PREPARED FOR:

LEGACY AT JORDAN LAKE PROPERTY OWNER'S ASSOCIATION, INC.

CHAPEL HILL, NC

DATE PREPARED:
MAY 30, 2024

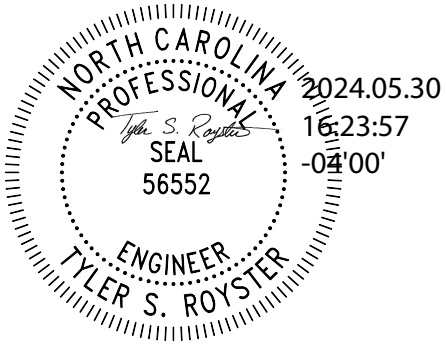

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TABLE OF CONTENTS

INTRODUCTIONS 1
EXECUTIVE SUMMARY 2
PURPOSE & SCOPE 3
Standards of Reference 4
SOURCES OF INFORMATION 5
Date of Inspection 5
Interviews 5
Documents 5
Cost Estimates 5
DESCRIPTION 6
SITE IMPROVEMENTS 7
Topography and Retaining Walls 7
Storm Drainage 7
Paving, Curbing and Flatwork 9
Landscaping, Site Fencing & Appurtenances 10
Structure 11
Ventilation 12
Exterior Finishes 13
Interior Finishes 14
Electrical & Lighting Systems 15
Plumbing, Fire Protection, & HVAC Systems 15
Amenities 16
Accessibility Considerations 17
CONCLUSION & LIMITATIONS 18

Appendix A: Engineer's Cost Estimates
Appendix B: Project Photographs
Appendix C: Reference Documents & Reports

INTRODUCTIONS

The Legacy at Jordan Lake Property Owner's Association, Inc. authorized Giles Flythe Engineers to conduct a Transition Study for the Legacy at Jordan Lake community located in Chapel Hill, NC.

The community recently completed or is nearing transition from developer (declarant) control to a board of directors comprised of homeowners in the community. As the homeowner-controlled board of directors assumes responsibility for managing the association and thereby maintaining common areas and other components, it is important to gain an understanding of the condition of these association-maintained components.

The purpose of the transition study is to provide a due-diligence service in determining the condition of the association-maintained components in relation to appropriate standards. Standards may include provided construction documents (building/site plans), building codes, material manufacturer installation recommendations, and other industry standards. This report will describe observed deficiencies in the quality of the association-maintained components and will provide an engineer's estimate for the cost to remedy the observed deficiencies.

We have reviewed the governing documents provided to assist in determining the maintenance responsibilities of the association. We recommend consulting with an attorney to assist in the determination of the responsible party for items identified in this report. The recommendations in this report should be considered in conjunction with any existing agreements, governing documents or other documents related to the development and management of the association.

The condition evaluation of this transition study will focus on significant concerns with the condition of the association-maintained building and site components of material nature.

The report should be read in its entirety in order to fully understand all of the information presented. There are many additional considerations during transition including governing documents, finances, budgets, reserve funding, insurance, and other association management responsibilities. We recommend consulting with other community association professionals including a community manager, attorney, insurance/risk management professional, and accountant to assist with the transition process. We also recommend completing a reserve study to fulfill the board's fiduciary duty to the owners.

The Foundation for Community Association Research has published a report titled Best Practices Report #7 Transition © 2014. This report provides further information on the community association transition process. This transition study engineering report has been completed with consideration of the guidelines for such reports noted in the best practices report.

EXECUTIVE SUMMARY

The association-maintained site improvements and building components are in varying condition. We have identified deficiencies in specific components as noted in this report and summarized in Appendix A – Transition Deficiencies.

This study is intended to identify items that have been constructed improperly or contain defects in the materials. Some of the components within the community are original to the beginning of construction and are beyond their expected useful life. We do not consider normal wear on individual components to be a construction defect and have not included those items in this study. These components should be repaired and/or replaced by the Association through a maintenance or reserve account.

The most significant observed deficiencies are as follows:

- Lack of as-built drawings and repairs to the stormwater control measures throughout the community.
- Roof surfaces at the clubhouse and fitness center need repair and modification.
- Leaks in the waterfall feature near the entrance of the community

A more detailed discussion of our findings is provided in this report and organized by component type. We have found components that are not in compliance with noted standards for which we recommend repair/remediation in the near term.

PURPOSE & SCOPE

The purpose of the transition study is to provide a due diligence service in determining the condition of the association-maintained components in relation to appropriate standards. As the homeowner-controlled association assumes responsibility for maintaining certain building and site components, it is diligent to seek an understanding of the condition of these components. We have included an engineer's cost estimate to repair/remediate any significant observed deficiencies.

This study has been performed according to the scope as generally defined by Legacy at Jordan Lake Property Owner's Association, Inc. and Giles Flythe Engineers in the approved proposal. The study has been completed in consideration of the standards noted for transition engineering reports in the Foundation for Community Association Research published Best Practices Report #7 Transition (© 2014). The findings and recommendations are based on interviews with the association's board representation; a review of available documents; and a visual inspection of the buildings and site.

The investigation involved, in particular, the pool building foundation (to the extent visible), the roof, exterior walls, framing (when visible), site improvements, drainage systems and stormwater control measures, utilities (to the extent visible), retaining walls, and common areas.

Our process for completing the Transition Study includes:

1. Reviewing information provided including governing documents, available construction drawings (building/site plans) and information on previously completed repairs or concerns with the condition of components.
2. Reviewing available information on the property as needed. This may include plat maps, tax records, and historical aerial photographs.
3. Conducting a visual inspection of the property. This may include interviewing association representatives during the inspection.
4. Reviewing appropriate construction standards for building and site components, as applicable based on concerns identified during inspection.
5. Developing engineer's estimates on the cost to repair/remediate observed deficiencies. This process may include completing take-offs to develop quantities of components.
6. Prepare a draft report and attend a meeting with the board of directors or full membership to review the report and our findings.
7. Finalize the Transition Study report and deliver the report in electronic format (PDF) and one hard copy upon request.

The statements in this report are opinions about the present condition of the areas inspected within the community. Our inspection is limited to a visual ground level inspection, and we did not remove any surface materials, perform any testing, or move any furnishings. This study is not an exhaustive engineering or technical evaluation or full building code compliance review. For additional limitations, see "Conclusion and Limitations".

Standards of Reference

The following definitions are provided as a standard of reference:

Excellent: Component or system is in "as new" condition, requiring no rehabilitation and should perform in accordance with expected performance.

Good: Component or system is sound and performing its function, although it may show signs of normal wear and tear. Some minor rehabilitation work may be required.

Fair: Component or system falls into one or more of the following categories: a) Evidence of previous repairs not in compliance with commonly accepted practice, b) Workmanship not in compliance with commonly accepted standards, c) Component or system is obsolete, d) Component or system approaching the end of expected performance. Repair or replacement is required to prevent further deterioration or to prolong expected life.

Poor: Component or system has either failed or cannot be relied upon to continue performing its original function as a result of having exceeded its expected performance, excessive deferred maintenance, or state of disrepair. The resent condition could contribute to or cause the deterioration of other adjoining elements or systems. Repair or replacement is required.

Adequate: A component or system is of a capacity that is defined as enough for what is required, sufficient, suitable, and/or conforms to standard construction practices

SOURCES OF INFORMATION

Date of Inspection

Onsite inspections of the property were conducted on the following date(s):

- February 2, 2024
- February 6, 2024

Interviews

We interviewed the following people in connection with this study:

- Nick Ruden, Community Manager – Elite Management Professionals
- Sabrina Kuratana – Association Board President
- Jennifer Cox – Association Board Member

Documents

The following documents were made available to us and reviewed:

- Chatham County tax records
- Recorded Plat Maps
- Legacy at Jordan Lake Property Owner's Association, Inc. Governing Documents

Cost Estimates

- Our internal data files on similar projects
- Local contractor estimates for similar projects.
- R.S. Means Construction Cost Estimating Data

DESCRIPTION

The Legacy at Jordan Lake Property Owner's Association, Inc. is a single-family home community accessed via Big Woods Road in Chapel Hill, NC. The amenity center is located at 225 Legacy Club Drive. The amenity center with swimming pool and pool building was built in 2017. The community includes a total of 463 single-family home sites. Initial development of the property began in approximately 2006, and construction of the homes occurred in multiple phases, between 2007 and 2023 according to Chatham County Tax Records. Amenities in the community include a swimming pool facility with a pool building, fitness center, tennis courts, and a common area park with playground equipment. Additionally, a 5-hole golf course is located in the common area behind the amenity center.

The Association has responsibility for common area site improvements and amenities. Site improvements include common area drainage systems including approximately twelve stormwater ponds, a guardhouse at the community entrance, a waterfall feature near the community entrance, and private asphalt paved streets and parking areas throughout the community. Additionally, approximately four miles of walking trails have been constructed throughout the community.

The clubhouse and fitness center are of wood frame construction on concrete slab-on-grade foundations. Exterior walls are clad with painted fiber cement siding, and the roofs is surfaced with asphalt architectural grade shingles.

Electrical, plumbing and gas services are routed underground and metered individually at each residence and at the pool building. The pool building is equipped with plumbing and electrical service, and hot water is provided via a conventional storage tank electric water heater located in the attic space. The pool building interior spaces are not heated/cooled, and ventilation in the pump room and restrooms is provided via powered ventilation fans with through-wall penetrations.

The community accessed via Big Woods Road with an additional temporary construction entrance located slightly to the North of the main entrance. The main entrance is marked with a masonry-clad monument with a painted composite sign bearing the community's name. Immediately beyond the entrance signage, a gatehouse separates the community from the entrance drive.

The asphalt-paved streets in the community are lined with concrete curbing and concrete sidewalks and are privately owned and maintained by the Association.

Stormwater drainage from the site flows via surface runoff into curb inlets in the paved areas and grassed swales with catch basins in the landscaped areas which lead to an underground piping network that discharges into the various stormwater control measures (SCMs) throughout the community. The stormwater control measures (SCM) are a mix of dry and wet stormwater ponds.

SITE IMPROVEMENTS

Topography and Retaining Walls

The property has been graded with mild to moderate slopes, with minimal quantities of retaining walls to capture the more severe changes in elevation. The retaining walls are generally located on single-family home lots, which are assumed to be the responsibility of the individual lot owners.

Several areas of site slopes also exist in the community to capture the more moderate changes in elevation. Some of the slopes in the undeveloped areas (riparian buffers) are original to the property and are covered with dense vegetation which acts as a suitable surface-stabilizing ground cover. The graded slopes in the developed common areas are typically surfaced with grassed ground cover. We observed multiple areas of erosion (minor instances. We did not observe any areas with significant erosion, and we consider the minor ground cover repairs to be a maintenance item and not a defect in construction.

Additionally, there are several walking trails located throughout the community with various ground cover installed including grass, Chapel Hill grit, crushed stone, and mulch. The most significant area of surface erosion noted on the walking trails was at the sloped embankment near the intersection of Legacy Falls Drive and Winding Creek Loop. Wooden landscape timbers were noted to be installed on the path to help prevent surface erosion caused by stormwater runoff and the timbers were noted to be undermined at the time of the site visit.

Based on our evaluation, we find that this portion of the project is not in compliance with the noted standards, as follows:

1	Correct soil erosion at walking trails where needed, install soil stabilizing measures or install heavier ground covering material to help prevent washout of lighter material.

Storm Drainage

Note, a small sample of the original design plans for the stormwater control measures were provided at the time of writing this report. The below observations/recommendations were made based on the observable conditions during the site visit, standard SCM requirements, and the limited sample of drawings. We recommend obtaining the remaining as-built drawings and applicable SCM acceptance letters from the original design engineer(s) prior to transitioning from the developer. The plat maps maintained by the Chatham County Register of Deeds do not contain detailed information on the stormwater systems within the community.

Stormwater drainage from the site flows via surface runoff into grassed swales towards catch basins in the landscaped areas and curb inlets along the streets. The inlets lead to an underground piping network that discharges into the various stream basins and the stormwater control measures (SCMs) located throughout the community. The piping networks appear to be comprised primarily of reinforced concrete piping with some sections of HDPE piping.

Multiple drainage concerns were observed during the inspection, including erosion issues and concerns with the operable function of the SCMs. Notable conditions are presented below:

- The wet ponds were generally in fair to good condition with minor to moderate sediment accumulation. Additionally, the majority of ponds exhibited minimal plantings along the vegetative shelf near the waterline. Typically, wet ponds are designed with a vegetative shelf that extends approximately 10' wide including inside the waterline and along the perimeter of the pond. The lack of a vegetative shelf likely contributed to the numerous instances of surface erosion and rilling noted in the embankments along the perimeter of the ponds.
- The wet pond near 171 High Woods Ridge appeared to be still under development with no established plantings or vegetative shelf at the time of the site visit.
- Additionally, the wet pond at the end of High Woods Ridge appeared to be recently constructed and embankment soil stabilization was in place at the time of the site visit.
- The inlet pipe was noted to be undermined and moderate surface erosion was noted at the wet pond behind 103 Two Creeks Loop.
- A partially obstructed inlet pipe was noted at the wet pond located near 134 Stoney Creek Way. The inlet pipe was partially obstructed with soil and organic debris. A negative slope was noted at the inlet pipe due to a buildup of soil near this area.

Additional drainage concerns are likely to develop over term, and we recommend the HOA budget for periodic drainage repairs and improvements as part of the regular maintenance plan for the community.

We note that drainage concerns in the community may exist within private home lots, however examination of drainage conditions on private property was not included in the scope of this study. Any drainage concerns on the single-family home lots are the responsibility of the individual lot owners and are not the responsibility of the Association.

