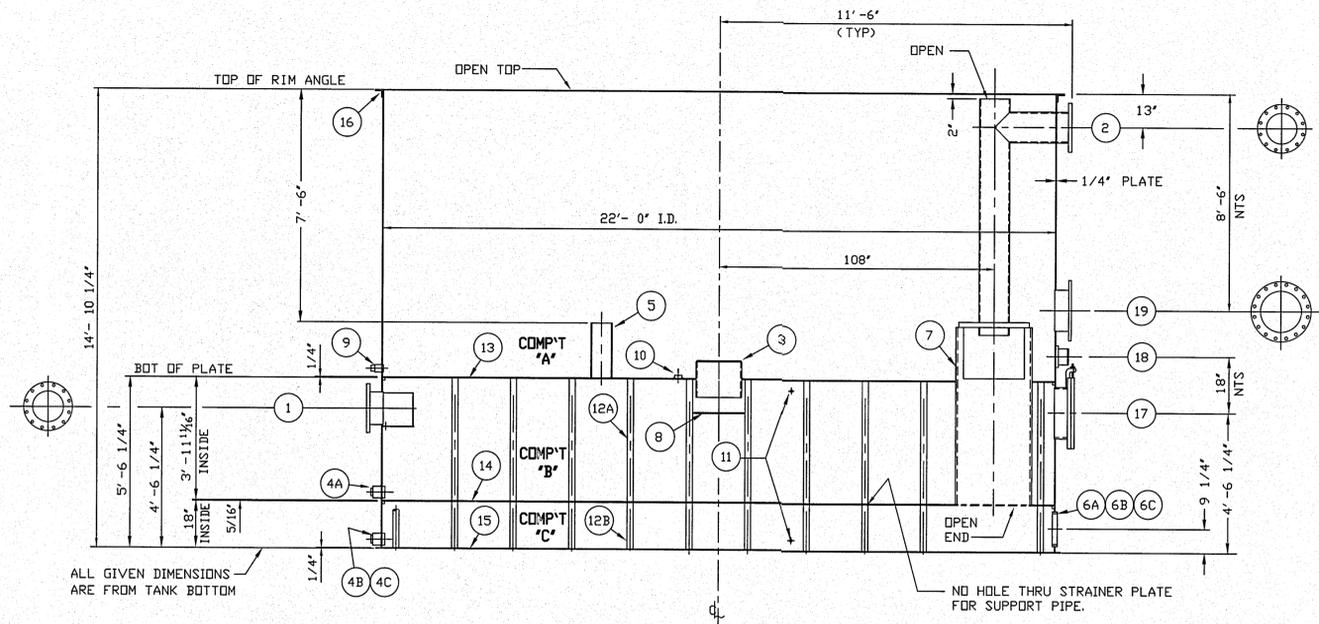
NOZZLES & TANK ATTACHMENT PARTS LIST							
ITEM	REQ.D.	SIZE	RATING		PIPE SCH.	DESCRIPTION	
1	1	12"	-	SLIP-ON, FF FLG.	STD WT	INLET (DETAIL 'J')	
2	1	12"	-	SLIP-ON, RF FLG.	STD WT	OUTLET (DETAIL 'D')	
3	1	18"	-	PIPE, B.O.E.	STD WT	BACKWASH (DETAIL 'H')	
4A	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	CLEANOUT, W/BR. PLUG (COMP'T. "B") (DETAIL 'B')	
4B	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMP'T. "C") (DETAIL 'B')	
4C	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMP'T. "C") (DETAIL 'B')	
5	1	8"	-	PIPE P.E.	SCH 40	SYPHON SEAL WELL (DETAIL 'F')	
6	3	14"x18"	-	-	-	RING TYPE PRESSED STEEL MANHOLES, MAJOR DIA. TO BE HORIZ. WITH COVER, YOKES, BOLTS 3/16" THK. 45 DURO- (DETAIL 'E') METER RUBBER GASKET & HANDGRIP IN MANHOLE COVER.	
7	1	30"	-	PIPE, P.E.	STD WT	INTERNAL CONDUIT (DETAIL 'D')	
8	1	24"SQ.	-	-	-	SQ. BAFFLE PLATE 1/4" THK. (DETAIL 'H')	
9	1	2"	3000# F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMP'T. "A") (DETAIL 'B')	
10	1	3"	3000# F.S.	SCRD. HALF CPLG.	-	VENT (SEE ORIENTATION FOR LOC.) (DETAIL 'H')	
11	2	1/4"	3000# F.S.	SCRD. FULL CPLG.	-	TEST CONNS, W/ BR. PLUG (COMP'T. "B" & "C") (DETAIL "A")	
12A	96	2"	-	-	SCH 40	SUPPORT PIPE, 3'-11 11/16" LG. (DETAIL 'B')	
12B	96	2"	-	-	SCH 40	SUPPORT PIPE, 18" LG. (DETAIL 'C')	
13	1	-	-	-	-	HEAD PLATE, 1/4" THK. (SEE HEAD PLATE DETAIL)	
14	1	-	-	-	-	STRAINER PLATE, 5/16" (SEE STRAINER PLATE DETAIL)	
15	1	-	-	-	-	BASE PLATE, 1/4" THK. (SEE BASE PLATE DETAIL)	
16	1	-	-	-	-	RIM ANGLE 3" x 3" x 1/4" THK.	
17	1	20"	-	-	-	HINGED MANWAY (SEE NOTES) (DETAIL 'E')	
18	1	-	-	-	-	NAMEPLATE AND BRACKET	
19	1	16"	-	SLIP-ON, RF FLG.	STD WT	SECONDARY WASH	

TANK FABRICATION NOTES:

- DESIGN, MATERIAL, FABRICATION AND WELDING TO BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF EVOQUA SPEC 106. TANK WILL BE FIELD ERRECTED BY OTHERS.
- THE FILTER SECTIONS WILL BE SHOP FABRICATED IN THE NUMBER OF PIECES PER DRAWING 129-22614 EXCEPT THAT THE OPTIONAL COVER IS NOT INCLUDED.
- THE FILTERS WILL BE FIELD ERRECTED, PIPED, LEAK TESTED, AND PAINTED BY OTHERS.
- FLANGE CONNECTIONS ARE TO BE CARBON STEEL CLASS 150 FF SO FLANGES. ALL PIPE AND FITTINGS ARE TO CONFORM TO ANSI STANDARDS. PIPING SHALL BE CARBON STEEL AND CONFORM TO A53B OR A106B WITH FLANGES TO A105.
- PIPING 3" AND SMALLER WILL BE SCH 40 WITH THREADED CAST IRON OR DUCTILE IRON FITTINGS. PIPING WILL BE SHIPPED IN RANDOM LENGTHS FOR CUTTING AND THREADING IN THE FIELD BY OTHERS.
- PIPING 4" AND LARGER WILL BE SHOP FABRICATED BY BUTTWELDING TO THE EXTENT SHOWN ON THE DRAWINGS. PIPE SIZES 4" TO 10" WILL BE SCH 40. PIPING LARGER THAN 10" WILL BE STD WALL.
- STRAINER INSTALLATION IS TO BE PERFORMED BY OTHERS PER FORM 4938W.
- FILTER MEDIA IS TO BE FURNISHED AND INSTALLED BY OTHERS PER SPEC 613.
- EACH FILTER TANK WILL BE EQUIPPED WITH THREE (3) 14" X 18" MANWAYS FOR COMPARTMENT "C" AND ONE 20" OD DAVITED MANWAY FOR COMPARTMENT "B". THE 20" MANWAY IS TO BE EQUIPPED WITH DAVIT, FASTENERS AND 1/8" THK FULL FACE EPDM GASKET.

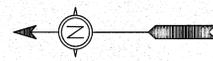
REFERENCE DRAWINGS

- 185-24216 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2A AND 2B
- 185-24217 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2C AND 2D
- 185-24218 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2E
- 185-24219 REV B, PLOT PLAN ARRANGEMENT
- 156-21982 REV A, TANK ORIENTATIONS
- 156-21983 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2A
- 156-21995 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2B
- 156-21996 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2C
- 156-21997 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2E
- 156-21998 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2E
- 156-21999 REV B, SHTS 1-3, PIPING LAYOUT
- 129-22614 REV B, STEEL CUTTING DETAILS FOR KD AVGF
- 184-14980 REV A, GRAVITY TANK TOLERANCES
- 157-22612 REV D, DETAIL, BACKWASH REGULATOR (P/N 167-22612)
- 157-35653 REV A, TANK FABRICATION, HEAD TANK
- 157-35659 REV 0, DETAILS, HEAD TANK SUPPORT
- 157-35960 REV 0, DETAILS, BACKWASH PIPE SUPPORT
- 157-29391 REV D, DETAIL 18" WASH PIPE (P/N 176-29391)
- 101-20778 REV 0, ASSEMBLY, BACKWASH REGULATOR
- 102-39852 REV 0, SPECIAL BACKWASH FITTING
- 102-35627 REV B, DETAIL, WEIR PLATE (P/N 107-35627)
- 102-36889 REV 0, ADJUSTABLE COLLAR (P/N 103-36889)
- 102-39230 REV D, SHTS 1-2, 316SS STRAINER ASSEMBLY (P/N 105-39230)
- 102-39775 REV 0, U-BOLT DETAIL, 316SS (P/N) 110-39775
- SPEC 106 REV E, FABRICATION OF STEEL GRAVITY VESSELS
- SPEC 613 REV 0, LOADING FILTER SAND
- SPEC 187-10021 REV C, THREAD SEALANT
- FORM 4938W REV 0, STRAINER INSTALLATION

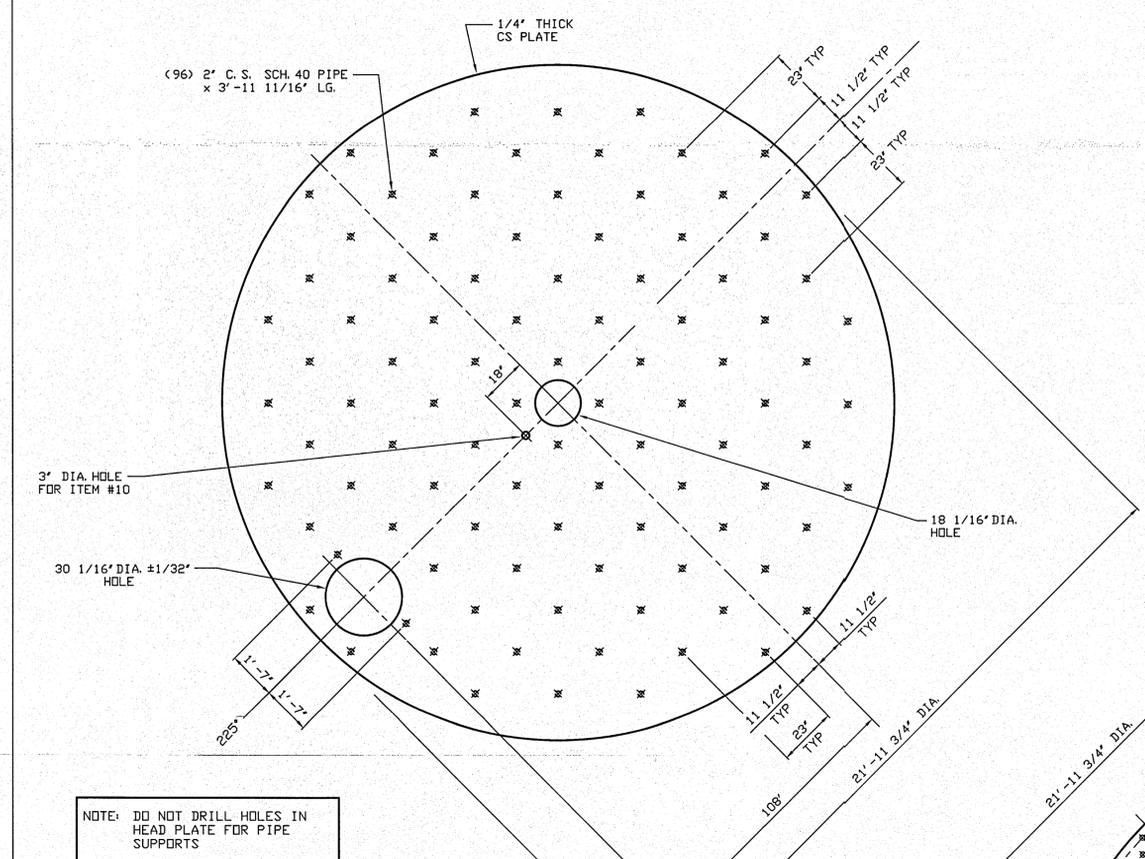


SECTIONAL ELEVATION UNIT 2D
SEE PLAN VIEW FOR TRUE ORIENTATION

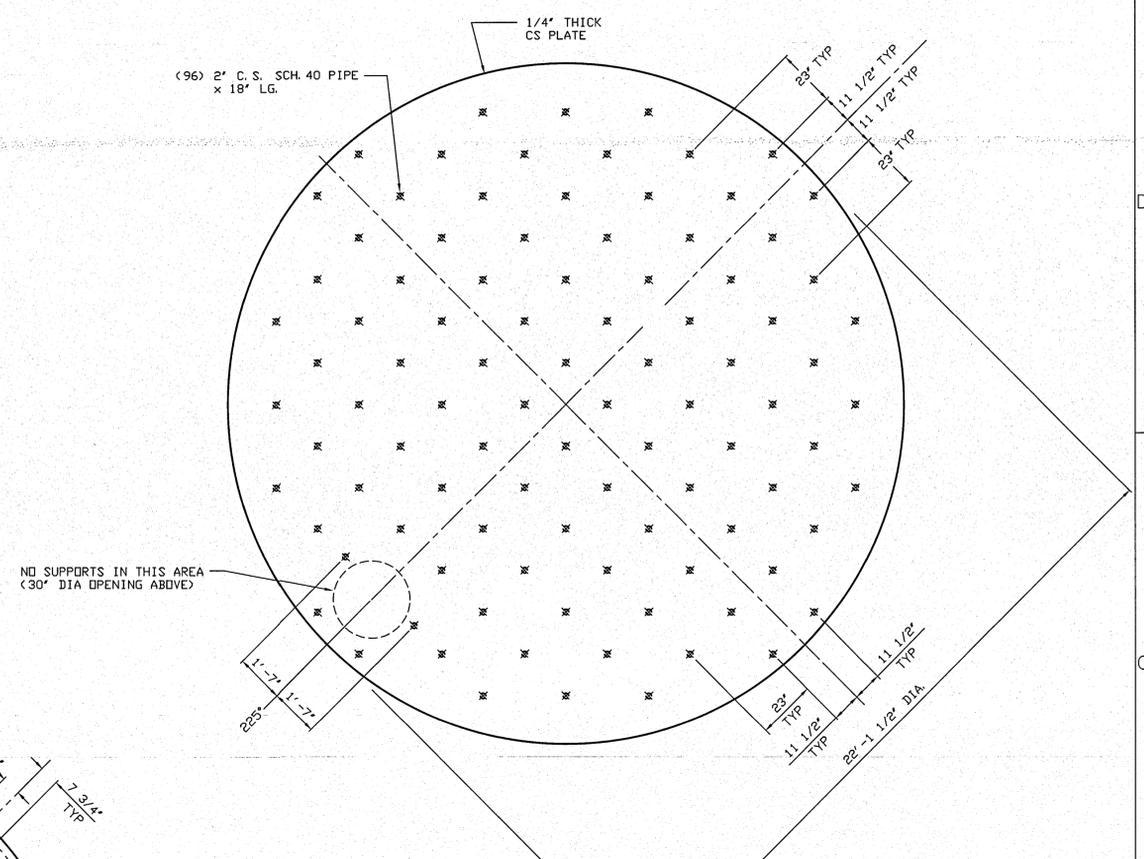
<p>COMPANY CONFIDENTIAL THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF EVOQUA AND/OR ITS AFFILIATES. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO EVOQUA AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY LOANED. THEY MUST BE DESTROYED, REPRODUCED, LOANED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF EVOQUA. IN NO EVENT SHALL THEY BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF EVOQUA. ALL PATENT RIGHTS ARE RESERVED. UPON THE DEMAND OF EVOQUA, THIS DOCUMENT, ALONG WITH ALL SPECS AND EXTRACTS, AND ALL RELATED NOTES AND ANALYSES, MUST BE RETURNED TO EVOQUA OR DESTROYED, AS INSTRUCTED BY EVOQUA. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.</p>						DESIGNER BKJ	DATE 9-19-19	TITLE TANK FABRICATION 22'-0" DIA. X 14'-10" HIGH AVGF "2D"
REVISED SIZE FROM 2" TO 3" AND LOCATION OF ITEM #10 (VENT).						CHECKER BG	DATE 9-19-19	CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BDLIVIA, NC
UPDATED REFERENCE DRAWING LIST.						ENGINEER MD	DATE 9-19-19	<p>WATER TECHNOLOGIES PERMUTIT PRODUCTS-UNION, NJ 908-851-2277</p>
REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN	<p>INT. REF. DWG.: SCALE: NONE</p> <p>PROJECT: 967113 INTERNAL DWG. NO.: 156-21997 DRAWING: 1 SHEET OF 3 REV B</p>	



