PROCUREMENT DEPARTMENT

Teria G. Sheffield
Procurement Director

ADDENDUM # 2

Date: 6/21/2024 **PROPOSAL ID #2932**

Bid #2932
Catawba Bend Preserve Phase 1

THE FOLLOWING INFORMATION SHALL BE INCORPORATED AS PART OF THE ABOVE MENTIONED SOLICITATION; ALL OTHER TERMS AND CONDITIONS SHALL REMAIN THE SAME.

Change 1: Additional Documents Attached SCDHEC Well and Septic Permits (Attachment A)
Contractor to review SCDHEC well and septic permits (attached). Contractor is responsible for providing cost for the hydropneumatic tanks, piping, fittings, etc. as required in the SCDHEC well permits (not currently shown on the drawings) for the gatehouse and restroom buildings. This cost should be included in the lump sum bids for the gatehouse and restroom portions of this project.

Change 2: Project Manual Bid Form Revisions - Attached Revised Bid Form (Attachment B)
In the Bid Schedule (Project Manual, page 5), Item #8 was changed from "Unclassified Excavation/CY" to "Comprehensive Grading" to be paid for by Lump Sum (LS). On the same page, Item #9 was changed from "Suitable Material for Shoulders and Slopes/CY" to "Undercut/On-Site Borrow" to be paid for on the basis of cubic yards (CY).

Change 3: Project Manual Revision
In Division II, Section 2 entitled Unit Prices (Project Manual, page 58), Item #8 description was changed from "Unclassified Excavation/CY" to "Comprehensive Grading" to be paid for by Lump Sum (LS). On the same page, Item #9 description was changed from "Suitable Material for Shoulders and Slopes/CY" to "Undercut/On-Site Borrow" to be paid for on the basis of cubic yards (CY).

Change 4: Project Manual Revision
In the specifications, SECTION 31 13 13 – CONCRETE PAVING, PAGE 5, Part 3, Item 3.2, Section B, "Compaction: Compact the base course through the full depth to not less than 100% of maximum laboratory density." This statement has been changed to read "Compaction: Compact the base course through the full depth to not less than 95% of maximum laboratory density.

This change reflects the acceptance of 95% compaction.

Change 5: Drawings Revision (Attachment C)
Page 27 Note has been changed from “Prop 50LF of 60” RCP” to read “Prop 50LF of Double 54” RCP”

Change 6: Drawings Revision (Attachment D)
Page 28, Detail 1- Pipe ends have been skewed to reflect skew angle at headwall connection. The skewed angle at the headwall/culvert interaction is not significant enough to require alterations the overall dimensions of the culvert.

Change 7: Additional Documents Waste Disposal Area Map (Attachment E)

ATTACHMENT A

PERMIT TO CONSTRUCT
Onsite Wastewater System

Permit ID: OSWW021500 v1.0
County: Lancaster

Name: Lisa Hagood
Type Facility: Commercial
Subdivision:
Block: Lot:

Site: 3271 Neely Store Road
Rock Hill, SC 29730

Program Code: CONVENTIONAL
System Code: 100 CONVENTIONAL
TM #: 773000000 (A1)
Water Supply: Private Well

PERMIT TO CONSTRUCT SYSTEM SPECIFICATIONS

Daily Flow (gpd): 40
LTAR (g/d/ft^2): 0.3
Min Pump Capacity: GPM at ft. of Head

Tank Sizes (gal): Septic Tank: 1000 Pump Chamber: Grease Trap:

Trenches: Length (ft): 45 Width (in): 36 Max. Depth (in): 32 Agg. Depth (in): 14

SPECIAL INSTRUCTIONS/CONDITIONS

THIS PERMIT IS SITE SPECIFIC. ANY CHANGES TO THE SYSTEM MUST BE APPROVED BY DHEC. ALTERNATIVE TRENCH PRODUCTS APPROVED UNDER STATE RULES AND REGULATIONS MAY BE SUBSTITUTED. ANY UNAPPROVED CHANGES WILL VOID THIS PERMIT.

Installers must contact the local Environmental Affairs office by 10:00 AM the day prior to installation in order to schedule a time for the final inspection. If a Department representative does not arrive within 30 minutes of the scheduled time, the installer may conduct the final inspection. When a contractor self-inspection occurs, the installer must complete DHEC form 3978, Approval to Operate Contractor Self-Inspection. The installer must submit the DHEC form 3978 within 2 business days of the completion of installation.

Self-installations require a pre-construction conference with a Department representative.

- *All applicable setbacks set forth in Regulation 61-56 apply.*
- *75' offset to any well*
- *If installing an approved alternative trench product, 100 linear feet must be installed.*

PERMIT TO CONSTRUCT SYSTEM DIAGRAM

See System Diagram on page 2 of this document.

Issued/Revised By: Edward C Stello **Date:** June 18, 2024

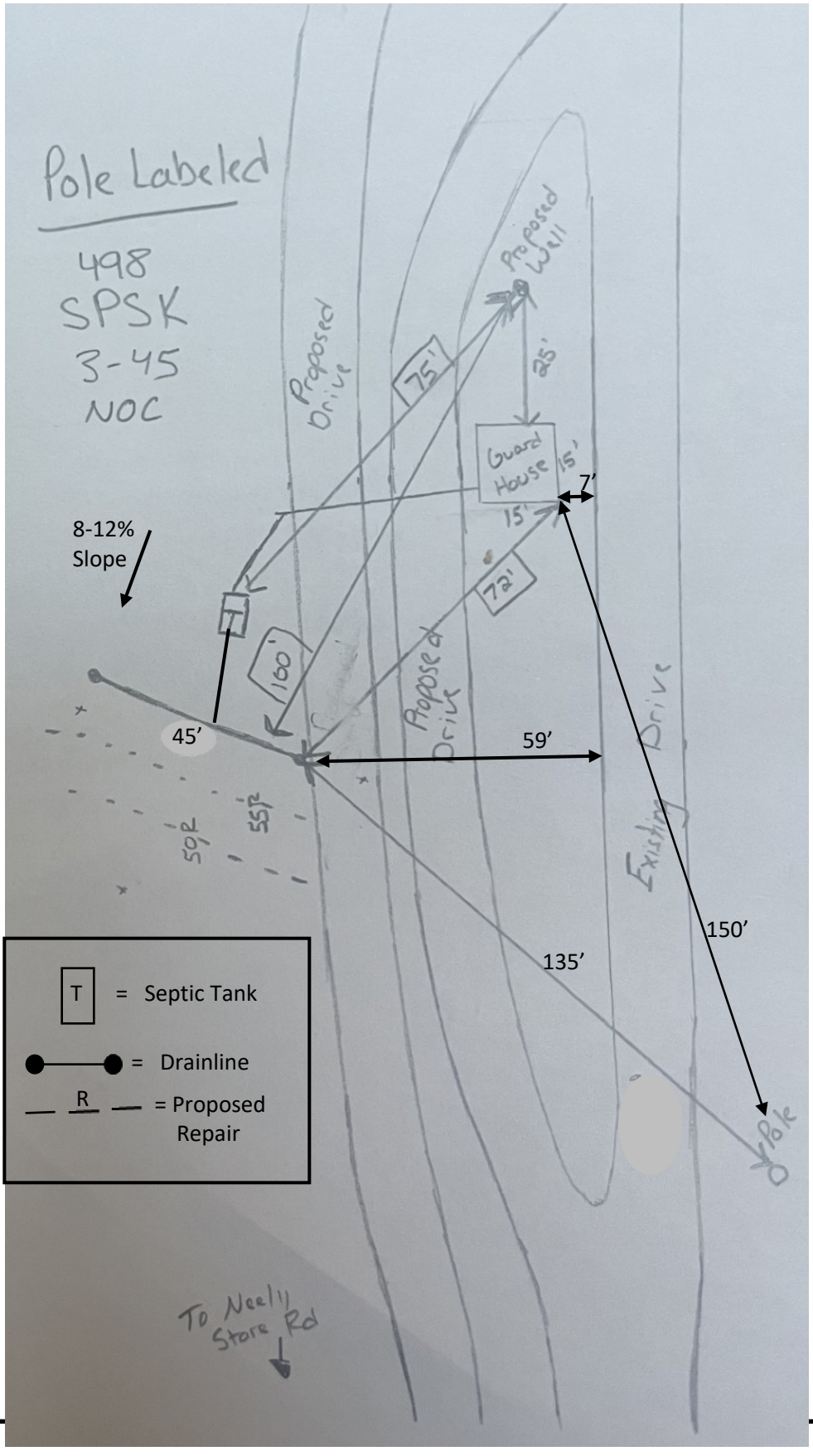
This Permit is Appealable Under the Administrative Procedures Act.
This Permit will Expire and Become Null and Void Five (5) Years from the Issuance Date.
There may be an Additional Fee for Changes in this Permit that Require a Site Reevaluation.