We recommend the above-noted concerns be addressed and repairs completed per the original project design and specifications, and in accordance with requirements of the local authority. Construction of the devices should be completed and accepted as permanent and regulated SCMs by the local municipality. It is likely that the local authority will require periodic infiltration testing to verify proper functionality of the bioretention devices. We recommend this testing be performed as a part of the regular inspection and maintenance program for the ponds, to be performed by a qualified stormwater pond maintenance professional. The HOA should ensure that the SCMs conform to all applicable regulations at all times.

Additional maintenance needs are likely to develop over time and should be addressed as part of routine maintenance of the stormwater control measures and drainage systems. We recommend engaging with a dedicated pond management company to provide inspections on a routine basis (at least quarterly). The maintenance company can then make repairs and provide recommendations to minor concerns before it escalates into more costly repairs.

It is likely that over time, due to the collection of sediment and contaminants, substantial repairs to the stormwater control measures will be required. Over time, as sediment accumulation advances, the ponds will lose capacity and may not function properly to collect and discharge stormwater at their design rates.

These types of repairs may include excavating and replacing layers of media, repairing buried piping and repairing the outlet device. In our experience, this type of repair may be required as early as 5-6 years after original construction. We recommend the HOA budget for this eventual expense as part of the reserve funding schedule.

We recommend engaging with a dedicated pond management company to provide inspections on a routine basis (at least quarterly). Chatham County typically requires that all stormwater control measures are inspected annually. The maintenance company can then make repairs and provide recommendations to minor concerns before it escalates into more costly repairs.

We recommend the following:

1. Obtain the original civil engineer's certification for the as-built conditions and construction of the bioretention stormwater control measures (SCMs).
2. Obtain the as built and design drawings and any other documentation for each of the SCMs.
3. Obtain the Operation and Maintenance manuals for each of the SCMs.

Based on our evaluation, we find that this portion of the project is not in compliance with the noted standards, as follows:

2	Earthwork repairs are needed at the inlet pipes to multiple stormwater ponds to ensure proper stormwater flow into the SCMs.
3	The perimeter of the SCMs should likely include a vegetative shelf extending into the waterline. Obtain the original design drawings for the SCMs to ensure the ponds meet the original design criteria.

We also recommend obtaining the original civil engineer's certification for the as-built conditions of the SCMs, as well as the original design drawings and the Operation and Maintenance Manuals.

Paving, Curbing and Flatwork

The asphalt-paved streets throughout the community are private and are the responsibility of the Association. The asphalt streets are in various stages of development with several sections of the private streets missing the final asphalt lift. The Board requested the exclusion of the asphalt-paved streets from this transition study, and we have excluded the asphalt-paved streets, vehicular bridges, and concrete curbing from this study.

Concrete sidewalks were noted to be installed throughout the community, near the clubhouse, and along at least one side of each road. Minor cracks, upheaval, and settlement were observed in individual sections of the concrete sidewalk. We consider the minor settlement and cracking in the concrete sidewalks to be a maintenance item and not a deficiency in the installation of the site elements based on the age of the components. We recommend that the community establish reserve funds to repair/replace damaged sections of concrete sidewalks on a regular cycle.

Some masonry pavers were noted to be installed at the traffic circle along Legacy Falls Drive as well as along the community entrance near the guardhouse. No significant settlement or upheaval was noted in the pavers at these locations; however, we anticipate minor repairs and sectional replacement will be required over time. Additionally, some minor subgrade repairs may be required as the community ages.

Based on our evaluation, we find that this portion of the project is in general compliance with the noted standards.

Landscaping, Site Fencing & Appurtenances

The developed common area open spaces are primarily finished with grassed ground cover, small shrubberies/plantings, and small to medium-sized trees. Buffer areas include mature trees which are original to the site. The entrance to the community along Big Woods Road is marked with a masonry monument wall with inlay sign bearing the community's name.

The landscaping in the common areas appeared to be in generally good condition with no systemic declination or deceased plantings observed. Early spring growth appeared healthy, and the small trees adjacent to the entrances have been recently pruned. Periodic repairs to correct future landscaping conditions as they develop should also be included in the regular maintenance budget, and/or as part of future drainage improvements. Note that there were some concerns with eroding or declining ground cover in areas of drainage issues as described above, and we recommend restoring these as part of drainage repairs.

The landscaping/plantings in combination with the established tree line appear to provide suitable opacity as required to maintain a suitable streetscape buffer.

Aluminum fencing is installed around the swimming pool and clubhouse area. The aluminum fencing is finished with a manufacturer-applied powder coating and appeared to be in generally good condition. The fencing is beginning to develop some sun fading which is typical and expected. The fencing around the clubhouse is accessed via key fob access and is equipped with panic hardware for egress. A small amount of additional anodized aluminum fencing was installed at the top of the waterfall feature. This fencing was noted to be in poor to fair condition with some areas of significant damage and fading noted near the entrance gates. We recommend repairing the fence to ensure proper access to the waterfall feature.

The waterfall structure has been reported to have multiple leaks which have resulted in the draining of the collection pools and multiple repairs to the plastered surface of the collection pools. The waterfall structure was functional and full of water at the time of the site visit, limiting the visual inspection of the surface. If leaks are left uncorrected at the collection pools, water leaks may cause subgrade settlement beneath the collection pools resulting in the need for major repairs. We recommend addressing the leaks at the waterfall to prevent leaks.

The entrance monument at Big Woods Road is a masonry wall with composite inlay signage and two monuments at either side of the drive aisles. These components appeared in good condition and no significant deterioration was noted.

The clubhouse common area space includes playground equipment, a mulched play area, and picnic table. The picnic table was generally in good condition. The remaining components appeared in suitable condition considering the age. Periodic replacement of these fixtures should be performed as needed and funded as an operational expense, or from the reserve account where budgeted accordingly.

The mailbox stations throughout the community were noted to consist of mail kiosks set into concrete sidewalks. The mailbox kiosks appeared to be in generally good condition and no significant deficiencies were noted at the mail stations within the community.

Based on our evaluation, we find that this portion of the project is not in compliance with the noted standards as follows:

4	Repair aluminum fencing at the waterfall structure to ensure proper access to the structure for cleaning/repairs.
5	Evaluate the waterfall feature for leaks in the collection pool surface and patch cracks as needed. Alternatively, a synthetic liner may be installed in the collection pools to help prevent leaks due to expansion cracks in the concrete surfaces.

STRUCTURE

Structure

The pool building is a wood-framed structure on a concrete slab-on-grade foundation. Overall, the building structure appeared to be in generally good condition. We did not observe significant deflection or displacement in the roof or floor slab systems, nor did we observe significant cracking in the exterior or interior finishes that can often be indicative of settlement or foundation movement.

Based on our evaluation, we find that this portion of the project is in general compliance with the noted standards.

Roofing Systems

The pitched roof surfaces over the clubhouse and fitness center are primarily covered with architectural-grade asphaltic fiberglass shingles with small sections of standing seam metal roofing and were installed in approximately 2017. The roofing includes drip edge material along the eaves and rakes, and the shingle overhang appeared to be of suitable length. The attic space is ventilated by ridge and soffit vents, and louvers at the dormers and gable ends. Bathroom ventilation is via flashed pipe penetrations through the roof.

The shingles at the clubhouse building roofs were noted to be woven at valleys. Most major shingle manufacturers do not recommend woven valleys when using architectural-grade shingles. We recommend the shingled roof surfaces be modified to be either open-cut or closed-cut at the valleys per the manufacturer's installation recommendations.

Some small sections of standing seam metal roofing were noted on the building roof surfaces. The asphalt shingles immediately adjacent to the metal roofing were noted to be lifted in multiple locations due to an improper angle of the metal flashing along the perimeter of the metal roofing. The current configuration may lead to premature damage to the shingles during high wind events and/or wind-driven rain events. We recommend modification of the metal flashing to ensure that the asphalt shingles are properly installed.

Some minor damage was noted on the shingles above the clubhouse buildings. The damage to the shingles appears to be from handling during the original installation or a material defect. Mechanical damage was noted on the shingles which resulted in a loss of granules and exposed fiberglass layers in the shingles. Additionally, several shingles were noted to be missing from the hip roof above the fitness center.

The guardhouse roof was noted to consist of a slate tile roofing system, assumed to be of original construction (2007). The slate tile appeared to be in generally good condition, however, multiple tiles were noted to be missing from the roof surface at the time of the inspection. We consider the missing tiles at the roof to be generally consistent with normal wear based on the age of the building. We recommend replacing the missing tiles at the guardhouse roof to prevent future roof leaks.

Gutters were noted to be installed and rain chains were noted to direct roof runoff to the landscaped beds around the perimeter of the buildings. Note, the majority of the rain chains were not anchored to the ground and moved freely when pressure was applied. We recommend anchoring the bottom of the rain chains to prevent damage and ensure proper drainage.

Based on our evaluation, we find that this portion of the project is not in compliance with the noted standards as follows:

6	Modify the roof valleys to be either open-cut or closed-cut per the original manufacturer's recommendations.
7	Replace damaged and missing shingles to prevent premature failure and roof leaks
8	Anchor rain chains to ensure proper drainage

Ventilation

Attic ventilation at the pool building is provided by ridge and soffit vents, and with louvers at the gable/dormer ends. Bathroom ventilation is provided by flashed pipe penetrations through the roof. The chemical room appeared to be adequately ventilated using powered exhaust fans.

The Environmental Protection Agency (EPA) has determined that some buildings may be affected by unhealthy indoor air contamination. We do not test for this and cannot provide you with an opinion about the indoor air quality of the buildings on this property as this is beyond the scope of this analysis. However, there are experts who test for indoor air contamination, and we recommend you enlist the services of such a professional should a concern over indoor air quality arise. In order to aid in healthy interior building environments, it is important that attic ventilation be adequate, bathroom, kitchen, and laundry exhausts discharge air directly to the outside, and moisture problems be immediately rectified.

Based on our evaluation, we find that this portion of the project is in general compliance with the noted standards.

Exterior Finishes

The exterior wall finishes on the clubhouse and fitness center are primarily comprised of painted fiber cement siding and trim, with adhered stone veneer along the walls. Ceilings are painted wood/composite paneling. Doors to the bathrooms and pool equipment rooms are painted hollow core metal skin components, and the windows are double hung vinyl units with dual pane glazing and include privacy frosting at the bathrooms.

The fiber cement siding appeared to be in generally good condition with minor immediate deficiencies evident at the time of the inspection. The bottom trim board nearest the ground around the perimeter of the buildings was noted to be installed flush to the soil and concrete surfaces. Typically, the fiber cement boards should be installed with an offset of approximately 1-2 inches from concrete surfaces and 6 inches from soil surfaces. This helps prevent water absorption into the fiber cement and prevents premature failure of the siding.

The clubhouse siding trim boards adjacent to the pool deck were noted to be bowed and failed sealant joints were noted in multiple locations. The trim was noted be installed flush to the concrete flatwork and was likely damaged by expansion and contraction from excess moisture intrusion. We recommend replacing the trim and ensuring a minimum of 1" of vertical clearance between the concrete and the trim. Appropriate flashing should be installed to prevent moisture intrusion in the gap. The Board has informed us that the trim boards may consist of a PVC material. If the trim boards are PVC, they should be removed and reinstalled per the manufacturer's instructions. Standoff from the pool deck may not be required for PVC.

Additionally, we have been informed that the weather barrier may not be properly installed behind the bowing trim components. The condition was not visible at the time of the inspection; however, the correction of improperly installed weather barrier may present a significant cost. We have not included removal of siding and replacement of the weather barrier as a part of this study.

Horizontal flashing (z-flashing) is typically installed above windows and louvers and appears to be appropriately lapped behind the above rows of siding. Horizontal flashing is also installed at the cladding transitions (above the stone veneer), and the lapped joints appear to be appropriately positioned away from the butt joints in the siding above.

The doors and windows at the clubhouse and fitness center buildings appeared to be in generally good condition with no significant deficiencies noted. Additionally, the doors and windows at the guardhouse were noted to function properly, were generally free of significant surface rust, and appeared to be consistent with the age of the structure.

The exterior wall finishes at the guardhouse were noted to generally consist of an EIFS system and stone veneer with areas of cedar shakes at the gables. Multiple instances of missing cedar shakes were noted

around the perimeter of the guardhouse. We consider the missing shakes to be consistent with normal wear based on the age of the building. We anticipate the Association will need to make minor repairs to the exterior building surfaces including crack fill of the EIFS system, regular building painting, and replacement of damaged cedar shakes throughout the life of the structure.

Based on our evaluation, we find that this portion of the project is not in compliance with the noted standards as follows:

9	Replace bowed trim boards and ensure proper standoff from concrete and soil surfaces as needed. Replace any failed joint sealants after modifications.

Interior Finishes

The interior walls of the clubhouse, fitness center, and equipment rooms are finished with smooth finished painted drywall and trim. Ceilings over the rear open area and breezeway are painted wood beadboard. Flooring in the restrooms is ceramic tile, and the primary flooring in the open space of the clubhouse is vinyl plank flooring. The fitness center is generally covered with rubberized flooring. The finishes appeared in generally good condition with some minor wear beginning to develop, consistent with the age and use of the facility. Periodic repainting and other upgrades to the interior finishes should be included in the maintenance plan for the facility.

Fixtures in the pool restrooms include metal partitions at the stalls and quartz countertops with ceramic sinks and mirrors. The fixtures were operational, and no immediate deficiencies were observed.