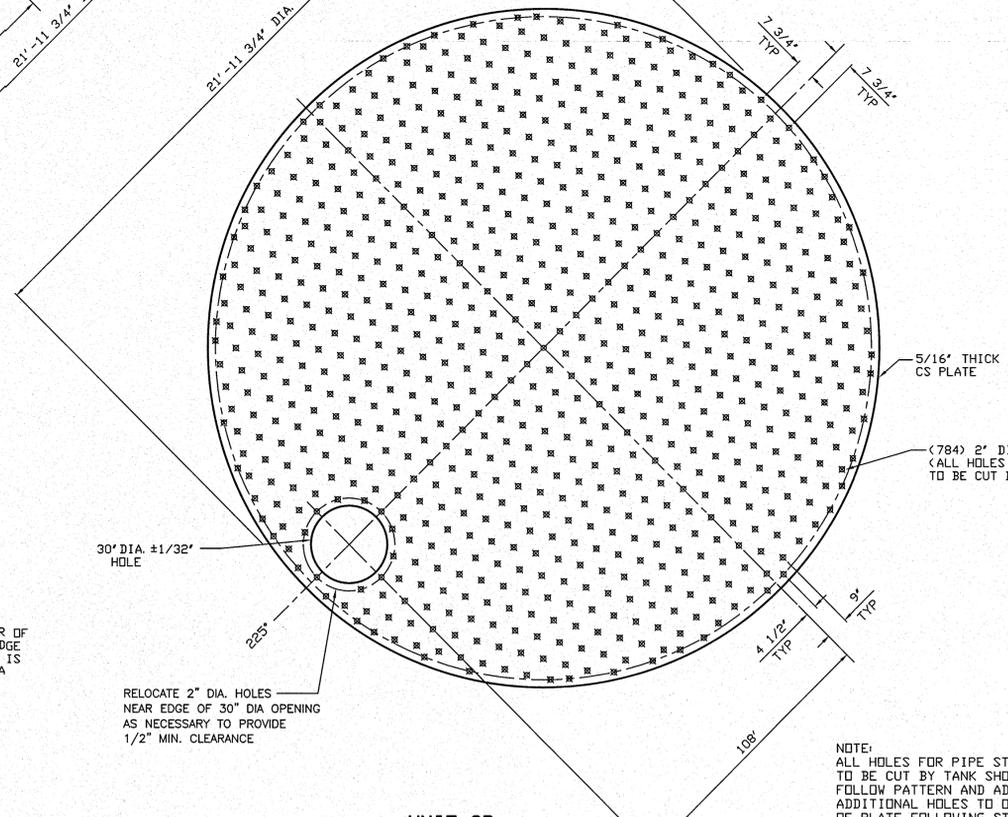
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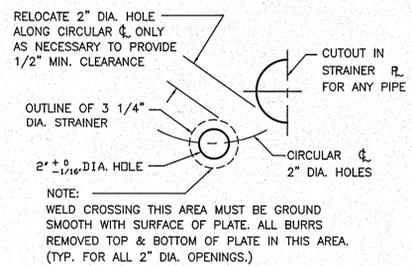
UNIT 2D
HEAD PLATE DETAIL
1/4" THK STEEL PLATE



UNIT 2D
BASE PLATE DETAIL
1/4" THK STEEL PLATE



UNIT 2D
STRAINER PLATE DETAIL
5/16" THK STEEL PLATE



STRAINER CLEARANCE DETAIL

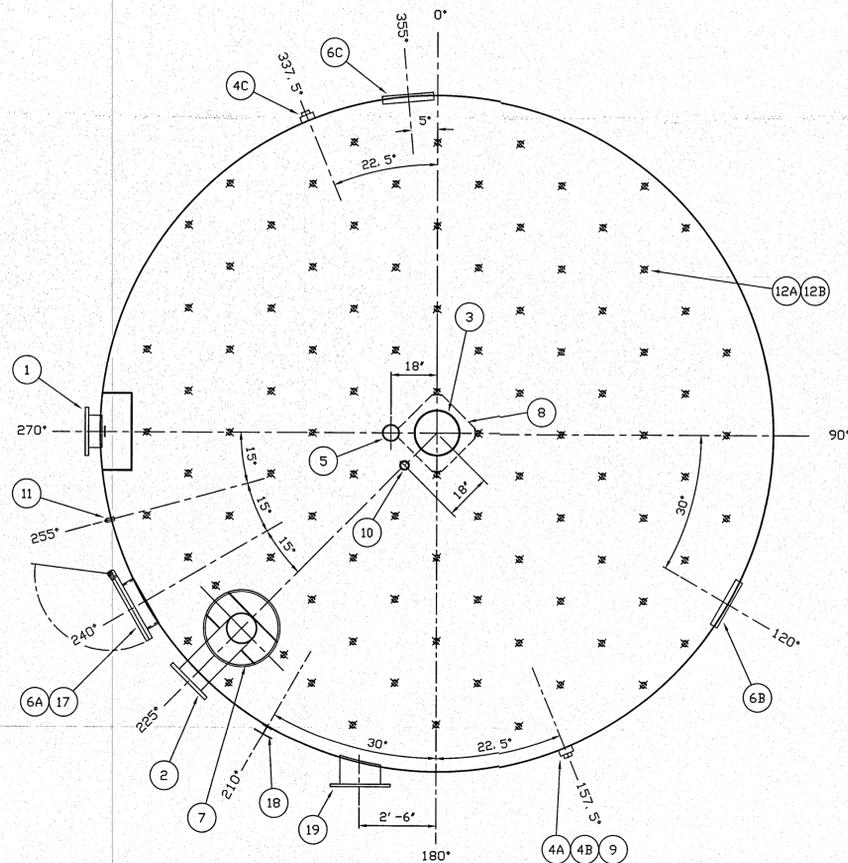
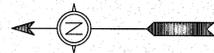
NOTES:
EACH PLATE TO BE SHIPPED IN <3> SECTIONS.
SECTION LINES SHOULD CLEAR ALL HOLES IN PLATE.

NOTE:
ALL HOLES FOR PIPE STRAINERS
TO BE CUT BY TANK SHDP.
FOLLOW PATTERN AND ADD ALL
ADDITIONAL HOLES TO OUTSIDE EDGE
OF PLATE FOLLOWING STRAINER CLEARANCE DETAIL.

Bruce B. Williams

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						CHECKER BG	DATE 9-6-19	CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC		
						ENGINEER MD	DATE 9-16-19	EVOQUA WATER TECHNOLOGIES PERMUTIT PRODUCTS-UNION, NJ 908-851-2277		
						INT. REF. DWG.	PROJECT 967113	INTERNAL DWG. NO. 156-21997	DRAWING SHEET 2 OF 3	REV A
						SCALE NONE				

REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN
A	REVISED SIZE AND LOCATION OF ITEM #10	10-21-19	BKJ	BG	MD	



PLAN UNIT 2E

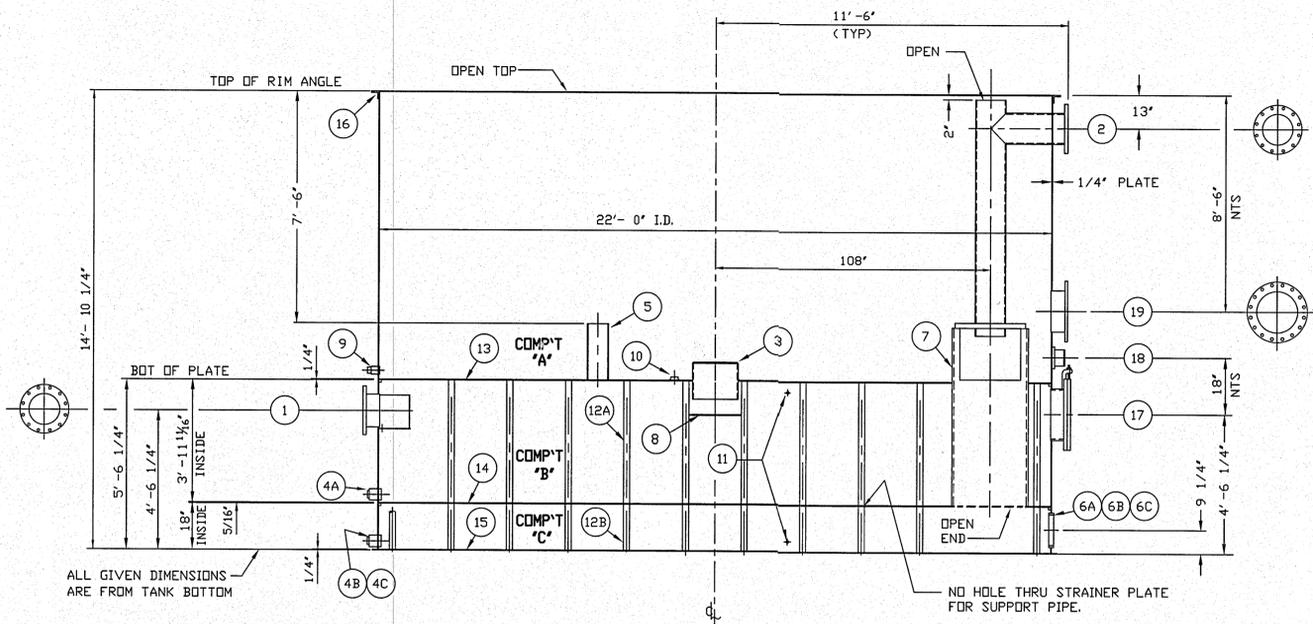
NOZZLES & TANK ATTACHMENT PARTS LIST							
ITEM	REQ.D.	SIZE	RATING		PIPE SCH.	DESCRIPTION	
1	1	12"	-	SLIP-ON, FF FLG.	STD WT	INLET (DETAIL 'J')	
2	1	12"	-	SLIP-ON, RF FLG.	STD WT	OUTLET (DETAIL 'D')	
3	1	18"	-	PIPE, B.O.E.	STD WT	BACKWASH (DETAIL 'H')	
4A	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	CLEANOUT, W/BR. PLUG (COMP'T. "B") (DETAIL 'B')	
4B	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMP'T. "C") (DETAIL 'B')	
4C	1	4"	X.H. F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMP'T. "C") (DETAIL 'B')	
5	1	8"	-	PIPE P.E.	SCH 40	SYPHON SEAL WELL (DETAIL 'F')	
6	3	14"x18"	-	-	-	RING TYPE PRESSED STEEL MANHOLES, MAJOR DIA. TO BE HORIZ. WITH COVER, YOKES, BOLTS 3/16" THK. 45 DURO- (DETAIL 'E') METER RUBBER GASKET & HANDGRIP IN MANHOLE COVER.	
7	1	30"	-	PIPE, P.E.	STD WT	INTERNAL CONDUIT (DETAIL 'D')	
8	1	24"SQ.	-	-	-	SQ. BAFFLE PLATE 1/4" THK. (DETAIL 'H')	
9	1	2"	3000# F.S.	SCRD. FULL CPLG.	-	DRAIN, W/BR. PLUG (COMP'T. "A") (DETAIL 'B')	
10	1	3"	3000# F.S.	SCRD. HALF CPLG.	-	VENT (SEE ORIENTATION FOR LOC.) (DETAIL 'H')	
11	2	1/4"	3000# F.S.	SCRD. FULL CPLG.	-	TEST CONNS, W/ BR. PLUG (COMP'T. "B" & "C") (DETAIL 'A')	
12A	96	2"	-	-	SCH 40	SUPPORT PIPE, 3'-11 11/16" LG. (DETAIL 'B')	
12B	96	2"	-	-	SCH 40	SUPPORT PIPE, 18" LG. (DETAIL 'C')	
13	1	-	-	-	-	HEAD PLATE, 1/4" THK. (SEE HEAD PLATE DETAIL)	
14	1	-	-	-	-	STRAINER PLATE, 5/16" (SEE STRAINER PLATE DETAIL)	
15	1	-	-	-	-	BASE PLATE, 1/4" THK. (SEE BASE PLATE DETAIL)	
16	1	-	-	-	-	RIM ANGLE 3" x 3" x 1/4" THK.	
17	1	20"	-	-	-	HINGED MANWAY (SEE NOTES) (DETAIL 'E')	
18	1	-	-	-	-	NAMEPLATE AND BRACKET	
19	1	16"	-	SLIP-ON, RF FLG.	STD WT	SECONDARY WASH	

TANK FABRICATION NOTES:

- DESIGN, MATERIAL, FABRICATION AND WELDING TO BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF EVOQUA SPEC 106. TANK WILL BE FIELD ERRECTED BY OTHERS.
- THE FILTER SECTIONS WILL BE SHOP FABRICATED IN THE NUMBER OF PIECES PER DRAWING 129-22614 EXCEPT THAT THE OPTIONAL COVER IS NOT INCLUDED.
- THE FILTERS WILL BE FIELD ERRECTED, PIPED, LEAK TESTED, AND PAINTED BY OTHERS.
- FLANGE CONNECTIONS ARE TO BE CARBON STEEL CLASS 150 FF SO FLANGES. ALL PIPE AND FITTINGS ARE TO CONFORM TO ANSI STANDARDS. PIPING SHALL BE CARBON STEEL AND CONFORM TO A53B OR A106B WITH FLANGES TO A105.
- PIPING 3" AND SMALLER WILL BE SCH 40 WITH THREADED CAST IRON OR DUCTILE IRON FITTINGS. PIPING WILL BE SHIPPED IN RANDOM LENGTHS FOR CUTTING AND THREADING IN THE FIELD BY OTHERS.
- PIPING 4" AND LARGER WILL BE SHOP FABRICATED BY BUTTWELDING TO THE EXTENT SHOWN ON THE DRAWINGS. PIPE SIZES 4" TO 10" WILL BE SCH 40. PIPING LARGER THAN 10" WILL BE STD WALL.
- STRAINER INSTALLATION IS TO BE PERFORMED BY OTHERS PER FORM 4938W.
- FILTER MEDIA IS TO BE FURNISHED AND INSTALLED BY OTHERS PER SPEC 613.
- EACH FILTER TANK WILL BE EQUIPPED WITH THREE (3) 14" X 18" MANWAYS FOR COMPARTMENT "C" AND ONE 20" OD DAVITED MANWAY FOR COMPARTMENT "B". THE 20" MANWAY IS TO BE EQUIPPED WITH DAVIT, FASTENERS AND 1/8" THK FULL FACE EPDM GASKET.

