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ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

101 North Pine Street, Suite 410 • Spartanburg, SC 29302 • Phone 864-269-0890

## **ADDENDUM NO. 2**

### **BROAD RIVER WWTP IMPROVEMENTS**

For

### **GAFFNEY BOARD OF PUBLIC WORKS**

**SCIIP No. A-23-E002**

**KCI Project No. 412403030**

**Date: May 15, 2025**

**TO: ALL HOLDERS OF RECORD OF CONTRACT DOCUMENTS**

Acknowledge receipt of this addendum by inserting its number and date in the Bid Form. Failure to do so may subject the bidder to disqualification.

The following revisions and/or additions to the Drawings and Contract Documents are hereby made a part of same and shall be incorporated in the Work of the Contract the same as if originally included in the Construction Documents. This addendum modifies them as follows:

#### **Questions and Clarifications:**

1. Pre-Bid meeting minutes are attached with this addendum.
2. Where is the existing pump in the RAS building supposed to be relocated to.

**Answer: Sheet C28 of the plans has been revised designating which pump will be the existing relocated pump, and where it is being relocated.**

3. Where does the 10" DIP air supply line transition to SSTL?

**Answer: Sheet C37 of the plans has been revised to show where the piping material will transition.**

4. At the Providence Creek pump station, sheet C7 calls for a new pressure gauge assembly, but the previous three sheets call out the pressure gauge assemblies as being existing. Are we providing a new pressure gauge assembly/assemblies?

**Answer: Sheets C6 and C7 of the plans have been revised to show where the one new pressure gauge assembly will be located. The rest of the existing pressure gauge assemblies will remain as is.**

5. Will there be a bid form line item(s) for rock excavation? If not, how are we supposed to handle rock?

**Answer: All excavation for this project is “unclassified”, so any rock material encountered is the responsibility of the Contractor to remove.**

6. It appears the bid form numbering is off. It goes 1, 2, 2, 3 ,etc...

**Answer: The error in the bid form numbering has been revised. See the revised bid form that is included in this addendum.**

7. Does the soil/stone/sand material that will be removed from the abandoned drying bed area (where the new tank will be installed) need to be disposed of in an approved landfill facility that will accept sludge, or can it be disposed of at a normal Construction/Debris landfill?

**Answer: The plans and specifications have been revised so that the base bid price for the “Demolition of Ex. Sludge Drying Beds” will include removing these materials and stockpiling them in the area adjacent to the new tank location. Additionally, an alternate bid item has been added for hauling off and disposing of the stockpiled material in a Construction/Debris landfill. See the revised Bid Form and the revised Measurement and Payment (Section 01400) that are included with this addendum.**

8. What is your intent for the pipe supports in the RAS Pump Station? I don’t see anything called out. Some of the pipe looks like it sits about 7’ off the ground.

**Answer: The intent is to have concrete pier pipe supports (similar to the detail shown on sheet C8 of the plans). A pipe support detail has been added to Sheet C28.**

#### **Contract Documents and Specifications:**

**1. 00311 – Bid Form**

- A. Replace the Bid Form with the attached “Bid Form (Revised 5/15/2025)” that is included with this addendum.

**2. 01400 – Measurement and Payment**

- A. Replace the Measurement and Payment section with the attached “Measurement and Payment (Revised 5/15/2025)” that is included with this addendum.

**3. 11378 – Floating Surface Aerators**

- A. Revise paragraph 1.2.A by including Aquaturbo as an approved equal manufacturer for the 100 HP floating surface aerator.

#### **4. Section 13208 (Bolted Stainless Steel Storage Tank)**

- A. Revise paragraph 1.2.A. by including the following tank manufacturer as an approved equal to the referenced manufacturer American Structures, Inc.

- 1. Tank Connection of Parsons, Kansas

#### **Plans:**

##### **1. Sheet C2 (General Notes, Legend and Sheet Index)**

- A. Add Note 6 to the "Providence Pump Station General Notes". See the revised Sheet C2 which is attached to this addendum.

"6. Contractor shall be responsible for removing and disposing of any solids/debris/trash that has accumulated around the existing submersible pumps/bases. Contractor shall sandbag and/or bulkhead off the area as required to install new pumps and pump bases."

##### **2. Sheet C4 (Providence Creek Pump Station Demolition Plan & Section)**

- A. Add Note 3 to the "Notes". See the revised Sheet C4 which is attached to this addendum.

"3. Contractor shall be responsible for removing and disposing of any solids/debris/trash that has accumulated around the existing submersible pumps/bases. Contractor shall sandbag and/or bulkhead off the area as required to install new pumps and pump bases."

##### **3. Sheet C6 (Providence Creek Pump Station Plan & Section)**

- A. Added note to install one new pressure gauge assembly. See the revised Sheet C6 which is attached to this addendum.

##### **4. Sheet C7 (Providence Creek Pump Station Plan & Section)**

- A. Added note to install one new pressure gauge assembly. See the revised Sheet C7 which is attached to this addendum.

##### **5. Sheet C9 (Broad River WWTP Overall Site Plan)**

- A. Added note showing new stockpile area for material removed from the new tank excavation. See the revised Sheet C9 which is attached to this addendum.

**6. Sheet C14 (Broad River WWTP Grading Plan)**

- A. Added note showing new stockpile area for material removed from the new tank excavation. See the revised Sheet C14 which is attached to this addendum.
- B. Added clouded area to accompany Note 1. See the revised Sheet C14 which is attached to this addendum.

**7. Sheet C15 (Broad River WWTP Grading Plan)**

- A. Revise the scale from 1" = 20'-0" to 1" = 10'-0" for the site plan to match the graphic scale. See the revised Sheet C15 which is attached to this addendum.

**8. Sheet C28 (Exist. RAS Pump Station Phase 2 Renovation Plan)**

- A. Change the call out note for RAS Pump #1 to designate it as the existing pump that will be relocated. See the revised Sheet C28 which is attached to this addendum.
- B. Add the "Concrete Pipe Support Detail" to this plan sheet. See the revised Sheet C28 which is attached to this addendum.

**9. Sheet C37 (Sludge Holding Tank No. 2 Section & Details)**

- A. Piping revisions and clarifications for the 6" decant piping and 10" air supply piping. See the revised Sheet C37 which is attached to this addendum.

**End of Addendum No. 2**





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ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

106 Clair Drive • Piedmont, SC 29673 • Phone 864-269-0890

**PRE-BID CONFERENCE MINUTES**  
**Broad River WWTP Improvements**  
**FOR**  
**Gaffney BPW**  
May 8, 2025  
10:00 A.M.

**OWNER:** **Gaffney Board of Public Works (GBPW)**  
210 East Frederick St.  
Gaffney, SC 29342

**ENGINEER:** **KCI Technologies, Inc.**  
101 N. Pine St.  
Spartanburg, SC 29302  
(864) 269-0890  
Primary Contact: Clay M. Helms, P.E.  
Email: clay.helms@kci.com

- I. Welcome & Introduction
  - a. KCI Representative – Clay Helms
  - b. Gaffney BPW Representatives: Adam Ruppe
- II. Brief Project Overview
  - a. Providence Pump Station
  - b. RAS Pump Station
  - c. Sludge Tank
  - d. Aeration Basin Slide Gates
  - e. Electrical
- III. Discussion Items
  - a. Bid Date: May 20, 2025 at 2 PM at Gaffney BPW Administration Building
  - b. Bidders must be on the Official Plan Holder list for bid to be received. Register on Quest web site.
  - c. SCIIP funded project
    - Conformance with Davis Bacon Wage Rates will be required.
    - Signed SCIIP Certification Form includes language stating that you and your subs have paid employees prevailing wages as it relates to this project.
    - Wage Rates will be included in the addendum.
  - d. Preparation of Bid
    - See Paragraph 4 of Information to Bidders
    - Include items listed in attachments to bid
    - Must use Bid Form included in Contract Documents
    - Reference Section 01400 (Measurement and Payment) to understand what work each bid item encompasses.

e. Award of Bid

- See Paragraph 13 of Information to Bidders
- Will be awarded on Base Bid plus alternates within budget
- Contract will be awarded on the base bid plus alternatives that do not exceed the amount of funds available.

f. Completion Time of 365 calendar days

- Liquidated Damages \$1,000 per day
- The Notice to Proceed date for the project will be delayed as necessary to ensure that the Contractor has enough time to order the materials needed for the project.

g. Access to WWTP and Providence PS

- Broad River WWTP gates are opened from 7 AM to 5 PM Monday through Thursday. Arrangements can be made with BPW for work on Fridays and weekends if needed.
- Water Treatment Plant gate (same access point to Providence PS) remains closed but is manned 24 hours a day and they will buzz you in.
- Coordinate with GBPW for work outside those hours

h. SC DES Construction Permit

- The SC DES construction permit has been obtained for both Providence PS and BR WWTP.
- DES approval prior to placing any new equipment into service.

IV. Addendum No. 2

- Addendum 2 with Pre-Bid Meeting minutes will be issued by 5/13/25
- No questions will be accepted after 5 PM on 5-14-25
- Future addenda will also include any equipment suppliers that have been approved equal.

V. Additional Topics/Comments:

- Where will the existing pump that is to be relocated supposed to be installed? KCI will address with Addendum #2.
- Will the materials excavated from the new sludge tank area need to be disposed of at a landfill facility that accepts sludge? KCI will address with Addendum #2.
- Contractor will need to clean out area in the Providence EQ basin as required to install new pumps. KCI will address with Addendum #2.
- Where does the DIP air line transition to SSTL? KCI will address with Addendum #2.
- What is the estimated construction cost for the Project? It has been estimated to be approximately \$11,000,000.

VI. Adjourn

PRE-BID CONFERENCE FOR  
Broad River WWTP Improvements  
Gaffney Board of Public Works  
May 8, 2025 at 10:00 A.M.