Minor moisture staining was noted in the wooden trim boards around the interior perimeter of the clubhouse and guardhouse. The moisture staining appears to be the result of moisture intrusion. No significant water leaks were reported at the time of the site visit. It is likely that the moisture intrusion is from water transfer between the fiber cement trim or an inadequate flashing detail around the perimeter of the building. We recommend ensuring proper flashing is installed around the building and modifying the fiber cement trim per the recommendation above to prevent further water damage.

Significant drywall damage was noted in the pump and chemical rooms at the rear of the fitness center building. The damage is likely due to prolonged exposure to highly concentrated chemicals and a high level of ambient moisture. This is common for chemical rooms; however, the damage should be repaired to help prevent framing damage in this area.

Based on our evaluation, we find that this portion of the project is not in compliance with the noted standards as follows:

10	Ensure proper flashing is installed around the exterior perimeter of the buildings and modify trim to prevent further moisture intrusion.
11	Repair the damaged drywall at the pump and chemical rooms

MECHANICAL SYSTEMS

Electrical & Lighting Systems

Electrical service to the clubhouse, guardhouse, and fitness center is rated for 250-Amp, 240-Volt capacity. The main electrical panel at the fitness center building was located in the chemical room. The main electrical panels at the clubhouse and guardhouse were noted to be installed in an electrical/utility closet. Note, the guardhouse also had a Generac generator installed at the time of the site visit. Inspection of the connection at the electrical closet showed that the generator was a backup for the septic pump. A battery backup was installed on the transfer switch panel and appeared to be functioning as intended.

Wired fixtures at the buildings include fluorescent strip lights, recessed can lights, ceiling fans, receptacles, switches and the pool pump/filtration equipment including a pool pump emergency power-off switch at the pool deck. The electrical fixtures were generally operable at the time of the inspection. The ceiling fans was tested to operate correctly.

Electrical fixtures at the fitness center, clubhouse, and guardhouse also include GFCI receptacles adjacent to water sources. A sampling of the receptacles was tested; the tested fixtures indicated correct wiring and the GFCI function properly tripped when tested.

Pole-mounted lights were noted to be installed at the tennis courts. A light switch in the form of a pole-mounted button was installed near the tennis court entrance used for court light operation. The tennis court lights were not on at the time of the inspection.

Based on our evaluation, we find that this portion of the project is in general compliance with the noted standards.

Plumbing, Fire Protection, & HVAC Systems

Potable water appears to be supplied to the community via private utility company. The supply lines appeared to be generally PVC throughout all buildings. A wastewater treatment plant owned by Aqua was noted to be located on the property near the center of the community. We have assumed that the wastewater systems in the community are routed to the wastewater treatment plant and served by the private utility.

Hot water to the building is provided by electric storage tank water heaters located in the utility closets of each respective building. Hot water was available at the tested fixtures at the time of the inspection.

Plumbing fixtures at the pool building include typical toilet and sink fixtures in the restrooms, an outdoor shower, and a drinking fountain. The outdoor shower faucet was missing components and was not operable at the time of the inspection.

The guardhouse is equipped with a Goodman 2-ton HVAC unit which appears to be original to the building. The unit appeared to be functional at the time of the inspection, however, the unit is beyond its anticipated useful life. We anticipate the replacement of the HVAC equipment will be required at the guardhouse in

the near term. We consider this to be consistent with normal wear based on the original construction of the building.

The clubhouse and fitness center are both served by two Carrier package units (one for each building) which provide a total cooling capacity of approximately 11.5 tons. The HVAC units were manufactured in 2017 and appeared to be functioning as intended during the site visit.

The swimming pool mechanical systems include pumps and sand filters. The pool pumps were operating at the time of the inspection. Periodic repairs and component replacement of the pool mechanical equipment should be included in the regular maintenance plan for the facility.

The guardhouse, clubhouse, and fitness center all included a fire alarm system with the main panel located in the utility closets of each respective building. The fitness center was also served by a fire sprinkler system. The main sprinkler riser was located in the pump room and appeared to be functioning as intended.

Based on our evaluation, we find that this portion of the project is in general compliance with the noted standards.

AMENITIES/OTHER

Amenities

The swimming pool is an in-ground concrete shell pool with plastered pool surface. The majority of the pool surface appears to be in good condition with no observable cracks at the time of the site visit. Note that the swimming pool was not drained for our inspection, and the active function of the pool pumps resulted water turbulence which prevented a thorough examination of the plaster surface.

The pool includes fixed metal ladders and rails at the stair entries. Other pool furnishings include chaise lounges, and tables with umbrellas and chairs which were stored in the covered open space at the time of the inspection. The furniture appeared in generally good condition with some minor wear due to use.

The clubhouse common area includes a variety of playground equipment, one metal-framed plastic picnic table, and a pet waste station. The playground equipment was in generally good condition and exhibited minor wear from regular use. Periodic replacement of site fixtures should be expected over time due to normal use.

Tennis courts were noted to be constructed adjacent to the fitness center building. The tennis court surfaces were in good condition with little to no cracking observed. A chain link fence was noted to extend around the perimeter of the tennis courts and overhead pole-mounted lighting was installed around the courts. The court lights were non-functional at the time of the site visit; however, the lights may be set not to turn on during daylight hours. We recommend ensuring the proper function of the tennis court lighting and making any repairs as needed to restore function.

The clubhouse fitness center includes a variety of strength and cardiovascular equipment. The Matrix brand equipment includes elliptical machines, treadmills, and recumbent bikes as well as cardiovascular training machines and strength training equipment. This type of equipment includes mechanical systems with multiple moving parts that will wear over term, however, the equipment appeared to be in generally good condition with minor wear noted from normal use.

A five-hole, par-three short iron golf course was noted behind the clubhouse building. The course consists of short fairways with five putting greens. The course appeared to be well-maintained, and we assume the maintenance of the course is completed through an annual landscaping budget.

Based on our evaluation, we find that this portion of the project is not in compliance with the noted standards as follows:

12	Ensure proper function of the tennis court lighting and make repairs as needed to restore function.

Accessibility Considerations

Accessibility to the amenity center and swimming pool facility appeared to be marginally adequate. A summary of our observations is provided below:

- There are two designated ADA parking spaces adjacent to the concrete sidewalk leading to the clubhouse and fitness center, which are marked with pole-mounted signs and pavement markings. The curb cuts at the sidewalk appear to meet the slope requirements.
- Bathroom doors are push-to-open and include graspable pull bars on the interior (no 'turn of the wrist' needed to operate the doors).
- The fence gates to the pool facility are operated by push bar egress.
- The outdoor pool shower is equipped with grab bars.
- The path of travel through the clubhouse to the designated parking spaces appears to meet the slope requirements, and the bathroom doors do not have impeding thresholds.

Note that this was not a full ADA evaluation. Items of concern with regard to accessibility may exist.

Based on our evaluation, we find that this portion of the project is in general compliance with the noted standards.

CONCLUSION & LIMITATIONS

In summary, the association-maintained site improvements and building components are in varying condition. We have identified deficiencies in specific components as noted in this report and summarized in Appendix A – Transition Deficiencies. The Engineer's Cost Estimates for noted repairs is also found in Appendix A.

The physical analysis portion of this Transition Study was completed through a limited visual inspection. The visual inspection was completed from ground level unless otherwise specified. The visual inspection is generally limited to readily accessible and visible common areas. Note that this inspection does not include removing surface materials, disassembling components, excavation or any testing. The inspection does not include riparian buffers or other protected areas. Buried utility components and other concealed components were not inspected as part of this analysis and we cannot be responsible for the condition of components not inspected.

The observations described in this study are valid on the date of the investigation and have been made under the conditions noted in the report. We prepared this study for the exclusive use of Legacy at Jordan Lake Property Owner's Association, Inc.. No other party should rely on the information in this report without consent. If another individual or party relies on this study, they shall indemnify and hold Giles Flythe Engineers, Inc. harmless for any damages, losses, or expenses they may incur as a result of its use. This study is not to be considered a warranty of condition, and no warranty is implied. The appendices are an integral part of this report and must be included in any review.

Members of the Giles Flythe Engineers team working on this study are not members of, or otherwise associated with the Association. Giles Flythe Engineers has disclosed any other involvement with the association that could result in conflicts of interest.

Information provided by the representatives of the association regarding financial, physical, quantity, or historical issues, will be deemed reliable by Giles Flythe Engineers. Information provided about repair projects will be considered reliable. Any on-site inspection should not be considered a project audit or full quality inspection. Giles Flythe Engineers is not aware of any additional material issues which, if not disclosed, would cause a distortion of the association's situation.

This Transition Study is partially a reflection of information provided to us. This study should not be considered a full building code compliance analysis or an exhaustive technical or engineering evaluation which would consist of a broader scope of work.

We have provided estimated costs to repair the identified deficiencies. These costs are based on our general knowledge of the construction industry. We have relied on standard sources as needed, such as Means Building Construction Cost Data and estimates reviewed by Giles Flythe Engineers on similar projects. We have performed no design work or other engineering analysis or calculations as part of this study, nor have we obtained competitive quotations or estimates from contractors. Actual repair costs can vary due to a variety of factors. We cannot be responsible for the specific cost estimates provided.

If you have any questions about this Transition Study, please feel free to contact us. Thank you for the opportunity to serve you.

Respectfully submitted,

Tyler S. Royster, PE, RS
Project Manager
Giles Flythe Engineers, Inc.
N.C. Lic. No. C-2871

APPENDIX A: ENGINEER'S COST ESTIMATES

The following estimates are provided based on our construction cost experience. The actual costs may vary significantly, depending on the quality of work done, the degree to which experienced contractors are available to do the work and other unpredictable variables. These estimates should be considered a guide, not a guarantee of the actual cost.

Item(s)	Description	Estimated Cost ($)
1	Correct soil erosion at walking trails where needed, install soil stabilizing measures or install heavier ground covering material to help prevent washout of lighter material.	$3,000
2	Earthwork repairs are needed at the inlet pipes to multiple stormwater ponds to ensure proper stormwater flow into the SCMs.	$60,000
3	The perimeter of the SCMs should likely include a vegetative shelf extending into the waterline. Obtain the original design drawings for the SCMs to ensure the ponds meet the original design criteria.	$180,000 + TBD
4	Repair aluminum fencing at the waterfall structure to ensure proper access to the structure for cleaning/repairs.	$2,000
5	Repair the waterfall structure to prevent water leaks which may lead to settlement of the collection pools. Alternatively, install a new synthetic liner in the collection pools to prevent leaks due to expansion cracks in the concrete surfaces.	$150,000
6 + 7	Modify the roof valleys to be either open-cut or closed-cut and replace damaged shingles per the original manufacturer's recommendations.	$4,000
8	Anchor rain chains to ensure proper drainage	$500
9 + 10	Replace bowed fiber cement trim, ensure proper standoff from concrete and soil surfaces, and ensure proper flashing is installed. Replace any failed joint sealants after modifications.	$5,000
11	Repair the damaged drywall at the pump and chemical rooms	$3,000
12	Ensure proper function of the tennis court lighting and make repairs as needed to restore function.	TBD
	TOTAL ESTIMATED COSTS (Budgetary only)	**$407,500 + TBD**

APPENDIX B: PROJECT PHOTOGRAPHS

Description A view of the clubhouse	
Photo No. **1**	

Description A view of the fitness center	
Photo No. **2**	

Description	
A view of the guardhouse	
Photo No. 3	

Description	
A view of surface erosion at the walking trails	
Photo No. 4	

Description	
A view of surface erosion at the walking trail	
Photo No. 5	

Description	
A view of surface erosion at the walking trail	
Photo No. 6	

Description	
A typical view of a dry stormwater pond	
Photo No. 7	

Description	
A view of an obstructed stormwater pond inlet	
Photo No. 8	

Description A view of an obstructed stormwater pond inlet	
Photo No. **9**	

Description A view of a wet stormwater pond under development	
Photo No. **10**	

Description	
A view of a wet stormwater pond	
Photo No. 11	

Description	
A view of erosion at the walking trails near the clubhouse	
Photo No. 12	

Description	
A view of surface erosion on the walking trails	
Photo No. 13	

Description	
A view of surface erosion on the walking trails	
Photo No. 14	

Description A view of surface erosion on the walking trails	
Photo No. 15	

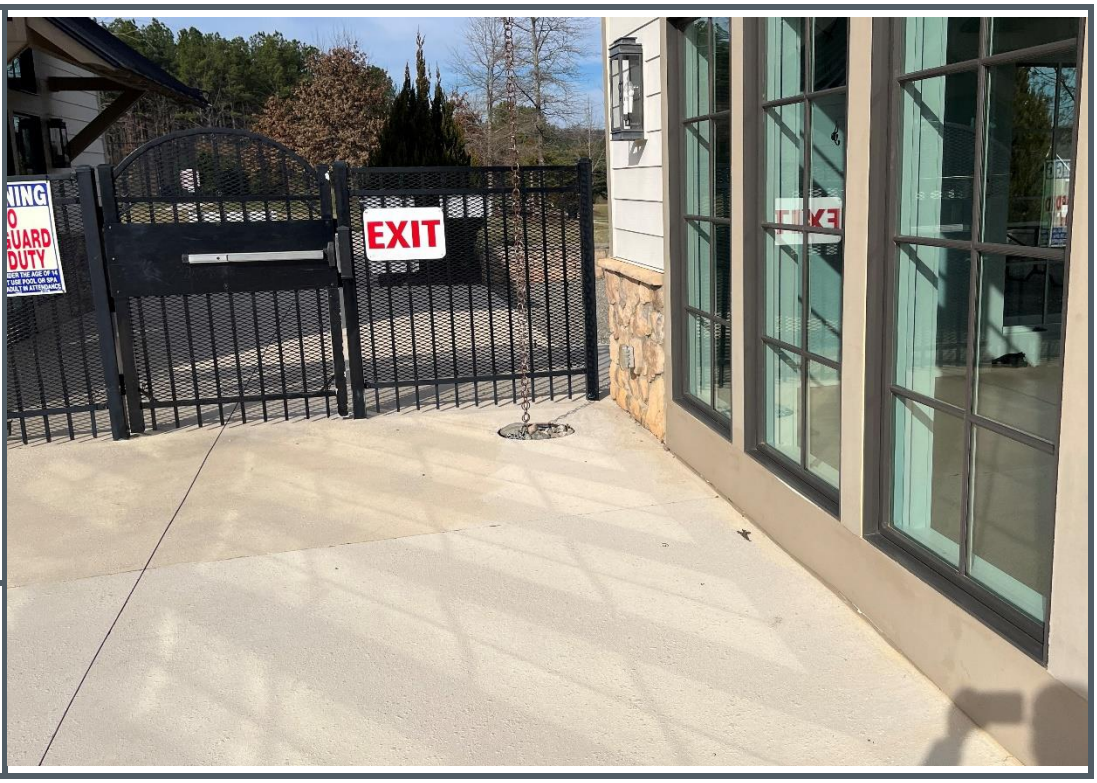
Description A view of the traffic circle along Legacy Falls Drive	
Photo No. 16	