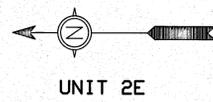
REFERENCE DRAWINGS

- 185-24216 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2A AND 2B
- 185-24217 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2C AND 2D
- 185-24218 REV B, PIPING AND GENERAL ARRGT, 22' FILTERS 2E
- 185-24219 REV B, PLOT PLAN ARRANGEMENT
- 158-21982 REV A, TANK ORIENTATIONS
- 156-21983 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2A
- 156-21995 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2B
- 156-21996 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2C
- 156-21997 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2D
- 156-21998 REV B, SHTS 1-3, TANK FABRICATION, 22'-0" DIA AVGFI, UNIT 2E
- 156-21999 REV B, SHTS 1-3, PIPING LAYOUT
- 129-22614 REV B, STEEL CUTTING DETAILS FOR KD AVGF
- 184-14980 REV A, GRAVITY TANK TOLERANCES
- 157-22612 REV D, DETAIL, BACKWASH REGULATOR (P/N 167-22612)
- 157-35653 REV A, TANK FABRICATION, HEAD TANK
- 157-35659 REV 0, DETAILS, HEAD TANK SUPPORT
- 157-35960 REV 0, DETAILS, BACKWASH PIPE SUPPORT
- 157-29391 REV D, DETAIL 18" WASH PIPE (P/N 176-29391)
- 101-20778 REV 0, ASSEMBLY, BACKWASH REGULATOR
- 102-39852 REV 0, SPECIAL BACKWASH FITTING
- 102-35627 REV B, DETAIL, WEIR PLATE (P/N 107-35627)
- 102-36889 REV 0, ADJUSTABLE COLLAR (P/N 103-36889)
- 102-39230 REV D, SHTS 1-2, 316SS STRAINER ASSEMBLY (P/N) 105-39230)
- 102-39275 REV 0, U/BOT DETAIL, 316SS (P/N) 110-39275
- SPEC 106 REV E, FABRICATION OF STEEL GRAVITY VESSELS
- SPEC 613 REV 0, LOADING FILTER SAND
- SPEC 187-10021 REV C, THREAD SEALANT
- FORM 4938W REV 0, STRAINER INSTALLATION

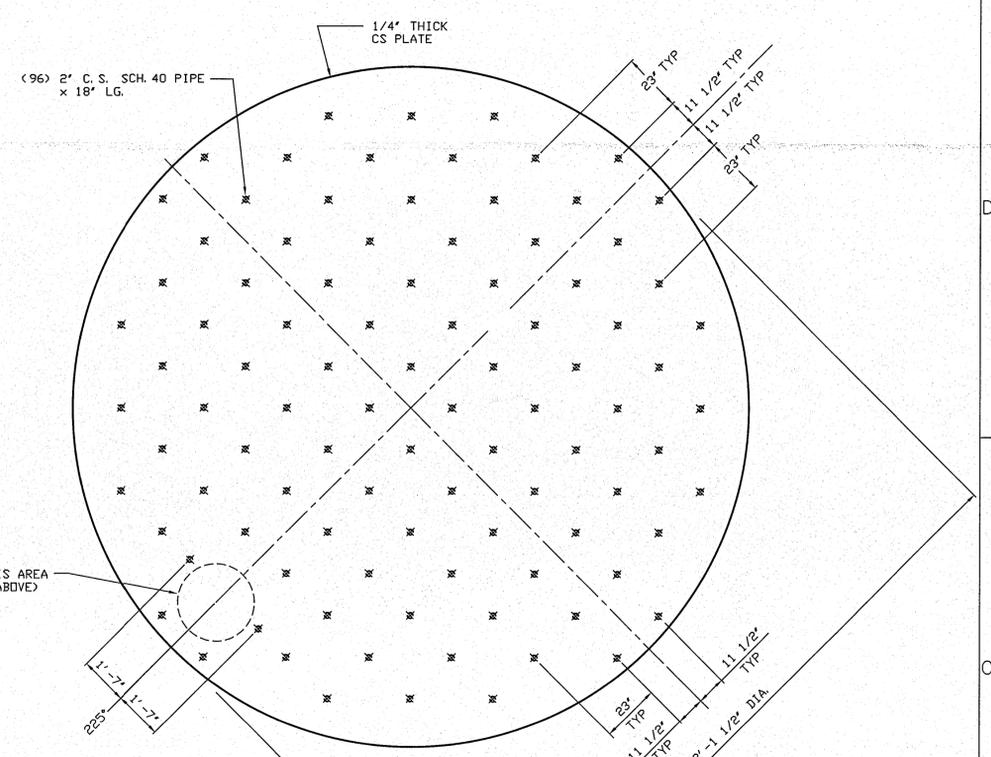
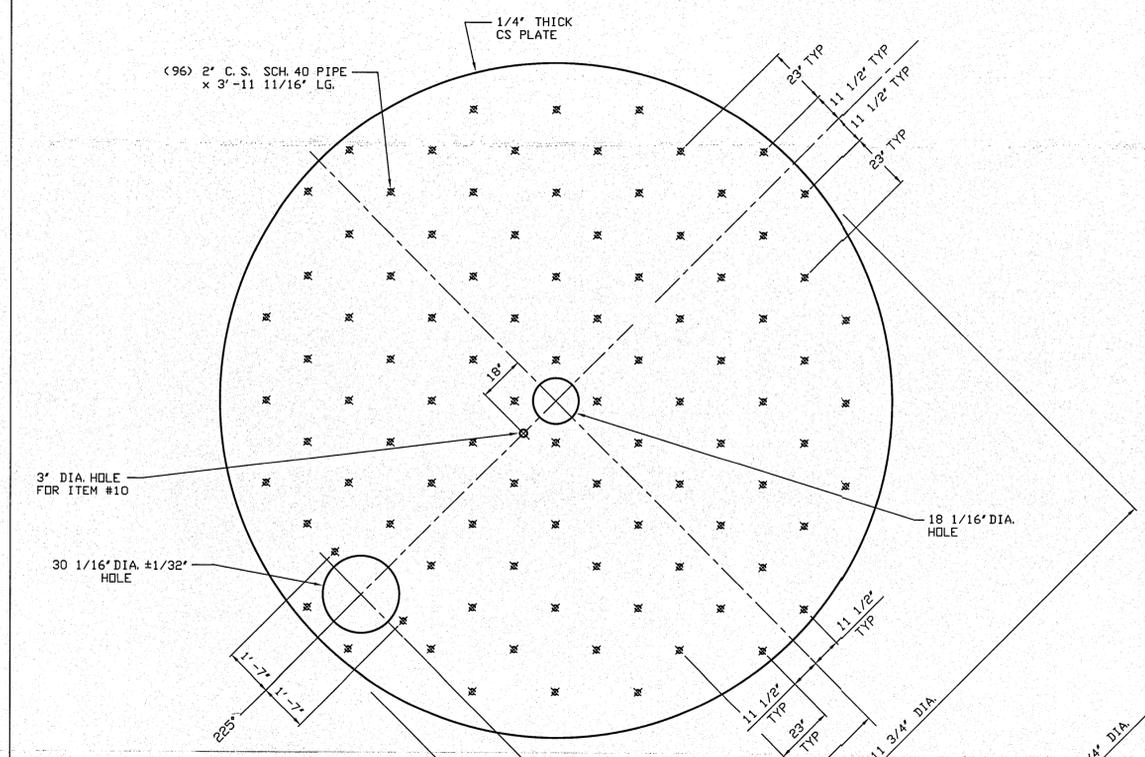


SECTIONAL ELEVATION UNIT 2E
SEE PLAN VIEW FOR TRUE ORIENTATION

<p>COMPANY CONFIDENTIAL THIS DOCUMENT AND ALL INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF EVOQUA AND/OR ITS AFFILIATES. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO EVOQUA AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY LOANED. IT MUST NOT BE REPRODUCED, LOANED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF EVOQUA. IN NO EVENT SHALL THEY BE USED IN ANY ANALYSIS, MUST BE RETURNED TO EVOQUA OR DESTROYED, AS INSTRUCTED BY EVOQUA. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.</p>					DESIGNER	DATE	TITLE	<p><i>Kevin P. ...</i> TANK FABRICATION 22'-0" DIA. X 14'-10" HIGH AVGF '2E'</p>			
					CHECKER	DATE	CUSTOMER	<p>BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC</p>			
					ENGINEER	DATE					
					INT. REF. DWG.:						
					SCALE:	NDNE					
REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN	PROJECT	INTERNAL DWG. NO.	DRAWING	SHEET	REV
B	REVISED SIZE FROM 2" TO 3" AND LOCATION OF ITEM #10 (VENT).	10-21-19	BKJ	BG	MD		967113	156-21998		1 OF 3	B
A	UPDATED REFERENCE DRAWING LIST.	10-3-19	BKJ	BG	MD						



8 7 6 5 4 3 2 1

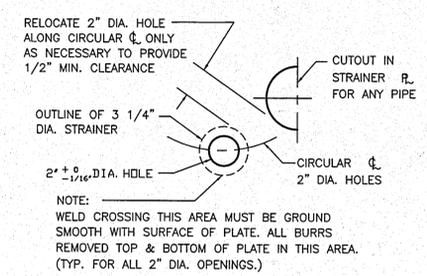


NOTE: DO NOT DRILL HOLES IN HEAD PLATE FOR PIPE SUPPORTS

UNIT 2E
13 HEAD PLATE DETAIL
1/4" THK STEEL PLATE

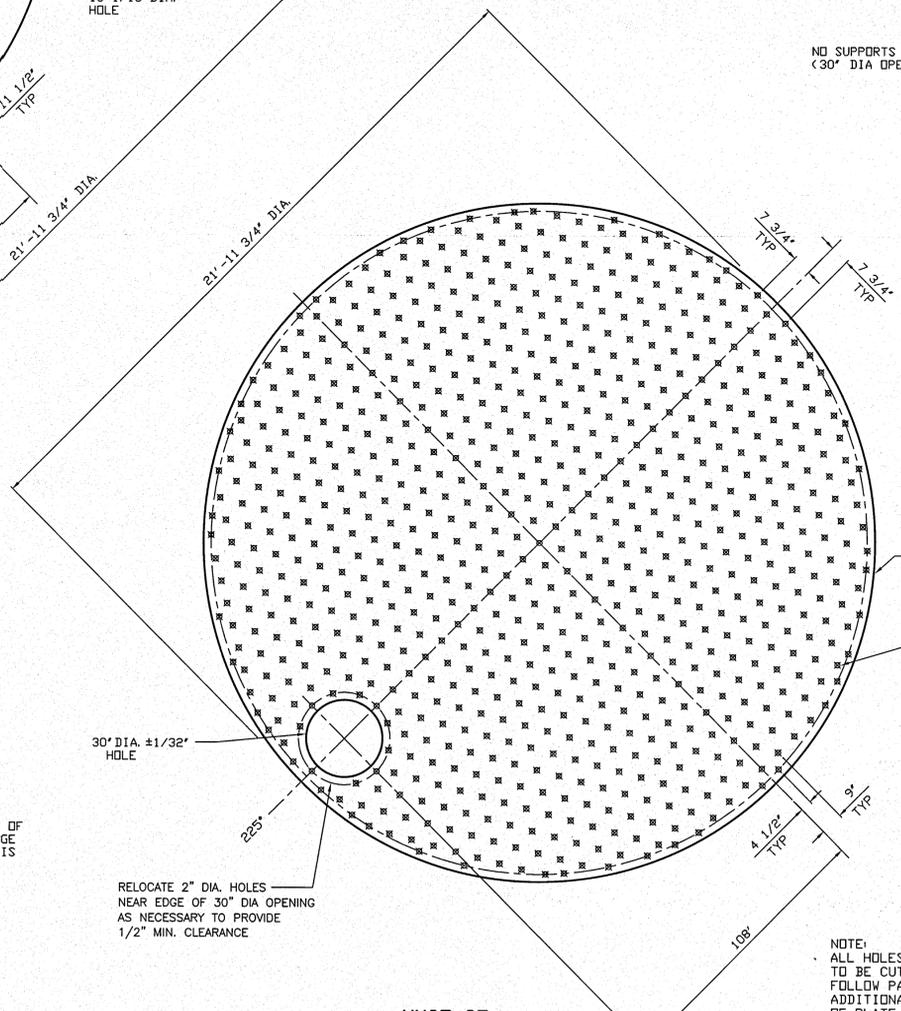
NOTE: DO NOT DRILL HOLES IN BASE PLATE FOR PIPE SUPPORTS

UNIT 2E
15 BASE PLATE DETAIL
1/4" THK STEEL PLATE



STRAINER CLEARANCE DETAIL

NOTE: DO NOT DRILL HOLES IN STRAINER PLATE FOR PIPE SUPPORTS

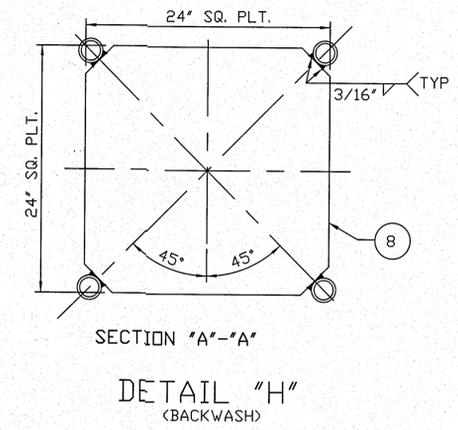
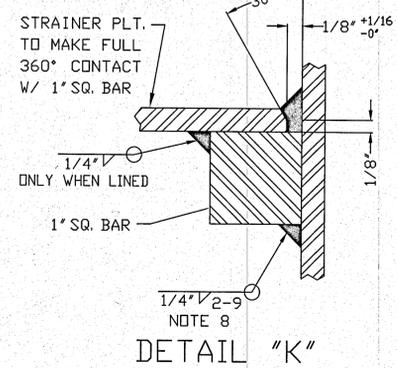
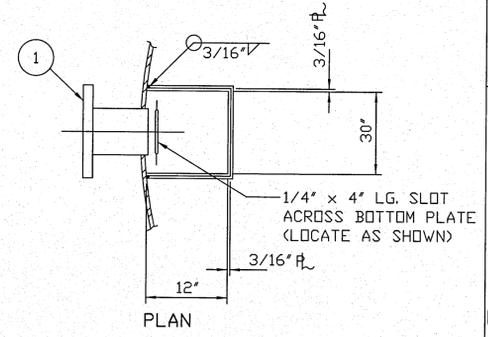
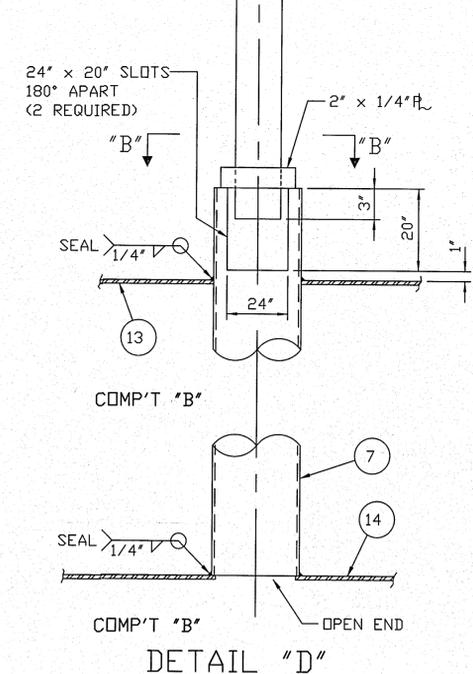
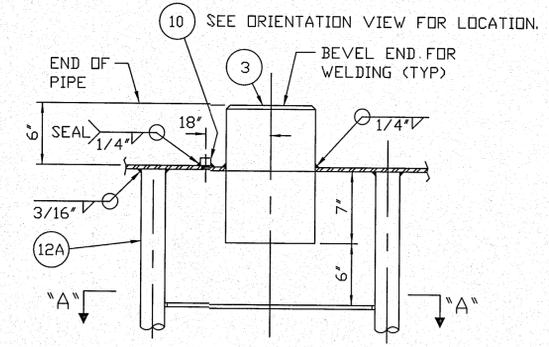
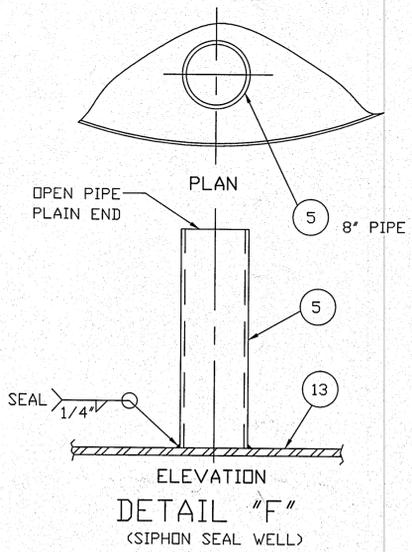
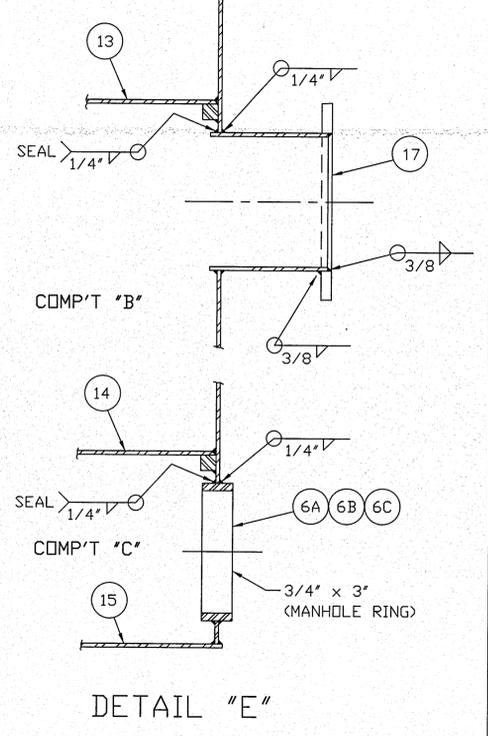
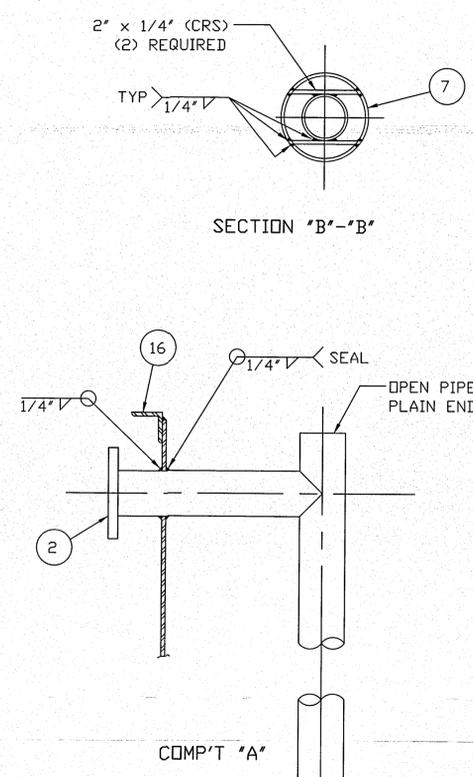
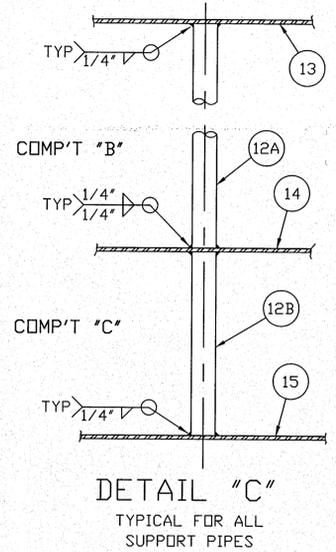
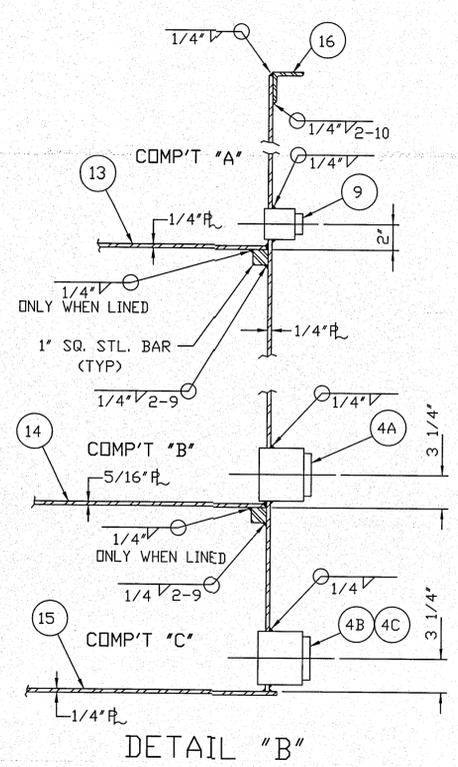
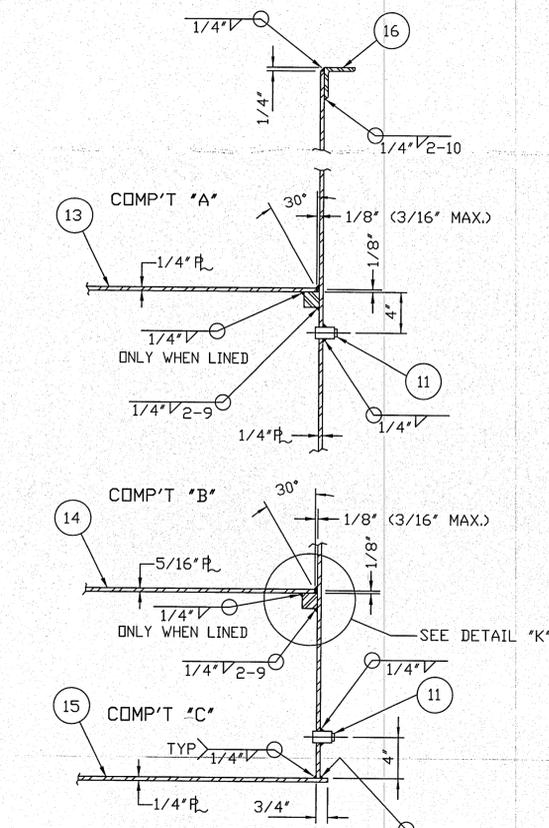