NAME	COMPANY	EMAIL ADDRESS	PHONE NUMBER
Clay Helms	KCI Tech.	clay.helms@kci.com	864-289-0890
LUKUS ANDRES	LANGSTON	L ANDRES@LANGSTONCONSTR.COM	864-905-5980
Austin Laney	Cove Utility	alaney@coveutility.com	704-441-3601
Michael Carter	Craftin Fluid Management	Michael.gotts@craftinfluidmanagement.com	980-315-1354
Keidi Melengu	Sawcross Inc	keidi.m@sawcross.com	352-214-9820
Jim Roberts	Langston	jroberts@langstonconstr.com	864-276-1417
Benji Ledg	Hyals Brothers	Benji@hyalsbro.com	(864) 414-1155
Adam Ruppe	BPN	aruppe@gbpw.com	864-761-4158
Amy Howard	HE	""	

BID FORM  
(Revised 5/15/2025)

FOR

BROAD RIVER WWTP IMPROVEMENTS  
SCIIP PROJECT NO. A-23-E002  
GAFFNEY BOARD OF PUBLIC WORKS

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

KCI Project No: 412403030

**PROPOSAL OF** \_\_\_\_\_, doing  
business as a corporation / a partnership / an individual (Strike out inapplicable terms), with its principal office in the  
City of \_\_\_\_\_, County of \_\_\_\_\_, State of \_\_\_\_\_  
\_\_\_\_\_, (hereinafter called "Bidder").

TO: Gaffney Board of Public Works  
(hereinafter called "Owner"),

Gentlemen:

The Bidder, in compliance with your invitation for bids for the construction of "**BROAD RIVER WWTP IMPROVEMENTS**" having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project, including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies, and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in written "Notice to Proceed" of the Owner and to fully complete the project within three hundred and sixty (**365**) consecutive calendar days thereafter as stipulated in the specifications. Bidder further agrees to pay as liquidated damages the sum of **\$1,000.00** for each consecutive calendar day thereafter as hereinafter provided in Paragraph 19 of the General Conditions.

The drawings, specifications and addenda are complementary of each other. What is called for by one shall be as binding as if called for by all. If a conflict between any of the above is discovered by the contractor, the problem shall be referred to the Engineer as soon as possible for resolution by the Engineer. Should a conflict occur which is not resolved before bid time and/or is necessary to comply with mandatory requirements (i.e., codes, ordinances, etc.), it shall be the contractor's responsibility to price and bid the more expensive method.

Bidder acknowledges receipt of the following addendum:

No. _____	Dated _____	No. _____	Dated _____
No. _____	Dated _____	No. _____	Dated _____



Bidder agrees to perform all of the wastewater treatment plant improvements described in the specifications and shown on the plans for the following unit prices:

**BASE BID:**

Item No.	Description	Quantity	Unit	Unit Price	Total
<b>1.</b>	<b>Contractor Mobilization</b>	1	LS	(5% Max. Total Bid)	\$
<b>2.</b>	<b>Providence Pump Station:</b>				
a.	Demolition	1	LS	\$	\$
b.	New Submersible Pumps and Bases	3	EA	\$	\$
c.	Pump Control Panel and Level Control	1	LS	\$	\$
d.	Piping, Valves, and Appurtenances	1	LS	\$	\$
e.	Concrete Pads and Sidewalks	1	LS	\$	\$
f.	Miscellaneous Metals	1	LS	\$	\$
g.	Building Renovations	1	LS	\$	\$
h.	Bypass Pumping	1	LS	\$	\$
i.	Electrical	1	LS	\$	\$
j.	HVAC	1	LS	\$	\$
k.	SCADA/Instrumentation	1	LS	\$	\$
<b>3.</b>	<b>Broad River WWTP Site Work:</b>				
a.	Grading	1	LS	\$	\$
b.	Piping, Manholes, Valves and Appurtenances	1	LS	\$	\$
c.	Concrete Pads and Sidewalks	1	LS	\$	\$
d.	Asphalt Patch	500	LF	\$	\$
e.	Asphalt Overlay	1,000	SY	\$	\$
f.	Asphalt Milling	1,000	SY	\$	\$
g.	Supplemental Controlled Density Fill	20	CY	\$	\$
h.	Silt Fencing	400	LF	\$	\$
i.	Sediment Tubes	10	EA	\$	\$
j.	Erosion Control Blanket	2,000	SY	\$	\$
k.	Grassing	1	Acre	\$	\$

Item No.	Description	Quantity	Unit	Unit Price	Total
<b>4.</b>	<b>Broad River WWTP RAS/WAS Pump Station:</b>				
a.	Demolition	1	LS	\$	\$
b.	New Pumps	3	EA	\$	\$
c.	Relocate Existing Pump	1	EA	\$	\$
d.	Pump Control Panels	4	EA	\$	\$
e.	Piping, Valves and Appurtenances	1	LS	\$	\$
f.	Concrete Floors and Pads	1	LS	\$	\$
g.	Miscellaneous Metals	1	LS	\$	\$
h.	Flow Meters	4	EA	\$	\$
i.	Flowable Fill and Piping Encasement	270	CY	\$	\$
j.	Electrical	1	LS	\$	\$
k.	HVAC	1	LS	\$	\$
l.	Instrumentation	1	LS	\$	\$
<b>5.</b>	<b>Broad River WWTP Sludge Tank:</b>				
a.	Demolition of Ex. Sludge Drying Beds	1	LS	\$	\$
b.	Tank Sub-Grade Preparation and Base	1	LS	\$	\$
c.	Bolted SSTL Sludge Holding Tank	1	LS	\$	\$
d.	Coarse Bubble Diffuser System	1	LS	\$	\$
e.	Positive Displacement Blower	1	LS	\$	\$
f.	Air Piping, Valves, and Appurtenances	1	LS	\$	\$
g.	Decant Piping and Valves Assembly	1	LS	\$	\$
h.	Yard Piping, Valves, and Appurtenances	1	LS	\$	\$
i.	Miscellaneous Metals	1	LS	\$	\$
j.	Reinforced Concrete Sidewalk and Pads	1	LS	\$	\$
k.	Electrical	1	LS	\$	\$

Item No.	Description	Quantity	Unit	Unit Price	Total
<b>6.</b>	<b>Broad River WWTP Electrical Gear:</b>				
a.	Demolition of Existing Electrical Gear	1	LS	\$	\$
b.	Electrical	1	LS	\$	\$
c.	New Main Switchboard	1	EA	\$	\$
d.	New Generator Set and Transfer Switches	1	LS	\$	\$
e.	New Aluminum Canopy	1	EA	\$	\$
f.	Concrete Generator Pad, Equipment Pads, and Transformer Pad	1	LS	\$	\$
<b>TOTAL BASE BID:</b>					<b>\$</b>

**TOTAL BASE BID (Written Out):** \_\_\_\_\_

\_\_\_\_\_ **Dollars**

**and** \_\_\_\_\_ **Cents**

**ALTERNATE BID ITEMS:**

Item No.	Description	Quantity	Unit	Unit Price	Total
A1.	New SSTL Slide Gates in Aeration Basin	3	EA	\$	\$
A2.	Floating Surface Aerator and Associated Electrical	1	EA	\$	\$
A3.	Removal and Replacement of the Fixed Platform Aerator Starter	3	EA	\$	\$
A4.	Area Light for Fixed Aerator Platform	3	EA	\$	\$
A5.	Hauling and Disposal of Excavated Materials from New Tank Excavation	1	LS	\$	\$

Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.

The above unit prices shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

The Bidder declares that he understands that the quantities shown in the Proposal are subject to adjustment by either increase or decrease and that should the quantities of any of the items of the work be increased, the undersigned proposed to do the additional work at the unit prices stated herein, and should the quantities be decreased, he also understands that payment will be made on actual quantities at the unit price bid, and will make no claim for anticipated profits for any decrease in the quantities and that actual quantities will be determined upon completion of the work, at which time adjustment will be made to the contract amount by direct increase or decrease.

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

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 90 calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract attached within 10 days and deliver a Surety Bond or Bonds as required by Paragraph 30 of the General Conditions.

By submission of this bid, each bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, that this bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this bid, with any other bidder or with any competitor.

Attachments to Bid:

The following properly completed items are to be attached to the Bid:

1. Section 00350, Bid Bond
2. Section 00604, Non-Collusion Affidavit
3. Section 00808, SC Illegal Immigration Reform Act Contractor Certification

Respectfully submitted:

SEAL – (If bid is by a corporation)

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

\_\_\_\_\_  
Signature

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

\_\_\_\_\_  
Title

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

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

Telephone No. \_\_\_\_\_

Fax No. \_\_\_\_\_

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

**END OF SECTION**

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## **GENERAL**

This section shall be the basis for payment for all work proposed under this project and shall include all labor, materials, tools, equipment, transportation, overhead, profit, insurance, taxes and all other costs necessary to provide for a complete and proper installation and placement in service of the work. No additional compensation will be considered, except for work approved by the Owner as a change to the work as a bid.

### **1. CONTRACTOR MOBILIZATION:**

Mobilization shall be paid for at the lump sum amount established in the bid and shall include all costs associated with the cost of insurance; payment and performance bonds; the contractor's cost of moving personnel and equipment to the project site; contractor's facilities on site; project signs; and other incidentals incurred prior to beginning actual construction of the project.

Payment for the cost of mobilization shall be limited to a maximum of five (5%) percent of the total contract amount. The amount of mobilization as listed in the Bid shall not be reduced in determining the total Bid amount.

