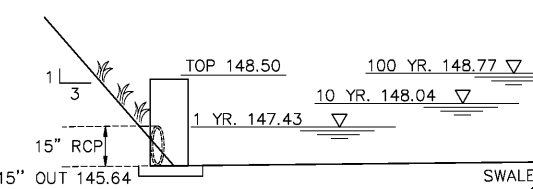


**POND DETAIL**

SCALE: 1" = 20'

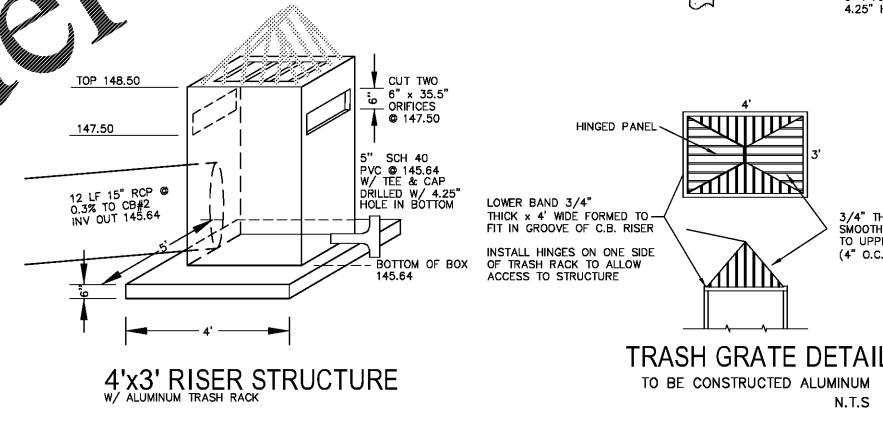


**POND CROSS SECTION**

NO TO SCALE

STAGE	ELEVATION	CONTOUR AREA (SF)	INCREMENTAL STORAGE (CF)	TOTAL STORAGE (CF)
0	145.64	0	0	0
0.36	146.00	417	75	75
1.36	147.00	4,011	2,214	2,289
2.36	148.00	6,295	5,153	7,442
3.36	149.00	7,555	6,925	14,367
3.51	149.15	7,990	1,166	15,533

**STAGE/STORAGE TABLE**



**Concrete and Asphalt Testing**

**Portland Cement Concrete Testing Requirements**  
 Initial Test: The initial test (from first ready-mix truck) is to be taken after the second cubic yard is dispensed from the mixer and is to consist of the following:  
 1. One slump test  
 2. Three cylinders pulled, prepared and stored on-site for 24 hours  
 3. Temperature recording  
 Subsequent Tests: After the above tests are pulled from the initial truck, every 5th truck thereafter is to be tested in the same manner as noted above.

**Asphalt Concrete Testing Requirements**  
 Compaction: Testing for apparent density is to follow NCDOT "Standard Specifications for Roads and Structures", Section 609-5, "Field Compaction Quality Management", latest revision.  
 Thickness: The minimum frequency of coring for thickness testing shall be on the basis of test sections consisting of not more than 1500 linear feet of lay down width, exclusive of intersections and irregular areas. The test sample is to be a 6-inch core sample. The sample is to be numbered and logged for identification purposes.  
 Contractor's Quality Control System: Follow NCDOT "Standard Specifications for Roads and Structures", Section 609-5, "Contractor's Quality Control System", latest revision.  
 Mixture and Job Mix Formula Adjustments: Follow NCDOT "Standard Specifications for Roads and Structures", Section 609-4, "Field Verification of Mixture and Job Mix Formula Adjustments", latest revision.  
 General: All other applicable sections of Section 609 of the NCDOT "Standard Specifications for Roads and Structures" shall apply relating to Quality Control, mix design, control limits, corrective action, equipment and measurement.  
 Testing Cost: Site Contractor is responsible for cost of testing.