UNIT 2E
14 STRAINER PLATE DETAIL
5/16" THK STEEL PLATE

NOTES:
EACH PLATE TO BE SHIPPED IN (3) SECTIONS.
SECTION LINES SHOULD CLEAR ALL HOLES IN PLATE.

NOTE:
ALL HOLES FOR PIPE STRAINERS TO BE CUT BY TANK SHOP.
FOLLOW PATTERN AND ADD ALL ADDITIONAL HOLES TO OUTSIDE EDGE OF PLATE FOLLOWING STRAINER CLEARANCE DETAIL.

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						CHECKER BG	DATE 9-6-19	CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC
						ENGINEER MD	DATE 9-6-19	PROJECT 967113
						INT. REF. DWG. SCALE: NONE		INTERNAL DWG. NO. 156-21998
								DRAWING 2 OF 3
								SHEET 3
								REV A



REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN
A	REVISED SIZE AND LOCATION OF ITEM #10.	10-21-19	BKJ	BG	WD	

COMPANY CONFIDENTIAL
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DESIGNER: BKJ DATE: 9-6-19
 CHECKER: BG DATE: 10-21-19
 ENGINEER: MD DATE: 10-21-19

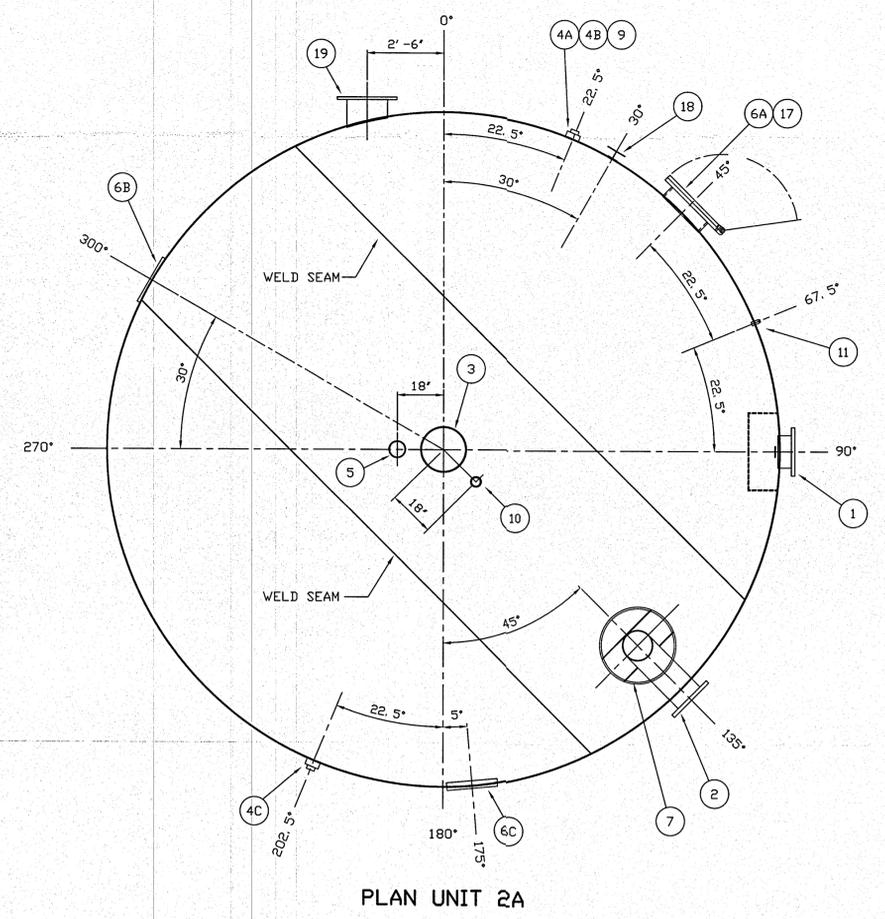
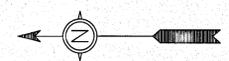
INT. REF. DWG.:
 SCALE: NONE

TITLE: TANK FABRICATION
 22'-0" DIA. x 14'-10" HG.
 AVGF '2E'

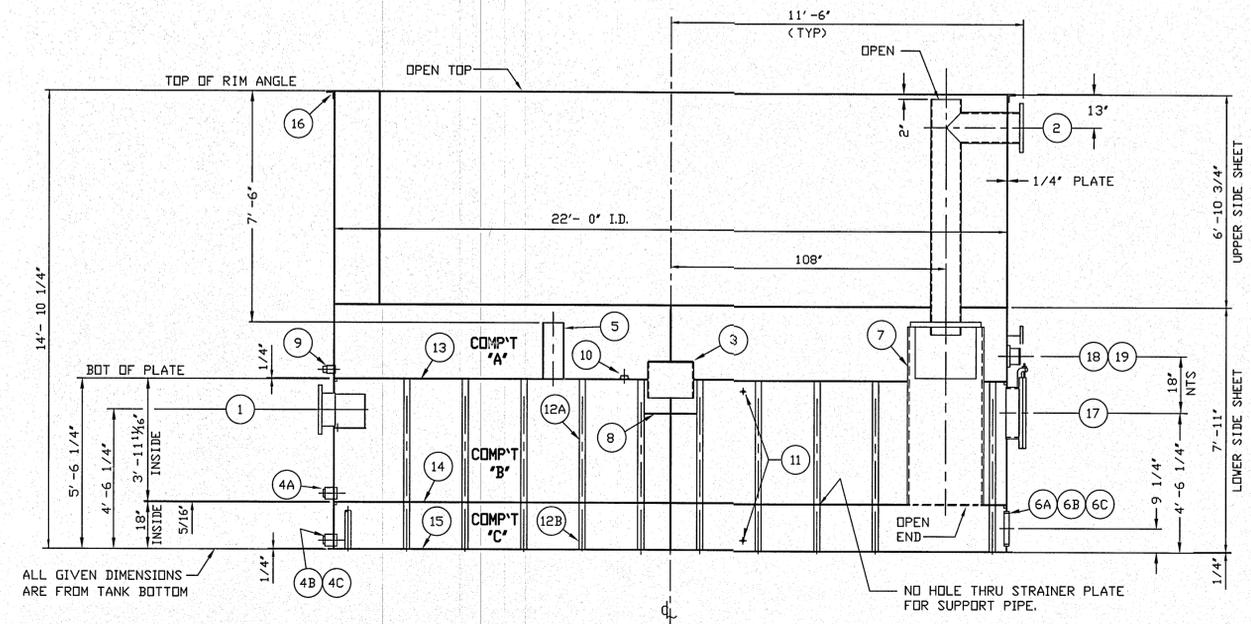
CLIENT: BRUNSWICK COUNTY PUBLIC UTILITIES
 BOLIVIA, NC

evoqua WATER TECHNOLOGIES
 PERMIT PRODUCTS-UNION, NJ
 908-851-2277

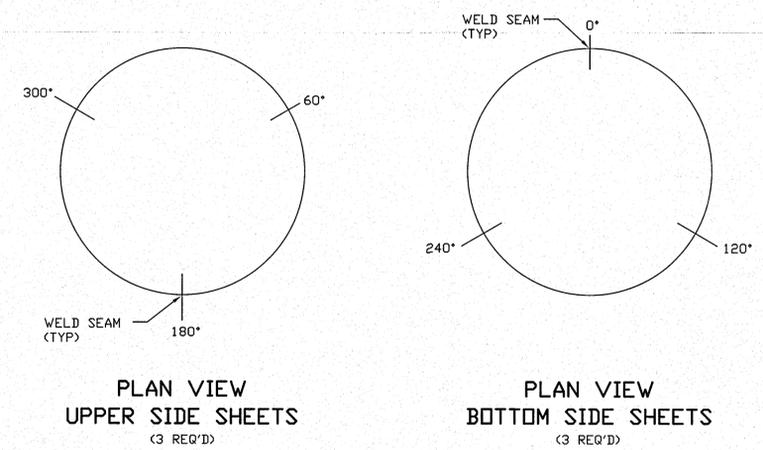
PROJECT: 967113 INTERNAL DWG. NO.: 156-21998 DRAWING: 3 OF 3 SHEET: 3 REV: A



PLAN UNIT 2A

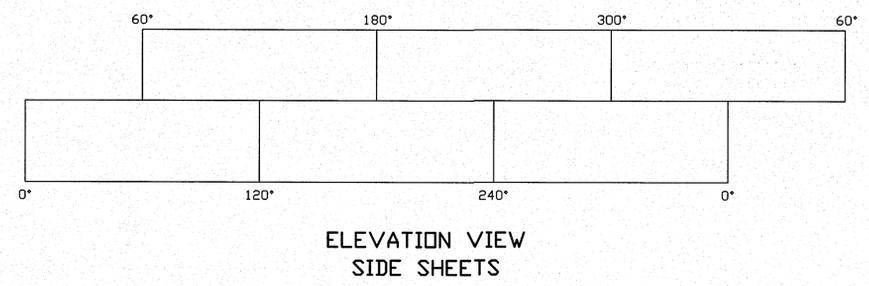


SECTIONAL ELEVATION UNIT 2A
SEE PLAN VIEW FOR TRUE ORIENTATION



PLAN VIEW
UPPER SIDE SHEETS
(3 REQ'D)

PLAN VIEW
BOTTOM SIDE SHEETS
(3 REQ'D)