PERMIT TO CONSTRUCT

Onsite Wastewater System

Applicant: Lisa Hagood
Permit ID: OSWW021500 v1.0
County: Lancaster

PERMIT TO CONSTRUCT SYSTEM DIAGRAM



Final Inspection
Onsite Wastewater System

Permit ID: OSWW021500 v1.0
County: Lancaster

Name: Lisa Hagood
Type Facility: Commercial
Subdivision:
Lot:
Gallons Per Day (GPD): 40

Address: 6 CONGRESS ST S
YORK, SC 29745
Site: Catawba Bend Preserve
Gatehouse and Restrooms

Program Code:
System Code:
TM #: 773000000 (A1)
Water Supply: Private Well

FINAL INSPECTION and ACTUAL INSTALLATION (Insert Drawing Below) **(NTS)**

Installer:
Septic Tank Mfr. & Size:
Pump Chbr Mfr. & Size:
Pump Mfr:
Pump Model:
Grease Trap Mfr:
Alt Product & Model:
Aggregate Type:
Agg Depth (in):
Trench Width (in):
Trench Depth (in):
Fill Cap: ☐**Yes** ☐**No**
Well Inst: ☐**Yes** ☐**No**
Well Dist (ft):
Building Dist (ft):
Property Dist (ft):
Water Dist (ft):
Elevation Readings:
Plumbing Stubout:
Septic Tank Inlet:
Septic Tank Outlet:
Pump Chamber Inlet:
Grease Trap Readings:
Stubout:
Inlet: Outlet:
Septic Tank Inlet:
Trench Information:
Trench No.: Trench Length: Elevations:

_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____

Inspected By: _____
☐ Dept. Staff ☐ Installer

Comments:

Installer
Printed Name:_____License #:_____
I hereby certify the system was installed in accordance with the referenced permit and R.61-56.
Installer Signature: _____Date: _____

THIS IS NOT AN APPROVAL TO OPERATE

THIS FORM MUST BE COMPLETELY FILLED OUT AND SUBMITTED TO THE LOCAL DHEC REGIONAL OFFICE WITHIN 48 HOURS OF SYSTEM INSTALLATION. THE SYSTEM CANNOT BE PLACED INTO OPERATION UNTIL AN OFFICIAL APPROVAL TO OPERATE IS ISSUED BY A DEPARTMENT REPRESENTATIVE.

Final Inspection

Onsite Wastewater System

Instructions for Completing DHEC 4432

Purpose: This form should be utilized to record final installation of septic systems.

Audience: This form should be utilized by DHEC staff or a licensed septic system installer who will be conducting final inspections on septic systems.

Instructions:

1. Form must be completed as indicated and submitted to the Department.

2. If being completed by a licensed septic system installer, it must be submitted to the Department within two (2) business days of completing the system installation.

3. The abbreviations contained within this document are as follows:

    a. TM #: Tax Map Number
    b. No.: Number
    c. NTS: Not to Scale
    d. Mfr: Manufacturer
    e. Alt: Alternative
    f. Agg: Aggregate
    g. Inst: Installed
    h. Chmbr: Chamber
    i. Dist: Distance
    j. in: Inches
    k. ft: Feet

Office Mechanics & Filing: This form is maintained under Retention Schedule 07335, Onsite Wastewater System Application and Permit Records.

PERMIT TO CONSTRUCT
Onsite Wastewater System

Permit ID: OSWW018181 v1.0
County: Lancaster

Name: Ron Pompey
Type Facility: Commercial
Subdivision:
Block: Lot:

Site: 3271 Neely Store Road
Rock Hill, SC, 29730

Program Code: CONVENTIONAL
System Code: 100 CONVENTIONAL
TM #: 773000000 (A1)
Water Supply: Private Well

PERMIT TO CONSTRUCT SYSTEM SPECIFICATIONS

Daily Flow (gpd): 600
LTAR (g/d/ft^2): 0.3
Min Pump Capacity: GPM at ft. of Head

Tank Sizes (gal): Septic Tank: 1500 Pump Chamber: Grease Trap:

Trenches: Length (ft): 667 Width (in): 36 Max. Depth (in): 30 Agg. Depth (in): 14

SPECIAL INSTRUCTIONS/CONDITIONS

THIS PERMIT IS SITE SPECIFIC. ANY CHANGES TO THE SYSTEM MUST BE APPROVED BY DHEC. ALTERNATIVE TRENCH PRODUCTS APPROVED UNDER STATE RULES AND REGULATIONS MAY BE SUBSTITUTED. ANY UNAPPROVED CHANGES WILL VOID THIS PERMIT.

Installers must contact the local Environmental Affairs office by 10:00 AM the day prior to installation in order to schedule a time for the final inspection. If a Department representative does not arrive within 30 minutes of the scheduled time, the installer may conduct the final inspection. When a contractor self-inspection occurs, the installer must complete DHEC form 3978, Approval to Operate Contractor Self-Inspection. The installer must submit the DHEC form 3978 within 2 business days of the completion of installation.

Self-installations require a pre-construction conference with a Department representative.

- *All applicable setbacks set forth in Regulation 61-56 apply.*
- *Well must be at least 75' from all parts of the septic system*
- *15' offset to any buried culvert pipe*
- *25' offset to where culvert discharges water to the ground surface*
- *Divert surface water flow away from all parts of septic system*

PERMIT TO CONSTRUCT SYSTEM DIAGRAM

See System Diagram on page 2 of this document.

Issued/Revised By: Edward C Stello **Date:** May 09, 2024

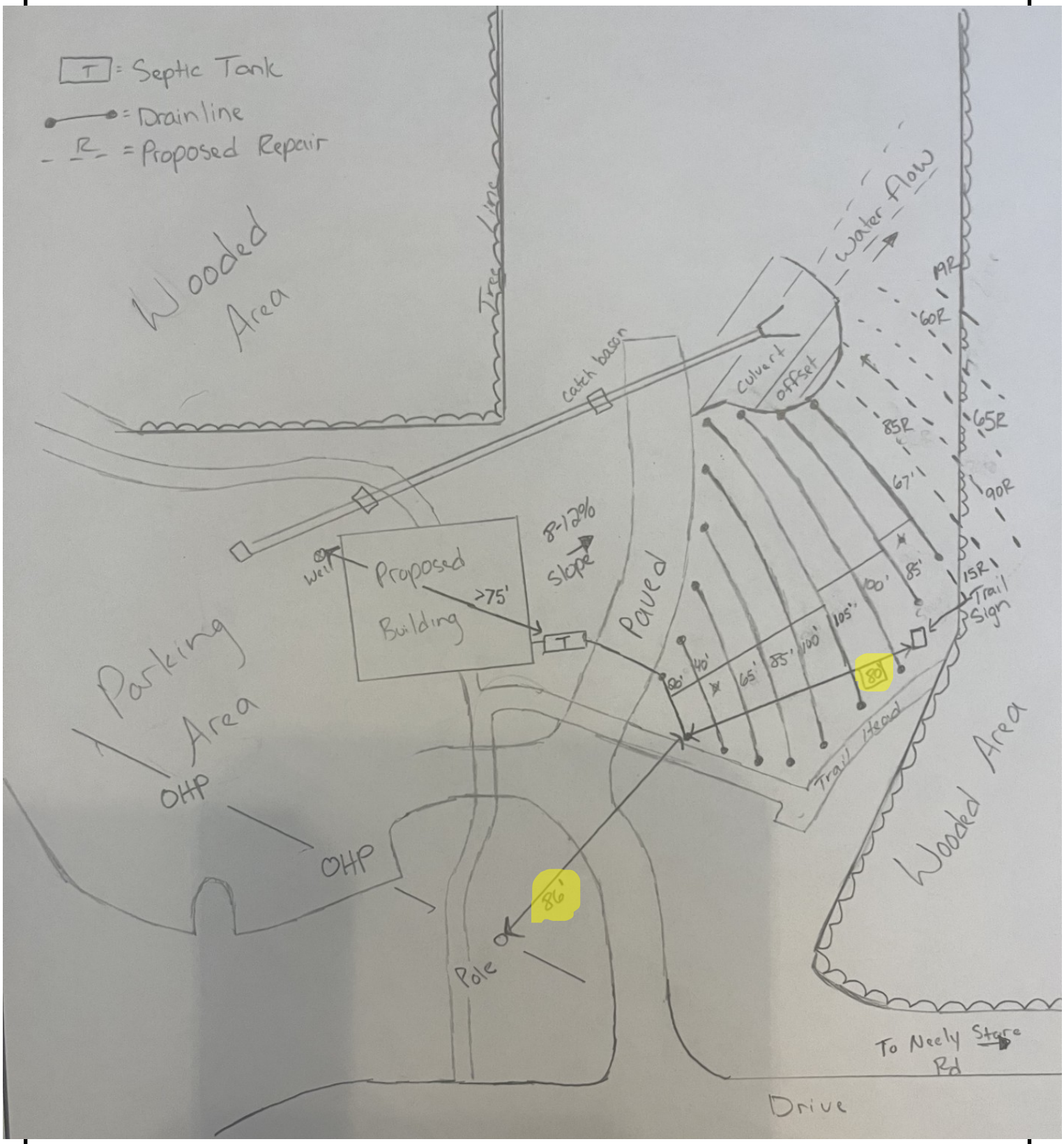
This Permit is Appealable Under the Administrative Procedures Act.
This Permit will Expire and Become Null and Void Five (5) Years from the Issuance Date.
There may be an Additional Fee for Changes in this Permit that Require a Site Reevaluation.

PERMIT TO CONSTRUCT

Onsite Wastewater System

Applicant: Ron Pompey
Permit ID: OSWW018181 v1.0
County: Lancaster

PERMIT TO CONSTRUCT SYSTEM DIAGRAM



Final Inspection
Onsite Wastewater System

Permit ID: OSWW018181 v1.0
County: Lancaster

Name: Ron Pompey
Type Facility: Commercial
Subdivision:
Lot:
Gallons Per Day (GPD): 600

Address: 6 CONGRESS ST S
YORK, SC 29745
Site: Catawba Bend Preserve
Gatehouse and Restrooms

Program Code:
System Code:
TM #: 773000000 (A1)
Water Supply: Private Well

FINAL INSPECTION and ACTUAL INSTALLATION (Insert Drawing Below) **(NTS)**

Installer:
Septic Tank Mfr. & Size:
Pump Chbr Mfr. & Size:
Pump Mfr:
Pump Model:
Grease Trap Mfr:
Alt Product & Model:
Aggregate Type:
Agg Depth (in):
Trench Width (in):
Trench Depth (in):
Fill Cap: ☐**Yes** ☐**No**
Well Inst: ☐**Yes** ☐**No**
Well Dist (ft):
Building Dist (ft):
Property Dist (ft):
Water Dist (ft):
Elevation Readings:
Plumbing Stubout:
Septic Tank Inlet:
Septic Tank Outlet:
Pump Chamber Inlet:
Grease Trap Readings:
Stubout:
Inlet: Outlet:
Septic Tank Inlet:
Trench Information:
Trench No.: Trench Length: Elevations:

_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____
_____ _____ _____

Inspected By: _____
☐ Dept. Staff ☐ Installer

Comments:

Installer
Printed Name:_____License #:_____
I hereby certify the system was installed in accordance with the referenced permit and R.61-56.
Installer Signature: _____Date: _____

THIS IS NOT AN APPROVAL TO OPERATE

THIS FORM MUST BE COMPLETELY FILLED OUT AND SUBMITTED TO THE LOCAL DHEC REGIONAL OFFICE WITHIN 48 HOURS OF SYSTEM INSTALLATION. THE SYSTEM CANNOT BE PLACED INTO OPERATION UNTIL AN OFFICIAL APPROVAL TO OPERATE IS ISSUED BY A DEPARTMENT REPRESENTATIVE.