## **PROVIDENCE PUMP STATION:**

### **2. DEMOLITION (Providence Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for the existing Providence Pump Station and shall include all costs associated with the demolition as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Demolition, removal, and disposal and/or salvage of the existing pumps and pump controls that are indicated on the plans.
- Demolition, removal, and disposal of the existing piping, valves, piping insulation, and appurtenances that are indicated on the plans.
- Demolition, removal, and disposal of the existing electrical wiring, conduit, panels, and controls as indicated on the plans.
- Demolition, removal, and disposal of the existing HVAC fans, louvers, panels, and controls as indicated on the plans.
- Demolition, removal, and disposal of the concrete floor sections, asphalt pavement, and concrete piping supports.
- Removal and proper disposal of construction debris and unsuitable materials.
- Clean-up of the construction site.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

### **3. NEW SUBMERSIBLE PUMPS (Providence Pump Station):**

Work performed under this bid item shall be paid for at the unit price per new pump as established in the bid for the pump station and shall include all costs associated with providing and installing the 3 new submersible pumps at the new pump station as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying pump station dimensions in the field.
- Daily clean-up of the construction site.
- Providing and installing the new pumps guide rails, bases, and associated accessories.
- 316 SSTL anchor bolts.
- Grouting the pump bases inside the existing EQ basin.
- Pipe supports.
- Coordinating the Equipment start-up with the supplier.

- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

#### 4. PUMP CONTROL PANEL AND LEVEL CONTROL (Providence Pump Station):

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for the pump station and shall include all costs associated with installing the pump control panels, level probe, and floats at the pump station as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Providing and installing the new pump control panel(s), level probe, floats, and associated accessories.
- Providing and installing the supports, anchors, wiring, conduit, junction boxes, disconnect panels, strain relief, and other appurtenances as shown on the plans and specified.
- Coordinating the equipment start-up with the supplier.
- Coordination with Owner SCADA/monitoring system provider.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

#### 5. PIPING, VALVES, AND APPURTENANCES (Providence Pump Station):

Work performed under this bid item shall be paid for at the lump sum price as established in the bid and shall include all costs associated with providing and installing the piping, valves, and appurtenances as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying piping dimensions in the field.
- Daily clean-up of the construction site.
- Unclassified excavation and properly compacted backfill.
- Removal and disposal of unsuitable materials.
- Providing and installing select backfill material.
- Pipe bedding as required.
- PVC pipe, Ductile Iron pipe (with Protecto 401 interior coating), and fittings as specified.
- Pipe insulation with aluminum jacket where indicated on the plans.
- Pipe restraint systems and thrust blocking.
- Couplings.
- Locate wire.
- Providing and installing all valves, geared operators, floor stands, valve boxes and accessories as shown on the plans and specifications.
- Providing and installing all DI fittings (both flanged and MJ). Interior of all fittings shall be Procto 401 coated.
- Bypass pumping connection.
- Pipe supports.
- Painting all exposed piping, fittings, valves, actuators/operators, supports, and floorstands. This includes all the piping inside the EQ Basin.
- Pressure gauges and associated taps, SSTL piping, and ball valves.
- Pipe installation and jointing of pipe.
- Pressure testing of piping.
- Dewatering of trench excavation.
- General surface restoration of disturbed areas of construction.
- Temporary and permanent grassing.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**6. CONCRETE PADS AND SIDEWALKS (Providence Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price for the installation of the poured in place concrete pads, foundations, and sidewalks and shall include all costs associated with providing the concrete as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Unclassified excavation and properly compacted backfill.
- Providing and installing the poured-in-place concrete.
- Steel, wire, and fiber reinforcement as specified and required.
- Installation and removal of forms.
- Stone bedding where shown on the plans and details.
- Concrete finishing and sealants.
- Installation of control/expansion joints and accessories.
- Preparation of concrete cylinders by an approved testing company as specified.
- General surface restoration of disturbed areas of construction.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**7. MISCELLANEOUS METALS (Providence Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price per each pump station as established in the bid for the various pump stations and shall include all costs associated with miscellaneous metals at the pump stations as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Aluminum Canopy over the exterior electrical panels located on the side of the control building.
- Painting all exposed ferrous surfaces that is not included in the piping and building renovation bid items.
- All anchors, bolts, straps, hangers, stainless steel chains, unistrut, etc. not specifically covered by other bid items.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**8. BUILDING RENOVATIONS (Providence Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for the existing pump station building and shall include all costs associated with the renovations inside the building as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Providing and installing new brick/block masonry in the existing fan and louver openings.
- Closing in the existing wall opening where the exhaust fan was removed. This will include the masonry, insulation, framing, sheathing and trim.
- All caulking associated with sealing the interior and exterior wall openings and penetrations.
- Painting the interior walls of the control building.
- Clean-up of the construction site.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**9. BYPASS PUMPING (Providence Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid and shall include all costs associated with bypass pumping at the pump station as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:



- Providing, installing, operating/maintaining the bypass pumping systems as required to keep the pump station in service during the construction of the improvements.
- Providing personnel and staff to operate and maintain the bypass pumping system.
- Providing a monitoring system for the by-pass pumping operation which will alert both the Contractor and Owner.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**10. ELECTRICAL (Providence Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for the pump station and shall include all costs associated with new electrical systems installed at the pump station as shown on the plans and described in the specifications. The lump sum prices shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying existing electrical systems in the field.
- Unclassified excavation and properly compacted backfill.
- Providing and installing select backfill material.
- Providing and installing the electrical equipment, conduit/wiring, panels, racks/poles, and associated equipment.
- Labeling of panels.
- Hazard/Danger warning signs and labels.
- Equipment start-up and warranties.
- Coordination with electrical power provider (Gaffney BPW).
- Coordination with Owner SCADA/monitoring system provider.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**11. HVAC (Providence Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for the pump station and shall include all costs associated with the new HVAC system installed at the pump station as shown on the plans and described in the specifications. The lump sum prices shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying existing electrical systems in the field.
- Providing and installing the new mini-split HVAC system.
- Providing and installing the coolant lines (including insulation), drain lines, and electrical wiring/conduit for the new HVAC system.
- Equipment start-up and warranties.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**12. SCADA/INSTRUMENTATION (Providence Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid and shall include all costs associated with new RTU/Monitoring systems installed at the pump station as shown on the plans and described in the specifications. The lump sum prices shall include (but not be limited to) the following items:

- Providing and installing the RTU/Monitoring equipment, conduit/wiring, panels, racks/poles, and associated equipment for the new pump stations.
- Modifications/Additions to the existing RTU/Monitoring equipment and associated equipment.
- Equipment start-up and warranties.
- Coordination with Owner SCADA/monitoring system provider.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**BROAD RIVER WWTP SITE WORK:****13. GRADING (WWTP Site):**

Work performed under this bid item shall be paid for at the lump sum price for the site grading and shall include all costs associated with grading the WWTP site as shown on the plans and described in the specifications. The lump sum pricing shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications.
- Unclassified excavation and properly compacted backfill.
- Removal and disposal of unsuitable materials.
- Providing and installing select fill material.
- Removal of excess material.
- General surface restoration of disturbed areas of construction.
- Temporary and permanent grassing.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**14. PIPING, MANHOLES, VALVES, AND APPURTENANCES (WWTP Site):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for the WWTP site and shall include all costs associated with providing and installing the piping, manholes, valves, and appurtenances at the as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications.
- Verifying piping dimensions in the field.
- Daily clean-up of the construction site.
- Unclassified excavation and properly compacted backfill.
- Removal and disposal of unsuitable materials.
- Providing and installing select backfill material.
- Pipe and manhole bedding as required.
- PVC pipe, Ductile Iron pipe (with Protecto 401 interior coating), HDPE pipe, and fittings as specified. The DIP air lines shall have no interior lining.
- Pre-Cast Concrete Manholes, including frame/cover, and all accessories.
- Providing and installing all plugs and thrust blocking on abandoned piping.
- Pipe restraint systems and thrust blocking.
- Couplings.
- Locate wire.
- Providing and installing all valves, geared operators, floor stands, extended bonnets, valve boxes and accessories as shown on the plans and specifications.
- Providing and installing all DI fittings (both flanged and MJ). Interior of all fittings shall be Procto 401 coated (except for air lines).
- Yard hydrants.
- Pipe supports.
- Painting all exposed piping, fittings, valves, actuators/operators, supports, and floorstands.
- Pressure gauges and associated taps, SSTL piping, and ball valves.
- Pipe installation and jointing of pipe.
- Pressure testing of piping.
- Air and mandrel testing of the gravity sewer lines.
- Vacuum testing of manholes.
- Dewatering of trench excavation.
- General surface restoration of disturbed areas of construction.
- Temporary and permanent grassing.

- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**15. CONCRETE PADS AND SIDEWALKS (WWTP Site):**

Work performed under this bid item shall be paid for at the lump sum price for the installation of the poured in place concrete pads and sidewalks and shall include all costs associated with providing the concrete as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Unclassified excavation and properly compacted backfill.
- Providing and installing the poured-in-place concrete.
- Steel, wire, and fiber reinforcement as specified and required.
- Installation and removal of forms.
- Stone bedding where shown on the plans and details.
- Concrete finishing and sealants.
- Installation of control/expansion joints and accessories.
- Preparation of concrete cylinders by an approved testing company as specified.
- General surface restoration of disturbed areas of construction.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**16. PAVEMENT REPLACEMENT (WWTP Site):**

Pavement replacement shall be paid for at the unit price per linear foot for each type of pavement and shall include all work to saw, cut, and remove existing pavement, excavation, furnish and install stone base and new pavement, tacking, metal plating, compaction, removal of debris, cleanup, and all other work required to replace pavement in accordance with the drawings and specifications.

All saw cuts must be perpendicular or parallel to the water and/or sewer line or paved area. No jagged or uneven cuts will be acceptable. Measurement of pavement areas shall be performed by the Engineer and the Contractor.