**Concrete Notes**

- All construction, placing, pouring and curing concrete is to conform to the latest edition of ACI 318.
- All reinforcing steel is to be cut and bent in conformance with the latest edition of ACI 318 and ASTM A-615.
- Portland Cement Concrete shall have a minimum 28-day compressive strength of 4000 PSI (or noted), a non-vibrated slump between 2.5 and 4 inches, a minimum cement content of 245 pounds per cubic yard, an entrainment of 7-7.5 percent and a maximum water-cement ratio of 0.45 in accordance with Class B concrete as described in the NCDOT Standard Specifications for Roads and Structures unless otherwise specified.
- Do not use chloride in any concrete which has reinforcing steel or wire fabric.
- Reinforcing steel shall meet ASTM A-615, Grade 60. Welded wire fabric shall meet ASTM A-185. The wire shall conform to ASTM A-62.
- Lap welded wire fabric a minimum of one mesh. Lap all bars a minimum of 24 inch. Alternate adjacent bar splices a minimum of 48".
- Use only approved chairs with sand pads to support reinforcing on grade.
- All crossings of reinforcement are to be tied. Supports for reinforcing to hold bars against movement during pour and finish operation. Supports for reinforcing bars to be a minimum of 48 inches apart.
- Concrete shall be only ready-mixed concrete. The time elapsing from mixing to placing the concrete shall not exceed ninety (90) minutes.
- Concrete shall not be deposited on frozen subgrade and shall not be poured when the air temperature for the succeeding 24-hour period is less than 32 degrees F.
- All concrete when placed in forms shall have a temperature between 50 degrees F and 90 degrees F and shall be maintained at a temperature of not less than 50 degrees for at least 72 hours for normal concrete and 24 hours for high early strength concrete.
- Do not place fresh concrete during summer on a dry subgrade. Moisture subgrade before placing concrete.
- Subgrade is to be firm, free of water and/or silt and undisturbed or compacted properly. Consult Engineer if soft or yielding subgrade is encountered for improvement directions. If ground water is entering subgrade, consult Engineer for instructions.
- Areas of concrete to be removed shall be saw cut before removing. The saw cut shall provide a smooth, straight edge approximately two (2) inches deep before breaking away the adjacent concrete.
- Immediately after the forms have been removed and all honeycombed areas are repaired, backfill to prevent underwash.
- Brooming of the concrete surface shall be done transverse to the direction of traffic for all pedestrian areas.
- Joint spacing shall be no less than 8-feet. Where existing sidewalks are being widened, transverse joints shall be located so as to line up with existing joints in the adjacent existing sidewalk. Grooved joints shall not be used.
- Concrete sub shall be responsible for all score joints and expansion joints. A preliminary score joint pattern and expansion joint pattern shall be submitted to the project engineer for review prior to pouring concrete.
- Expansion joints shall be one-half (1/2) inch in width and shall be placed between all rigid objects at a distance of no more than thirty (30) feet apart and shall extend the full depth of the concrete with the use of the filler one-half (1/2) inch below the finished surface.
- The edges of the curb/sidewalk shall be finished with an approved edge tool one-half (1/2) inch radius. Joints shall be similarly finished immediately after templates have been removed.
- Saw cut joints as soon as fresh concrete will retain coarse aggregate against the sawing operation.
- Contractor SHALL NOT POUR any concrete before forms are inspected by the project engineer and owner. Any concrete that has not been approved by the engineer and/or owner will be the responsibility of the contractor.

**Drainage Notes**

- Boxes may be reinforced masonry, masonry precast concrete or precast concrete.
- The maximum height of an un-reinforced masonry drainage structure with a wall shall be limited to 8' - 0" from invert of the outlet pipe to the top of the coating. Drainage structures less than 8' shall have walls 12" thick. Boxes over 12' in total depth shall be designed by a PE Professional Engineer. 42" walls are not allowed on drainage structures.
- Steps are to be provided on all drainage deeper than 42".
- Steps are to be PSI-PF as manufactured by M. A. Industries or an approved equal. Locate on non-pipe walls.
- Mortar in masonry boxes is to be type S.
- Clay brick structures are not allowed.
- Concrete pipe is to be minimum 24" diameter and shall conform to meeting ASTM C-76, latest revision.
- Concrete building brick is to meet ASTM C-90, latest revision.
- All iron castings are to be drilled and logged in the drainage structure. The drainage structure as well as be drilled.
- All cast-in-place or precast concrete drainage structures located in paved areas accessible to truck loadings to be designed to meet AASHTO 20-44 loading. See manufacturer details for wall, top and bottom thickness.
- All from 1/2" gages, and hoods receive a bituminous coating.