Description	
A view of the stone pavers at the traffic circle center	
Photo No. 17	

Description	
A typical view of the concrete sidewalks installed throughout the community	
Photo No. 18	

Description	
A typical view of cracks in the concrete sidewalk	
Photo No. 19	

Description	
A view of the covered patio at the clubhouse	
Photo No. 20	

Description	
A view of the access gate to the pool enclosure	
Photo No. 21	

Description	
A view of the trim board pulling away from the windows. Failed joint sealant at the side of the trim	
Photo No. 22	

Description	
A view of the trim board pulling away from the windows. Failed joint sealant at the side of the trim	
Photo No. 23	

Description	
A view of the trim board pulling away from the windows. Failed joint sealant at the side of the trim	
Photo No. 24	

Description	
A view of trim board pulling away from the windows. Failed joint sealant at the side of the trim	
Photo No. 25	

Description	
A view of moisture staining noted at the interior of the clubouse	
Photo No. 26	

Description A view of drywall damage noted at the chemical room	
Photo No. 27	

Description A view of drywall damage noted at the chemical room	
Photo No. 28	

Description A view of the roofs above the clubhouse and fitness center with woven valleys.	
Photo No. **29**	

Description A view of the lifted shingles near the metal roofing	
Photo No. **30**	

Description	
A typical view of shingle damage noted on the clubhouse	
Photo No. 31	

Description	
A typical view of shingle damage noted on the clubhouse	
Photo No. 32	

Description A view of the lifted shingles near the metal roofing	
Photo No. 33	

Description A view of missing shingles above the fitness center	
Photo No. 34	

Description	
A view of shingle damage on the clubhouse roof	
Photo No. 35	

Description	
A view of the tennis courts	
Photo No. 36	

Description A view of the playground equipment	
Photo No. 37	

Description A view of the slate roof at the guardhouse	
Photo No. 38	

Description A view of the cedar shakes at the guardhouse	
Photo No. 39	

Description A view of the HVAC system at the guardhouse	
Photo No. 40	

Description	
A typical view of the package HVAC units at the clubhouse and fitness center	
Photo No. 41	

Description	
A typical view of the electric water heaters	
Photo No. 42	

Description A view of the waterfall feature	
Photo No. 43	

Description A view of the collection pools at the waterfall feature	
Photo No. 44	

Description	
A view of the damaged fencing at the waterfall feature	
Photo No. 45	

Description	
A view of the top level of the waterfall feature	
Photo No. 46	

Description	
A view of the waterfall feature	
Photo No. 47	

Description	
A view of the swimming pool and pool deck	
Photo No. 48	

Description	
A view of the pool furniture	
Photo No. 49	

Description	
A view of the grill at the clubhouse	
Photo No. 50	

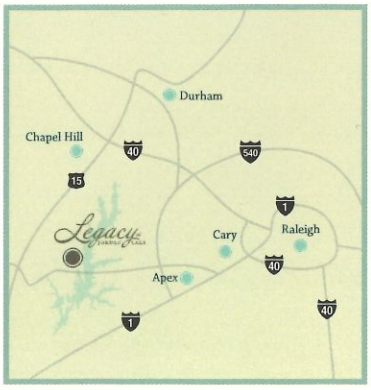
APPENDIX C: REFERENCE DOCUMENTS & REPORTS

Legacy at JORDAN LAKE

legacyjordanlake.com

Trail Map

Enjoy a morning jog, relaxing walk or family bike ride on nearly four miles of paved trails. The system connects you to amenities and neighbors.



1 Springs Trail
0.37 miles +/-
7 min. 3 min. 1.5 min.

2 Park Hills Trail
1.05 miles +/-
21 min. 11 min. 4 min.

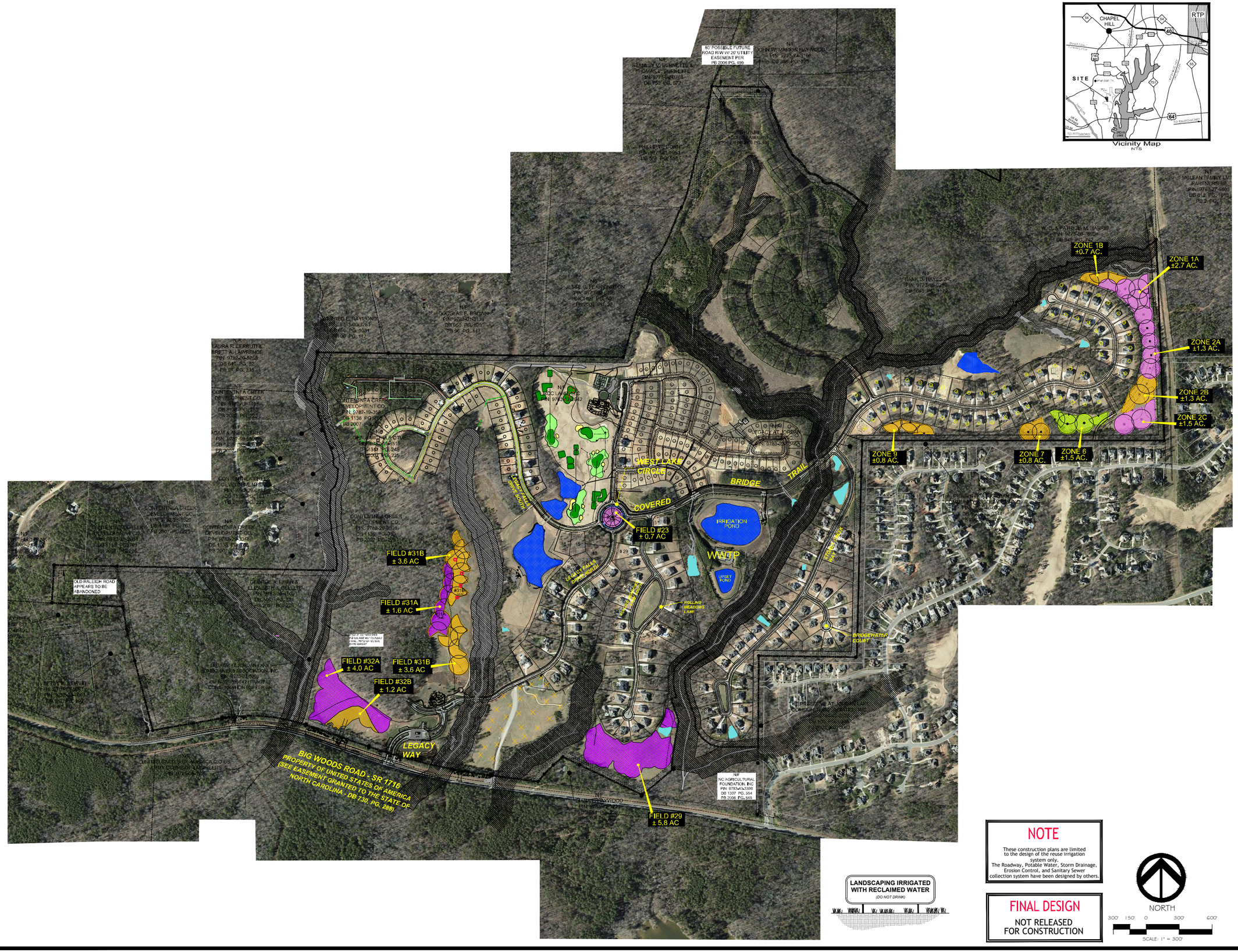
3 Falls North Trail
0.24 miles +/-
5 min. 2.5 min. 1 min.

4 Falls South Trail
0.28 miles +/-
5.2 min. 2.7 min. 1.2 min.

5 Falls Trail Connector
0.18 miles +/-
3.5 min. 1.5 min. 1 min.

6 South Place Trail
0.33 miles +/-
7 min. 3 min. 1.5 min.

7 Village Ridge Trail
0.48 miles +/-
12 min. 6 min. 4 min.



LANDSCAPING IRRIGATED WITH RECLAIMED WATER
(DO NOT DRINK)

NOTE

These construction plans are limited to the design of the reuse irrigation system only.
The Roadway, Potable Water, Storm Drainage, Erosion Control, and Sanitary Sewer collection system have been designed by others.