ELEVATION VIEW
SIDE SHEETS

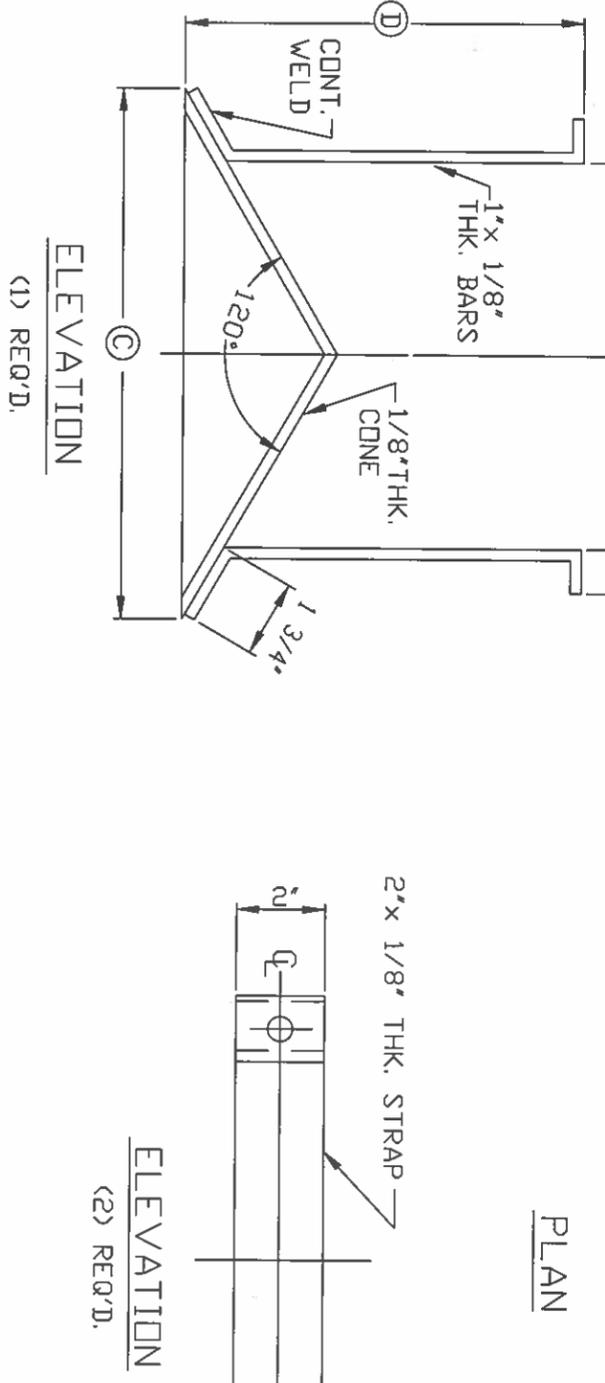
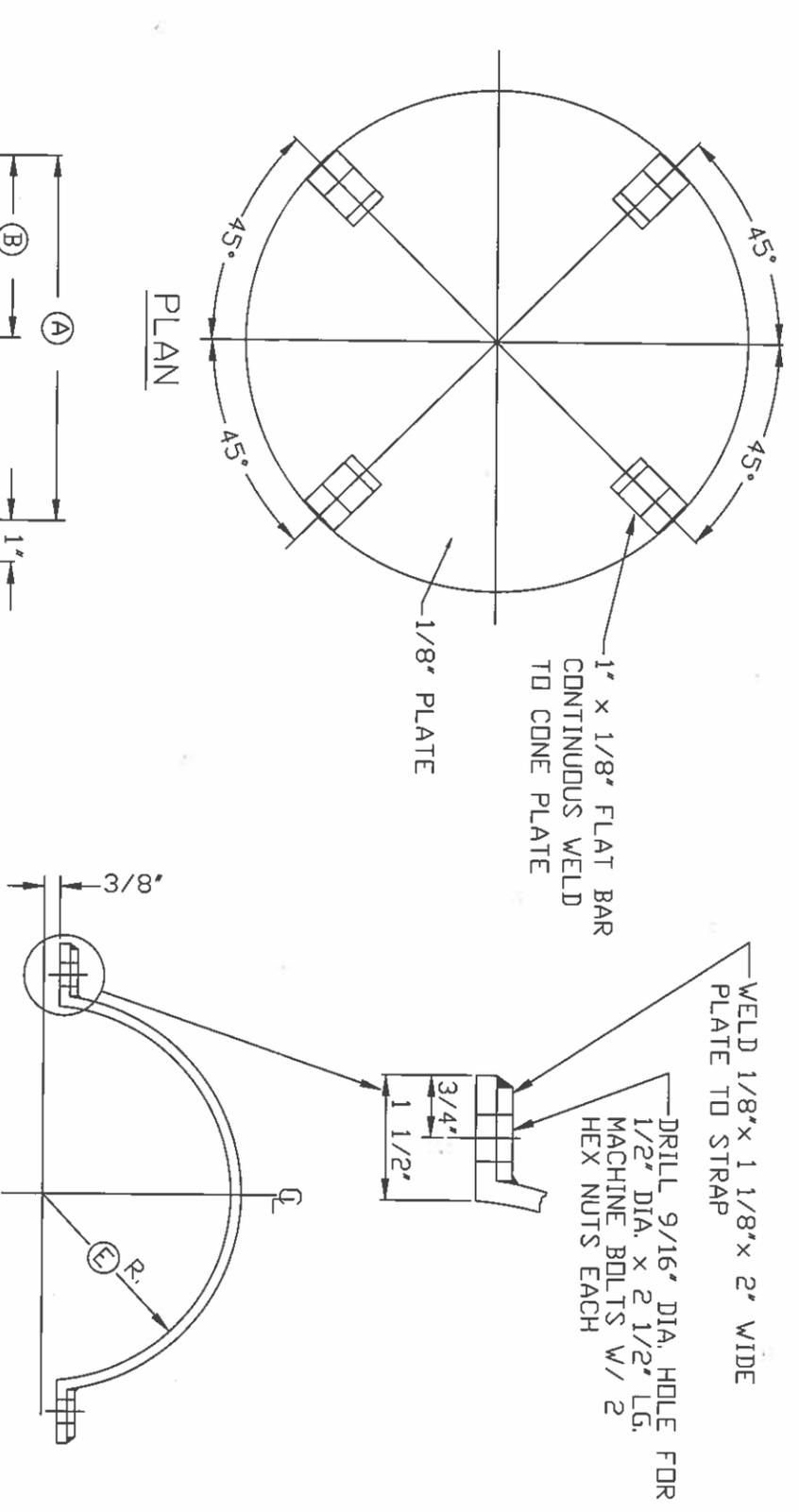
TANK DIA.	UPPER SIDE SHEET	LOWER SIDE SHEET	HEAD PLATE	HEAD PLATE SUPPORT	STRAINER PLATE	STRAINER PLATE SUPPORT	BASE PLATE	COVER PLATE	RIM	PIPE SUPPORTS
22'-0"	3	3	3	4	3	4	3	NONE	4	'A' 96 'B' 96

NOTES:

- 1 EVOQUA SPEC. NO. 106 APPLIES IN ADDITION TO BUT NOT SUPERSEDING ANY OTHER CODE REQUIREMENTS SPECIFIED IN THE EVOQUA PURCHASE ORDER.
2. MAXIMUM NUMBER OF PIECES FOR SHIPMENT MUST NOT EXCEED TOTAL INDICATED ON DRAWING. AT FABRICATORS OPTION, FEWER PIECES WILL BE ACCEPTABLE PROVIDED THE PIECE SIZE AND WEIGHT IS WITHIN LIMITS, CONFORMING TO ACCEPTED INDUSTRY PRACTICES AS TO ERECTION AND SHIPMENT. IF ABOVE OPTION IS EXERCISED, EVOQUA IS TO BE ADVISED AS TO DIMENSIONS AND WEIGHT OF LARGEST PIECE.
3. ALL NOZZLE CONNECTIONS TO BE SHIPPED LOOSE WITH FLANGES, WHERE REQUIRED, SHOP WELDED TO NOZZLE.
4. ALL PIPE ASSEMBLIES TO BE SHIPPED AS INDICATED.
5. LOCATION OF ALL NOZZLES, MANHOLE RINGS AND OTHER TANK CONNECTIONS TO BE MARKED AND CENTER PUNCHED ONLY, ALL OPENINGS FOR ABOVE TO BE FIELD CUT, AFTER ERECTOR CHECKS LOCATION.
6. NOTE TO ERECTING CONTRACTOR- IN THE EVENT OF DEFICIENCIES, NOTIFY EVOQUA IN ADVANCE OF TAKING CORRECTIVE ACTION. APPROVAL OF CORRECTIVE ACTIONS MUST BE MADE BY EVOQUA IN WRITING BEFORE PROCEEDING.

NOZZLES & TANK ATTACHMENT	
ITEM	DESCRIPTION
1	INLET
2	OUTLET
3	BACKWASH
4A	CLEANOUT, W/BR. PLUG (COMP.T. "B")
4B	DRAIN, W/BR. PLUG (COMP.T. "C")
4C	DRAIN, W/BR. PLUG (COMP.T. "C")
5	SYPHON SEAL WELL
6	ELLIPTICAL MANWAY
7	INTERNAL CONDUIT
8	SQ. BAFFLE PLATE 1/4" THK.
9	DRAIN, W/BR. PLUG (COMP.T. "A")
10	VENT
11	TEST CONNS, W/ BR. PLUG
12A	SUPPORT PIPE, 3"-11 11/16" LG.
12B	SUPPORT PIPE, 18" LG.
13	HEAD PLATE, 1/4" THK.
14	STRAINER PLATE, 5/16"
15	BASE PLATE, 1/4" THK.
16	RIM ANGLE 3" x 3" x 1/4" THK.
17	HINGED MANWAY (SEE NOTES)
18	NAMEPLATE AND BRACKET
19	SECONDARY WASH

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CHECKER DATE					ENGINEER DATE	CLIENT BRUNSWICK COUNTY PUBLIC UTILITIES BOLIVIA, NC
INT. REF. DWG.: SCALE: NONE					PROJECT 967113	WATER TECHNOLOGIES PERMIT PRODUCTS-UNION, NJ 908-851-2277
REV DESCRIPTION DATE DWN CHKD APVD ECN					INTERNAL DWG. NO. 156-22025	DRAWING SHEET 1 OF 1 REV 0



REF. TANK DIA.	WASH TAIL PIPE SIZE	BACKWASH REGULATOR DWG.	"A"	"B"	"C"	"D"	"E"
3'-0"	3"	158-22612	3 5/8"	1 13/16"	7"	9"	1 15/16"
4'-0"	4"	159-22612	4 5/8"	2 5/16"	8"	9"	2 7/16"
5'-0"	4"	159-22612	4 5/8"	2 5/16"	8"	9"	2 7/16"
6'-0"	6"	161-22612	6 3/4"	3 3/8"	10"	9"	3 1/2"
7'-0"	6"	161-22612	6 3/4"	3 3/8"	10"	9"	3 1/2"
8'-0"	6"	161-22612	6 3/4"	3 3/8"	10"	9"	3 1/2"
9'-0"	8"	162-22612	8 3/4"	4 3/8"	12"	9"	4 1/2"
10'-0"	8"	162-22612	8 3/4"	4 3/8"	12"	9"	4 1/2"
11'-0"	8"	162-22612	8 3/4"	4 3/8"	12"	9"	4 1/2"
12'-0"	8"	162-22612	8 3/4"	4 3/8"	12"	9"	4 1/2"
13'-0"	10"	163-22612	10 7/8"	5 7/16"	14"	9"	5 9/16"
14'-0"	10"	163-22612	10 7/8"	5 7/16"	14"	9"	5 9/16"
15'-0"	10"	163-22612	10 7/8"	5 7/16"	14"	9"	5 9/16"
16'-0"	12"	164-22612	12 7/8"	6 7/16"	16"	12"	6 9/16"
18'-0"	12"	164-22612	12 7/8"	6 7/16"	16"	12"	6 9/16"
20'-0"	14"	165-22612	14 1/8"	7 1/16"	18"	12"	7 3/16"
22'-0"	16"	167-22612	16 1/8"	8 1/16"	20"	12"	8 3/16"
25'-0"	18"	168-22612	18 1/8"	9 1/16"	22"	12"	9 3/16"

NOTE:
 1. QUANTITIES SHOWN = (1) SET FOR (1) FILTER.
 2. ALL MATERIAL TO BE STEEL.

REV	DESCRIPTION	DATE	OWN	CHKD	APVD	ECN
D	ECN 3408BH	6-22-06	EK	BG		
C	ECN 3408AH	12-14-76	WIN			
B	ECN 3408AC	5-7-74	FDC			
A	MATERIAL NOTED	8-5-63	JE			

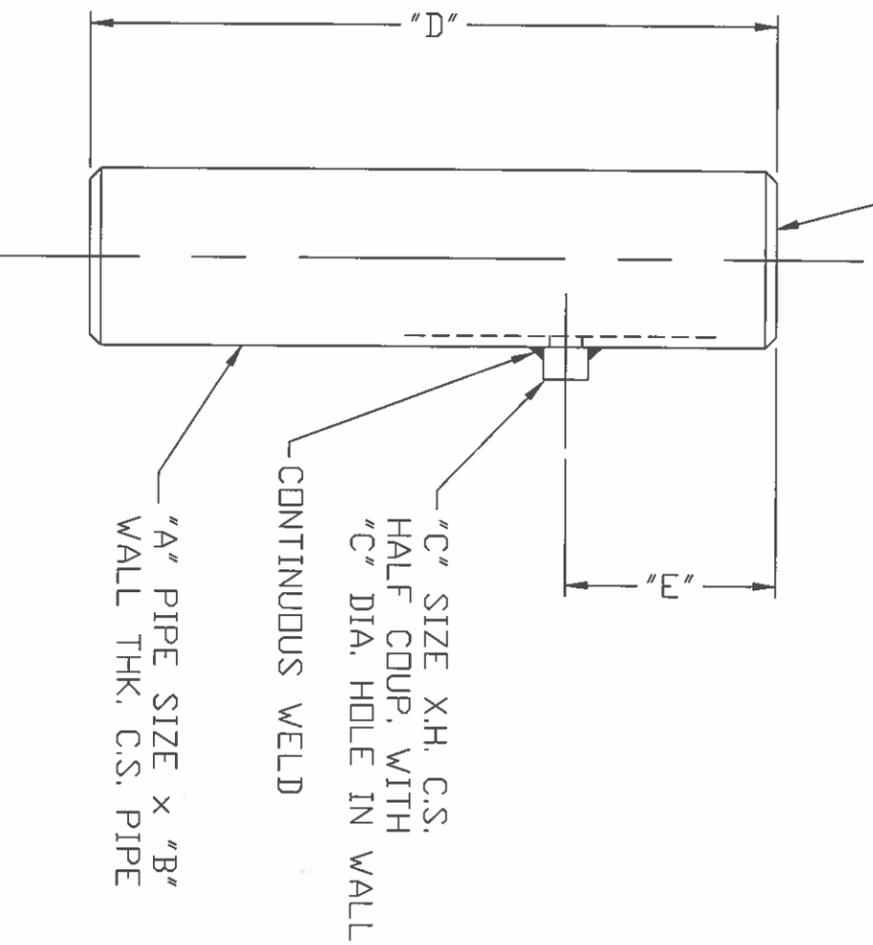
DESIGNER	DATE	TITLE
REL	3-14-62	DETAILS
CHECKER	DATE	BACKWASH REGULATOR
AB	3-14-62	
ENGINEER	DATE	CLIENT

Kevin Williamson



evogua
 WATER TECHNOLOGIES
 Water Technologies
 UNION, NJ
 (800) 631-0878

BEVEL BOTH ENDS
FOR WELDING



TOLERANCE ON DIMENSIONS
NOT OTHERWISE SPECIFIED
DECIMAL ± .06
FRACTIONAL ± 1/16"
ANGULAR ± 1°

REF. TANK DIA.	DWG. NO.	"A"	"B"	"C"	"D"	"E"
---	---	---	---	---	---	---
5'-0"	160-29391	6"	SCH. 40	1 1/2"	10'-0 3/4"	19"
6'-0"	161-29391	6"	SCH. 40	1 1/2"	9'-6 11/16"	19"
7'-0"	162-29391	6"	SCH. 40	1 1/2"	9'-0 11/16"	19"
8'-0"	163-29391	8"	SCH. 40	2"	8'-9 3/4"	22"
9'-0"	164-29391	8"	SCH. 40	2"	8'-4"	22 3/4"
10'-0"	165-29391	8"	SCH. 40	2"	7'-10"	22 1/2"
11'-0"	167-29391	10"	SCH. 40	2 1/2"	7'-6 11/16"	25"
12'-0"	168-29391	10"	SCH. 40	2 1/2"	7'-2 1/4"	25"
13'-0"	169-29391	10"	SCH. 40	2 1/2"	6'-3 5/8"	25"
14'-0"	170-29391	12"	STD. WT.	3"	5'-3 11/16"	27 7/8"
15'-0"	171-29391	12"	STD. WT.	3"	4'-9 11/16"	27 3/8"
16'-0"	173-29391	14"	STD. WT.	3"	4'-6 11/16"	31"
18'-0"	174-29391	16"	STD. WT.	3"	3'-9 11/16"	36"
20'-0"	175-29391	16"	STD. WT.	3"	2'-9 5/8"	25"
22'-0"	176-29391	18"	STD. WT.	3"	2'-0 1/2"	17"
25'-0"						

NONE REQUIRED

NOTE:

1. QUANTITIES SHOWN EQUAL ONE SET FOR ONE FILTER.

REV	DESCRIPTION	DATE	DWN	CHKD	APPD	ECN
D	ECN 3408BH	6-22-06	EK	BG		
C	ECN 3408BF	2-9-90	RZ			
B	ECN 3408BA	5-8-96	MS			
A	ECN 3408AH (8'-0" & 10'-0")	12-1-76	WIN			
	ECN 3408AC	5-7-74	FDC			