Final Inspection

Onsite Wastewater System

Instructions for Completing DHEC 4432

Purpose: This form should be utilized to record final installation of septic systems.

Audience: This form should be utilized by DHEC staff or a licensed septic system installer who will be conducting final inspections on septic systems.

Instructions:

1. Form must be completed as indicated and submitted to the Department.

2. If being completed by a licensed septic system installer, it must be submitted to the Department within two (2) business days of completing the system installation.

3. The abbreviations contained within this document are as follows:

    a. TM #: Tax Map Number
    b. No.: Number
    c. NTS: Not to Scale
    d. Mfr: Manufacturer
    e. Alt: Alternative
    f. Agg: Aggregate
    g. Inst: Installed
    h. Chmbr: Chamber
    i. Dist: Distance
    j. in: Inches
    k. ft: Feet

Office Mechanics & Filing: This form is maintained under Retention Schedule 07335, Onsite Wastewater System Application and Permit Records.

Healthy People. Healthy Communities.

STATE WATER SYSTEM CONSTRUCTION PERMIT

Permission is Hereby Granted To: YORK COUNTY GOVERNMENT
6 S CONGRESS ST
YORK SC 29745

for the construction of a potable water source, storage and/or distribution system as shown on the attached water system layout sketch and in accordance with requirements set forth in the special conditions and the construction specifications of this permit described below:

PROJECT NAME: YORK COUNTY WELL - Catawba Bend Preserve Gatehouse
COUNTY: York

PROJECT DESCRIPTION: New SWS Well to serve County Park Installation of a public supply well, wellhead piping, 6-ft x 6-ft x 4-in reinforced concrete pad, hydropneumatic storage tank (refer to Special Condition #1), lockable well house and all necessary appurtenances to serve a picnic shelter located at 3271 Neely Store Road, Rock Hill SC 29730
PERMIT NUMBER: 37651-WS

DATE OF ISSUE: June 04, 2024
EXPIRATION DATE: June 04, 2027

SPECIAL CONDITIONS: (see page 2 of this permit)

Once construction is complete, the MIDLANDS REGION BEHS LANCASTER must be contacted at 803-285-7461 in order to obtain a final permit to operate. Written Final approval must be obtained before the system is placed into operation.

Gregory C Harrington, Regional Engineer
Associate
MIDLANDS REGION BEHS LANCASTER

cc: Bureau of Water Permitting File

SPECIAL CONDITIONS

1. Based on a well yield of ten (10) gallons per minute (gpm), the hydropneumatic storage tank(s) shall have a **total gross storage of 60 gallons** (total useable volume** of 20 gallons) for the operating pressure range.

   a. If the approved pumping rate exceeds 10 gpm:
      i. The required volume may be decreased by 20 gpm for every one (1) gallon over ten (10) gallons. However in no case shall the usuable storage be less than two (2) times the yield of the well (i.e., for a 13 gpm well the usable storage of the tank shall equal or exceed 26 gallons).
      ii. If it's determined that the pump cycle is less than 10 minutes or if it exceeds 6 cycles per hour, then the storage capacity will need to be re-evaluated.

   b. If the approved pumping rate is less than 10 gpm:
      i. the usable tank volume must be increased by 20 gallons for every one gallon per minute less than 10 gpm.

2. In order to obtain approval to place the newly constructed facilities into operation the following information must be submitted to Gregory C Harrington, MIDLANDS REGION BEHS LANCASTER EQC District Office, 2475 DHEC RD, , LANCASTER, SC 29720-2901 803-285-7461.

   (a) The well record form, which must be completed by the well driller (form enclosed).

   (b) Results of the yield/performance test and pump curve for pump installed.

   (c) Copy of the water quality analyses required by this permit (i.e., total coliform, chlorine residual, nitrate, iron, and manganese). Refer to Page 7 additional analyses. Note: chlorine residual must be zero.

   (d) The enclosed certification of construction form completed and signed by the well driller and contractor.

   A final construction inspection will need to be conducted once the above information is submitted.

3. If in the future a water main from a publicly owned water system is installed adjacent to your property, this well must be physically disconnected from the water line, and service

must be established with the water system. The well may be maintained for irrigation purposes only; otherwise, it must be properly abandoned.

CONSTRUCTION SPECIFICATIONS

A. Wells

(1) The well must be drilled by a certified well driller registered in South Carolina.

(2) The location of the well must be at least 100 feet from all potential pollution sources. Potential pollution sources include but are not limited to the following: septic tank, tile field, sewer line, abandoned unprotected well, waste treatment lagoon, storage lagoon, animal feed lot, chemical handling area, chemical storage area, petroleum storage area, waste disposal area, mine.

(3) The location of the well must be at least 50 feet from all surface water bodies (lake, stream, river, pond, or drainage ditch which normally holds water).

(4) The well must draw water from an aquifer a minimum of 50 feet deep.

(5) Hand dug wells and wells constructed with casing materials of concrete or ceramic pipe shall not be used as a source of water for a public water system.

(6) Wells or well pump stations in pits are prohibited.

(7) The casing for rock wells must be galvanized iron or black steel and driven to refusal into firm bedrock. A drive shoe is recommended to be used on the end of the casing being driven into the firm bedrock. The top of the casing must extend at least twelve (12) inches above the concrete pad.

(8) Screens, if used, can be either wire wound stainless steel or manufactured PVC. "Homemade" PVC screens shall not be used.

(9) Where artificial filter packing is used, the gravel shall be free of foreign material and sterilized before being placed around the screen.

(10) Grouting is required on all wells. The materials used for grouting shall be sand-cement, bentonite-cement mixture, or neat cement. Grouting for all wells shall be a minimum of 1.5 inches thick when using forced injection and 3 inches for gravity feed. ****The Department shall be notified a minimum of three (3) days prior to the time of grouting of the well. Refer to the attached office contact information sheet.**

(11) The annular space between the outside surface of the well casing and the bore hole shall be grouted with a sand-cement mixture, bentonite-cement mixture or neat cement. The sand cement or neat cement mixture shall be composed of not more than two (2) parts by weight of sand to one (1) part of cement with not more than seven (7) gallons of clean water per bag (one cubic foot or 94 pounds) of cement. The bentonite-cement mixture shall be composed of three (3) to five (5) pounds of bentonite mixed with seven (7) gallons of clean water per bag (one cubic foot or 94 pounds) of cement.

(12) The minimum length of grout for sanitary protection shall be as follows:

(a) For open hole wells into bedrock aquifers the length of grout shall be to at least fifty (50) feet or firm bedrock, whichever is less. However, where bedrock is encountered at less than twenty (20) feet, at least twenty (20) feet of casing shall be used and the entire length of the casing shall be grouted.

(b) For screened, natural filter wells and artificial filter (gravel pack) wells in to unconsolidated aquifers the length of grout shall be to fifty (50) feet or the first low permeability stratum (clay, marl, etc.), or to within ten (10) feet of the upper most screen when no low permeability stratum is encountered, whichever is greater.

(c) For open hole wells into limestone aquifers the length of grout shall be to fifty (50) feet or firm limestone or firm marl, whichever is less. However, where limestone or firm marl is encountered at less than twenty (20) feet, at least 20 feet of casing shall be used and the entire length of the casing shall be grouted.

The Department may require an additional length of grout where warranted by site, geological and/or water quality conditions. See the special conditions of this permit for any special requirements concerning the length of grout.

(13) The grout material shall be placed by tremie pipe, either by pouring or forced injection, after water or other drilling fluid has been circulated in the annular space sufficiently to clear all obstructions. There shall be a minimum annular space of three (3) inches for gravity feed and one and one-half (1.5) inches for forced injection between the outside surface of the casing and the formation. The minimum size tremie pipe shall be two (2) inches inside diameter for gravity feed and one (1) inch inside diameter for forced injection. When placing the grouting material, the tremie pipe shall be lowered to the bottom of the zone to be grouted and raised slowly as the grout material is introduced. The tremie pipe shall be kept full continuously from start to finish of the grouting procedure, with the discharge end of the tremie pipe being continuously submerged in the grout until the zone to be grouted is completely filled. The grout shall be allowed to properly cure before

construction may be resumed. Other methods of installing the grout may be used if prior approval is given by the Department.

(14) The casing shall be sealed with a suitable flanged, threaded, or welded cap or compression seal. The outside casing shall be sealed to, and centered in, a reinforced concrete pad. The concrete pad must be at least six (6) feet by six (6) feet by four (4) inches thick and sloped so that water will drain away from the casing.

(15) A screened vent must be provided for the casing (except on packer jet wells). The vent must extend a minimum of eighteen (18) inches above the concrete pad. The vent can be the gooseneck type with twenty-four (24) mesh screen over the opening or manufactured slotted pipe with effective opening of .024 inches or smaller.