**A. Asphalt Patch (Trench Line):**

1. Length will be measured along center line of the utility from one end to the other within the area to be repaved.
2. No measurement of width will be made.
3. Payment will be made at the unit price per linear foot stated in the Bid Form.
4. The unit price shall include the installation and compaction of backfill material (including the crushed stone), maintaining the crushed stone until final pavement replacement can be made, excavating the stone, installing the new asphalt patch.
5. The 8 inches of compacted crushed stone base material.
6. 4 inches of asphalt surface patch.

**B. Asphalt Overlay:**

1. Length will be measured from end to end of resurfaced area.
2. Width will be measured as average width.
3. Overlay shall be 1.5 inches deep (minimum).
4. Area will be determined from length and width measurements.
5. Payment will be made at the unit price per square yard as stated in the Bid Form.

**C. Asphalt Milling:**

1. Length will be measured from end to end of milled area.

2. Width will be measured as average width.
3. The depth of the milling shall average 1.5 inches.
4. Area will be determined from length and width measurements.
5. Payment will be made at the unit price per square yard as stated in the Bid Form.

NOTE: The Engineer shall determine the locations where the milling shall be done. No pavement will be made for milling without prior authorization from the Engineer.

D. Supplemental Controlled Density Fill:

Payment for supplemental controlled density fill will be paid for at the unit price per cubic yard as stated in the Bid Form and it shall include installation of traffic plates and meeting all requirements of the SCDOT.

- a. Concrete fill for Asphalt Replacement is not included in this pay item. Costs for Concrete fill used in the Asphalt Replacement shall be included in the unit price per linear foot stated in the Bid Form.
- b. The Engineer shall determine the locations where the controlled density fill will be installed. No payment will be made without authorization for the use of supplemental controlled density fill from the Engineer.

**17. EROSION & SEDIMENT CONTROL FACILITIES (WWTP Site):**

- A. Silt fencing shall be paid for at the unit price per linear foot established in the bid and shall include all costs associated with providing, installing, maintaining, and removal of the silt fence in accordance with the contract drawings and specifications or as directed by the Engineer.
- B. Sediment tubes shall be paid for at the unit price per each established in the bid and shall include all costs associated with providing, installing, maintaining, and removal of the protection devices as required by the contract specifications and drawings. The Engineer shall confirm the location and type of protective device required.
- C. Erosion Control Blanket (ECB) shall be paid for at the unit price per square yard established in the bid and shall include all costs associated with providing, installing, maintaining the ECB in accordance with the contract drawings and specifications or as directed by the Engineer.

**18. GRASSING (WWTP Site):**

Work performed under this bid item shall be paid for at the unit price per acre for grassing sludge application areas at the WWTP and shall include all costs associated as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Seeding and sowing the grass seed mixture at the specified application rates.
- General surface restoration of disturbed areas of construction.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**BROAD RIVER WWTP RAS/WAS PUMP STATION:****19. DEMOLITION (WWTP RAS Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for the existing WWTP RAS pump station and shall include all costs associated with the demolition as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Demolition, removal, and disposal and/or salvage of the existing pumps and pump controls that are indicated on the plans.
- Demolition, removal, and disposal of the existing piping, valves, piping, and appurtenances at the RAS pump station and surrounding areas that are indicated on the plans.
- Demolition, removal, and disposal of the existing piping, valves, and appurtenances at the three clarifier sludge withdrawal boxes that are indicated on the plans.
- Demolition, removal, and disposal of the existing electrical wiring, conduit, panels, and controls as indicated on the plans.
- Demolition, removal, and disposal of the existing HVAC fans, louvers, panels, and controls as indicated on the plans.
- Demolition, removal, and disposal of the concrete floor sections, asphalt pavement, wall sections, and concrete piping supports at the RAS pump station.
- Demolition, removal, and disposal of the concrete wall sections, grating, weir gates, and appurtenances at the three clarifier sludge withdrawal boxes.
- Pumping out the debris, solids, and materials from the RAS wetwell and removing/disposing of them at an approved facility.
- Pressing washing and cleaning out the interior of the RAS wetwell prior to its abandoning.
- Plugging all the pipes (entering the wetwell) with non-shrink hydraulic grout.
- Removal and proper disposal of construction debris and unsuitable materials.
- Clean-up of the construction site.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**20. NEW PUMPS (WWTP RAS Pump Station):**

Work performed under this bid item shall be paid for at the unit price for each pump as established in the bid for the pump station and shall include all costs associated with providing and installing the 3 new pumps as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying pump station dimensions in the field.
- Daily clean-up of the construction site.
- Providing and installing the new pumps, bases, motors, and associated accessories.
- Pressure Gauge Kits and Drain Kit assemblies for each pump.
- 316 SSTL anchor bolts.
- Grouting the pump bases.
- Pipe supports.
- Coordinating the Equipment start-up with the supplier.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**21. RELOCATE EXISTING PUMP (WWTP RAS Pump Station):**

Work performed under this bid item shall be paid for at the unit price as established in the bid for the pump station and shall include all costs associated with removing and installing the existing RAS pump as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying pump station dimensions in the field.

- Daily clean-up of the construction site.
- Installing the existing pump, base, motors, and associated accessories.
- 316 SSTL anchor bolts.
- Grouting the pump bases.
- Providing and installing new Pressure Gauge Kit.
- Pipe supports.
- Coordinating the Equipment start-up with the supplier.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

## 22. PUMP CONTROL PANELS (WWTP RAS Pump Station):

Work performed under this bid item shall be paid for at the unit price per pump control panel as established in the bid for the pump station and shall include all costs associated with installing the pump control panels at the pump station as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- Providing and installing the new pump control panels and associated accessories.
- Providing and installing the supports, anchors, wiring, conduit, junction boxes, disconnect panels, and other appurtenances as shown on the plans and specified.
- Coordinating the equipment start-up with the supplier.
- Coordination with Owner SCADA/monitoring system provider.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

## 23. PIPING, VALVES, AND APPURTENANCES (WWTP RAS Pump Station):

Work performed under this bid item shall be paid for at the lump sum price at the RAS pump station and the sludge piping connections for the three (3) clarifiers as established in the bid and shall include all costs associated with providing and installing the piping, valves, and appurtenances as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying piping dimensions in the field.
- Daily clean-up of the construction site.
- Unclassified excavation and properly compacted backfill.
- Removal and disposal of unsuitable materials.
- Providing and installing select backfill material.
- Pipe bedding as required.
- PVC pipe, Ductile Iron pipe (with Protecto 401 interior coating), and fittings as specified.
- Pipe restraint systems and thrust blocking.
- Couplings.
- Locate wire.
- Providing and installing all valves, geared operators, chain operators, floor stands, valve boxes and accessories as shown on the plans and specifications.
- Providing and installing all DI fittings (both flanged and MJ). Interior of all fittings shall be Procto 401 coated.
- Pipe supports.
- Painting all exposed piping, fittings, valves, actuators/operators, supports, and floorstands. This includes all the exposed piping at the clarifier sludge piping connections.
- Pressure gauges and associated taps
- SSTL air bleed piping, and ball valves.
- Pipe installation and jointing of pipe.
- Pressure testing of piping.
- Dewatering of trench excavation.

- General surface restoration of disturbed areas of construction.
- Temporary and permanent grassing.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**24. CONCRETE FLOORS AND PADS (WWTP RAS Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price for the installation of the poured in place concrete pads and floors and shall include all costs associated with providing the concrete as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Unclassified excavation and properly compacted backfill.
- Providing and installing the poured-in-place concrete.
- Steel, wire, and fiber reinforcement as specified and required.
- Installation and removal of forms.
- Stone bedding where shown on the plans and details.
- Concrete finishing and sealants.
- Installation of control/expansion joints and accessories.
- Preparation of concrete cylinders by an approved testing company as specified.
- General surface restoration of disturbed areas of construction.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**25. MISCELLANEOUS METALS (WWTP RAS Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price per each pump station as established in the bid for the WWTP RAS pump station and shall include all costs associated with miscellaneous metals as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Painting all exposed ferrous surfaces that is not included in the piping bid item.
- All anchors, bolts, straps, hangers, stainless steel chains, unistrut, etc. not specifically covered by other bid items.
- Pipe supports and hangers.
- SSTL drain grating and frames.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**26. FLOW METERS (WWTP RAS Pump Station):**

Work performed under this bid item shall be paid for at the unit price for each flow meter installed at the RAS pump station and shall include all costs associated with providing and installing the units as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- Providing and installing the flow meter, grounding rings, and associated piping and accessories.
- Piping and coupling connections.
- Providing and installing the electrical equipment, transmitter, display/control unit, wiring, panels, and associated equipment.
- Equipment start-up and warranties.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**27. FLOWABLE FILL AND PIPING ENCASEMENT (WWTP RAS Pump Station):**

Work performed under this bid item shall be paid for at the unit price per cubic yard as established in the bid for the existing WWTP RAS pump station building and shall include all costs associated as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- Providing and installing the flowable fill inside the abandoned wetwell (under the RAS building).
- Providing and installing the concrete encasement around the piping which will be installed under the RAS building slab and foundations.
- Clean-up of the construction site.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**28. ELECTRICAL (WWTP RAS Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for the RAS pump station and shall include all costs associated with new electrical systems installed at the RAS pump station as shown on the plans and described in the specifications. The lump sum prices shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying existing electrical systems in the field.
- Unclassified excavation and properly compacted backfill.
- Providing and installing select backfill material.
- Providing and installing the electrical equipment, conduit/wiring, panels, racks/poles, and associated equipment.
- Labeling of panels.
- Hazard/Danger warning signs and labels.
- Equipment start-up and warranties.
- Coordination with Owner SCADA/monitoring system provider.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**29. HVAC (WWTP RAS Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for the RAS pump station and shall include all costs associated with the new HVAC systems installed at the pump station as shown on the plans and described in the specifications. The lump sum prices shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying existing electrical systems in the field.
- Providing and installing the new exhaust fan, heaters, ductus, and associated accessories.
- Equipment start-up and warranties.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**30. INSTRUMENTATION (WWTP RAS Pump Station):**

Work performed under this bid item shall be paid for at the lump sum price for the RAS pump station as established in the bid and shall include all costs associated with new RTU/Monitoring systems installed at the pump station as shown on the plans and described in the specifications. The lump sum prices shall include (but not be limited to) the following items:

- Providing and installing the RTU/Monitoring equipment, conduit/wiring, panels, racks/poles, and associated equipment for the new pump stations.
- Modifications/Additions to the existing RTU/Monitoring equipment and associated equipment.