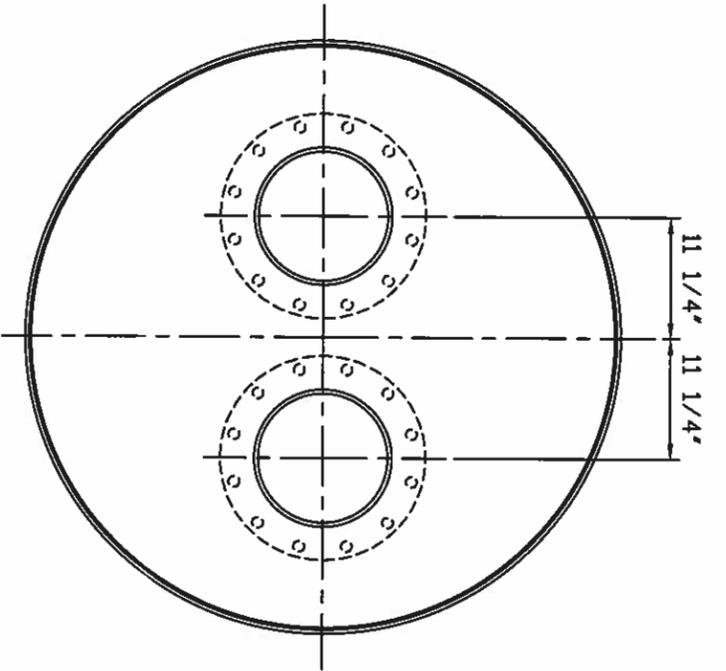
DESIGNER	DATE	TITLE
FDC	11-27-73	DETAILS WASH PIPE
CHECKER	DATE	
ENGINEER	DATE	

INT. REF. DWG.:	SCALE:	PROJECT	INTERNAL DWG. NO.	DRAWING	SHEET	REV
	NONE	157-29391			1 OF 1	D

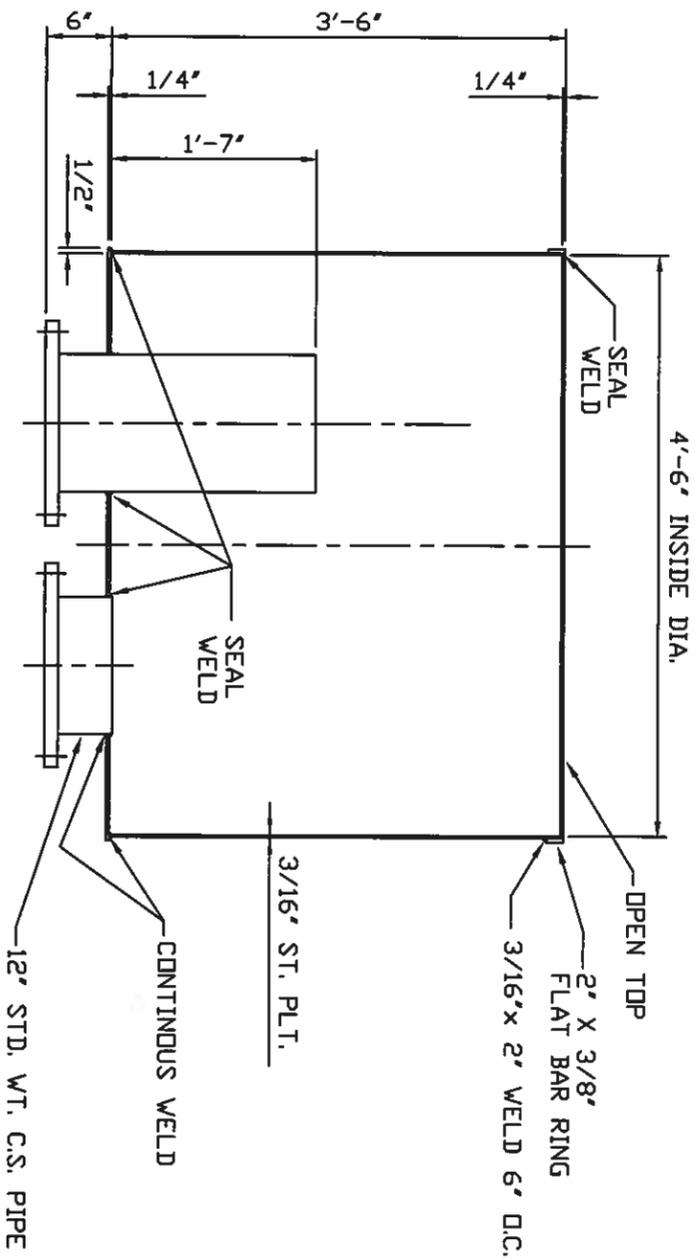
CLIENT	evogua WATER TECHNOLOGIES	Water Technologies UNION, NJ 0878 (800) 631-0878
--------	---------------------------	--

Kevin Christman





PLAN



SECTIONAL ELEVATION

- NOTES:
1. WELD TANK WATER TIGHT.
 2. SHIP TANK SET-UP AS SHOWN.
 3. SEE FILTER TANK DETAIL OR P.D. FOR PAINT REQUIREMENTS.
 4. FABRICATE PER SPEC. 106.

AT TANK SHOP'S OPTION,
 (2) 12" SIZE 125# STD. F.S. SLIP-ON LIGHTWEIGHT FLANGES,
 FLAT FACED, TAYLOR FORGE CATALOG #484, PG 142 OR EQUAL,
 BOLT HOLES TO STRADDLE CENTERLINES,
 OR 3/4" THK. PLATE FLANGE.

Benjamin Blanton, Sr.



REV	DESCRIPTION	DATE	DMN	CHKD	APPD	ENR
A	CUST COMMENTS - HEAD TK VENT FROM 30" TO 42" HG.	10-3-19	BKJ	BG	MD	
B	FLAT BAR RING WAS 1 1/2" X 3/8"	1-24-20	BKJ	BG	MD	

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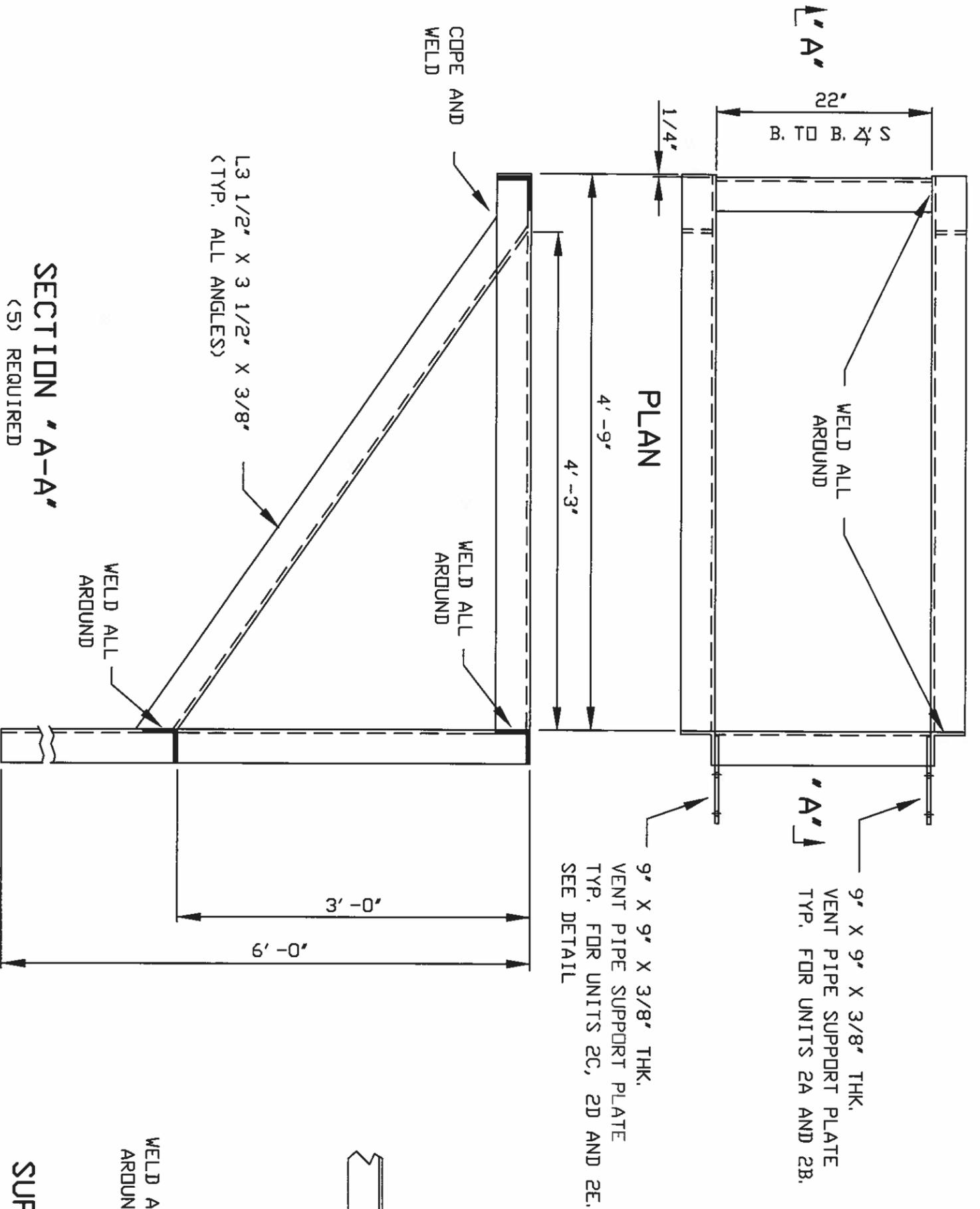
DESIGNER	BKJ	DATE	9-20-19
CHECKER	BG	DATE	9-20-19
ENGINEER	MD	DATE	9-20-19

TANK FABRICATION
 HEAD TANK
 22'-0" DIA. AVGF (INDUSTRIAL)

evoqua
 WATER TECHNOLOGIES
 Water Technologies
 PERMUTIT PRODUCTS-UNION, NJ
 908-851-2277

PROJECT: 967113
 INTERVAL DWG. NO: 157-35653
 DRAWING: 1 OF 1

- NOTES:
- SHIP SET UP AS SHOWN.
 - SEE FILTER TANK DETAIL OR P. D. FOR PAINT REQUIREMENT.



SUPPORT PLATE DETAIL

SECTION 'A-A'
(5) REQUIRED
MK. '2A', '2B', '2C', '2D' AND '2E'

L3 1/2' X 3 1/2' X 3/8'
(TYP. ALL ANGLES)

9' X 9' X 3/8" THK.
VENT PIPE SUPPORT PLATE
TYP. FOR UNITS 2A AND 2B.
SEE DETAIL

(4) 1/2" DIA. HOLES
FOR (2) 3/8" DIA. U-BOLTS

WELD ALL AROUND



Kevin Williams

REV	DESCRIPTION	DATE	OWN	CHNG	APND	ECN

DESIGNER	BKJ	DATE	10-21-19
CHECKER	BG	DATE	10-21-19
ENGINEER	BG	DATE	10-21-19

PROJECT	967113	REVISION	157-35659	DRAWING	1	SHEET	1	OF	1	REV	0
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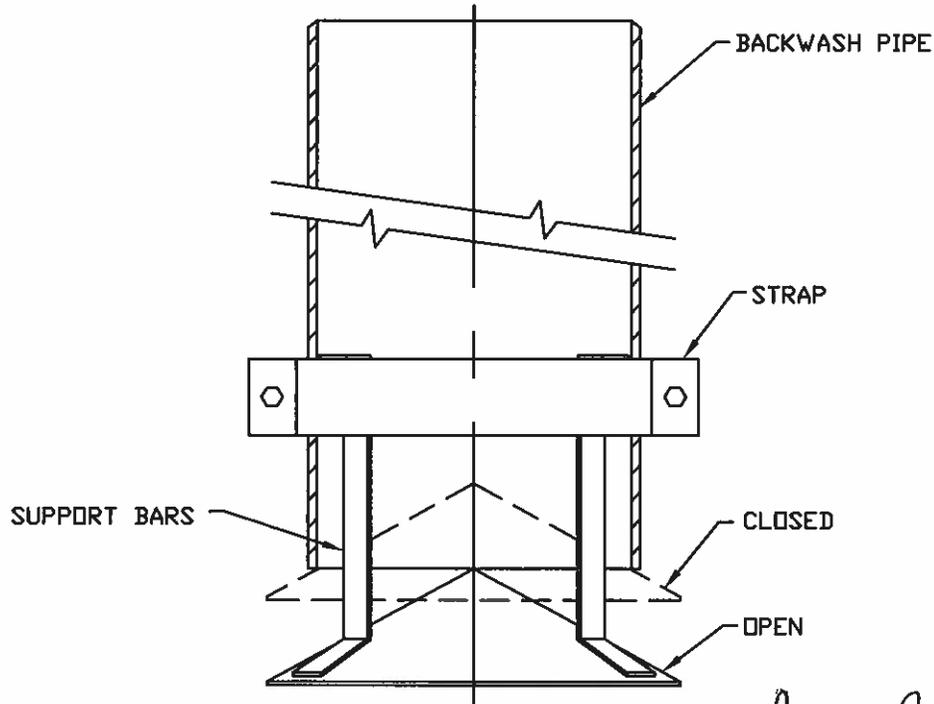
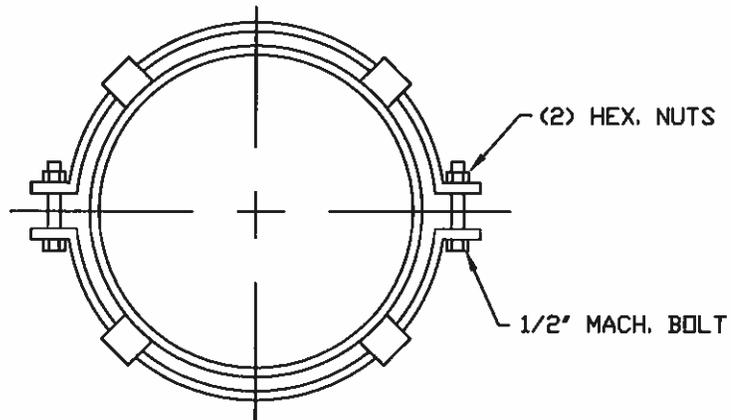
CLIENT	HEAD TANK SUPPORT
TITLE	DETAILS

evogua
 WATER TECHNOLOGIES
 Water Technologies
 PERMUTTI PRODUCTS-UNION, NJ
 908-851-2277

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TOLERANCE ON DIMENSIONS
 NOT OTHERWISE SPECIFIED
 DECIMAL ±.005
 FRACTIONAL ± 1/32"
 ANGULAR ± 1°

REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN



Berwin A. Guttmann

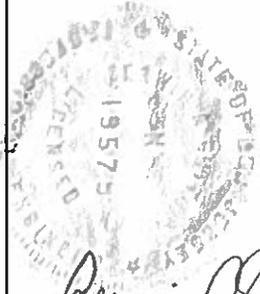
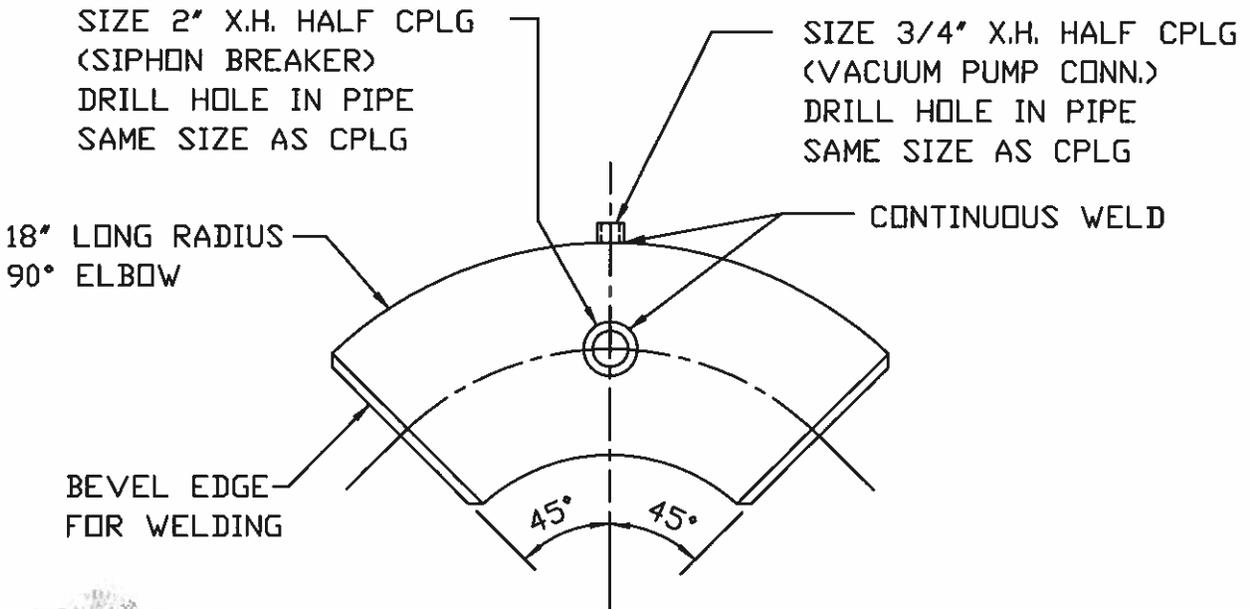


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DESIGNER	DATE
EK	5-30-14
CHECKER	DATE
BG	5-30-14
ENGINEER	DATE
BG	5-30-14
INT. REF. DWG.:	
SCALE:	NONE

TITLE		ASSEMBLY BACKWASH REGULATOR BUCKET			
CLIENT					
S.O. NUMBER		INTERNAL DWG. NO.		DRAWING	
		101-20778			
EVOQUA WATER TECHNOLOGIES		WATER TECHNOLOGIES UNION, NJ (800) 631-0878			
SHEET		1 OF 1		REV 0	

REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN

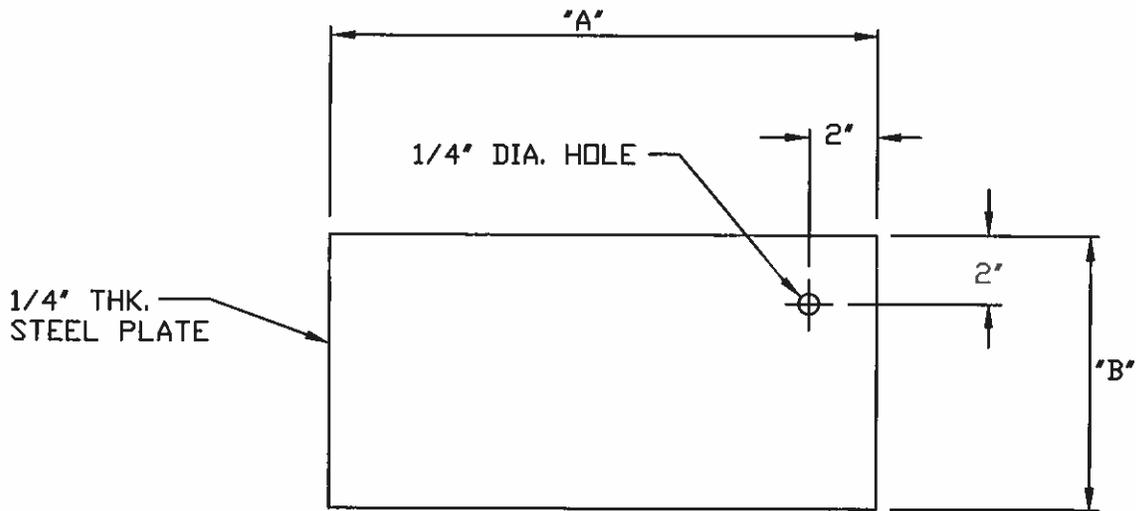


Berwin Guttmann

MATERIAL REQ'D:
SEAMLESS ST'L ELBOW, STD. WT. A234
CARBON ST'L COUPLINGS

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	BKJ	10-3-19	BACKWASH SPECIAL FITTING				
	CHECKER	DATE	CLIENT				
	BG	10-3-19					
	ENGINEER	DATE					
	MD	10-3-19	<p>Water Technologies PERMUTT PRODUCTS-UNION, NJ 908-851-2277</p>				
INT.REF.DWG.:			PROJECT	INTERNAL DWG.NO.	DRAWING	SHEET	REV
SCALE:	NONE			102-39852		1 OF 1	0

TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED							
DECIMAL	±.005	B	ECN 3408BH	6-22-06	EK	BG	
FRACTIONAL	± 1/32"	A	ECN 3408AD	9-13-78			
ANGULAR	± 1°	--	ECN 3408AC	5-7-74			
REV		DESCRIPTION		DATE	DWN	CHKD	APVD



ONE (1) REQ'D.

TANK DIA.	PART NO.	'A'	'B'
3'-0" THRU 12'-0"	103-35627	3'-1 1/2"	18 1/2"
13'-0"	104-35627	3'-7 1/2"	18 1/2"
14'-0" THRU 20'-0"	105-35627	5'-1 1/2"	18 1/2"
25'-0"	106-35627	6'-1 1/2"	24 1/2"
22'-0"	107-35627	5'-1 1/2"	24 1/2"



Berni A. Guttormsen

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	SB	5-7-74	DETAILS WEIR PLATE			
	CHECKER	DATE	CLIENT			
	ENGINEER	DATE	EVOQUA Water Technologies UNION, NJ (800) 631-0878			
	INT. REF. DWG.:		PROJECT	INTERNAL DWG. NO.	DRAWING	SHEET
SCALE:	NONE		102-35627		1 OF 1	B

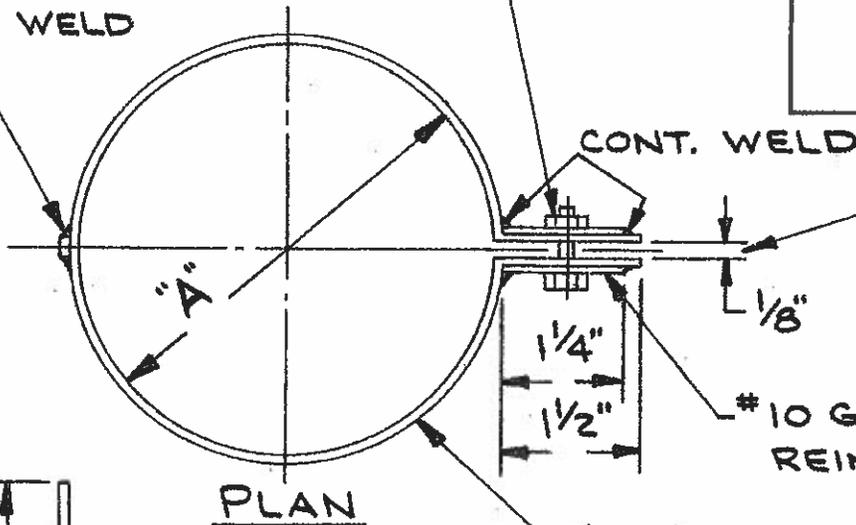
101-24990

FURNISH (4) 3/8" x 1" LG.
S.S. BOLTS W/HEX NUTS

TOLERANCE ON DIMENSIONS
NOT OTHERWISE SPECIFIED

DECIMAL ± .005
FRACTIONAL ± 1/64
ANGULAR ± 1°

CONT. WELD
B.S.

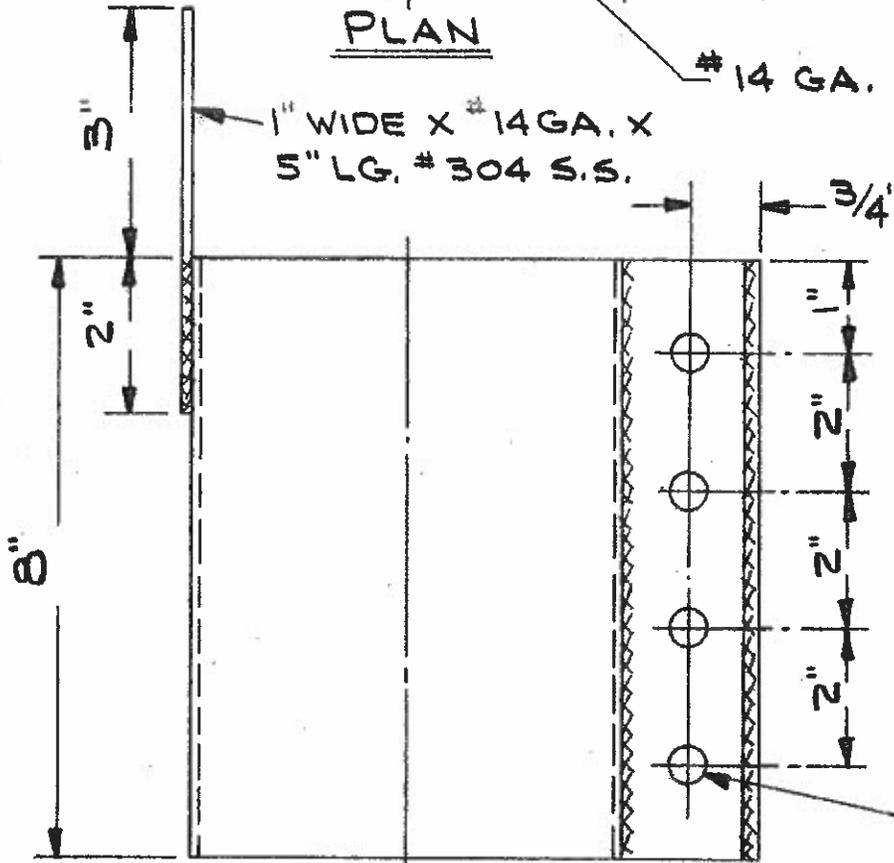


FURNISH 1/4" WIDE
X 8" LG. X 1/8" THK.
SOFT RUBBER
GASKET.

#10 GA. S.S. #304
REINFORCING PL.

#14 GA. S.S. #304

PLAN



ELEVATION

PIPE SIZE	PART NO.	"A"
12"	103-36889	12 3/4"
14"	104-36889	14"

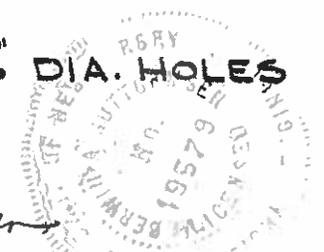
(4) 7/16" DIA. HOLES

NOTES:

1. FABRICATOR TO FURNISH ALL BOLTS, NUTS & GASKETS.
2. ALL MATERIALS 304 S.S.

Bernie Peterson

SPECIAL INLET PIPE
ADJUSTABLE COLLAR



MADE FDC CHECKED

MATERIAL REQ'D. PER			
SEE DWG.			
No.	DATE	E.C.No.	

THE PERMUTIT COMPANY

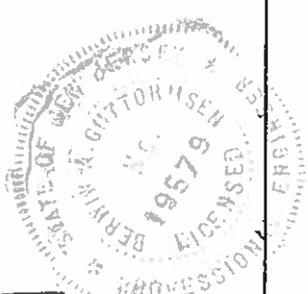
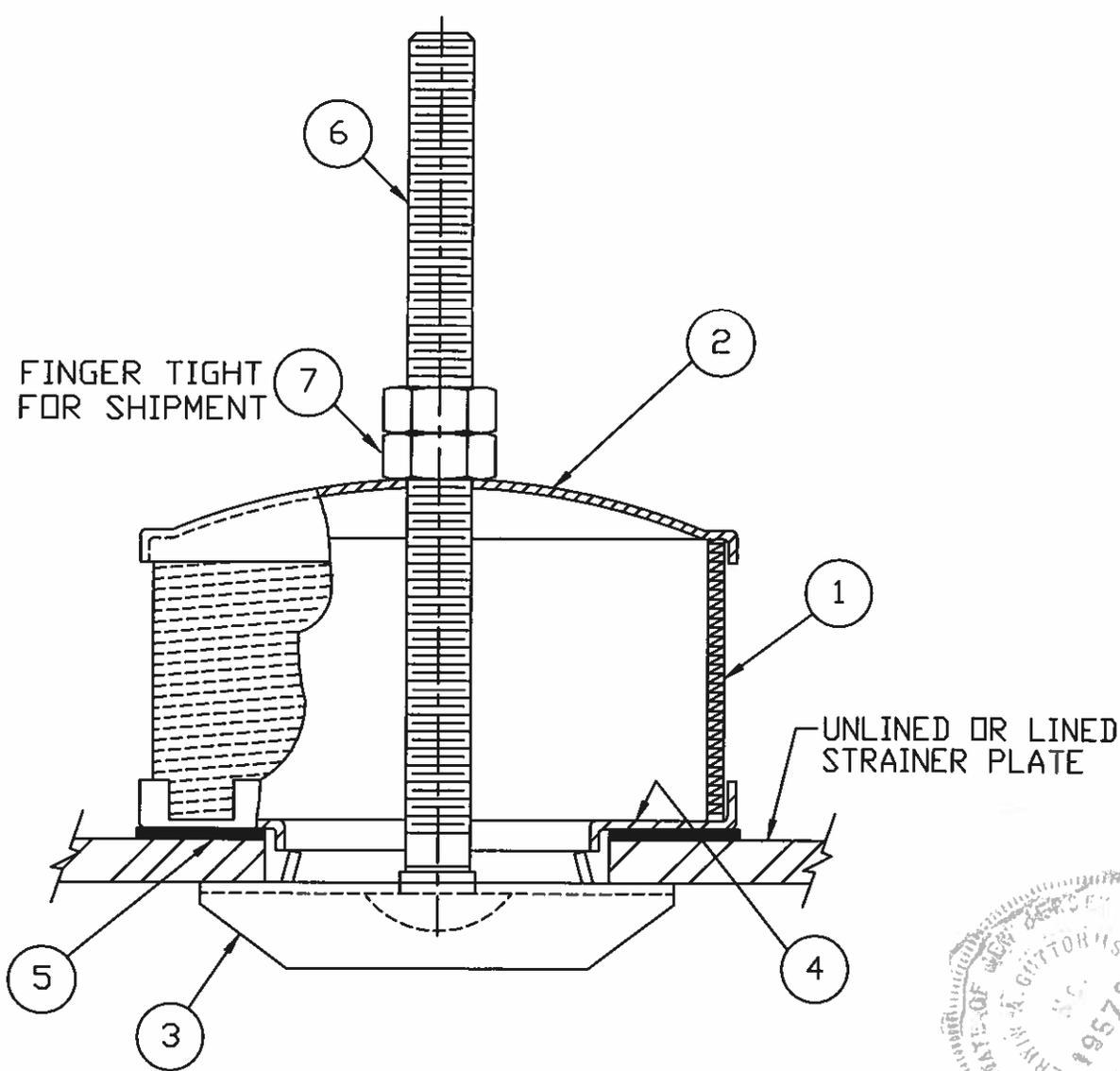
SCALE # DATE 3-13-74

102-36889

FINISH

REVISIONS

TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED DECIMAL ±.005 FRACTIONAL ± 1/32" ANGULAR ± 1°	D	ECN 3197 BZ	8-23-01				
	C	ECN 3197 BY	4-9-99				
	B	ECN 3197 BV	2-7-96				
	A	ECN 3197 BT	10-14-91				
	0	ECN 3197 BR	10-01-91				
	REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN



Berni Pittman

FOR ASSEMBLY LIST SEE SHT. 2

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DESIGNER	ORLOWSKI	DATE	10-01-91
CHECKER	BG	DATE	10-01-91
ENGINEER		DATE	
INT. REF. DWG.:			
SCALE:	NONE		

TITLE		10-MIL STRAINER ASSEMBLY 316SS W/ COMMERCIAL EPDM GASKET FOR 2.00" STRAINER PLATE HOLE		
CLIENT				
PROJECT		INTERNAL DWG. NO.	DRAWING	SHEET
		102-39230		1 OF 2
				REV
				D

Water Technologies
PERMUTIT PRODUCTS-UNION, NJ
908-851-2277

TOLERANCE ON DIMENSIONS NOT OTHERWISE SPECIFIED DECIMAL ±.005 FRACTIONAL ± 1/32" ANGULAR ± 1°	D	ECN 3197 BZ	8-23-01				
	C	ECN 3197 BY	4-9-99				
	B	ECN 3197BV	2-7-96				
	A	ECN 3197 BT	19-14-91				
	0	ECN 3197 BR	10-01-91				
REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN	

ASSEMBLY LIST

ITEM	QTY	PART NO.	DESCRIPTION
1	1	SEE BELOW	SCREEN, 0.010" SLOT SIZE, 316L SS
2	1	102-39185 125000935	UPPER SCREEN WASHER, 316 SS
3	1	102-39184 125000934	BASE, 316 SS
4	1	102-39183 125000933	LOWER SCREEN WASHER, 316 SS
5	1	102-39228 125000938	GASKET, EPDM, 212 DEG. F
6	1	187-30823 125000210	BOLT, RD. HD. SQ. NECK, 3/8"-16 x 5", 316 SS
7	2	188-07431 170000020	NUT, HEX, 3/8"-16, 316 SS

SAP PART NO.	ASSY NO.	SCREEN PART NO.	SLOT OPEN AREA	SCREEN HEIGHT
W3T16651	103-39230 125000947	103-39229 125000946	1.20 SQ. IN.	13/16"
W3T16656	104-39230 125000959	104-39229 125000958	2.20 SQ. IN.	1 1/2"
W3T425121	105-39230 125001249	106-39229 125000965	2.95 SQ. IN.	2"
	106-39230 125001250	107-39229 125000968	3.85 SQ. IN.	2 5/8"

FOR SECTIONAL DWG. SEE SHT. 1

Berwin B. Bortman

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DESIGNER ORLOWSKI	DATE 10-01-91	TITLE 10-MIL STRAINER ASSEMBLY 316SS W/ COMMERCIAL EPDM GASKET FOR 2.00" STRAINER PLATE HOLE
CHECKER BG	DATE 10-01-91	CLIENT
ENGINEER	DATE	
INT. REF. DWG.:		
SCALE: NONE	PROJECT INTERNAL DWG. NO. 102-39230	DRAWING SHEET 2 OF 2 REV D



EVOQUA
WATER TECHNOLOGIES

Water Technologies
PERMUTT PRODUCTS-UNION, NJ
908-851-2277

S P E C I F I C A T I O N

MIRACLE ADHESIVE SEALANT

MANUFACTURER: TACC International Corporation

PRODUCT: Lifelong Silicone Sealant #830 White

DESCRIPTION: Non-staining, non-flammable, fast drying caulk with excellent gap filling characteristics and aging properties

CONFORMANCE: FDA Approved #21 CFR 1777.2600

CONTAINER: 11 oz. tube

PACKAGING: 12 Tubes per carton, carton weight 13 lbs.