(16) A well identification plate must be securely attached to the casing or embedded into the concrete pad. The plate must be made of a durable, weather-proof, material and contain the following information:

(a) Driller name and registration number;
(b) Date well completed;
(c) Total depth of well (in feet);
(d) Casing: Depth (in feet), Inside diameter (in inches);
(e) Screened intervals (of screened wells);
(f) Filter-pack interval (of wells with artificial filter-pack);
(g) Yield expressed in gallons per minute (gpm), or specific capacity expressed in gallons per minute per foot of drawdown (gpm/ft.-dd); and
(h) Static water level and date measured

(17) If a submersible pump is installed, the well head piping must include a check valve followed by a sample tap or hose bibb, a gated blow-off valve, and an in-line gate valve, all of which must be prior to any storage tank. A flow meter is also recommended. If a flow meter is installed it must be prior to the blow-off. Please refer to the attached diagram for an illustration of a typical well and tank installation when a submersible pump is used.

(18) If a jet pump is installed, the well head piping must include a sample tap or hose bibb followed by a gated blow-off and an in-line gate valve, all of which must be prior to any storage tank. A flow meter is also recommended. If a flow meter is installed it must be prior to the blow-off. No check valve is required in the main line of the well head piping for a jet pump; however, a check valve must be provided on the sample tap or hose bibb and the discharge of the blow-off must be a minimum of 12 inches above the concrete pad. A check valve must be installed on the down-stream side of the storage tank. The purpose of not installing a check valve between the pump and the tank is so that the tank will help

keep the pump primed. Please refer to the attached diagram for an illustration of a typical well and tank installation when a jet well pump is used.

(19) A pressure relief valve shall be installed on the well head piping if the pump installed is capable of discharging at a greater pressure than the pressure rating of the storage tank. The pressure relief valve must be set at a pressure equal to or less than the pressure rating of the tank. This valve must also be sized to discharge the rated capacity of the pump.

(20) All electrical wiring must be in rigid or flexible conduit.

(21) The well head must be provided with a well house for protection from weather and vandalism. A lock must be installed on the door or cover. Well houses shall be constructed in a manner and of material that will allow one person easy access to the sampling taps and the well head piping for inspection, maintenance and sampling.

(22) A yield/performance test must be performed for a period of at least 6 hours. Measurements must be recorded at least hourly for yield (gallons per minute) and water level. It is recommended that a test pump be used to perform this test so as to optimize the sizing and selection of the permanent pump. However, if the permanent pump is used, the test should be performed against the average system pressure (i.e., for a 30/50 operating pressure range the pressure should be 40 psi). This may be accomplished by partially closing the gate valve on the blow-off until the desired pressure is obtained. The gate valve may need to be adjusted further during the test in order to maintain the desired pressure. If the test is not performed against the average system pressure, the well yield will be what the pump is rated for at the average system pressure. The pump rating must come from the manufacturer's pump curve for the selected pump.

(23) Any well abandonment shall be conducted by a certified well driller and in accordance with R.61-58.(B)(15) of the State Primary Drinking Water Regulations.

B. Storage

(1) The pressure rating of the hydropneumatic storage tank(s) must be at least seventy-five (75) psi.

(2) The hydropneumatic storage tank(s) must have adequate support and reaction blocking to prevent breaks in the lines connected to the tank.

(3) The hydropneumatic storage tank(s) must be equipped with a means to sample the tank, an isolation valve, and pressure gauge.

(4) Except for a captive air storage tank, the hydropneumatic storage tank must also be equipped with a drain, separate inlet and outlet piping arranged so that water flows through the tank, and an automatic air make-up system. If an air compressor is used in the air make-up system, a pressure relief valve must also be installed on the tank.

(5) If the tank is five hundred (500) gallons or larger an access manhole, a minimum two (2) inch diameter drain, and a vacuum relief valve must be provided. An air compressor shall be installed if the hydropneumatic storage tank two thousand (2000) gallons or larger.

(6) Hydropneumatic storage tanks five hundred (500) gallons and larger must meet the requirements of the American Society of Mechanical Engineers for construction and installation of unfired pressure vessels and must carry its approval stamp.

(7) Controls for operating the pump must be by pressure switch or other automatic means and set to operate on at least thirty (30) psi on /fifty (50) psi off range. A greater operating pressure may be required to assure that a minimum of 25 psi is maintained throughout the distribution system at all times. The maximum pressure range between the on/off operating pressures shall be a maximum of twenty (20) psi.

(8) All paint coatings which come into contact with drinking water shall be certified as meeting the specifications of the American National Standards Institute/National Sanitation Foundation Standard 61.

C. Distribution System

(1) PVC, polyethylene, galvanized iron, or copper piping is acceptable. All piping must be certified as meeting the specifications of the American National Standards Institute/National Sanitation Foundation Standard 61, Drinking Water System Components - Health Effects. Any pipe material, solder or flux used in a potable water system must be lead free. "Lead free" is defined to mean that solder and flux can contain no more than 0.2% lead; pipes and fittings not more than 8.0% lead. If polyethylene pipe is used, water tight compression fittings must be used. Radiator or pipe clamps shall not be used on any underground piping.

(2) All external distribution piping shall be installed at least thirty (30) inches below grade. All single service water lines shall be at least eighteen (18) inches below grade. Where this is not possible, pipe shall be steel, ductile iron, or other approved material and method approved by the Department, and, when necessary, insulated from freezing.

(3) Reaction blocking of poured concrete must be placed at all bends, tees, valves, etc. for all lines two and one half (2.5) inches and larger.

(4) No water line shall be placed within ten (10) feet of a septic tank, sewer line, or manhole or within twenty five (25) feet of a drain field. Where a water line must cross a sewer line (not a drain field), there shall be a minimum of eighteen (18) inch vertical separation with the water line crossing over the top of the sewer line.

(5) Adequate blow-offs shall be provided for periodic flushing of the system. If a dead end water line is greater than one and one half (1.5) inches in diameter and longer than two hundred (200) feet in length, installation of a blow-off is required. Please refer to the attached diagram for an illustration of a typical blow-off.

(6) Upon completion, the distribution system must be pressure tested at a pressure equal to or exceeding the maximum working pressure. The pressure test must be held for at least two (2) hours without a drop in pressure.

D. Disinfection/Testing

(1) Upon completion and setting of the permanent pump and following the pressure test, the well, storage tanks, and all piping must be disinfected by adding calcium hypochlorite or sodium hypochlorite to the well in sufficient amounts to produce at least a 50 milligram per liter concentration. (See Table #1) The pump must be run long enough to get the chlorine solution throughout the well head piping, tank, and distribution line. This solution must be retained for 24 hours then completely flushed from the system. The water must be tested for chlorine to insure that the chlorine solution has been completely flushed from the well and distribution system prior to sampling for total coliform and E.coli bacteria. Once the chlorine solution has been removed, two (2) samples must be collected at least 24 hours apart from the well and one (1) sample from the point farthest from the well or metered connection and analyzed for total coliform bacteria and E.coli bacteria by a DHEC certified laboratory. If the analysis indicates the presence of either or both total coliform and E.coli bacteria, the disinfection and sampling procedure must be repeated until the analysis indicates the absence of total coliform and E.coli bacteria. A separate sample for total coliform and E.coli analysis must be collected and analyzed from all tanks five hundred (500) gallons or larger.

(2) In addition to the total coliform sample, a water sample must be collected from the well and tested for **nitrate**, **iron**, and **manganese**. The water sample must also be tested for **fluoride** if the well is located in one of the following counties: Horry, Georgetown, Charleston, Colleton, Beaufort, Jasper, Dorchester, Berkeley. The water sample must also be tested for **total uranium** if the well is located in one of the following counties: Greenville, Pickens. The water sample must also be tested for **radium** if the well is located in one of

the following counties: Richland, Lexington, Aiken. These analyses must be performed by a DHEC certified laboratory.

CERTIFICATION OF CONSTRUCTION

WELL DRILLER CERTIFICATION

I do hereby certify that the: (circle those items completed by the well driller)

1. Well
2. Pump
   Mfr. Name: _____ Model No:_____
   H.P. _____ Length of drop pipe: _____ ft. Capacity _____ gpm
   Type: __ Submersible __ Jet (shallow) __ Turbine __ Jet (deep)
   __ Reciprocating __ Centrifugal
3. Well head piping
4. Tank
   Mfr. Name: _____ Model No: _____
   Pressure range setting: _____ Usable Volume @ setting: _____
   Type: __ Standard __ Bladder
5. Distribution system

have been constructed in accordance with the requirements specified in the construction permit.

Well Driller's Name(Print):

Well Driller's Signature:
Certification Number: _____Date:

*Satisfactory bacteriological sample results shall be provided for the distribution line in addition to the well. Refer to Condition D(1).

CERTIFICATION OF CONSTRUCTION

CONTRACTOR CERTIFICATION

I do hereby certify that the: (circle those items completed by the contractor)

1. Pump
   Mfr. Name: _____ Model No:_____
   H.P. _____ Length of drop pipe: _____ ft. Capacity _____ gpm
   Type: __ Submersible __ Jet (shallow) __ Turbine __ Jet (deep)
   __ Reciprocating __ Centrifugal
2. Well head piping
3. Tank
   Mfr. Name: _____ Model No: _____
   Pressure range setting: _____ Usable Volume @ setting: _____
   Type: __ Standard __ Bladder
4. Distribution system

have been constructed in accordance with the requirements specified in the construction permit.

Contractor's Name (Print):

Contractor's Signature: _____Date:

*Satisfactory bacteriological sample results shall be provided for the distribution line in addition to the well. Refer to Condition D(1).