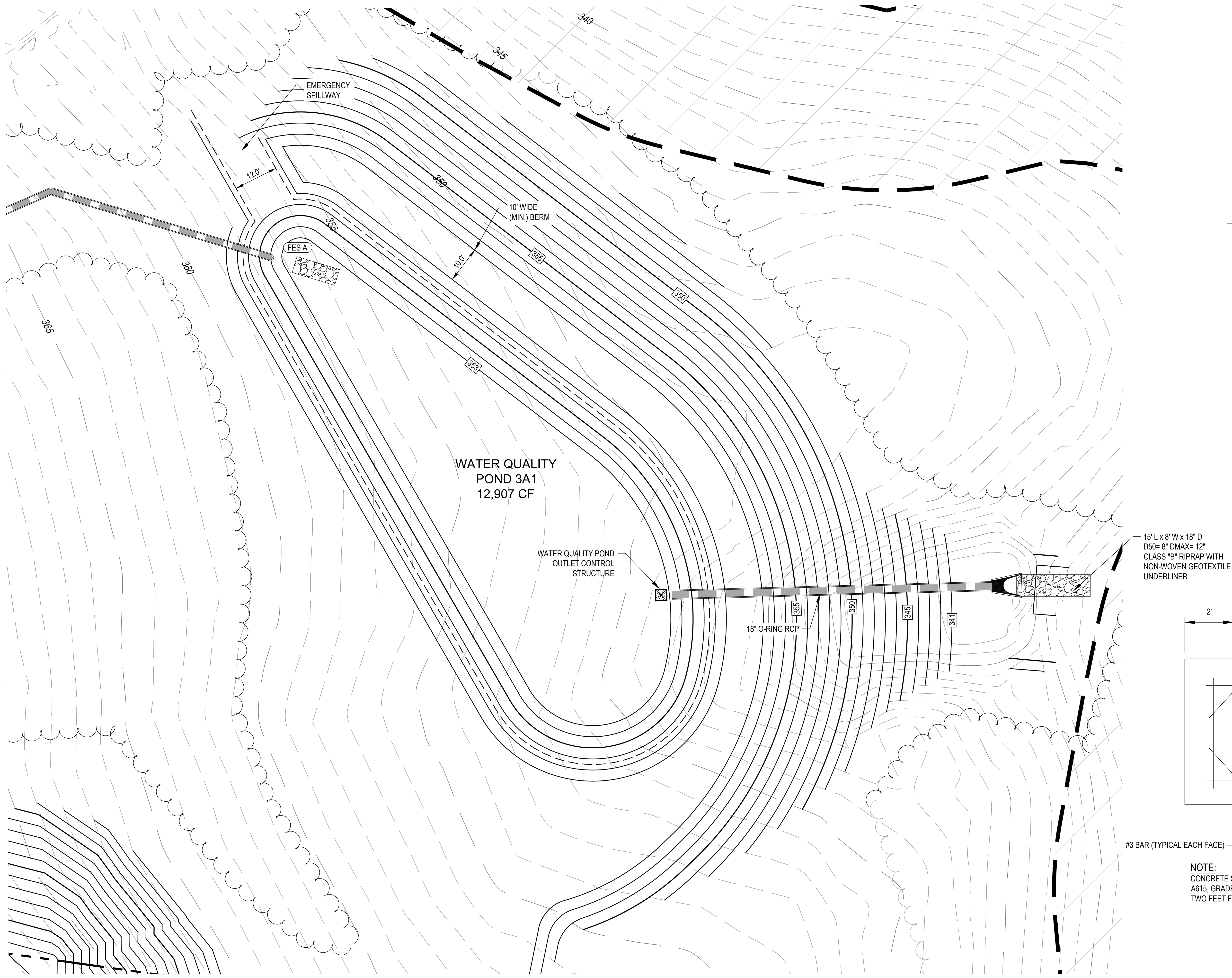
FINAL DESIGN

NOT RELEASED FOR CONSTRUCTION

NORTH

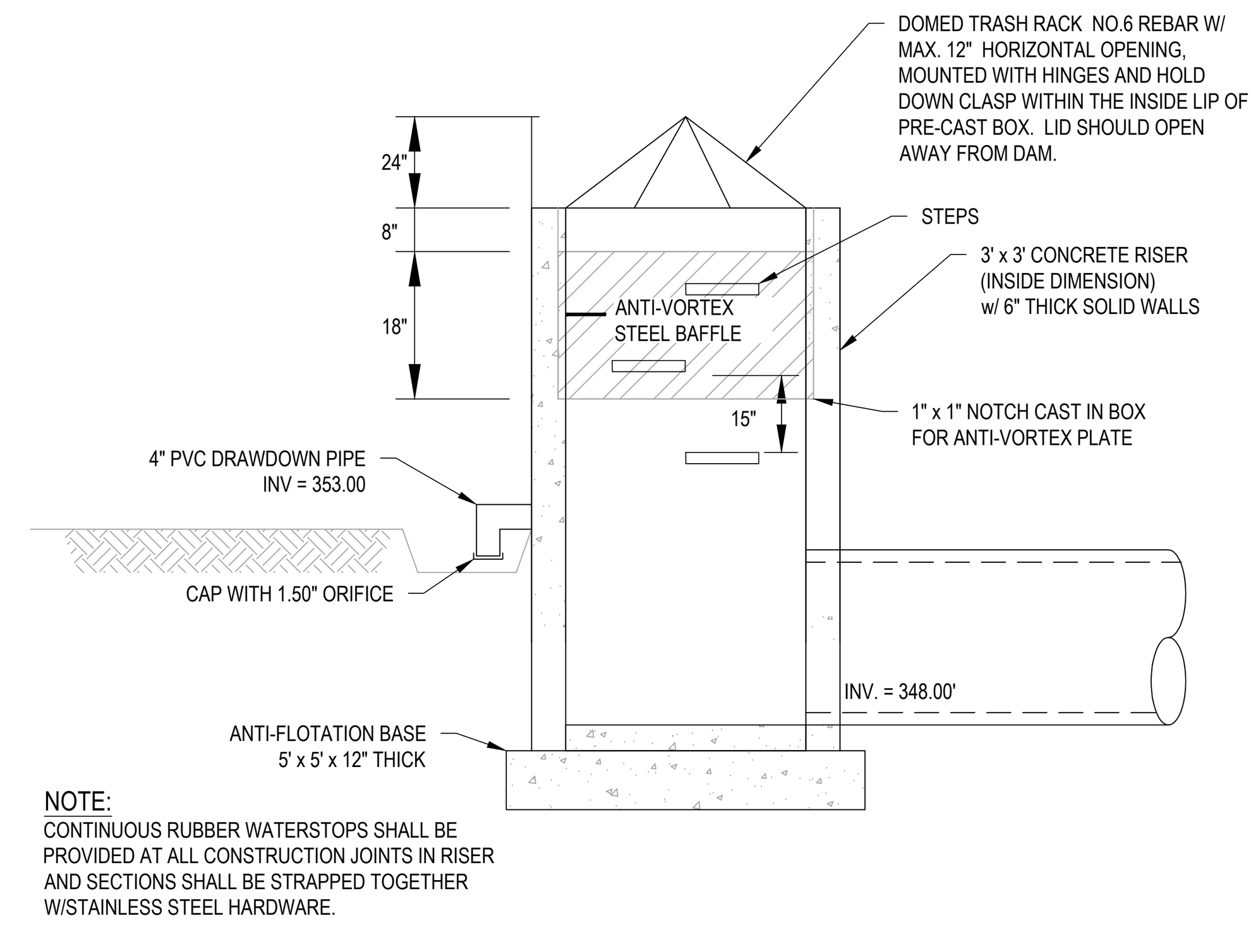
300' 150' 0 300' 600'

SCALE: 1" = 300'



STORMWATER POND 3A1 PLAN

1" = 20'



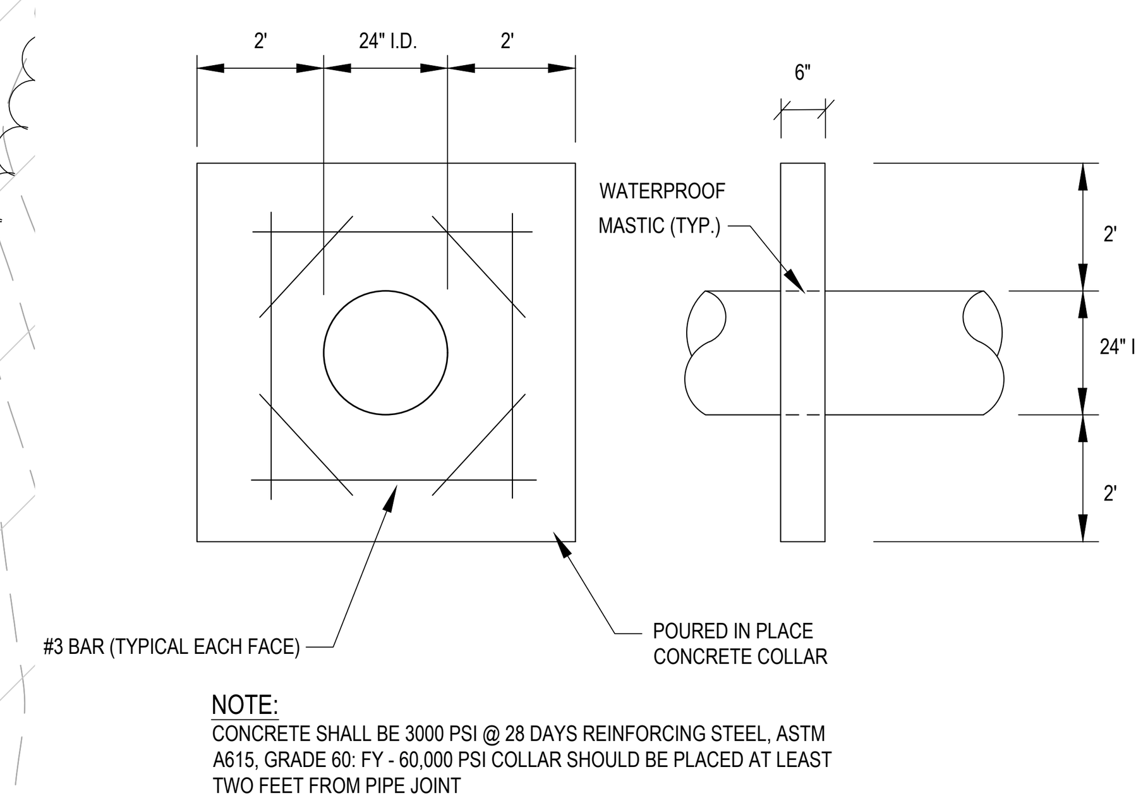
NOTE:
CONTINUOUS RUBBER WATERSTOPS SHALL BE PROVIDED AT ALL CONSTRUCTION JOINTS IN RISER AND SECTIONS SHALL BE STRAPPED TOGETHER W/STAINLESS STEEL HARDWARE.

WATER QUALITY POND OUTLET CONTROL STRUCTURE

NOT TO SCALE

LEGEND

- PROPERTY LINE (PL)
- R/W — RIGHT-OF-WAY LINE
- SETBACK LINE
- UTILITY EASEMENT
- 140 — EXISTING MAJOR CONTOUR
- 139 — EXISTING MINOR CONTOUR
- 140 — PROPOSED MAJOR CONTOUR
- 139 — PROPOSED MINOR CONTOUR
- PROPOSED STORM DRAINAGE PIPE
- SS — PROPOSED GRAVITY SEWER
- W — PROPOSED WATER LINE
- TP — PROPOSED TREE PROTECTION FENCE
- LD — PROPOSED LIMITS OF DISTURBANCE
- PROPOSED RETAINING WALL
- FLARED END SECTION
- STORM MANHOLE
- YARD INLET
- CATCH BASIN
- FLOW ARROW
- 100.0' — PROPOSED SPOT ELEVATION
- TW=100.0' — PROPOSED GRADE AT TOP OF WALL
- BW=100.0' — PROPOSED GRADE AT BOTTOM OF WALL



NOTE:
CONCRETE SHALL BE 3000 PSI @ 28 DAYS REINFORCING STEEL, ASTM A615, GRADE 60: FY - 60,000 PSI COLLAR SHOULD BE PLACED AT LEAST TWO FEET FROM PIPE JOINT

ANTI-SEEP COLLAR DETAIL

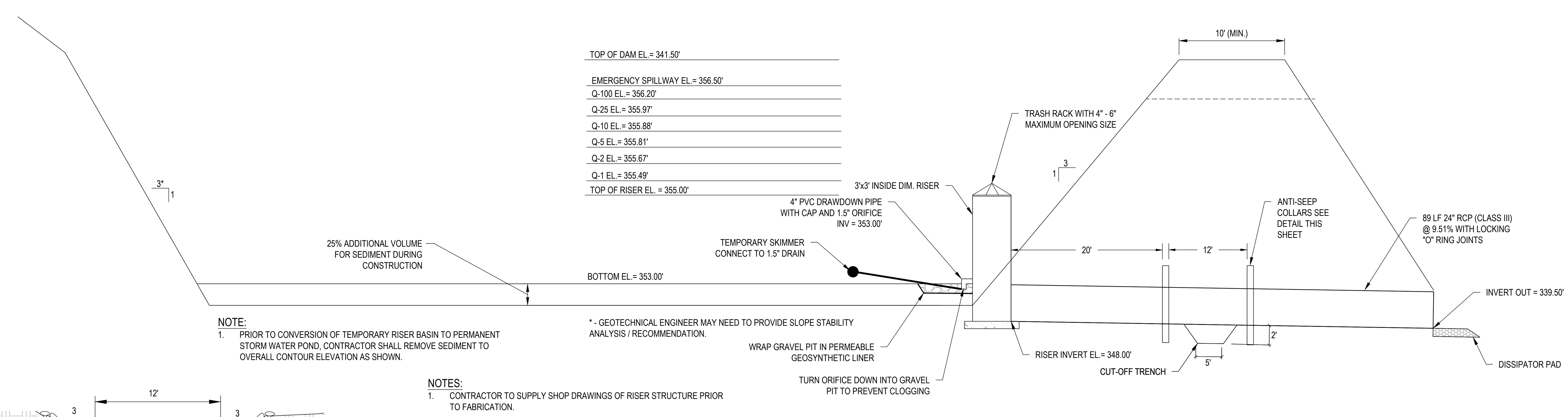
NOT TO SCALE

DAM EMBANKMENT CONSTRUCTION NOTES

1. CONTROLLED FILL, AS SPECIFIED BY THE GEOTECHNICAL ENGINEER, IN THE DAM EMBANKMENT SHALL BE PLACED IN 6-INCH LOOSE LAYERS (3-INC LOOSE LAYERS WITHIN 3-FEET OF EITHER SIDE OF THE PRINCIPAL SPILLWAY PIPE TO A DEPTH OF 2-FEET OVER THE PIPE) AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF + OR – TWO PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D698.
2. ALL VISIBLE ORGANIC DEBRIS SUCH AS ROOTS AND LIMBS SHALL BE REMOVED FROM THE FILL MATERIAL PRIOR TO COMPACTION TO THE REQUIRED DENSITY. SOILS WITH ORGANIC MATTER CONTENT EXCEEDING 5% BY WEIGHT SHALL NOT BE USED. STONES GREATER THAN 3-INCH (IN ANY DIRECTION) SHALL BE REMOVED FROM THE FILL PRIOR TO COMPACTION.
3. FILL MATERIAL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITIES OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED RANGES OR OTHERWISE NOT CONFORMING TO SPECIFIED REQUIREMENTS SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE MATERIALS.
4. ANY FILL LAYER THAT IS SMOOTH DRUM ROLLED TO REDUCE MOISTURE PENETRATION DURING A STORM EVENT SHALL BE PROPERLY SCARIFIED PRIOR TO THE PLACEMENT OF THE NEXT SOIL LIFT.
5. SURFACE WATER AND STREAM FLOW SHALL BE CONTINUOUSLY CONTROLLED THROUGHOUT CONSTRUCTION AND THE PLACEMENT OF CONTROLLED FILL.
6. FOUNDATION AREAS MAY REQUIRE UNDERCUTTING OF COMPRESSIBLE AND/OR UNSUITABLE SOILS IN ADDITION TO THAT INDICATED ON THE PLANS. ALL SUCH UNDERCUTTING SHALL BE PERFORMED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER AND SHALL BE MONITORED AND DOCUMENTED. IN NO CASE SHALL THERE BE AN ATTEMPT TO STABILIZE ANY PORTIONS OF THE FOUNDATION SOILS WITH CRUSHED STONE.
7. TREATMENT OF SEEPAGE AREAS, SUBGRADE PREPARATION, FOUNDATION DEWATERING AND ROCK FOUNDATION PREPARATION (I.E., TREATMENT WITH SLUSH GROUTING, DENTAL CONCRETE, ETC.) MAY BE REQUIRED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER. ALL SUCH ACTIVITIES SHALL BE CLOSELY MONITORED AND DOCUMENTED BY THE GEOTECHNICAL ENGINEER.
8. FILL ADJACENT TO THE RISER AND PRINCIPAL SPILLWAY PIPE SHALL BE PLACED SO THAT LIFTS ARE AT THE SAME LEVEL ON BOTH SIDES OF THE STRUCTURES.
9. EARTHWORK COMPACTION WITHIN 3-FEET OF ANY STRUCTURES SHALL BE ACCOMPLISHED BY MEANS OF HAND TAMPERS, MANUALLY DIRECTED POWER TAMPERS OR PLATE COMPACTORS OR MINIATURE SELF-PROPELLED ROLLERS.
10. COMPACTION BY MEANS OF DROP WEIGHTS FROM A CRANE OR HOIST SHALL NOT BE PERMITTED.
11. HEAVY EQUIPMENT SHALL NOT BE ALLOWED TO PASS OVER CAST-IN-PLACE STRUCTURES UNTIL ADEQUATE CURING TIME HAS ELAPSED.
12. TO RE-ESTABLISH VEGETATION AFTER CONSTRUCTION, A 2- TO 3-INCH LAYER OF TOPSOIL SHALL BE PLACED ON THE DISTURBED EMBANKMENT SURFACE AND THE AREA SEEDED AND MULCHED OR HYDROSEEDED.