**Grading Notes**

- Site Contractor to inform General Contractor to verify finished grade at building before digging footings. Some portions of the building foundation may be of masonry, existing masonry may be removed to allow exterior grades to be dropped. In this case, step footings may be necessary to achieve the desired grade variations.
- New finished contours shown on top of future paving in areas to receive pavement and top of topsoil in areas to be seeded or sodded.
- Areas outside of the parking lot parameters shown to be seeded shall receive 4 inches of topsoil. This topsoil to be placed and leveled by the Contractor.
- Dimensions on buildings are for grading purposes only and are not to be used to lay-out footings. See Architectural Plans.
- Contractor shall notify and cooperate with all utility companies or firms having facilities on or adjacent to the site before disturbing, altering, removing, relocating, adjusting or connecting to said facilities.
- All catch basin grates and frames are to be Vulcan or approved equal. Verify that dimension heights on castings are not exceeded in critical areas before ordering substitute castings.
- All areas not covered by an impervious surface or landscaped planting bed are to be graded.
- Unusable excavated materials and all waste resulting from clearing and grubbing shall be disposed of off-site by Contractor.
- All excavation is unclassified and shall include all materials encountered.
- Before any machine work is done, Contractor shall stake out and mark the items established by the Site Plan. Control points shall be preserved. All trees during the course of the project. Look of proper working points and grade stakes may require cessation of operations until such points and grades have been placed to the Owner's satisfaction.

**Parking, Roadway and Building Subgrade Preparation**

- Subgrade on Precompact Original Soil
  - Remove all the topsoil and all questionable organic soil and extend a minimum of four (4) feet beyond the outside edge of the pavement. Stockpile topsoil that is free from trash and debris for reuse.
  - Precompact the exposed grade with a vibratory roller weighing a minimum of ten (10) tons (static load) equal to stabilize the soil and to reduce the air content of the subgrade to the level required by the design. The end of the fill shall be terminated at the minimum slope of two (2) horizontal to one (1) vertical, measured from three (3) feet beyond the outside edge of the pavement to the toe of the fill. The soil is to be select granular soil weighing a minimum of 110 pcf at the optimum moisture content.
- Subgrade on Certified Compacted Fill
  - Prepare the site following the same procedures as outlined in items 1 and 2 above.
  - Using the same compaction equipment as outlined above, compact new fill soil in +/- 8-inch layers to a minimum 98-percent of the maximum dry density of its optimum moisture content in accordance with the Standard Proctor Method, ASTM Standard D 690-79 and field controlled in accordance with ASTM Standard D 2167-84, or equal. The top one (1) foot of the prepared fill subgrade should be compacted to 100-percent of the maximum dry density using the Standard Proctor Method.
  - The end of the fill shall be terminated at the minimum slope of two (2) horizontal to one (1) vertical, measured from three (3) feet beyond the outside edge of the pavement to the toe of the fill. The soil is to be select granular soil weighing a minimum of 110 pcf at the optimum moisture content.

**Site Plan Notes**

- Contractor to provide full water service to site including meter, setting and connection fees in his bid.
- The Site Contractor is to assume responsibility for water and sewer utilities from a point 5' outside of the building to the point of public connection.
- Contractor to furnish all pipe stripings.
- Owner to purchase and locate all recycle bins. Recycle bins shall not be provided by City.
- A Geotechnical investigation was prepared for this project. Contractor is responsible for digging site, if desired prior to bid. Contact number is 252-459-8196 at least 48 hours prior to want to gain access. Contact Penny Myers at 252-459-8196.
- All site planning is to meet the State Building Code, Volume II, Plumbing.
- Water service to be installed in accordance with the State Building Code, Volume II, Plumbing.
- Water service to be PVC, meet the minimum grades for 4-inch lines.
- Water service to be 1.0% percent.
- Water service valve, if needed, is to be located in building and is not Site Contractor's responsibility.
- Fire department signs, marking and ramp per the details.
- All site placement markings and all traffic control devices are the Site Contractor's responsibility. Contractor shall provide Uniform Traffic Control Devices, current edition, as amended; ADA guidelines, ANSI A117.1.
- Contractor shall coordinate installation of all signs, pavement markings, and other traffic control devices with other contractors on the site.
- Contractor shall saw-cut to provide smooth transition at tie-in to existing edge of pavement when applicable.
- Do not pour any concrete before forms are inspected and approved by Engineer/Owner.
- Contractor shall comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by AGC of America, Inc., and the Safety and Health Regulations for Construction issued by the U.S. Department of Labor.
- Storm drainage pipe is to be Class III reinforced concrete meeting ASTM C-76, latest revision.
- All handicap ramps are to meet "ADA Accessibility Guidelines for Buildings and Facilities" as detailed in Federal Register, Vol. 56, No. 144, dated July 26, 1991, rules and regulations adopted January 26, 1992, latest revision. Also, refer to North Carolina State Building Code Volume 1-C, "Making Buildings and Facilities Accessible To and Usable by the Physically Handicapped", 1991, latest edition and ANSI A117.1, current edition, as amended.