Table 1: Quantity of Substance Required to Produce a 50 Part Per Million Concentration of Chlorine

Well Diameter (inches)	Ounces of Compound For Each 10-ft Depth of Water		
	Dry - 70% Calcium Hypochlorite* or Liquid - 12% Sodium Hypochlorite		Household Bleach
	Dry Measure	Liquid Measure	Liquid Measure
2	0.02	0.09 fl oz	0.21 fl oz
4	0.06	0.35 fl oz	0.81 fl oz
6	0.14	0.78 fl oz	1.88 fl oz
8	0.25	1.39 fl oz	3.33 fl oz
10	0.39	2.2 fl oz	5.21 fl oz
12	0.56	3.2 fl oz	7.51 fl oz
24	2.24	12.8 fl oz	30.0 fl oz
36	5.03	28.2 fl oz	67.51 fl oz
All quantities may be rounded to the nearest half-ounce for convenience of measurements. **128 fl oz = 8 pt = 4 qt = 1 gal** *** 1 heaping teaspoon of 70% hypochlorite is approximately □ ounce.**			
EXAMPLE:	6-inch diameter, 100 feet deep well with the water level 20 feet below ground level contains 80 feet of water		
To disinfect with household bleach, you would use 1.88 ounces for each 10 feet of depth or (8 x 1.88) = 15.04 ounces.			
If the well depth or water level is not known, one (1) gallon of liquid household bleach may be used instead of the above amounts.			

Healthy People. Healthy Communities.

STATE WATER SYSTEM CONSTRUCTION PERMIT

Permission is Hereby Granted To: YORK COUNTY GOVERNMENT
6 S CONGRESS ST
YORK SC 29745

for the construction of a potable water source, storage and/or distribution system as shown on the attached water system layout sketch and in accordance with requirements set forth in the special conditions and the construction specifications of this permit described below:

PROJECT NAME: CATAWBA BEND PRESERVE RESTROOM
COUNTY: York

PROJECT DESCRIPTION: New SWS Well to serve County Park Installation of a public supply well, wellhead piping, 6-ft x 6-ft x 4-in reinforced concrete pad, hydropneumatic storage tank (refer to Special Condition #1), lockable well house and all necessary appurtenances to serve a picnic shelter located at 3271 Neely Store Road, Rock Hill SC 29730 – Restroom for entire park.
PERMIT NUMBER: 37657-WS

DATE OF ISSUE: June 04, 2024
EXPIRATION DATE: June 04, 2027

SPECIAL CONDITIONS: (see page 2 of this permit)

Once construction is complete, the MIDLANDS REGION BEHS LANCASTER must be contacted at 803-285-7461 in order to obtain a final permit to operate. Written Final approval must be obtained before the system is placed into operation.

Gregory C Harrington, Regional Engineer
Associate
MIDLANDS REGION BEHS LANCASTER

cc: Bureau of Water Permitting File

SPECIAL CONDITIONS

1. Based on a well yield of ten (10) gallons per minute (gpm), the hydropneumatic storage tank(s) shall have a **total gross storage of 720 gallons** (total useable volume** of 240 gallons) for the operating pressure range.

   a. If the approved pumping rate exceeds 10 gpm:
      i. The required volume may be decreased by 20 gpm for every one (1) gallon over ten (10) gallons. However in no case shall the usuable storage be less than two (2) times the yield of the well (i.e., for a 13 gpm well the usable storage of the tank shall equal or exceed 26 gallons).
      ii. If it's determined that the pump cycle is less than 10 minutes or if it exceeds 6 cycles per hour, then the storage capacity will need to be re-evaluated.

   b. If the approved pumping rate is less than 10 gpm:
      i. the usable tank volume must be increased by 20 gallons for every one gallon per minute less than 10 gpm.

2. In order to obtain approval to place the newly constructed facilities into operation the following information must be submitted to Gregory C Harrington, MIDLANDS REGION BEHS LANCASTER EQC District Office, 2475 DHEC RD, , LANCASTER, SC 29720-2901 803-285-7461.

   (a) The well record form, which must be completed by the well driller (form enclosed).

   (b) Results of the yield/performance test and pump curve for pump installed.

   (c) Copy of the water quality analyses required by this permit (i.e., total coliform, chlorine residual, nitrate, iron, and manganese). Refer to Page 7 additional analyses. Note: chlorine residual must be zero.

   (d) The enclosed certification of construction form completed and signed by the well driller and contractor.

   A final construction inspection will need to be conducted once the above information is submitted.

3. If in the future a water main from a publicly owned water system is installed adjacent to your property, this well must be physically disconnected from the water line, and service

must be established with the water system. The well may be maintained for irrigation purposes only; otherwise, it must be properly abandoned.

CONSTRUCTION SPECIFICATIONS

A. Wells

(1) The well must be drilled by a certified well driller registered in South Carolina.

(2) The location of the well must be at least 100 feet from all potential pollution sources. Potential pollution sources include but are not limited to the following: septic tank, tile field, sewer line, abandoned unprotected well, waste treatment lagoon, storage lagoon, animal feed lot, chemical handling area, chemical storage area, petroleum storage area, waste disposal area, mine.

(3) The location of the well must be at least 50 feet from all surface water bodies (lake, stream, river, pond, or drainage ditch which normally holds water).

(4) The well must draw water from an aquifer a minimum of 50 feet deep.

(5) Hand dug wells and wells constructed with casing materials of concrete or ceramic pipe shall not be used as a source of water for a public water system.

(6) Wells or well pump stations in pits are prohibited.

(7) The casing for rock wells must be galvanized iron or black steel and driven to refusal into firm bedrock. A drive shoe is recommended to be used on the end of the casing being driven into the firm bedrock. The top of the casing must extend at least twelve (12) inches above the concrete pad.

(8) Screens, if used, can be either wire wound stainless steel or manufactured PVC. "Homemade" PVC screens shall not be used.

(9) Where artificial filter packing is used, the gravel shall be free of foreign material and sterilized before being placed around the screen.

(10) Grouting is required on all wells. The materials used for grouting shall be sand-cement, bentonite-cement mixture, or neat cement. Grouting for all wells shall be a minimum of 1.5 inches thick when using forced injection and 3 inches for gravity feed. ****The Department shall be notified a minimum of three (3) days prior to the time of grouting of the well. Refer to the attached office contact information sheet.**

(11) The annular space between the outside surface of the well casing and the bore hole shall be grouted with a sand-cement mixture, bentonite-cement mixture or neat cement. The sand cement or neat cement mixture shall be composed of not more than two (2) parts by weight of sand to one (1) part of cement with not more than seven (7) gallons of clean water per bag (one cubic foot or 94 pounds) of cement. The bentonite-cement mixture shall be composed of three (3) to five (5) pounds of bentonite mixed with seven (7) gallons of clean water per bag (one cubic foot or 94 pounds) of cement.

(12) The minimum length of grout for sanitary protection shall be as follows:

(a) For open hole wells into bedrock aquifers the length of grout shall be to at least fifty (50) feet or firm bedrock, whichever is less. However, where bedrock is encountered at less than twenty (20) feet, at least twenty (20) feet of casing shall be used and the entire length of the casing shall be grouted.

(b) For screened, natural filter wells and artificial filter (gravel pack) wells in to unconsolidated aquifers the length of grout shall be to fifty (50) feet or the first low permeability stratum (clay, marl, etc.), or to within ten (10) feet of the upper most screen when no low permeability stratum is encountered, whichever is greater.

(c) For open hole wells into limestone aquifers the length of grout shall be to fifty (50) feet or firm limestone or firm marl, whichever is less. However, where limestone or firm marl is encountered at less than twenty (20) feet, at least 20 feet of casing shall be used and the entire length of the casing shall be grouted.

The Department may require an additional length of grout where warranted by site, geological and/or water quality conditions. See the special conditions of this permit for any special requirements concerning the length of grout.

(13) The grout material shall be placed by tremie pipe, either by pouring or forced injection, after water or other drilling fluid has been circulated in the annular space sufficiently to clear all obstructions. There shall be a minimum annular space of three (3) inches for gravity feed and one and one-half (1.5) inches for forced injection between the outside surface of the casing and the formation. The minimum size tremie pipe shall be two (2) inches inside diameter for gravity feed and one (1) inch inside diameter for forced injection. When placing the grouting material, the tremie pipe shall be lowered to the bottom of the zone to be grouted and raised slowly as the grout material is introduced. The tremie pipe shall be kept full continuously from start to finish of the grouting procedure, with the discharge end of the tremie pipe being continuously submerged in the grout until the zone to be grouted is completely filled. The grout shall be allowed to properly cure before

construction may be resumed. Other methods of installing the grout may be used if prior approval is given by the Department.

(14) The casing shall be sealed with a suitable flanged, threaded, or welded cap or compression seal. The outside casing shall be sealed to, and centered in, a reinforced concrete pad. The concrete pad must be at least six (6) feet by six (6) feet by four (4) inches thick and sloped so that water will drain away from the casing.

(15) A screened vent must be provided for the casing (except on packer jet wells). The vent must extend a minimum of eighteen (18) inches above the concrete pad. The vent can be the gooseneck type with twenty-four (24) mesh screen over the opening or manufactured slotted pipe with effective opening of .024 inches or smaller.

(16) A well identification plate must be securely attached to the casing or embedded into the concrete pad. The plate must be made of a durable, weather-proof, material and contain the following information:

(a) Driller name and registration number;
(b) Date well completed;
(c) Total depth of well (in feet);
(d) Casing: Depth (in feet), Inside diameter (in inches);
(e) Screened intervals (of screened wells);
(f) Filter-pack interval (of wells with artificial filter-pack);
(g) Yield expressed in gallons per minute (gpm), or specific capacity expressed in gallons per minute per foot of drawdown (gpm/ft.-dd); and
(h) Static water level and date measured

(17) If a submersible pump is installed, the well head piping must include a check valve followed by a sample tap or hose bibb, a gated blow-off valve, and an in-line gate valve, all of which must be prior to any storage tank. A flow meter is also recommended. If a flow meter is installed it must be prior to the blow-off. Please refer to the attached diagram for an illustration of a typical well and tank installation when a submersible pump is used.