- Equipment start-up and warranties.
- Coordination with Owner SCADA/monitoring system provider.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

### **BROAD RIVER WWTP SLUDGE TANK:**

#### **31. DEMOLITION OF EXISTING SLUDGE DRYING BEDS (Sludge Tank):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid form for the demolition of the existing sludge drying beds as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Demolition, removal, and disposal of the existing piping that is indicated on the plans.
- Demolition, removal, and disposal of the existing concrete structures.
- Demolition, removal, and disposal of the existing electrical wiring, conduit, panels, and controls as indicated on the plans.
- Excavation, removal, and proper stockpiling of the unsuitable materials, dirt/soil, sand aggregate, and stone aggregate located in and under the existing sludge drying beds. This includes neatly stockpiling the materials in the area adjacent to the new sludge holding tank site.
- Clean-up of the construction site.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

#### **32. TANK SUB-GRADE PREPARTION AND BASE (Sludge Tank):**

Work performed under this bid item shall be paid for at the lump sum price for the site grading for the sludge holding tank, associated equipment area, and surrounding areas disturbed by the demolition of the existing sludge drying beds. It shall include all costs associated with grading the site as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications.
- Unclassified excavation and properly compacted backfill.
- Providing and installing select fill material as required to meet the final grades shown on the plans.
- General surface restoration of disturbed areas of construction.
- Temporary and permanent grassing.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

#### **33. BOLTED STAINLESS STEEL (SSTL) SLUDGE HOLDING TANK (Sludge Tank):**

Work performed under this bid item shall be paid for at the lump sum price for providing and installing of each bolted stainless steel sludge holding tank and shall include all costs associated with providing and installing the tank as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Unclassified excavation and properly compacted backfill.
- Removal and disposal of unsuitable materials.
- Reinforced concrete foundation for the tank.
- Reinforced concrete sloped floor and sump as shown on the plans.
- Providing and installing the bolted stainless-steel tank including the manway and pipe

- penetrations as detailed in the plans and specifications.
- Providing and installing the access ladder and catwalk/platform as detailed in the plans and specifications.
- Providing and installing the pipe supports as detailed in the plans and specifications.
- Hydraulic testing.
- Grouting joints, etc. with non-shrink grout.
- General surface restoration of disturbed areas of construction.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**34. COARSE BUBBLE DIFFUSER SYSTEM (Sludge Tank):**

Work performed under this bid item shall be paid for at the lump sum price for the coarse bubble diffuser system for the sludge holding tank and shall include all costs associated with providing and installing the units/systems as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Providing and installing the coarse bubble diffuser system and associated accessories.
- 316 stainless steel anchor bolts as required to fasten units to the concrete floor.
- Air piping, diffusers, and coupling connections.
- Pipe supports.
- Equipment start-up and warranties.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**35. POSITIVE DISPLACEMENT BLOWER (Sludge Tank):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for each positive displacement (PD) blower assembly and shall include all costs associated with installing the PD Blower and piping/valves as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying pump station dimensions in the field.
- Daily clean-up of the construction site.
- 316 stainless steel anchor bolts as required.
- Providing and installing the PD blower, and associated accessories required by the manufacturer and as detailed on the plans and specifications.
- Inlet and outlet piping, flanged fittings and couplings.
- Butterfly, Pressure Relief, and Check Valves.
- Pressure gauges, temperature gauges, and associated SSTL piping and ball valves.
- Pipe supports.
- Painting the exposed piping and valves.
- Providing and installing the electrical equipment, wiring, panels, and associated equipment.
- Equipment start-up and warranties.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**36. AIR PIPING, VALVES, AND APPURTENANCES (Sludge Tank):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for each air piping system associated with the sludge holding tank and shall include all costs associated with providing and installing the piping, valves, connections, supports, and appurtenances from the termination of the existing blower discharge piping header to the connection with the coarse bubble diffuser piping inside the tank as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying piping dimensions in the field.
- Providing and installing the stainless-steel schedule 10 pipe and fittings as specified.
- Providing and installing unlined ductile iron piping and fittings as specified.
- Couplings.
- Connections to the blower discharge piping header and coarse bubble diffuser piping.
- Providing and installing all butterfly valves and handwheel actuators.
- Pipe supports.
- Pressure Gauges.
- Pressure testing of piping.
- Painting.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**37. DECANT PIPING AND VALVES ASSEMBLY (Sludge Tank):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for each decant piping and valve assembly associated with the sludge holding tank(s) and shall include all costs associated with providing and installing the piping, valves, connections, and appurtenances as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying piping dimensions in the field.
- Pipe bedding as required.
- STTL Schedule 10 decant piping header and fittings as specified.
- Pipe insulation with aluminum jacket.
- Ductile Iron piping (with Protecto 401 interior coating), and fittings as specified.
- Concrete blocking and support for decant piping header.
- Couplings and/or flange adaptors.
- Painting DI Pipe.
- Piping connections to the tank flanges and yard piping.
- Providing and installing all plug valves, actuators, chains, and accessories.
- SSTL Uni-Strut racks for fastening the actuator chains.
- Pipe installation and joining of pipe and valves.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**38. YARD PIPING, VALVES, AND APPURTENANCES (Sludge Tank):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for each yard piping systems associated with the sludge holding tank, forcemains, drains and water lines, and shall include all costs associated with providing and installing the piping, valves, connections, and appurtenances as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying piping dimensions in the field.
- Daily clean-up of the construction site.
- Unclassified excavation and properly compacted backfill.
- Removal and disposal of unsuitable materials.
- Providing and installing select backfill material.
- Pipe bedding as required.
- PVC pipe, Ductile Iron pipe (with Protecto 401 interior coating), and fittings as specified.

- Providing and installing all plugs and thrust blocking on abandoned piping.
- Pipe restraint systems.
- Couplings.
- Piping connections to the existing yard piping and manholes (including the existing sludge loading station).
- Providing and installing all valves, actuators and appurtenances.
- Post hydrants.
- Pipe supports.
- Pipe installation and jointing of pipe.
- Painting the exposed piping and valves (including piping in vaults).
- Pressure testing of piping.
- Dewatering of trench excavation.
- General surface restoration of disturbed areas of construction.
- Temporary and permanent grassing.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

### **39. MISCELLANEOUS METALS (Sludge Tank):**

Work performed under this bid item shall be paid for at the lump sum price for the installation of each miscellaneous metals system as established in the bid and shall include all costs associated with miscellaneous metals as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Providing and installing the piping supports (as indicated on the plans).
- Pipe Bollards.
- All anchors, bolts, straps, hangers, unistrut, etc. not specifically covered by other bid items.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

### **40. REINFORCED CONCRETE SIDEWALKS AND PADS (Sludge Tank):**

Work performed under this bid item shall be paid for at the unit price for the installation of the each poured in place reinforced concrete pads, foundations, and sidewalks associated with the project and shall include all costs associated with providing the concrete as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Unclassified excavation and properly compacted backfill.
- Providing and installing the poured-in-place concrete.
- Steel, wire, and fiber reinforcement as specified and required.
- Installation and removal of forms.
- Stone bedding where shown on the plans and details.
- Concrete finishing and sealants.
- Installation of control/expansion joints and accessories.
- Preparation of concrete cylinders by an approved testing company as specified.
- General surface restoration of disturbed areas of construction.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

### **41. ELECTRICAL (Sludge Tank):**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid and shall include all costs associated with the electrical systems for the sludge tank and blower as shown on the plans and described in

the specifications. The lump sum price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying existing electrical systems in the field.
- Unclassified excavation and properly compacted backfill.
- Providing and installing select backfill material.
- Providing and installing the electrical equipment, blower starter, conduit/wiring, panels, racks/poles, and associated equipment.
- Labeling of panels.
- Hazard/Danger warning signs and labels.
- Equipment start-up and warranties.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

### **BROAD RIVER WWTP ELECTRICAL GEAR:**

#### **42. DEMOLITION OF EXISTING ELECTRICAL GEAR:**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid for the existing WWTP and shall include all costs associated with the demolition as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Demolition, removal, and disposal of the existing electrical MCC's, switch gear, wiring, conduit, panels, and controls as indicated on the plans.
- Disconnecting the existing generator and transfer switches.
- Demolition, removal, and disposal of the concrete floor sections, asphalt pavement, and concrete structures as required to install new facilities.
- Removal and proper disposal of construction debris and unsuitable materials.
- Removal and delivery to the Owner the existing gear and panels that they determine to retain.
- Clean-up of the construction site.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

#### **43. ELECTRICAL:**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid and shall include all costs associated with each total electrical systems for the WWTP gear as shown on the plans and described in the specifications. The lump price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying existing electrical systems in the field.
- Unclassified excavation and properly compacted backfill.
- Providing and installing select backfill material.
- Providing and installing the electrical equipment, conduit/wiring, panels, racks/poles, junction boxes, transformers, duct banks, and associated equipment.
- Labeling of panels.
- Hazard/Danger warning signs and labels.
- Equipment start-up and warranties.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**Note: The electrical costs associated with the Providence Pump Station, WWTP RAS building, sludge tank and floating aerator shall be paid for by the separate electrical bid items indicated on the bid form for those entities and should not be included in this bid item cost.**