**General Notes:**

- This plan must be approved by Prince George County Planning prior to construction of any street, water, storm drainage or other site improvement on this plan.
- All improvements shall conform to the Prince George County Standards and Specifications or VDOT, as applicable.
- Disturbed area is greater than 1 acre and formal Sedimentation & Erosion Control plan approval is required as a condition of construction plan approval. Measures shown on the approved Erosion & Sedimentation Control Plan shall be regarded as minimum requirements; additional measures shall be put in place to ensure that no sediment is released from the site.
- The General Contractor is responsible for installing and maintaining all measures necessary to ensure that all sediment is contained on-site.
- Omitted.
- Stormwater detention and nutrient management has previously been approved and addressed.
- Water and sewer service fees are due on this site prior to receiving building permit. Contact Prince George County for payment information.
- Contractor shall make arrangements with the local utility authority for connection to existing mains. Do NOT operate any existing valves without permission of Prince George County.
- Water meters supplied by contractors shall contain encoder register and module for radio transmitted meter reading per the Prince George County Standards.
- For the installation of electrical services, location of pad-mounted transformer if needed and to connect electrical services, contact Public Utilities of Prince George County.
- Any relocation of existing utilities will be at the cost of the General Contractor. VDOT will not accept responsibility for damages to curb and gutter or street improvements if installed prior to underground services, nor will the VDOT absorb the cost for pavement patching, damages to landscaping or borings to install underground services.
- Contractor shall be responsible for all work zone traffic control in or adjacent to ROW. All signs, pavement markings and other traffic control devices shall conform to the Manual on Uniform Traffic Control Devices (MUTCD), latest edition as amended.
- Fire Protection water supply system including fire hydrants, shall be installed and in service prior to recording the subdivision, or, if no subdivision is involved, shall be installed prior to the placing of combustible building materials for structures or combustible pre-tested fabricated building assemblies on the project site or utilizing them in the construction of building structures. If phased coordination is planned, coordinate installation of the fire protection water system is permitted.
- Fire department vehicular access to all structures under construction shall be provided at all times. In areas where ground surfaces are soft or likely to become soft, hard all weather surface roads shall be provided and maintained.
- Omitted.
- Commercial property Address Numbers shall be a minimum of ten (10) inches in height with a minimum stroke width of one (1) inch. These numbers shall contrast with their background and shall be Arabic style numerals.
- Address Numbers must be posted on the front of the structure nearest to the main entrance in a position to be plainly legible, visible and unobstructed from the street or road fronting the property. Any change of deviation from this plan prior to or during construction, will cause addressing and/or street names to be re-evaluated with possible subsequent change.
- Plans are based on an actual field survey performed by TIMMONS GROUP.
- Reference horizontal datum is NAD 83, reference vertical datum is NAVD 88.
- Contractor to verify all building dimensions and/or location(s) with architectural drawings before beginning construction. If any discrepancies are found, cease construction and consult the architect and civil engineer for resolution.
- Omitted.
- All HVAC equipment shall be screened from the view of all public street rights-of-way for their entire length along those streets, except for necessary access.
- For the installation of gas services, contact Public Utilities.
- The customer is required to provide an outside lockable disconnect.
- Right-of-Way Easement must be placed prior to installation of utilities.
- Call VA One Call before digging to locate existing utilities.
- If overhead primary electric lines are present, mature tree height shall not exceed 15 feet.
- Copies of all permits and approved plans must be kept on site in a plastic box that is conspicuously located and easily accessible during construction. This includes approved construction plans, approved location and plan encroachments, approved driveway permits, water/sewer permits, etc.
- Plan approval is valid for five (5) years from approved date.