(18) If a jet pump is installed, the well head piping must include a sample tap or hose bibb followed by a gated blow-off and an in-line gate valve, all of which must be prior to any storage tank. A flow meter is also recommended. If a flow meter is installed it must be prior to the blow-off. No check valve is required in the main line of the well head piping for a jet pump; however, a check valve must be provided on the sample tap or hose bibb and the discharge of the blow-off must be a minimum of 12 inches above the concrete pad. A check valve must be installed on the down-stream side of the storage tank. The purpose of not installing a check valve between the pump and the tank is so that the tank will help

keep the pump primed. Please refer to the attached diagram for an illustration of a typical well and tank installation when a jet well pump is used.

(19) A pressure relief valve shall be installed on the well head piping if the pump installed is capable of discharging at a greater pressure than the pressure rating of the storage tank. The pressure relief valve must be set at a pressure equal to or less than the pressure rating of the tank. This valve must also be sized to discharge the rated capacity of the pump.

(20) All electrical wiring must be in rigid or flexible conduit.

(21) The well head must be provided with a well house for protection from weather and vandalism. A lock must be installed on the door or cover. Well houses shall be constructed in a manner and of material that will allow one person easy access to the sampling taps and the well head piping for inspection, maintenance and sampling.

(22) A yield/performance test must be performed for a period of at least 6 hours. Measurements must be recorded at least hourly for yield (gallons per minute) and water level. It is recommended that a test pump be used to perform this test so as to optimize the sizing and selection of the permanent pump. However, if the permanent pump is used, the test should be performed against the average system pressure (i.e., for a 30/50 operating pressure range the pressure should be 40 psi). This may be accomplished by partially closing the gate valve on the blow-off until the desired pressure is obtained. The gate valve may need to be adjusted further during the test in order to maintain the desired pressure. If the test is not performed against the average system pressure, the well yield will be what the pump is rated for at the average system pressure. The pump rating must come from the manufacturer's pump curve for the selected pump.

(23) Any well abandonment shall be conducted by a certified well driller and in accordance with R.61-58.(B)(15) of the State Primary Drinking Water Regulations.

B. Storage

(1) The pressure rating of the hydropneumatic storage tank(s) must be at least seventy-five (75) psi.

(2) The hydropneumatic storage tank(s) must have adequate support and reaction blocking to prevent breaks in the lines connected to the tank.

(3) The hydropneumatic storage tank(s) must be equipped with a means to sample the tank, an isolation valve, and pressure gauge.

(4) Except for a captive air storage tank, the hydropneumatic storage tank must also be equipped with a drain, separate inlet and outlet piping arranged so that water flows through the tank, and an automatic air make-up system. If an air compressor is used in the air make-up system, a pressure relief valve must also be installed on the tank.

(5) If the tank is five hundred (500) gallons or larger an access manhole, a minimum two (2) inch diameter drain, and a vacuum relief valve must be provided. An air compressor shall be installed if the hydropneumatic storage tank two thousand (2000) gallons or larger.

(6) Hydropneumatic storage tanks five hundred (500) gallons and larger must meet the requirements of the American Society of Mechanical Engineers for construction and installation of unfired pressure vessels and must carry its approval stamp.

(7) Controls for operating the pump must be by pressure switch or other automatic means and set to operate on at least thirty (30) psi on /fifty (50) psi off range. A greater operating pressure may be required to assure that a minimum of 25 psi is maintained throughout the distribution system at all times. The maximum pressure range between the on/off operating pressures shall be a maximum of twenty (20) psi.

(8) All paint coatings which come into contact with drinking water shall be certified as meeting the specifications of the American National Standards Institute/National Sanitation Foundation Standard 61.

C. Distribution System

(1) PVC, polyethylene, galvanized iron, or copper piping is acceptable. All piping must be certified as meeting the specifications of the American National Standards Institute/National Sanitation Foundation Standard 61, Drinking Water System Components - Health Effects. Any pipe material, solder or flux used in a potable water system must be lead free. "Lead free" is defined to mean that solder and flux can contain no more than 0.2% lead; pipes and fittings not more than 8.0% lead. If polyethylene pipe is used, water tight compression fittings must be used. Radiator or pipe clamps shall not be used on any underground piping.

(2) All external distribution piping shall be installed at least thirty (30) inches below grade. All single service water lines shall be at least eighteen (18) inches below grade. Where this is not possible, pipe shall be steel, ductile iron, or other approved material and method approved by the Department, and, when necessary, insulated from freezing.

(3) Reaction blocking of poured concrete must be placed at all bends, tees, valves, etc. for all lines two and one half (2.5) inches and larger.

(4) No water line shall be placed within ten (10) feet of a septic tank, sewer line, or manhole or within twenty five (25) feet of a drain field. Where a water line must cross a sewer line (not a drain field), there shall be a minimum of eighteen (18) inch vertical separation with the water line crossing over the top of the sewer line.

(5) Adequate blow-offs shall be provided for periodic flushing of the system. If a dead end water line is greater than one and one half (1.5) inches in diameter and longer than two hundred (200) feet in length, installation of a blow-off is required. Please refer to the attached diagram for an illustration of a typical blow-off.

(6) Upon completion, the distribution system must be pressure tested at a pressure equal to or exceeding the maximum working pressure. The pressure test must be held for at least two (2) hours without a drop in pressure.

D. Disinfection/Testing

(1) Upon completion and setting of the permanent pump and following the pressure test, the well, storage tanks, and all piping must be disinfected by adding calcium hypochlorite or sodium hypochlorite to the well in sufficient amounts to produce at least a 50 milligram per liter concentration. (See Table #1) The pump must be run long enough to get the chlorine solution throughout the well head piping, tank, and distribution line. This solution must be retained for 24 hours then completely flushed from the system. The water must be tested for chlorine to insure that the chlorine solution has been completely flushed from the well and distribution system prior to sampling for total coliform and E.coli bacteria. Once the chlorine solution has been removed, two (2) samples must be collected at least 24 hours apart from the well and one (1) sample from the point farthest from the well or metered connection and analyzed for total coliform bacteria and E.coli bacteria by a DHEC certified laboratory. If the analysis indicates the presence of either or both total coliform and E.coli bacteria, the disinfection and sampling procedure must be repeated until the analysis indicates the absence of total coliform and E.coli bacteria. A separate sample for total coliform and E.coli analysis must be collected and analyzed from all tanks five hundred (500) gallons or larger.

(2) In addition to the total coliform sample, a water sample must be collected from the well and tested for **nitrate**, **iron**, and **manganese**. The water sample must also be tested for **fluoride** if the well is located in one of the following counties: Horry, Georgetown, Charleston, Colleton, Beaufort, Jasper, Dorchester, Berkeley. The water sample must also be tested for **total uranium** if the well is located in one of the following counties: Greenville, Pickens. The water sample must also be tested for **radium** if the well is located in one of

the following counties: Richland, Lexington, Aiken. These analyses must be performed by a DHEC certified laboratory.

CERTIFICATION OF CONSTRUCTION

WELL DRILLER CERTIFICATION

I do hereby certify that the: (circle those items completed by the well driller)

1. Well
2. Pump
   Mfr. Name: _____ Model No:_____
   H.P. _____ Length of drop pipe: _____ ft. Capacity _____ gpm
   Type: __ Submersible __ Jet (shallow) __ Turbine __ Jet (deep)
   __ Reciprocating __ Centrifugal
3. Well head piping
4. Tank
   Mfr. Name: _____ Model No: _____
   Pressure range setting: _____ Usable Volume @ setting: _____
   Type: __ Standard __ Bladder
5. Distribution system

have been constructed in accordance with the requirements specified in the construction permit.

Well Driller's Name(Print):

Well Driller's Signature:
Certification Number: _____Date:

*Satisfactory bacteriological sample results shall be provided for the distribution line in addition to the well. Refer to Condition D(1).

CERTIFICATION OF CONSTRUCTION

CONTRACTOR CERTIFICATION

I do hereby certify that the: (circle those items completed by the contractor)

1. Pump
   Mfr. Name: _____ Model No:_____
   H.P. _____ Length of drop pipe: _____ ft. Capacity _____ gpm
   Type: __ Submersible __ Jet (shallow) __ Turbine __ Jet (deep)
   __ Reciprocating __ Centrifugal
2. Well head piping
3. Tank
   Mfr. Name: _____ Model No: _____
   Pressure range setting: _____ Usable Volume @ setting: _____
   Type: __ Standard __ Bladder
4. Distribution system

have been constructed in accordance with the requirements specified in the construction permit.

Contractor's Name (Print):

Contractor's Signature: _____Date:

*Satisfactory bacteriological sample results shall be provided for the distribution line in addition to the well. Refer to Condition D(1).

Table 1: Quantity of Substance Required to Produce a 50 Part Per Million Concentration of Chlorine

Well Diameter (inches)	Ounces of Compound For Each 10-ft Depth of Water		
	Dry - 70% Calcium Hypochlorite* or Liquid - 12% Sodium Hypochlorite		Household Bleach
	Dry Measure	Liquid Measure	Liquid Measure
2	0.02	0.09 fl oz	0.21 fl oz
4	0.06	0.35 fl oz	0.81 fl oz
6	0.14	0.78 fl oz	1.88 fl oz
8	0.25	1.39 fl oz	3.33 fl oz
10	0.39	2.2 fl oz	5.21 fl oz
12	0.56	3.2 fl oz	7.51 fl oz
24	2.24	12.8 fl oz	30.0 fl oz
36	5.03	28.2 fl oz	67.51 fl oz
All quantities may be rounded to the nearest half-ounce for convenience of measurements. **128 fl oz = 8 pt = 4 qt = 1 gal** *** 1 heaping teaspoon of 70% hypochlorite is approximately □ ounce.**			
EXAMPLE:	6-inch diameter, 100 feet deep well with the water level 20 feet below ground level contains 80 feet of water		
To disinfect with household bleach, you would use 1.88 ounces for each 10 feet of depth or (8 x 1.88) = 15.04 ounces.			
If the well depth or water level is not known, one (1) gallon of liquid household bleach may be used instead of the above amounts.			