GENERAL GRADING NOTES

1. REFER TO THE OVERALL SITE LAYOUT FOR RELATED NOTES.
2. BOUNDARY & TOPOGRAPHIC INFORMATION TAKEN FROM A SURVEY PREPARED BY THE CE GROUP, INC.
3. FINISHED WALK AND CURB ELEVATIONS SHALL BE 6" ABOVE FINISHED PAVEMENT GRADE UNLESS NOTED DIFFERENTLY ON THE PLANS.
4. THE CONTRACTOR SHALL NOTE THAT THE PLANS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EVERY OFFSET, TRANSITION, GRADE CHANGE, ETC. THAT MAY BE REQUIRED FOR A COMPLETE AND WORKING SYSTEM.
5. CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
6. CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY TO TRANSITION BACK TO EXISTING GRADE.
7. ALL FILL TO BE COMPACTED TO 98% DRY DENSITY (STANDARD PROCTOR) UNDER PAVEMENT AND BUILDING PADS OR AS SPECIFIED IN PROJECT GEOTECHNICAL REPORT BY OTHERS.
8. THE PROPOSED CONTOURS SHOWN ARE FINISHED ELEVATIONS. REFER TO PAVEMENT AND SIDEWALK DETAILS TO ESTABLISH CORRECT SUBBASE OR AGGREGATE BASE COURSE ELEVATIONS TO BE COMPLETED UNDER THIS CONTRACT.
9. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE SO THAT RUNOFF WILL FLOW BY GRAVITY AWAY FROM BUILDINGS AND ACROSS NEW PAVEMENT AND/OR LANDSCAPE AREAS TO NEW OR EXISTING STORM DRAIN INLETS, SWALES, DITCHES OR OVERLAND SHEET FLOW.
10. GRADE BUILDING PAD(S) TO A LEVEL BELOW FINISHED FLOOR ELEVATION EQUAL TO THE FLOOR SLAB THICKNESS TO AN ACCURACY OF 1/1OTH OF A FOOT.
11. TO MINIMIZE DAMAGE TO EXISTING TREES NEAR THE EXTERIOR EDGE OF BUFFERS AND STREETSCAPE, THE CONTRACTOR SHALL CUT MINIMUM 2" TRENCHES ALONG THE LIMITS OF DISTURBANCE SO AS TO CUT, RATHER THAN TEAR, ROOTS.
12. ALL STORM DRAINAGE PIPING SHALL BE CLASS III REINFORCED CONCRETE PIPE (RCP) UNLESS OTHERWISE NOTED.
13. SEE SHEET 31 FOR DRAINAGE STRUCTURE DETAILS.



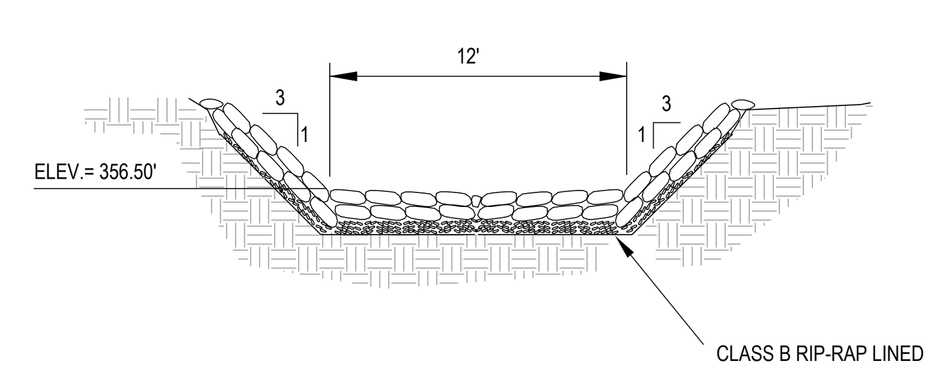
NOTE:
1. PRIOR TO CONVERSION OF TEMPORARY RISER BASIN TO PERMANENT STORM WATER POND, CONTRACTOR SHALL REMOVE SEDIMENT TO OVERALL CONTOUR ELEVATION AS SHOWN.

* - GEOTECHNICAL ENGINEER MAY NEED TO PROVIDE SLOPE STABILITY ANALYSIS / RECOMMENDATION.

NOTES:
1. CONTRACTOR TO SUPPLY SHOP DRAWINGS OF RISER STRUCTURE PRIOR TO FABRICATION.

DRY POND PROFILE

NOT TO SCALE



EMERGENCY SPILLWAY

NOTES:

1. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR OUTLET STRUCTURE AND TRASH RACK FOR APPROVAL.
2. DAM EMBANKMENT IS TO BE SEEDED IMMEDIATELY AFTER DAM CONSTRUCTION IS COMPLETE.
3. STORMWATER MANAGEMENT STRUCTURE IS TO BE UTILIZED AS A TEMPORARY EROSION CONTROL DEVICE INITIALLY. ONCE CONSTRUCTION IS COMPLETED AND UPSTREAM SURFACES HAVE BEEN PERMANENTLY STABILIZED, CONTRACTOR IS TO REMOVE ALL SEDIMENT FROM BASIN AND CONVERT TO PERMANENT WATER QUALITY STRUCTURE.
4. SKIMMER IS NOT TO BE REMOVED UNTIL ALL UPSTREAM SURFACES HAVE BEEN PERMANENTLY STABILIZED.

NORTH

20' 0 20' 40'
SCALE: 1" = 20'

STOP!
BEFORE YOU DIG CALL
THE NC ONE CALL CENTER
1-800-632-4949
IT'S THE LAW!

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL CHATHAM COUNTY, NCDEQ PWSS, AND NCDOT STANDARDS AND PROJECT-SPECIFIC SPECIFICATIONS DATED MAY 14TH.

NO.	REVISIONS	DATE
6	GRADING REVISIONS	04/17/2020
5	NCDEQ-PWSS COMMENTS	10/01/2019
4	NCDEQ-PERCS COMMENTS	09/09/2019
3	WATERLINE REVISIONS	08/28/2019
2	WATERLINE REVISIONS	08/09/2019
1	EROSION CONTROL & STORMWATER REVISIONS	08/02/2019

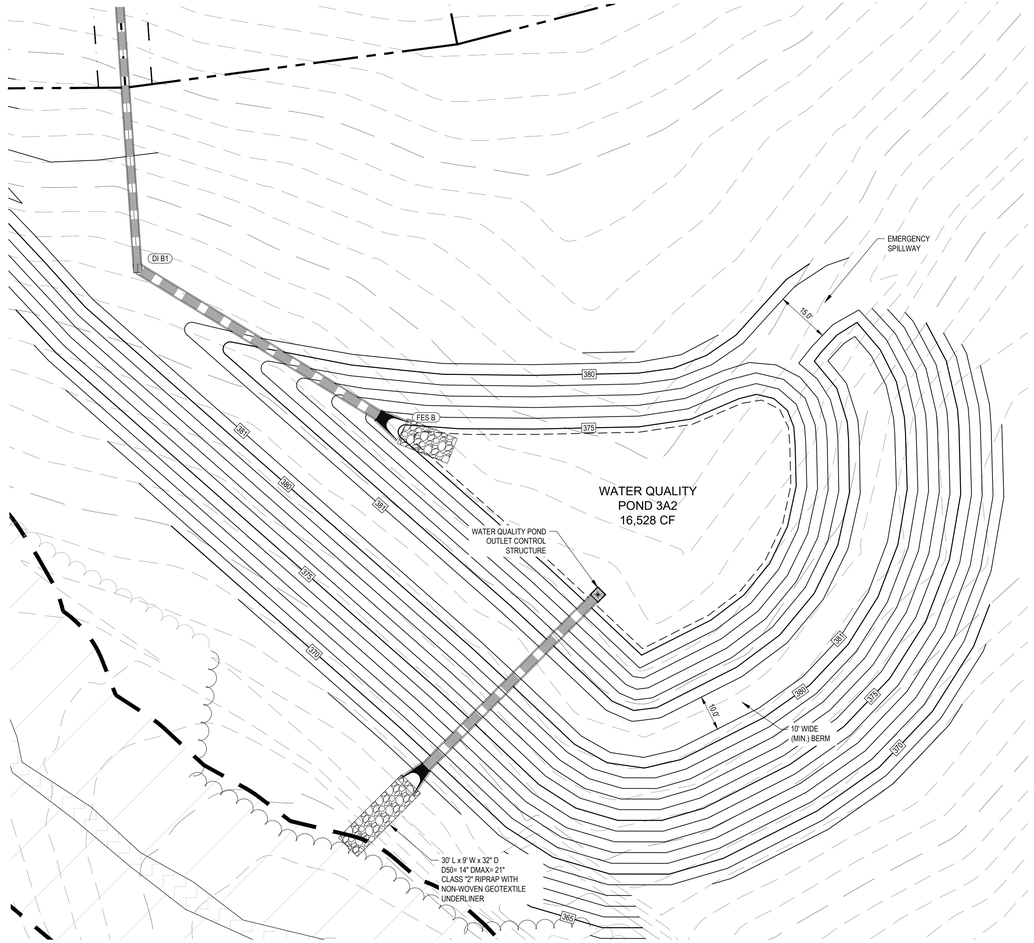
CE GROUP
301 GLENWOOD AVE. 220
RALEIGH,NC 27603
PHONE: 919-367-8790
FAX: 919-322-0032
www.cegroupinc.com
License # C-1739

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 034332 JOSEPH M. CRAIG 04/17/2020

THE LEGACY - PHASE 3
CONSTRUCTION PLANS
STORMWATER POND 3A1 PLAN

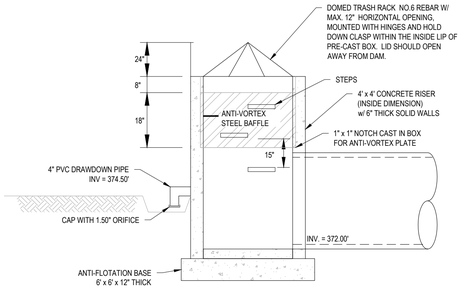
COVERED BRIDGE TRAIL
CHATHAM COUNTY, NORTH CAROLINA

Date: 05/14/2019
Scale: 1" = 20'
Drawn: BWM
Checked: JMC
Project No. 330-03
Computer Dwg. Name: 330-03 8A STORMWATER POND 3A1
Sheet No: 8A



STORMWATER POND 3A2 PLAN

1" = 20'



NOTE:
CONTINUOUS RUBBER WATERSTOPS SHALL BE PROVIDED AT ALL CONSTRUCTION JOINTS IN RISER AND SECTIONS SHALL BE STRAPPED TOGETHER W/STAINLESS STEEL HARDWARE.

WATER QUALITY POND OUTLET CONTROL STRUCTURE

NOT TO SCALE

LEGEND

- PROPERTY LINE (PL)
- R/W — RIGHT-OF-WAY LINE
- SETBACK LINE
- UTILITY EASEMENT
- 140 — EXISTING MAJOR CONTOUR
- 139 — EXISTING MINOR CONTOUR
- 140 — PROPOSED MAJOR CONTOUR
- 139 — PROPOSED MINOR CONTOUR
- PROPOSED STORM DRAINAGE PIPE
- SS — PROPOSED GRAVITY SEWER
- W — PROPOSED WATER LINE
- TP — PROPOSED TREE PROTECTION FENCE
- LD — PROPOSED LIMITS OF DISTURBANCE
- PROPOSED RETAINING WALL
- FLARED END SECTION
- STORM MANHOLE
- YARD INLET
- CATCH BASIN
- FLOW ARROW
- 100.0' — PROPOSED SPOT ELEVATION
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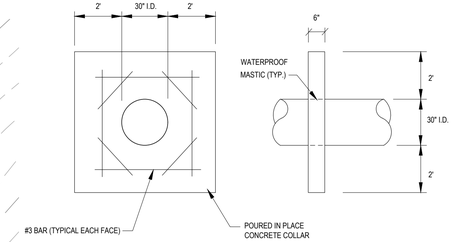

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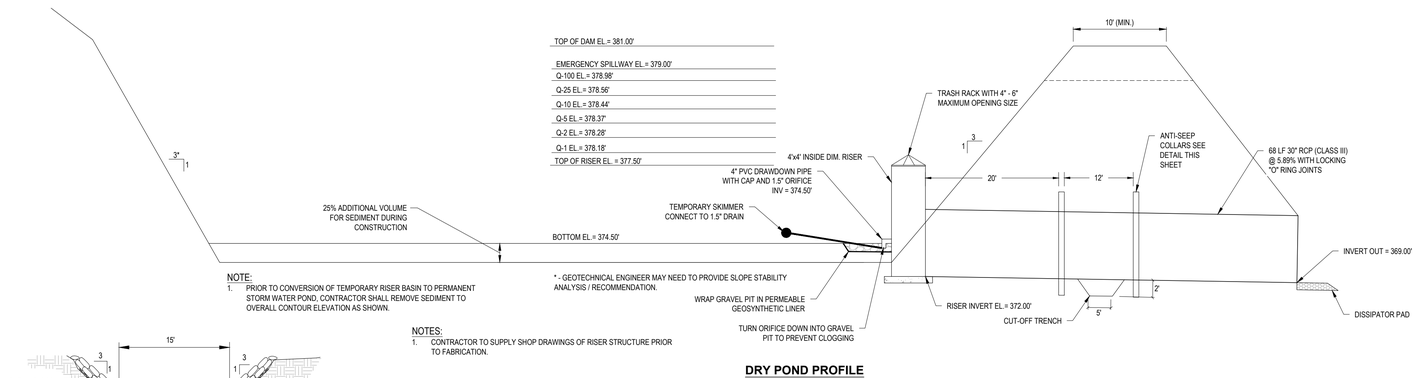