**44. NEW MAIN SWITCHBOARD:**

Work performed under this bid item shall be paid for at the unit price as established in the bid and shall include all costs associated with new main switch board for the WWTP as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying existing electrical systems in the field.
- Unclassified excavation and properly compacted backfill.
- Providing and installing select backfill material.
- Providing and installing the new main switchboard and associated equipment.
- Termination/connection of all wiring.
- Labeling of panels.
- Hazard/Danger warning signs and labels.
- Equipment start-up and warranties.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**45. NEW GENERATOR SET AND TRANSFER SWITCHES:**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid and shall include all costs associated with installing the permanent engine generator system at the WWTP as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying pump station dimensions in the field.
- Providing and installing the engine generator set, automatic transfer switch (ATS), manual transfer switch (MTS), and associated accessories.
- 316 SSTL anchor bolts.
- Providing and installing the electrical wiring, conduit, panels, and associated equipment.
- Making the wiring connections and terminations required.
- Installation of the unit(s) on the concrete base pad and anchors for engine generator.
- Providing and installing the platform, stairs, and handrailing, etc. for access to the generator.
- Completely filling fuel tank with diesel fuel.
- Termination and connection of all control/signal wiring.
- Start-up and testing of the generator system.
- Training and O&M Manuals.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**46. ALUMINUM CANOPY:**

Work performed under this bid item shall be paid for at the unit price as established in the bid for each aluminum canopy and shall include all costs associated with installing the canopy as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications.
- Providing and installing the aluminum canopy and associated accessories required by the manufacturer and as detailed on the plans and specifications.
- Providing and installing the back wall panels.
- SSTL anchor bolts and/or concrete footings as required.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**47. CONCRETE GENERATOR PAD, EQUIPMENT PADS, AND TRANSFORMER PAD:**

Work performed under this bid item shall be paid for at the lump sum price for the installation of the poured in

place concrete pads, foundations, and sidewalks for the generator, main switchgear, and transformer pad and shall include all costs associated with providing the concrete as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Unclassified excavation and properly compacted backfill.
- Providing and installing the poured-in-place concrete.
- Steel, wire, and fiber reinforcement as specified and required.
- Installation and removal of forms.
- Stone bedding where shown on the plans and details.
- Concrete finishing and sealants.
- Installation of control/expansion joints and accessories.
- General surface restoration of disturbed areas of construction.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

### **Alternate Bid Items:**

#### **A1. NEW SSTL SLIDE GATES IN AERATION BASIN:**

Work performed under this bid item shall be paid for at the unit price per each slide gate established in the bid and shall include all costs associated with installing the unit as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Demolition/removal of the existing sluice gates and associated brackets and accessories.
- Providing and installing the new SSTL slide gates, brackets, guides, and accessories in the existing aeration basin outlet structure.
- Providing and installing the floor stands and handwheels/cranks as specified on the plans and specifications.
- SSTL bolts and hardware as required.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

#### **A2. FLOATING SURFACE AERATOR AND ASSOCIATED ELECTRICAL:**

Work performed under this bid item shall be paid for at the unit price per each floating surface aerator and associated electrical work installed as established in the bid and shall include all costs associated with installing the unit as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Providing and installing the floating surface aerator and associated electrical cable.
- Providing and installing the starter panel and associated electrical equipment.
- Providing and installing the required SSTL mooring cables and hardware to connect to the existing mooring posts.
- SSTL bolts and hardware as required.
- Providing and installing the electrical equipment, wiring, panels, and associated equipment.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**A3. REMOVAL AND REPLACEMENT OF THE EXISTING FIXED PLATFORM AERATOR STARTER:**

Work performed under this bid item shall be paid for at the unit price per each fixed aerator as established in the bid and shall include all costs associated with installing the unit as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Demolition/removal of the existing starters and accessories.
- Providing and installing the floating surface aerator starter and associated electrical wiring.
- SSTL bolts and hardware as required.
- Providing and installing the electrical equipment, wiring, panels, and associated equipment.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**A4. AREA LIGHT FOR FIXED AERATOR PLATFORM:**

Work performed under this bid item shall be paid for at the unit price per each area light as established in the bid and shall include all costs associated with installing the unit as shown on the plans and described in the specifications. The unit price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Demolition/removal of the lights and accessories.
- Providing and installing the new area light and associated accessories
- SSTL bolts and hardware as required.
- Providing and installing the electrical equipment, wiring, panels, and associated equipment.
- Other work as required for a complete and proper installation and compliance with the Plans and Contract Documents/Specifications.

**A5. HAULING AND DISPOSAL OF EXCAVATED MATERIALS FROM THE NEW TANK EXCAVATION:**

Work performed under this bid item shall be paid for at the lump sum price as established in the bid and shall include all costs associated with removing/hauling and disposal of the materials excavated from the new tank area as shown on the plans and described in the specifications. The lump sum price shall include (but not be limited to) the following items:

- Field investigation work as outlined on the Contract Drawings and in the Specifications. Verifying dimensions in the field.
- Removal and proper disposal of the unsuitable materials, dirt/soil, sand and stone aggregate in a Construction and Debris (C&D) landfill facility. The cost of the removal and disposal (including all fees from the landfill facility) will be the responsibility of the Contractor. The Owner will provide the necessary sampling/test data for the materials (that may be required by the landfill facility). Additionally, the Contractor shall be responsible for completing all application forms, etc. that may be required by the landfill facility.
- Other work as required for a complete and proper compliance with the Plans and Contract Documents/Specifications.

**END OF SECTION**



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## SITE-SPECIFIC CONSTRUCTION NOTES

6. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF ANY SOLIDS/DEBRIS/TRASH THAT HAS ACCUMULATED AROUND THE EXISTING SUBMERSIBLE PUMPS/BASES. CONTRACTOR SHALL SANDBAG AND/OR BULKHEAD OFF THE AREA AS REQUIRED TO INSTALL THE NEW PUMPS AND PUMP BASES.

SEQUENCE OF CONSTRUCTION\*

1. SUBMIT BYPASS PLAN FOR APPROVAL TO OWNER'S REPRESENTATIVE.
2. INSTALL NEW GATE VALVE ON FORCEMAIN AS SHOWN ON PROJECT PLANS.
3. REPLACE GATE VALVES IN EXISTING BUILDING AS SHOWN ON PROJECT PLANS.
4. ASSEMBLE, INSTALL, AND TEST ALL BYPASS PIPING AND EQUIPMENT. PLACE STATION IN BYPASS.
5. REMOVE ALL EQUIPMENT AND PIPING WITHIN EXISTING BUILDING, EXISTING WETWELL, AND OTHER SITE FEATURES AS SHOWN ON DEMOLITION SHEETS.
6. INSTALL PUMPS AND ALL RELATED EQUIPMENT IN NEW WET WELL.
7. INSTALL NEW CONTROL PANEL AND ALL RELATED HARDWARE AND EQUIPMENT INCLUDING CONDUITS, WIRING, CONTROL FLOATS AND LEVEL SENSOR, AND ALL RELATED CONDUITS, BRACKETS, ETC.
8. SCHEDULE SCDES FINAL INSPECTION. RECEIVE FINAL APPROVAL TO PLACE IN OPERATION.
9. DEMOBILIZE ALL BYPASS PUMPING EQUIPMENT AND COMPLETE FINAL SITE WORK.

## LEGEND

	EXISTING	PROPOSED
BUILDING/STRUCTURE AND STREET NUMBER		
ASPHALT PAVEMENT		
CONCRETE SIDEWALK		
DIRT OR GRAVEL ROAD		
FENCE		
CREEK OR DITCH		
BENCH MARK		
CONC. MON.		
X-POINT		
PROPERTY LINE		
ROAD RIGHT OF WAY		
PERMANENT EASEMENT		
TEMPORARY CONSTRUCTION EASEMENT		
IRON PIN OR CORNER		
TREE LINE		
POWER POLE		
GUY POLE		
GUY WIRE		
LIGHT POLE		
UNDERGROUND TELEPHONE		
OVERHEAD POWER		
SEWER MANHOLE		
SEWER LINE & SIZE		
SEWER FORCE MAIN		
CLEAN OUT		
EXISTING PIPING TO BE REMOVED		
EXISTING PIPING TO BE ABANDONED		
GAS LINE		
GAS VALVE		
CATCH BASIN		
DROP INLET		
JUNCTION BOX		
STORM DRAIN		
WATER METER		
WATER VALVE		
FIRE HYDRANT		
BLOW-OFF		
WATER LINE		
SPOT ELEVATION		
CONTOUR 1 FT		
CONTOUR 5 OR 10 FT		
WETLAND DELINEATION		