TECH. INFORMATION: 800-503-6991



Benjamin Dittomus

C	04/23/99	3408BG	U.S. F I L T E R
0	02/10/61	3178	SEALANT, 11 OZ. MIRACLE
REV	DATE	ECN/BY	ADHESIVE #830 WHITE
REVISIONS			SHEET 1 OF 1 SPEC No. 187-10021 REV C

S P E C I F I C A T I O N

FABRICATION OF STEEL GRAVITY-TYPE TANKS

SCOPE:

This specification covers the fabrication of flat-bottomed, vertical, cylindrical, conical or rectangular welded tanks of various sizes and capacities for water service with internal pressures approximating atmospheric pressure.

MATERIAL: Plate and Structural

Open hearth, electric furnace or basic oxygen process hot-rolled steel, 55,000 psi minimum tensile strength, free from laminations and injurious or unsightly surface defects. Carbon content shall not be excessive to insure against cracking during welding. The MINIMUM requirements of ASTM Specifications A36, A131B, A131C, A283D, A285C or CSA40.8.

PIPE:

ASTM A120, A53B, A106B OR API 5L apply.

FORGED FLANGES:

ASTM A105-1, A105-2, A181-1 or A181-2 apply.



WELDING:

All welding shall be of good workmanship, free from undercut and other visible defects. Heat, rod and procedure shall be selected to produce welds with proper penetration when hand or automatic welding is applied. Requirements of AISC Specification Sections 1.4.5, 1.17 and 1.23 WILL APPLY.

- a) Outer Tank: All seams are to be butt-welded, water tight with seal weld required only as noted.
- b) Internal Parts: All plate seam to be butt-welded, unless otherwise noted.

E	02/14/78	2632F	U.S. F I L T E R
0	05/21/59	2632	FABRICATION OF STEEL
REV	DATE	ECN/BY	GRAVITY-TYPE TANKS
REVISIONS			SHEET 1 OF 3 SPEC No. 000-00106 REV E

S P E C I F I C A T I O N

c) Structural Members: Connections to have minimum 1/4" continuous welds, unless specified otherwise on drawings.

FABRICATION TOLERANCES:

Layout, fit-up and welding shall be carefully effected to produce accurate location and true alignment.

Tolerances in accordance with Dwg 184-14980 shall apply to all given dimensions, unless otherwise specified on drawings.

All screwed fittings to be supplied with thread protectors or plugs for shipment. Screwed fittings shall be checked for thread engagement if thread protectors are used. All flanged connections to have flange protectors for shipment. The MINIMUM requirements of AISC Specification Sections 1.23 and 1.25 ARE APPLICABLE.

INSPECTION AND TEST:

All work to be subject to fabricator's shop inspection to insure conformity with specifications. US Filter/Warren inspectors to have free access at all reasonable times. The MINIMUM requirements of AISC Specification Section 1.26 and US Filter/Warren Engineering Specification #996 WILL APPLY. Any other inspection is to be defined in the purchase order.

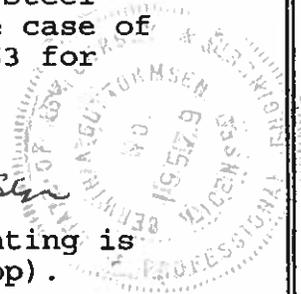
CLEANING:

Oil, grease, dirt, chemicals, rust scale, loose rust, welding flux slag or other material shall be removed by Solvent Cleaning per Steel Structures Painting Council Specification SSPC-1-63, in the case of chemical contaminants, and Power Tool Cleaning per SSPC-3-63 for physical contaminants.

PAINT:

No shop painting unless otherwise specified. (If shop painting is required, painting will be accepted by customer at tank shop).

Bernie Guttmann



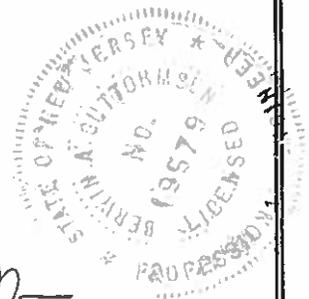
E	02/14/78	2632F	U.S. F I L T E R
0	05/21/59	2632	FABRICATION OF STEEL
REV	DATE	ECN/BY	GRAVITY-TYPE TANKS
REVISIONS			SHEET 2 OF 3 SPEC No. 000-00106 REV E

S P E C I F I C A T I O N

Shells or unassembled shell pieces shall be supported adequately to prevent distortion during shipment.

UNASSEMBLED TANKS:

- a) Nozzles are to be made up with flanges shop welded to collars. Nozzle assemblies will be shipped loose, but location of nozzle connections are to be clearly marked with paint on tank.
- b) Tank fabricator shall forward to the US Filter/Warren Engineering Department, prior to shipment, four (4) sets of certified drawings clearly indicating piece numbers and piece orientation.



Benjamin A. Guttorf

E	02/14/78	2632F	U.S. F I L T E R
0	05/21/59	2632	FABRICATION OF STEEL
REV	DATE	ECN/BY	GRAVITY-TYPE TANKS
REVISIONS			SHEET 3 OF 3 SPEC No. 000-00106 REV E

THE PERMUTIT COMPANY

ENGINEERING DEPARTMENT

SPECIFICATION FOR

LOADING FILTER SAND

(For filters having no gravel supporting layers)

Spec. No. 613

Sheet 1 of 1

Prep. By D. Miller

Approved _____

Issue No. _____

Date 12-22-63

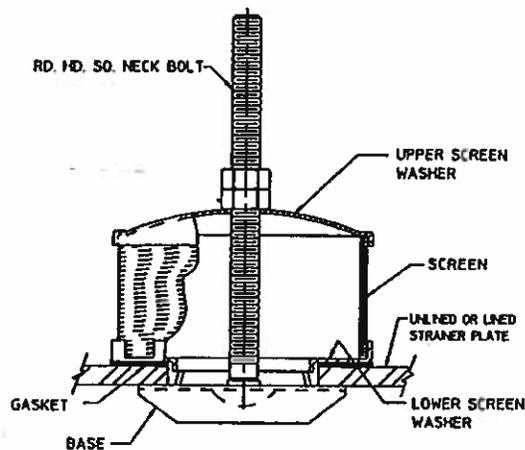
REV	DATE	ECN
0	1-10-64	1002-B

1. Check underdrain carefully to be certain all parts are installed in accordance with drawings and instructions. Check with a feeler gauge to be sure there are no openings greater than 0.007" adjacent to strainer assemblies.
 2. Admit cold water to filter until underdrain is submerged by about 12". *
 3. Load sand into filter up to depth shown on drawings.
- * This step helps to distribute sand when loaded in succeeding step. It is essential where sand is to be blown into a filter, since air-flow sand may be hot enough to damage plastic parts if not cooled by water in the filter.



Benjamin A. Gutborn

INSTALLATION OF STRAINER ASSEMBLY



The wedgewire screen strainers provided for the underdrain system may require installation prior to loading media, or they may come preinstalled in the unit as shipped. In either case, the strainer assembly openings need to be checked prior to loading media, as described below. This is required since strainers can come loose due to vibration in shipment.

The following procedure is to be used to install the strainers (if they are not preinstalled), or to install replacement strainers, should this become necessary.

1. IMPORTANT NOTICE: Before installing strainers, inspect the upper and lower surfaces around the 2" holes. In unlined tanks inspect for any burrs, weld spatter, etc., which would prevent proper seating of the strainer assemblies. In lined tanks, inspect for seams or other overlapping or other irregularities that would affect the strainer sealing. In entering and working in lined tanks, exercise caution so as not to damage the lining. If significant irregularities are found notify US Filter before proceeding. **EACH STRAINER MUST SEAT TIGHTLY AROUND ITS ENTIRE CIRCUMFERENCE BEFORE INSTALLING THE FILL MEDIA.**

2. Strainers are normally shipped as complete assemblies with loose gaskets. Gaskets are required for every strainer installation, and will provide a seal between the lower screen washer and the strainer plate. If the gasket is loose, place it over the base and under the lower screen washer.

3. Loosen the nuts to the top of the bolt. Then tilt and insert the base into the 2" hole in the strainer plate, holding the tip of the bolt so that it does not fall through. Center the base in the hole so that the ends of the strainer base are resting flat against lower side of the strainer plate.

4. Allow the strainer assembly to slide down over the bolt, so that the gasket is resting on the top surface of the strainer plate, and the strainer assembly, including the gasket, is concentric with the hole. The neck of the lower screen washer should fall within the 2" strainer hole, tending to center the strainer. After being certain that the base, bolt, gasket, and wedgewire screen are centered on the hole, hand tighten the first nut so that the strainer assembly is lightly seated against the strainer plate. Shift the strainer assembly so that you can feel the neck of the lower screen washer holding it over the hole, and re-center it.

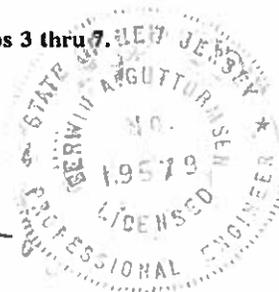
5. Tighten down on the first nut by hand, until the entire assembly cannot be rotated by hand, then make one full turn of the nut, using a wrench, to secure it in place. **DO NOT OVER TIGHTEN**, as this could damage the cover or screen.

6. Place the second nut onto the bolt and tighten with a wrench on top of the first nut. This serves as a locknut.

7. Final inspection should include the use of a 0.006" feeler gauge at the base of the strainer, between the strainer plate and the lower screen washer, and between the lower nut and the upper screen washer. This procedure will assure the proper seal, so that the fill media will be retained.

8. If the gap is larger than 0.006", back off on the nuts and repeat Steps 3 thru 7.

Berwin Ruttarsen



Erection Procedure Page 1-4 Rev A, 10/28/2019

Scope

This procedure covers the erection of five (5) 22 ft dia. X 14'-10" high AVGFs (Automatic Valveless Gravity Filters) made by Evoqua Water Technologies and shipped knocked down to the Brunswick County Public Utilities Site in Bolivia, NC along with unit piping and accessories.

Demolition and Disposition of Scrap

Contractor is to include in his scope the demolition of the existing AVGFs with their unit piping. Interconnecting piping may be scrapped or re-used at the discretion of the end user. If the decision is to scrap this material, contractor will remove it. Dumpsters, if required, are to be provided by the contractor.

Unloading of New AVGF Material

Contractor's scope includes unloading material from trucks that arrive at the jobsite, and the provision of lifting equipment and personnel to accomplish this work. In addition, newly arrived material is to be safely stored at the jobsite with suitable protection against weather related damage and secured against theft.

Degree of Shop Assembly (As Shipped Condition of Material)

Plate material for the flat internal plates separating the compartments will be shipped cut to the required size and strainer holes will be made in the strainer plate. The walls will also be cut to size and rolled. This plate material will be blast cleaned and primed on both sides prior to shipment, except no paint within 3" of field welds. Blasting of internal normally submerged parts is to be per SSPC SP10 Near White Metal Blast Cleaning. Blasting of external parts to be per SSPC SP6, Commercial Blast Cleaning.

With one exception, pipe material for butt welded pipe sections (4" and larger) will be cut to the required length to be butt welded together in the field by the erector. The exception is the 16" line between units for secondary backwash. Here we will supply over length pipe to be cut and fit at the jobsite.

Piping 3" and smaller will be shipped in random lengths to be cut and threaded in the field by the erector.

Piping will be prime painted in the shop after blast cleaning, with 3" unpainted at welds.

As Shipped Sections

The AVGF material will be shipped in the following sections. Pieces will be marked with numbers to correlate with markings on erection drawings that will be provided:

Side Sheet – Maximum of 12 sections, rolled and cut to size. Location of all nozzle's manhole rings and other connections to be marked only. These openings are to be field cut after location is checked.

Head Plate – The plate separating compartments "A" and "B" will be shipped in a maximum of 5 sections

Strainer Plate – The plate separating compartments "B" and "C" will be shipped in a maximum of 5 sections

Base Plate – The baseplate (floor) will be shipped in a maximum of 5 sections

As Shipped Sections (cont.)

Rim Angle – The rim angle will be shipped rolled and in 4 sections

Head Plate Support (1" x 1" square rod) – Rolled and in 4 sections

Strainer Plate Support (1" x 1" square rod) – Rolled and in 4 sections

Strainer Plate Supports (2" Sch 40 pipe x 18" long) – Individual 96 pieces cut to length

Head Plate Supports (2" Sch 40 pipe x 47-11/16" long) – Individual 96 pieces cut to length

Nozzle Connections – All shipped loose but with flanges welded on

Flanged Manways – Shipped loose but with flanges welded on and cover with gasket and davit attached

Elliptical manways - Shipped loose but with cover, gasket and fasteners

Threaded Couplings – Shipped loose

Other AVGF Internal Accessories – Items such as baffle plate, inlet pocket, backwash connection, internal conduit, outlet piping, syphon seal well and like items will be shipped loose for assembly by the erector.

Head Tank and Head Tank Support – Will be fabricated complete except for attachment to the vessel by the erector.

Field Assembly and Finish

After demolition of the existing AVGFs it is the erector's responsibility to check the foundation for fitness (advise if issues) and erect the AVGFs on site. Note that each AVGF has its own orientation of connections and be sure to use the correct material for each filter location.

Following erection, but before any further painting, the contractor shall perform the following tests:

Dye penetrant testing of critical welds

Vacuum box test of base plate welds

Fill test for water leaks and hold for a minimum of two hours

Touch up of all prime painted surfaces is required at welds and other marred surfaces. The touch up paint is to be Tnemec 20-1211 Red Pota-Pox Primer. Prior to applying touch up primer, prepare internal normally submerged parts per SSPC SP10 Near White Metal Blast Cleaning. Blasting of external parts to be per SSPC SP6, Commercial Blast Cleaning.

A finish paint system is to be included by the erector consisting of an intermediate and finish coat of AWWA approved epoxy compatible with the specified primer. The finished color is to be light gray. The finish paint system is to be applied to all interior and exterior surfaces of the AVGFs. The paint is to be applied per manufacturer's recommendations and shall be checked with a thickness gauge to ensure that the required dry film thickness is achieved within the range specified by the manufacturer.

Note: The design of the AVGFs is limiting to the interior space in Compartments "B" and "C" where the height is approximately 48" and 18" respectively. In addition, there are (96) 2" pipes obstructing work in these areas. Nevertheless, these areas are to be subject to the same paint application requirements as other areas of the AVGFs.

As each AVGF is erected and set in place install piping that is within the project scope (shown in solid lines on the Evoqua drawings). It will be necessary for contractor to support the large backwash piping that discharges into the sumps. These supports are to be fabricated and installed by the contractor in accordance with the attached drawing 157-35660. This includes the brackets to be welded to the backwash piping with gussets as shown.

For piping not in the project scope, it is the utility's intention to reuse large interconnecting piping and pipe supports. No erection work is required for this piping.

When fabrication, testing, and painting is complete, the contractor shall install all the strainers per Form 4938W and advise Evoqua that the unit is complete and ready for loading. The furnishing of filter media (sand) and its loading is by others.

Erecting Contractor's Quotation

Conformance to all drawings and specification provided as part of this request for quotation is required.

Contractor shall include in his quote a fabrication schedule with major milestones from mobilization through completion. After award, fabricator shall maintain updates to the schedule, prepare and submit weekly reports.

Work is to include compliance with all applicable local and state requirements.

Contractor shall include in his quote:

Removal of demolished scrap.

Installation of piping marked solid on Evoqua drawings (this piping is furnished by Evoqua).

Services of a crane, manlift, forklift, and scissor lift, as required.

Welding equipment and supplies.

Safety equipment, rigging and tools.

Personal protective equipment (PPE).

Temporary restroom facilities.

The cost (including expenses) of having two Engineers of Evoqua Water Technologies (Permutit) traveling from Union, NJ on site to inspect the work during at least two visits. Each visit will consist of two travel days and one work day for two individuals. Total Cost for these site visits would be \$21,600.00.

Berwin Dutton



Brunswick County is to include:

Furnishing and installing interconnecting piping (piping shown dashed or piping not shown on Evoqua drawings).

Repairs, if necessary, to foundations.

Electrical supply for small tools.



Kevin Guttmann