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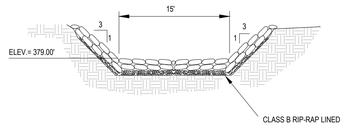
DRY POND PROFILE

NOT TO SCALE



EMERGENCY SPILLWAY

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NORTH

20' 0 20' 40'

SCALE: 1" = 20'

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CE GROUP
301 GLENWOOD AVE. 220
RALEIGH,NC 27603
PHONE: 919-367-8790
FAX: 919-322-0032
www.cegroupinc.com
License # C-1739

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 034332 JOSEPH M. CRAIG
4/17/2020

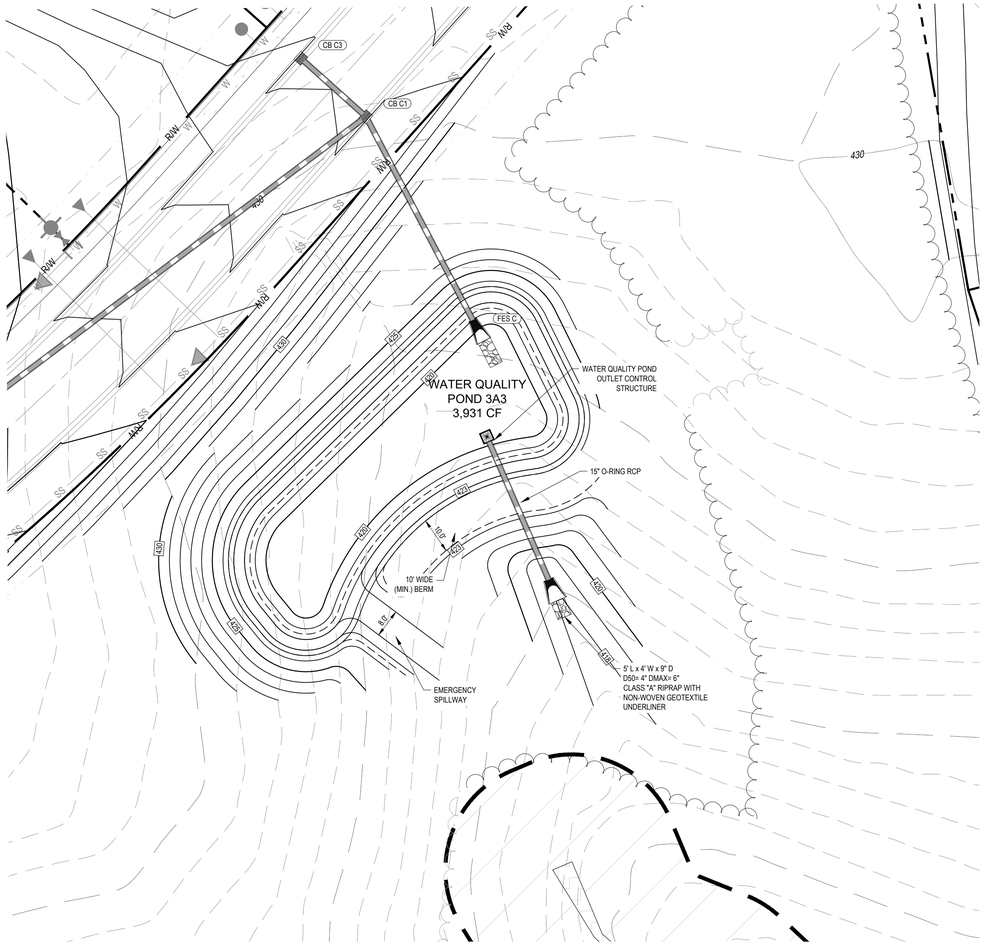
THE LEGACY - PHASE 3
CONSTRUCTION PLANS
STORMWATER POND 3A2 PLAN

COVERED BRIDGE TRAIL
CHATHAM COUNTY, NORTH CAROLINA

Date: 05/14/2019
Scale: 1" = 20'
Drawn: BWM
Checked: JMC
Project No. 330-03
Computer Dwg. Name 330-03 8B STORMWATER POND 3A2

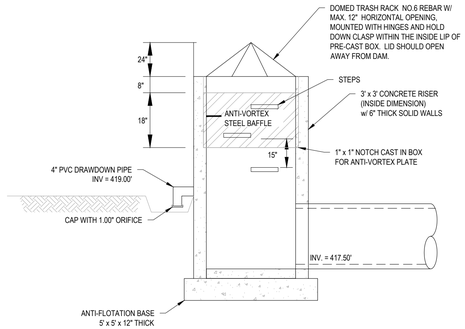
Sheet No: 8B

P:\330 (Freehold Capital)\330-03 (Legacy Phase 3)\Design\Planset\Construction Plans\330-03 8B STORMWATER POND 3A2.dwg PLOTTED: 4/17/2020 11:35 AM BY: JHUDSON



STORMWATER POND 3A3 PLAN

1" = 20'



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WATER QUALITY POND OUTLET CONTROL STRUCTURE

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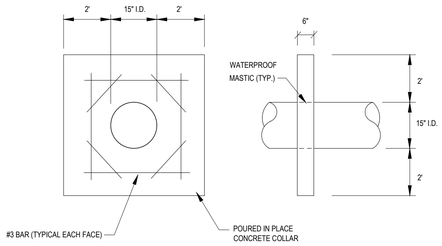

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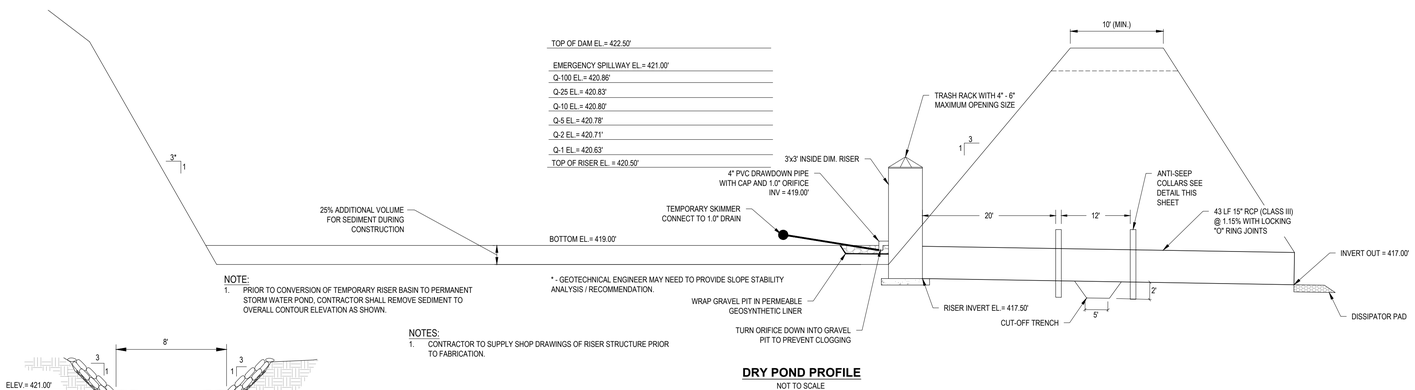

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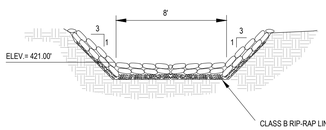

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CE GROUP
301 GLENWOOD AVE. 220
RALEIGH,NC 27603
PHONE: 919-367-8790
FAX: 919-322-0032
www.cegroupinc.com
License # C-1739

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 034332 JOSEPH M. CRAIG
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THE LEGACY - PHASE 3
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STORMWATER POND 3A3 PLAN

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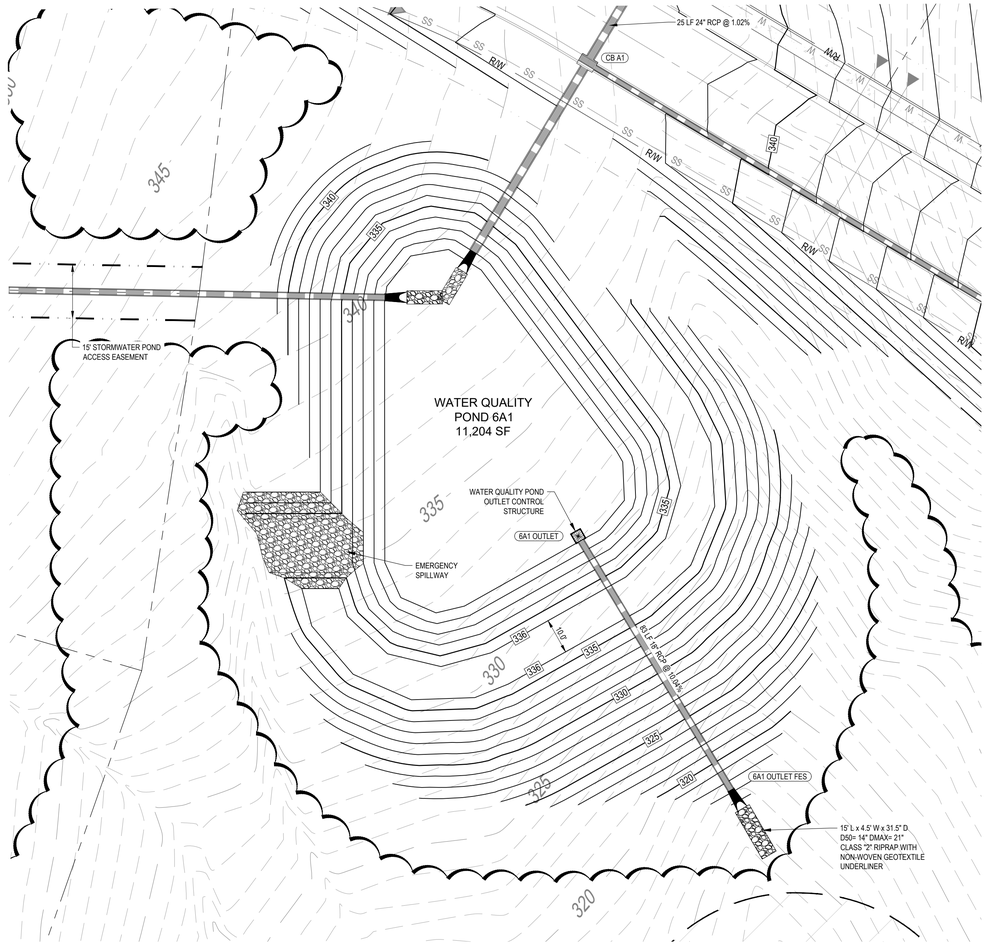

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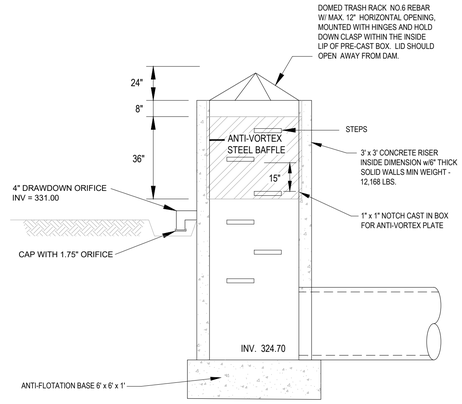

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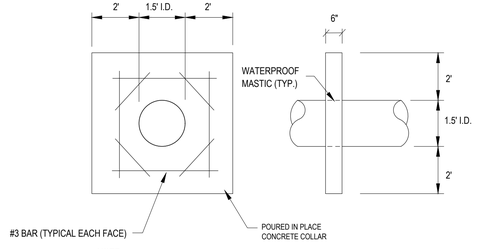

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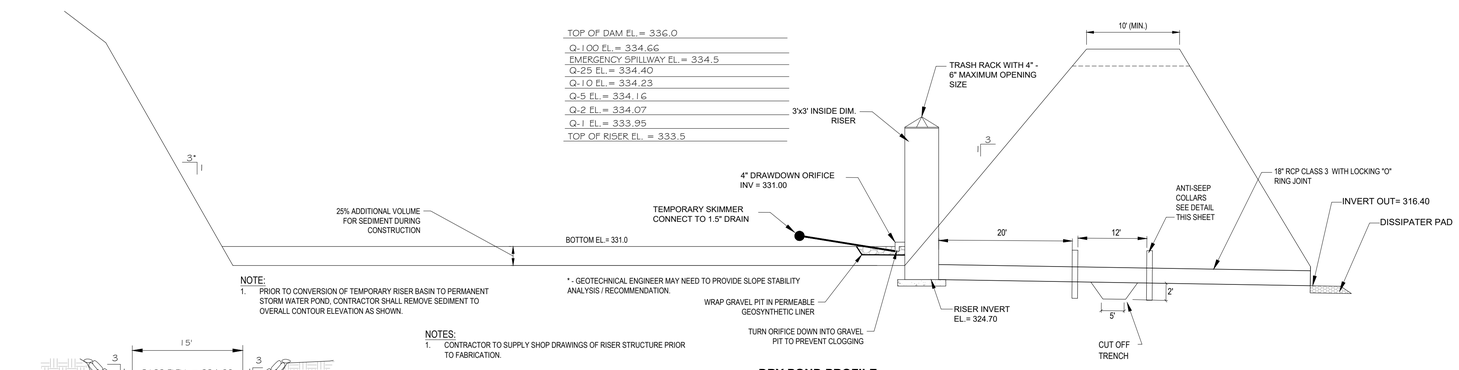

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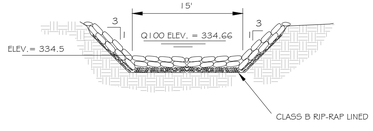

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12. TO RE-ESTABLISH VEGETATION AFTER CONSTRUCTION, A 2- TO 3-INCH LAYER OF TOPSOIL SHALL BE PLACED ON THE DISTURBED EMBANKMENT SURFACE AND THE AREA SEEDED AND MULCHED OR HYDROSEEDED.