**Sewer Notes**

- No sewer line installation shall take place until an approved Site Plan has been issued.
- Sewer Pipe:
  - SDR-35 SMOOTHWALL: Pipe shall conform to ASTM D-3034 Type PSM, SDR-35.
  - Pipe bedding shall be according to utility standard detail. (See Sheet D-22)
  - Any well pointing, dewatering, etc. needed during sewer construction is to be included in the cost of the line laid. Utilize select fill from on-site for trench borrow when needed. If material of a select nature is not available, bring in from off-site.
  - The minimum clearances for water, sewer and storm drainage lines shall be as follows:

Between	Horizontal	Vertical
Water and Sewer	10'	18" w/water above sewer
Water and Storm Drainage	-	12" w/water above storm drainage
Sewer and Storm Drainage	-	24" w/storm drainage above sewer
- The Contractor shall make arrangements with the local utility authority for connecting to existing manholes or mains.
- Location, size and invert elevations of clean outs shown on drawings are to be coordinated with the approved Plumbing Plans for the building. All plumbing to meet the requirements of the NC State Building Code, Volume II, Plumbing, latest revision.
- Contractor shall seal, match and lock all disturbed pits within 72 hours after finishing trench. All sedimentation control measures shall be kept in operation until a stable surface of grass is established and the area is capable of resisting erosion and wind action. All erosion control measures shall be removed when authorized by the Engineer after completion of the project.
- All excavated wood and rocks shall be disposed off-site by the Contractor. Bury will not be permitted on-site.
- Contractor shall take proper precautions not to disturb existing property corner markers. All disturbed property corner markers shall be replaced by a Registered Land Surveyor.
- All cost for the provision of erosion control rip rap, site meshing, matting, grass seeding and silt fence shall be included in total bid.
- Manholes or Wetwells shall be in conformance with GSIA "Confined Access Entry" requirements. Proper notification and other applicable equipment and devices may be necessary to protect workers, after system is operational, from hydrogen-sulfide gas build-up or otherwise dangerous environment.
- The contractor shall provide, upon completion of water and sewer construction, record drawings of the sewer installation specifically showing/depicting any deviations from the permitted plans. Plans to be worked reviewed and submitted to Engineer. The final payment request will not be submitted to the Engineer until completion of these drawings. These drawings shall be reviewed and received by the Engineer.
- The contractor is responsible for notifying local authority of time and date he plans to commence utility construction.
- Where lines cross gravel/asphalt driveways, Contractor is to restore driveways to the original condition. Drives shall be repaired within 7-days of open cut.
- All Sanitary Sewer shall be in accordance to Prince George County Standards and Specifications.
- All Frames and Lids to receive a bituminous coating.

**Water Notes**

- No existing valves and fire hydrants shall be operated without the explicit permission from the Public Utility Director. The contractor shall make arrangements with the local utility authority prior to connecting to existing mains.
- Contractor shall seal, match, and lock all disturbed area within 7 days after backfilling trench. All sedimentation control measures shall be kept in operation until a stable surface of grass is established and the area is capable of resisting erosion and wind action. All erosion control measures shall be removed when authorized by the Engineer after the completion of the project.
- All excavated wood and rocks shall be disposed off-site by the Contractor. Bury will not be permitted on-site.
- Water line crossing existing asphalt pavement shall be installed by the Open Cut method.
- Where lines cross gravel/asphalt driveways, Contractor is to restore driveways to the original condition. Drives shall be repaired within 7-days of open cut.
- Contractor shall take proper precautions not to disturb existing property corner markers. All disturbed property corner markers shall be replaced by a Registered Land Surveyor.
- All cost for the provision of erosion control rip rap, site meshing, matting, grass seeding and silt fence shall be included in the total bid.
- Utility contractor is responsible for notifying local authority of time and date he plans to commence construction.
- Any well pointing, dewatering, etc. needed during construction shall be the responsibility of the contractor. Trench borrow needed during construction shall be included in the cost of the line laid, unless otherwise specified.
- Valve box to be 3 piece telescopic with concrete collar when not in pavement.
- The contractor shall provide all the material and appliances necessary for the complete installation of the utilities. All pipe and fittings shall be inspected prior to being covered.
- Lines shall be flushed thoroughly to remove dirt and debris. Chlorine shall be applied to all water lines in sufficient concentration to leave an overall residual of 50 ppm. The chlorinated water shall remain in the lines for 24 hours at the end of which time the chlorine residual shall be at least 10 ppm. The lines shall then be flushed until there is normal chlorine residual present and samples shall be collected for bacteriological analysis.
- The contractor to conduct bacteriological testing of water lines, which have successfully passed hydrostatic testing and have been disinfected in conformance with AWWA Standards. This procedure requires (5) days to complete.
- No contractors are authorized to use un-metred water during construction. All pipe and appliances shall be thoroughly cleaned prior to placement. Pipe shall be laid with straight lines and even grades and all joints shall be perfectly fitted. During periods when pipe is not being laid, open ends shall be securely blocked.
- All excavation is unclassified and shall include all materials encountered.
- All concrete used for blocking and concrete collars is to be minimum 3,000 pcf at 28 days, air entrained.
- Contractor shall saw-cut to provide smooth transitions where existing asphalt is to be removed.