INDEX TO DRAWINGS	
SHEET NUMBER	SHEET TITLE
C1	TITLE SHEET
C2	GENERAL NOTES, LEGEND AND SHEET INDEX
<u>PROVIDENCE CREEK PUMP STATION</u>	
C3	PROVIDENCE CREEK PUMP STATION SITE PLAN
C4	PROVIDENCE CREEK PUMP STATION DEMOLITION PLAN & SECTION
C5	PROVIDENCE CREEK PUMP STATION DEMOLITION PLAN & SECTION
C6	PROVIDENCE CREEK PUMP STATION PLAN & SECTION
C7	PROVIDENCE CREEK PUMP STATION PLAN & SECTION
C8	PROVIDENCE CREEK PUMP STATION DETAILS
<u>BROAD RIVER WWTP</u>	
C9	BROAD RIVER WWTP OVERALL SITE PLAN
C10	BROAD RIVER WWTP NORTH SITE PLAN
C11	BROAD RIVER WWTP SOUTH SITE PLAN
C12	PREVIOUSLY DEMOLISHED STRUCTURES
C13	DECANT SEWER PROFILE
C14	BROAD RIVER WWTP GRADING PLAN
C15	BROAD RIVER WWTP GRADING PLAN
C16	BROAD RIVER WWTP AERATION BOX GATES DEMOLITION PLAN
C17	BROAD RIVER WWTP NEW AERATION BOX GATES
C18	EXIST. CLARIFIER NO. 1 SLUDGE DRAW-OFF BOX DEMOLITION PLAN
C19	EXIST. CLARIFIER NO. 1 SLUDGE DRAW-OFF BOX PLAN AND DETAILS
C20	EXIST. CLARIFIER NO. 2 DEMOLITION PLAN
C21	EXIST. CLARIFIER NO. 3 DEMOLITION PLAN
C22	EXIST. RAS PUMP STATION PIPING PLAN
C23	EXIST. RAS PUMP STATION PHASE 1 DEMOLITION PLAN
C24	EXIST. RAS PUMP STATION PHASE 1 DEMOLITION SECTIONS
C25	EXIST. RAS PUMP STATION PHASE 1 DEMOLITION SECTIONS
C26	EXIST. RAS PUMP STATION PHASE 1 RENOVATION PLAN
C27	EXIST. RAS PUMP STATION PHASE 2 DEMOLITION PLAN
C28	EXIST. RAS PUMP STATION PHASE 2 RENOVATION PLAN
C29	EXIST. RAS PUMP STATION PHASE 1 & 2 RENOVATION SECTION
C30	EXIST. RAS PUMP STATION PHASE 1 & 2 RENOVATION SECTION
C31	EXIST. SLUDGE DRYING BEDS DEMOLITION PLAN
C32	EXIST. DRYING BEDS DEMOLITION SECTIONS
C33	EXIST. SLUDGE LOADING PUMP STATION AND BLOWER DEMOLITION PLAN
C34	EXIST. SLUDGE LOADING PUMP STATION AND BLOWER PLAN
C35	EXIST. SLUDGE LOADING PUMP STATION AND BLOWER SECTIONS
C36	SLUDGE HOLDING TANK NO. 2 PLAN
C37	SLUDGE HOLDING TANK NO. 2 SECTIONS & DETAILS
C38	STANDARD SEWER DETAILS
C39	MISCELLANEOUS DETAILS
EC1 – EC3	EROSION CONTROL DETAILS
E1 – E18	ELECTRICAL PLANS AND DETAILS
H1 – H5	HVAC PLANS AND DETAILS

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## GENERAL NOTES, LEGEND AND SHEET INDEX

**BROAD RIVER WWTP IMPROVEMENTS  
BOARD OF PUBLIC WORKS**

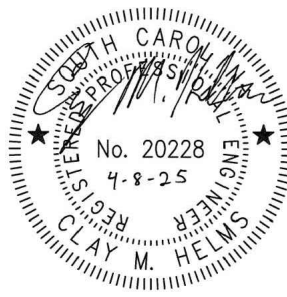
Gaffney, South Carolina

PROJECT NO.: 41240303  
DESIGNED: CMH  
CHECKED: CMH  
APPROVED: DJD

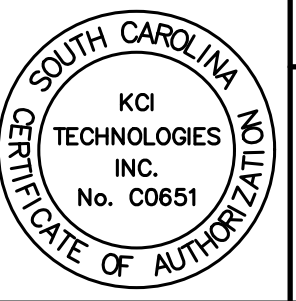
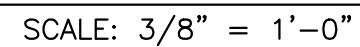
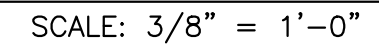
# C2



Know what's **below**.  
**Call** before you dig







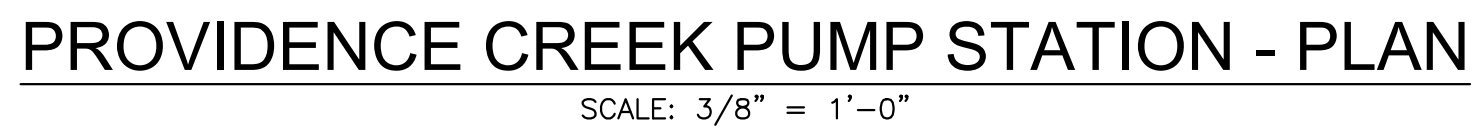
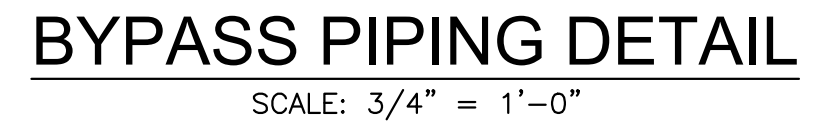
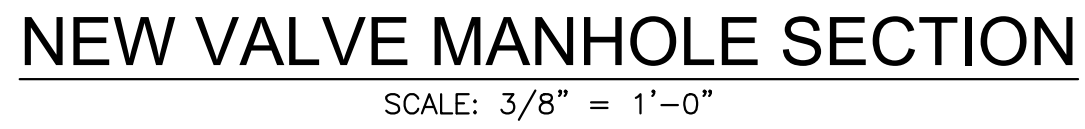
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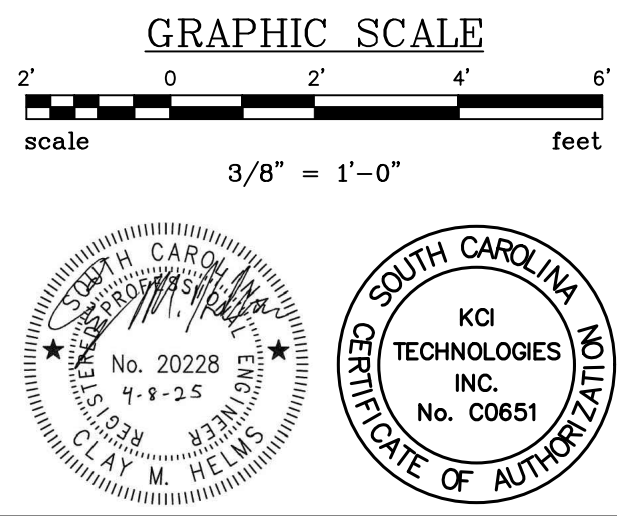
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1. ROUTE REFRIGERANT TUBING TIGHT TO WALLS AND CEILINGS. INSULATE AND PROVIDE ALUMINUM JACKETING AS REQUIRED PER SPECIFICATIONS AND CODE.
2. REFRIGERANT TUBING PENETRATES WALL AND RISES UP INSIDE OF WALL TO CEILING. SEAL PENETRATIONS WATER TIGHT.




NOTES:

1. DIMENSIONS AND PIPE SIZES FROM RECORD DRAWINGS BY B.P. BARBER DATED 6/30/1999 AND SUMMIT ENGINEERING GROUP INC. DATED 8/12/2014.
2. MATCH EXISTING EXTERIOR BRICK COLOR AND STYLE AS CLOSE AS POSSIBLE.

[illegible]

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# PROVIDENCE CREEK PUMP STATION PLAN & SECTION


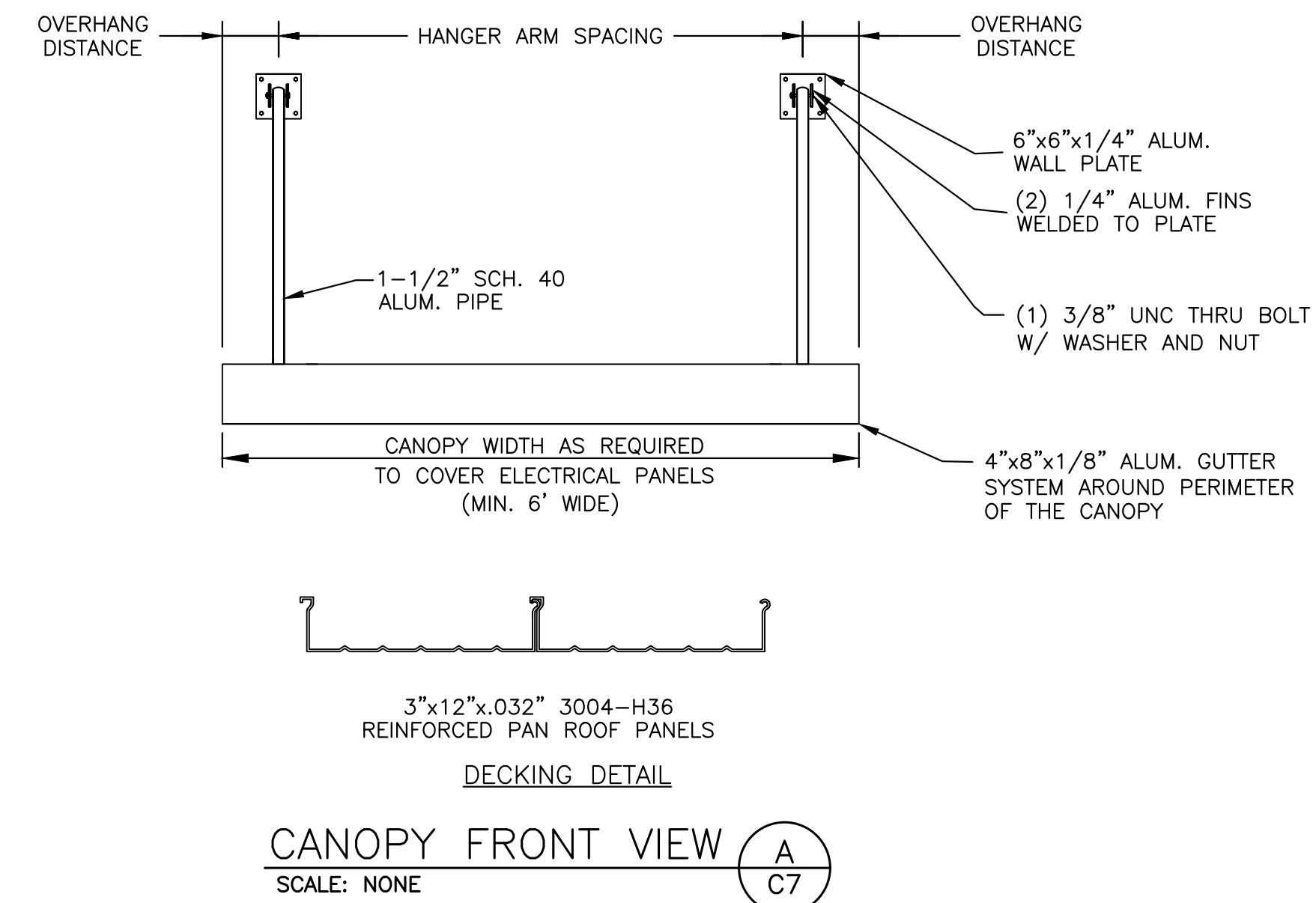
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Gaffney, South Carolina