BID FORM

REVISED

Catawba Bend Preserve Phase 1

Submitted: _____, 2024

York County Government
6 South Congress Street
York, SC 29745

Sir or Madam:

The undersigned, as Bidder, hereby declares that the only person or persons interested in the Bid, as principal or principals, is or are named herein and that no other person than herein mentioned has any interest in the Bid of the Contract to which the work pertains; that this Bid is made without connection or arrangement with any other person, company, or parties making a bid or proposal and that the Bid is in all respects fair and made in good faith without collusion or fraud.

The Bidder further declares that he has examined the site of the Work and, through personal knowledge and experience and/or subsurface investigations, has fully satisfied himself in regard to all conditions pertaining to such site and he assumes full responsibility therefore; that he has examined the Drawings and Specifications for the Work and from his own experience or from professional advice that the Drawings and Specifications are sufficient for the Work to be done; that he has examined the other Contract Documents and all addenda relating thereto, and that he has satisfied himself fully, relative to all matters and conditions with respect to the Work to which this Bid pertains.

The Bidder proposes and agrees, if this Proposal is accepted, to contract with York County Government (OWNER) in the form of contract specified, to furnish all necessary materials, equipment, machinery, tools, apparatus, transportation and labor and to perform all work necessary to complete the Work specified in the Bid and other Contract Documents.

The Bidder further proposes and agrees to commence substantial work on this project within 15 days of a Notice to Proceed and agrees that the Work will be completed and ready for final payment **within 365 days** of the Notice to Proceed.

The Bidder further agrees that the deductions for liquidated damages, as stated in the Agreement and General Conditions, constitute fixed, agreed, and liquidated damages to reimburse the OWNER for additional costs to the OWNER resulting from the Work not being completed within the time limit stated in the Contract Form. The liquidated damages shall be **$400.00** for each consecutive calendar day thereafter.

The Bidder further agrees to execute a Contract and furnish satisfactory Performance and Indemnity and Payment Bonds, and the required Certificates of Insurance, within ten consecutive calendar days after receipt of Notice of Award of the Contract, and the undersigned agrees that in case of failure on his part to execute the said Contract and Performance and Indemnity and Payment Bonds within the ten (10) consecutive calendar days after the award of the Contract, the Bid guarantee accompanying his Bid and the money payable thereon shall be paid to the OWNER as liquidation of damages sustained by the OWNER; otherwise, the Bid guarantee shall be returned to the undersigned after the Contract is signed and the Performance and Indemnity and Payment Bonds are filed.

BID SCHEDULE
CATAWBA BEND PRESERVE PHASE 1

Base Bid List

All work performed by the Contractor as essential to the completion of the intent of the Contract Documents shall be paid for in accordance with the Bid Schedule. No direct payment will be made for work performed which is not shown as a separate Bid Item. All costs shall be included in the various Pay Items in the Bid Schedule for the work shown on the drawings.

BID – UNIT PRICE SCHEDULE

Item No.	Qnty.	Unit		Installed Item Unit Cost	Total
1)	1	LS	Mobilization	$	$
2)	1	LS	Construction Staking	$	$
3)	1	LS	Gatehouse Building	$	$
4)	1	LS	Restroom Building	$	$
5)	1	LS	Entry Gate Area	$	$
6)	1	LS	Erosion Control	$	$
7)	1	LS	Clearing and Grubbing	$	$
8)	1 LS Comprehensive Grading			$	$
9)	5,000 CY Undercut/On-Site Borrow			$	$
10)	68	CY	Reinforced Concrete Structures	$	$
11)	350	LF	15 Inch RCP	$	$
12)	100	LF	54 Inch RCP	$	$
13)	200	LF	Timber Guard Rail	$	$

14)	3	EA	Concrete Catch Basin	$	$
15)	8	EA	Riprap Apron	$	$
16)	13,085	TN	Compacted Aggregate Base Course	$	$
17)	9,200	SY	Prime Coat	$	$
18)	40,130	SY	2” HMA Surface Course Type B	$	$
19)	1	LS	Electrical	$	$
20)	1	LS	Pavement Striping	$	$
21)	5.66	AC	Grassing	$	$
22)	1	LS	Landscaping	$	$
23)	1	LS	As Builts	$	$
24)	250	CY	Rock Removal	$	$

Total Project Bid $ _____

Signature Page - OFFERORS MUST COMPLETE AND SIGN THE FORM BELOW
The submittal must be signed by an authorized representative of the Offeror accepting all terms and conditions contained in this document and any addenda. Modifying the terms and conditions of this solicitation may result in your response being rejected.

COMPANY NAME	FEDERAL TAX ID NUMBER
COMPANY ADDRESS	CITY, STATE, ZIP+4
PAYMENT/REMITTANCE ADDRESS	CITY, STATE, ZIP+4
EMAIL ADDRESS	COMPANY TELEPHONE
PRINT NAME	TITLE
AUTHORIZED SIGNATURE	DATE

Minority Status

- ☐ Not Minority Owned
- ☐ African American Male
- ☐ Caucasian Female
- ☐ African American Female
- ☐ Aleut
- ☐ Eskimo
- ☐ East Indian
- ☐ Native American
- ☐ Asian
- ☐ Other (Please Explain)

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ **Go to *www.irs.gov/FormW9* for instructions and the latest information.**

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN,* later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–		–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	**Signature of U.S. person ▶**		**Date ▶**	

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9.*

Purpose of Form

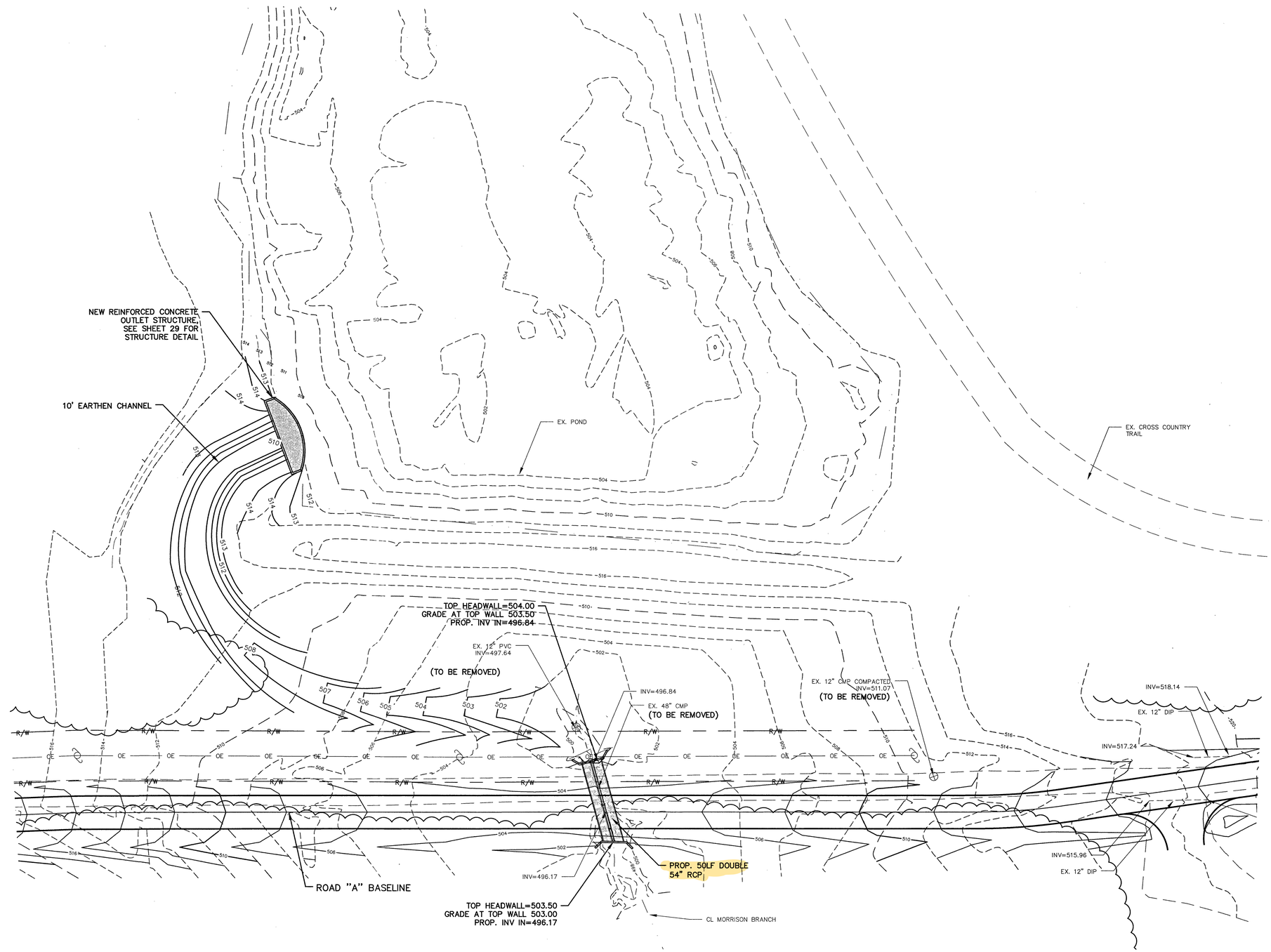
An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

ATTACHMENT C



30 0 30 60 Feet

HORIZONTAL SCALE: 1" = 30'

Plans Prepared By:
Armstrong Glen, P.C.
9731-L Southern Pine Boulevard
P.O. Box 2326
Charlotte, NC 28241
Phone: 704-529-0345
Fax: 704-529-0493