**Gospel Notes**

The following notes do not represent the belief of any municipality, government organization, or client of Stocks Engineering. The detail is included to show the foundation of Stocks Engineering and its employees. We are thankful for the truth outlined below you will clearly see what it means to have a personal relationship with Christ.

- GOD'S LOVE**  
God loves you and he created you to know him personally. He has a wonderful plan for your life. John 3:16 "For God so loved the world that he gave his only son, that whoever believes in him shall not perish, but have eternal life." What prevents us from knowing God personally?  
Romans 3:23 "For all have sinned and fall short of the glory of God." Romans 6:23 "For the wages of sin is death" (Spiritual separation from God)  
This diagram illustrates that God is Holy and people are sinful. A great gulf separates the two. The arrows illustrate people continually trying to reach God through our own efforts, but we inevitably fail.
- OUR CONDITION**  
People are sinful and separated from God, so we cannot know him personally and experience his love and plan.  
Romans 3:23 "For all have sinned and fall short of the glory of God."  
There is only one way to bridge this gulf...
- GODS RESPONSE**  
Jesus Christ is God's only provision for sin, through Him alone we can know God personally and experience His love and plan.  
Romans 8:8 "But God demonstrated His own love for us in this: While we were still sinners, Christ died for us." John 14:6 Jesus answered, "I AM the way the Truth and the Life. No one comes to the Father except through me."  
It is not enough just to know these truths...  
Ephesians 2:8-9 "For it is by grace you have been saved, through faith - and this is not from yourselves, it is the gift of God - not by works, so no one can boast."  
John 1:12 "Yet to all who received Him, to those who believed in His name, he gave the right to become children of God."  
Which circle best represents your life? This circle would you like to have represent your life? You can receive Christ right now by faith in prayer. "Lord Jesus, I need you. Thank you for dying on the cross for my sins. I open the door to my life and receive you as my Savior and Lord. Thank you for giving me eternal life. Take control of the throne of my life. Make me the kind of person you want me to be." If this prayer expresses the desire of your heart, then you can pray this prayer and Christ will come into your life as he promised.  
For more information on what it means to have a relationship with God, or if you have any questions or prayer requests please submit them to stocksengineering@gmail.com, call us at 252.459.8196, or visit our web site, www.stocksengineering.com.  
These two circles represent two kinds of lives... Self-Directed Life: Self is in the center and on the throne; Christ is outside. Christ-Directed Life: Christ is in the center and on the throne; self is outside to Christ.

THEN JESUS DECLARED, "I AM THE BREAD OF LIFE. WHOEVER COMES TO ME WILL NEVER GO HUNGRY, AND WHOEVER BELIEVES IN ME WILL NEVER BE THIRSTY. JOHN 6:35

**STOCKS ENGINEERING**  
 801 EAST WASHINGTON STREET  
 NASHVILLE, N.C. 27856  
 WWW.STOCKSENGINEERING.COM  
 P.O. BOX 1108  
 PHONE: (252) 459-8196

**BLN-C-1874**  
**Hardees**  
 CHAIRMAN'S RECOMMENDATION  
 BODIE-NOELL ENTERPRISES, INC.  
 P.O. BOX 1908  
 ROCKY MOUNT, NC 27802-1908  
 (252) 807-2800

**HARDEES at PRINCE GEORGE COUNTY, VA.**

**COMMONWEALTH OF VIRGINIA PROFESSIONAL ENGINEER**  
 MICHAEL STOCKS  
 Lic. No. 063308  
 8/19/19  
 J. Michael Stocks

**SITE NOTES AND DETAILS**

REVISIONS	
10/28/19	SCM Revisions
12/6/19	PRINCE GEORGE REVIEW
2/7/20	VDOT REVIEW
2/14/20	PRINCE GEORGE REVIEW
2/28/20	VDOT COMMENTS

FILE NO. 2017-013  
 HORZ. SCALE: 1"=20'  
 VERT. SCALE: NONE  
**CE-09**