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PROJECT NO.:	412403030
DESIGNED:	CMH
CHECKED:	CMH
APPROVED:	DJD

# C6





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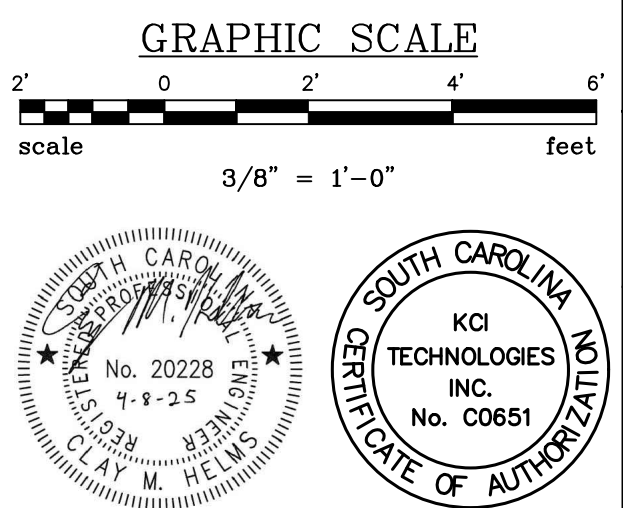
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**PROVIDENCE CREEK PUMP STATION  
PLAN & SECTION  
BROAD RIVER WWTP IMPROVEMENTS  
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PROJECT NO.:	412403030
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CHECKED:	CMH
APPROVED:	DJD

# C7







SCALE: 1" = 40'-0"

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**BROAD RIVER WWTP OVERALL SITE PLAN**

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Gaffney, South Carolina

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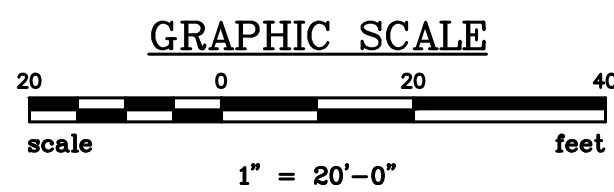
C9







SCALE: 1" = 20'-0"



**BROAD RIVER WWTP GRADING PLAN**

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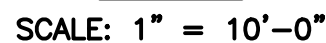
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# C14





1. CONCRETE FOUNDATION LAYOUT IS APPROXIMATE. CONFIRM FINAL FOUNDATION SIZE WITH EQUIPMENT MANUFACTURER PRIOR TO CONSTRUCTION.
2. COORDINATE ELECTRICAL STUB-UP AREA WITH EQUIPMENT MANUFACTURER.
3. ALL COSTS FOR THE ENGINE GENERATOR FOUNDATION SHALL BE INCLUDED IN THE ENGINE GENERATOR BID ALTERNATIVE.



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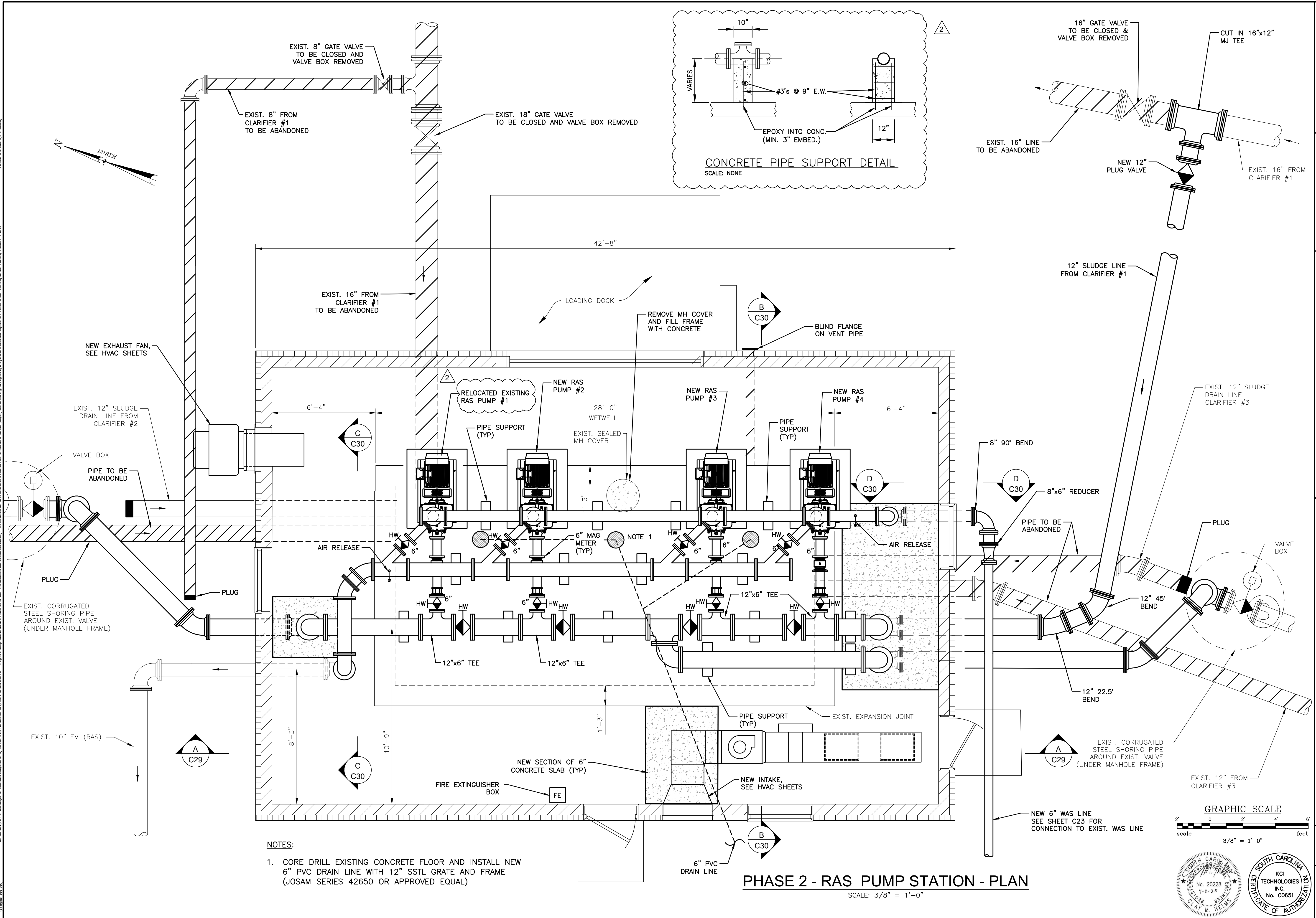
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Gaffney, South Carolina

# C15



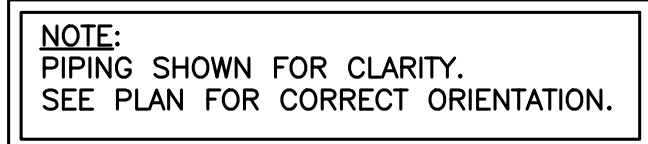




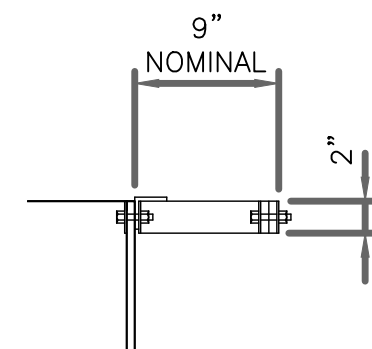
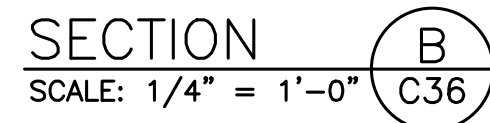
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APPROVED: DJD	
<b>C28</b>	



1. 4" PLUG VALVES WITH GEAR ACTUATORS AND CHAINS.
2. CHAINS SHALL EXTEND TO A POINT 4 FEET ABOVE THE GROUND SURFACE.
3. VALVE OPERATORS ON POSITIONS 1,2 & 3 NORTH (TOWARDS EXIST. INFLUENT PUMP STATION) AND POSITIONS 4,5 & 6 FACE SOUTH.
4. THE SPOOL PIECES SHALL BE FIELD MEASURE TO EXACT LENGTH. UNIFLANGES WILL NOT BE ACCEPTABLE.
5. FLANGE FILLERS MAY BE NEEDED TO OBTAIN NECESSARY CLEARANCE ON THE VALVES CLOSEST TO WALL.
6. INSTALL SSTL UNISTRUT RACK ON EACH SIDE OF DECANT HEADER (TWO REQUIRED) TO FASTEN THE OPERATOR CHAINS TO.



SCALE:  $3/16" = 1'-0"$



4' 0 4' 8'

scale feet

$1/4" = 1'-0"$

4' 0 4' 8' 12'

scale feet

$3/16" = 1'-0"$



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**BROAD RIVER WWTP IMPROVEMENTS**  
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# C37