NO	DATE	BY	DESCRIPTION

SOUTH CAROLINA PROFESSIONAL ENGINEER WILLIAM M. STRONG No. 29000 6/21/2024

SOUTH CAROLINA ASSISTANT CERTIFICATE OF AUTHORIZATION ARMSTRONG GLEN, P.C. No. C01550

22106 JOB NO.	SCALE		
22106/CATAWBA BEND ENTRANCE ROAD/ACAD/WMA CAD FILE PATH	CHECKED BY		
DJC PREPARED BY	06/21/2024 DATE		
WMA APPROVED BY			

CATAWBA BEND PRESERVE PHASE 1

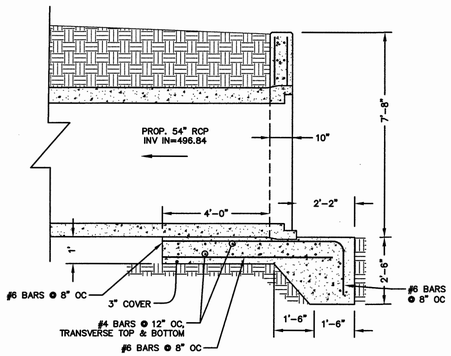
OUTLET STRUCTURE

SHEET 27 OF 82

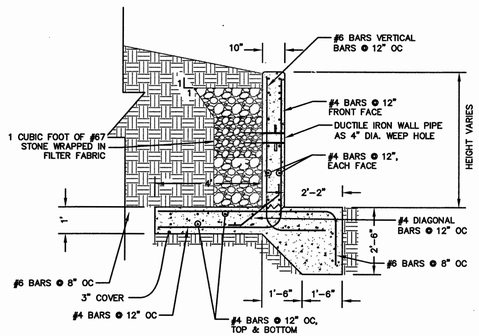
ATTACHMENT D

GENERAL NOTES:

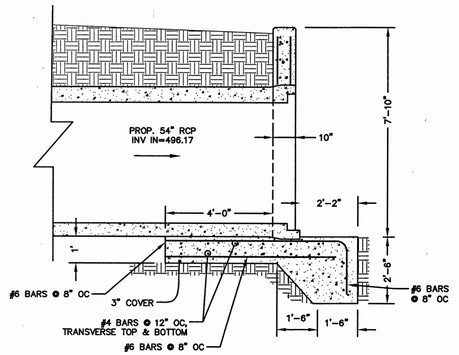
1. ALL CONCRETE TO BE 4,000 PSI UNLESS OTHERWISE NOTED.
2. ALL CONCRETE REINFORCING STEEL SHALL BE GRADE 60.
3. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
4. ALL EXPOSED JOINTS WILL BE CONCAVE TOOLED.
5. ALL DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING STEEL ARE TO CENTERS OF BARS.
6. FORMS ARE TO BE USED FOR CONSTRUCTION OF THE BOTTOM SLAB.
7. REINFORCEMENT COVER TO BE 2" AT ALL FACES UNLESS OTHERWISE NOTED.



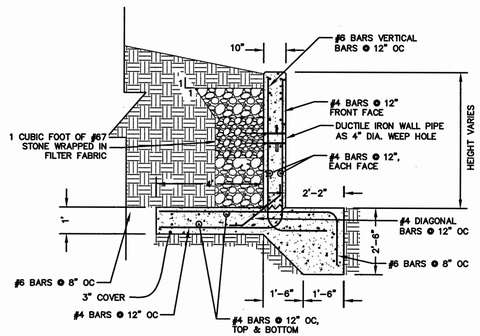
7/28 SECTION AT HEADWALL
SCALE: 3/8" = 1'



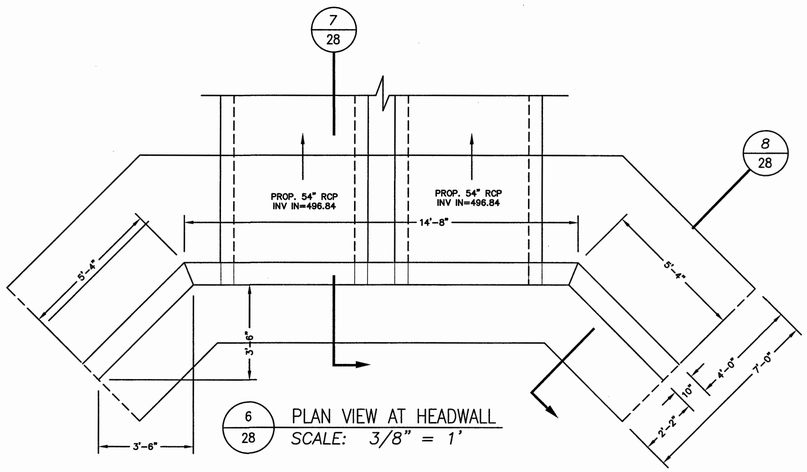
8/28 SECTION AT HEADWALL & WING WALLS
SCALE: 3/8" = 1'



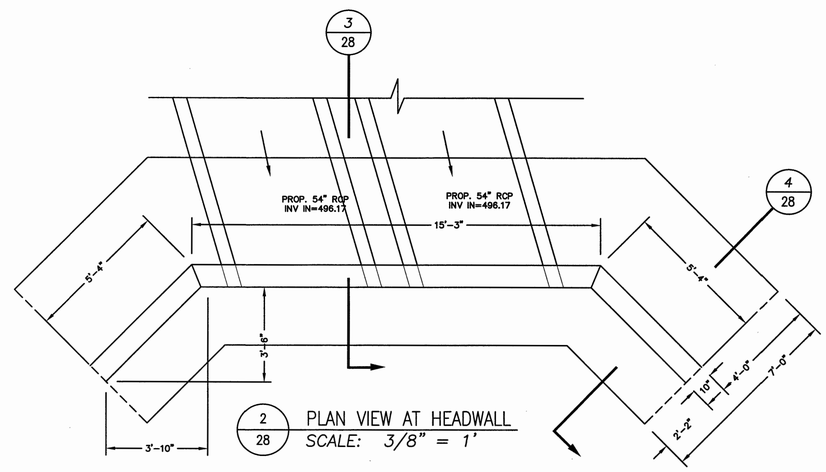
3/28 SECTION AT HEADWALL
SCALE: 3/8" = 1'



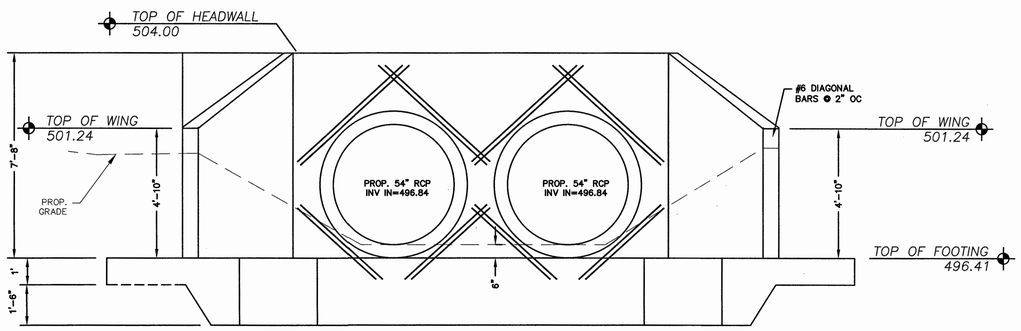
4/28 SECTION AT HEADWALL & WING WALLS
SCALE: 3/8" = 1'



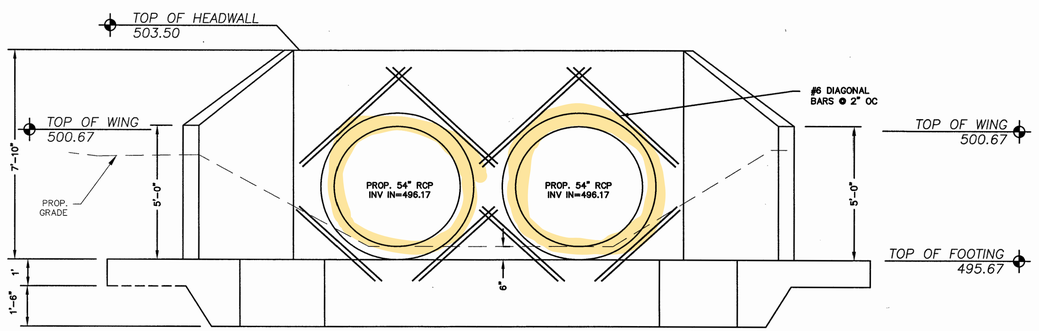
6/28 PLAN VIEW AT HEADWALL
SCALE: 3/8" = 1'



2/28 PLAN VIEW AT HEADWALL
SCALE: 3/8" = 1'



5/28 ELEVATION VIEW AT HEADWALL
SCALE: 3/8" = 1'



1/28 ELEVATION VIEW AT HEADWALL
SCALE: 3/8" = 1'

Plans Prepared By:
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9731-L Southern Pine Boulevard
P.O. Box 7326
Charlotte, NC 28241
Phone: 704-529-0345
Fax: 704-529-0493

NO.	DESCRIPTION	BY	DATE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL No. 28000 WILLIAM A. MARSHBURN 6/21/2024

NORTH CAROLINA CERTIFICATION ARMSTRONG GLEN, P.C. No. C01550

22106 JOB NO.	NA SCALE		
22106/CATAWBA BEND ENTRANCE ROAD/ACAD/ WMA CAD FILE PATH	CHECKED BY	06/21/2024 DATE	
DJC PREPARED BY	WMA APPROVED BY		

CATAWBA BEND PRESERVE PHASE 1

EXISTING POND/DAM IMPROVEMENT

STRUCTURAL DETAILS

SHEET 28 OF 82

ATTACHMENT E