GENERAL GRADING NOTES

1. REFER TO THE OVERALL SITE LAYOUT FOR RELATED NOTES.
2. BOUNDARY & TOPOGRAPHIC INFORMATION TAKEN FROM A SURVEY PREPARED BY THE CE GROUP, INC.
3. FINISHED WALK AND CURB ELEVATIONS SHALL BE 6" ABOVE FINISHED PAVEMENT GRADE UNLESS NOTED DIFFERENTLY ON THE PLANS.
4. THE CONTRACTOR SHALL NOTE THAT THE PLANS ARE SCHEMATIC IN NATURE AND DO NOT SHOW EVERY OFFSET, TRANSITION, GRADE CHANGE, ETC. THAT MAY BE REQUIRED FOR A COMPLETE AND WORKING SYSTEM.
5. CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
6. CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY TO TRANSITION BACK TO EXISTING GRADE.
7. ALL FILL TO BE COMPACTED TO 98% DRY DENSITY (STANDARD PROCTOR) UNDER PAVEMENT AND BUILDING PADS OR AS SPECIFIED IN PROJECT GEOTECHNICAL REPORT BY OTHERS.
8. THE PROPOSED CONTOURS SHOWN ARE FINISHED ELEVATIONS. REFER TO PAVEMENT AND SIDEWALK DETAILS TO ESTABLISH CORRECT SUBBASE OR AGGREGATE BASE COURSE ELEVATIONS TO BE COMPLETED UNDER THIS CONTRACT.
9. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE SO THAT RUNOFF WILL FLOW BY GRAVITY AWAY FROM BUILDINGS AND ACROSS NEW PAVEMENT AND/OR LANDSCAPE AREAS TO NEW OR EXISTING STORM DRAIN INLETS, SWALES, DITCHES OR OVERLAND SHEET FLOW.
10. GRADE BUILDING PAD(S) TO A LEVEL BELOW FINISHED FLOOR ELEVATION EQUAL TO THE FLOOR SLAB THICKNESS TO AN ACCURACY OF 1/10TH OF A FOOT.
11. TO MINIMIZE DAMAGE TO EXISTING TREES NEAR THE EXTERIOR EDGE OF BUFFERS AND STREETSCAPE, THE CONTRACTOR SHALL CUT MINIMUM 2" TRENCHES ALONG THE LIMITS OF DISTURBANCE SO AS TO CUT, RATHER THAN TEAR, ROOTS.
12. ALL STORM DRAINAGE PIPING SHALL BE CLASS III REINFORCED CONCRETE PIPE (RCP) UNLESS OTHERWISE NOTED.
13. SEE SHEET 31 FOR DRAINAGE STRUCTURE DETAILS.

NOTES:

1. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR OUTLET STRUCTURE AND TRASH RACK FOR APPROVAL.
2. DAM EMBANKMENT IS TO BE SEEDED IMMEDIATELY AFTER DAM CONSTRUCTION IS COMPLETE.
3. STORMWATER MANAGEMENT STRUCTURE IS TO BE UTILIZED AS A TEMPORARY EROSION CONTROL DEVICE INITIALLY. ONCE CONSTRUCTION IS COMPLETED AND UPSTREAM SURFACES HAVE BEEN PERMANENTLY STABILIZED, CONTRACTOR IS TO REMOVE ALL SEDIMENT FROM BASIN AND CONVERT TO PERMANENT WATER QUALITY STRUCTURE.
4. DRAWDOWN PIPE IS NOT TO BE INSTALLED UNTIL ALL UPSTREAM SURFACES HAVE BEEN PERMANENTLY STABILIZED.

NORTH

20' 0 20' 40'

SCALE: 1" = 20'

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NO.	REVISIONS	DATE
9	PER NCDEQ - PERC5 COMMENTS	2019-01-30
8	PER PERC5 & PWSS COMMENTS	2019-01-14
7	PER CHATHAM COUNTY COMMENTS	2018-12-17
6	PER OWNER COMMENTS	2018-08-13
5	PER NCDEQ COMMENTS	2018-08-02
4	PER OWNER COMMENTS	2018-06-18
3	PER EROSION CONTROL COMMENTS	2018-04-11
2	PER EROSION CONTROL COMMENTS	2018-04-05
1	PER CLIENT COMMENTS	2018-03-15

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301 GLENWOOD AVE. 220
RALEIGH,NC 27603
PHONE: 919-367-8790
FAX: 919-322-0032
www.cegroupinc.com
License # C-1739

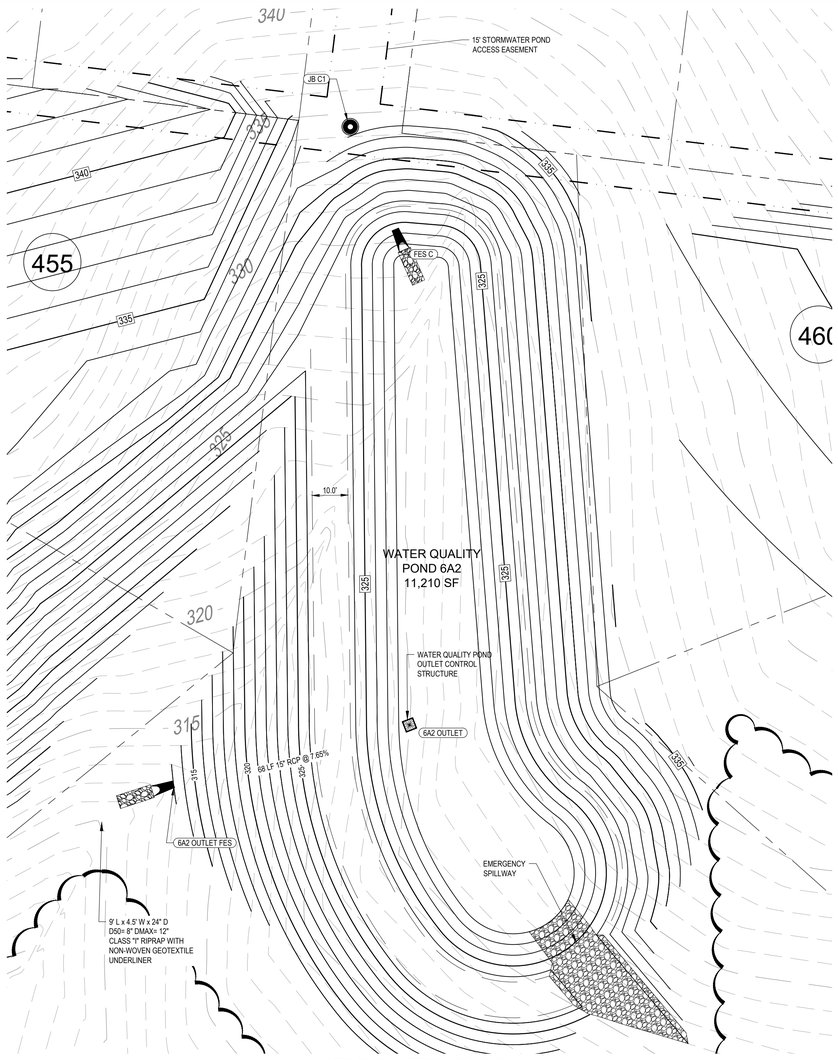
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 034332 JASEEH M. CRAIG
01/30/19

THE LEGACY - PHASE 6
CONSTRUCTION PLANS
STORMWATER POND 6A1 PLAN

BIG WOODS ROAD
CHATHAM COUNTY, NORTH CAROLINA

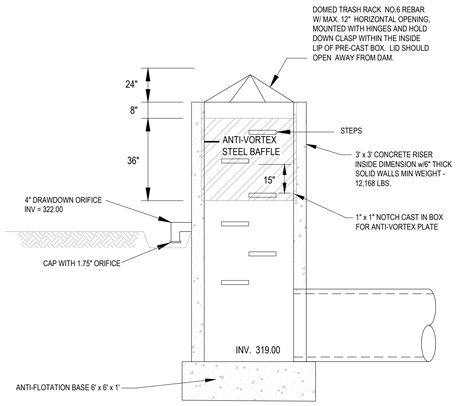
Date: 02/16/2018
Scale: 1" = 20'
Drawn: JCH
Checked: JMC
Project No. 330-12
Computer Dwg. Name 330-12 21 STORMWATER POND A1

Sheet No: 21 Of 32



STORMWATER POND PLAN

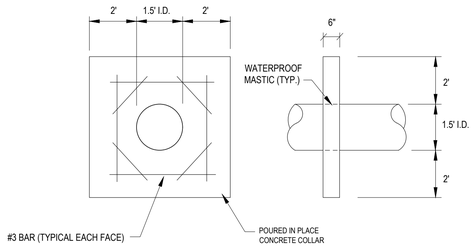
1" = 20'



NOTE:
CONTINUOUS RUBBER WATERSTOPS SHALL BE PROVIDED AT ALL CONSTRUCTION JOINTS IN RISER AND SECTIONS SHALL BE STRAPPED TOGETHER W/STAINLESS STEEL HARDWARE.

WATER QUALITY POND OUTLET CONTROL STRUCTURE

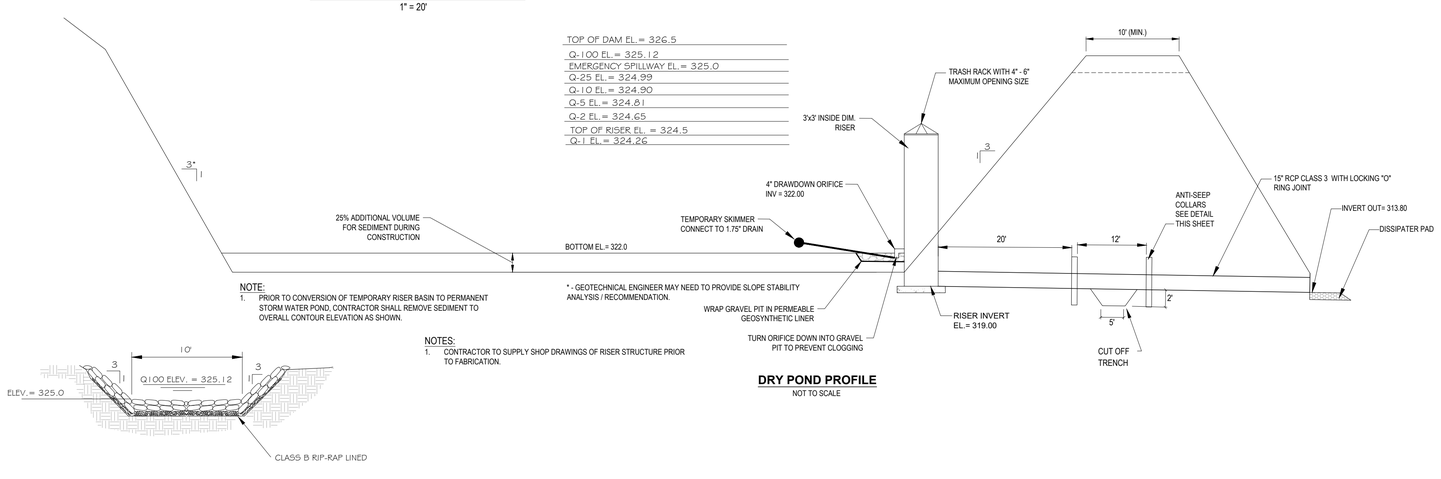
NOT TO SCALE



NOTE:
CONCRETE SHALL BE 3000 PSI @ 28 DAYS REINFORCING STEEL, ASTM A615, GRADE 60, FY - 60,000 PSI COLLAR SHOULD BE PLACED AT LEAST TWO FEET FROM PIPE JOINT

ANTI-SEEP COLLAR DETAIL

NOT TO SCALE



NOTE:
1. PRIOR TO CONVERSION OF TEMPORARY RISER BASIN TO PERMANENT STORM WATER POND, CONTRACTOR SHALL REMOVE SEDIMENT TO OVERALL CONTOUR ELEVATION AS SHOWN.

* - GEOTECHNICAL ENGINEER MAY NEED TO PROVIDE SLOPE STABILITY ANALYSIS / RECOMMENDATION.

NOTES:
1. CONTRACTOR TO SUPPLY SHOP DRAWINGS OF RISER STRUCTURE PRIOR TO FABRICATION.

DRY POND PROFILE

NOT TO SCALE

EMERGENCY SPILLWAY

LEGEND

- PROPERTY LINE (PL)
- R/W — RIGHT-OF-WAY LINE
- SETBACK LINE
- UTILITY EASEMENT
- 140 — EXISTING MAJOR CONTOUR
- 139 — EXISTING MINOR CONTOUR
- 140 — PROPOSED MAJOR CONTOUR
- 139 — PROPOSED MINOR CONTOUR
- SS — PROPOSED STORM DRAINAGE PIPE
- SS — PROPOSED GRAVITY SEWER
- W — PROPOSED WATER LINE
- TP — PROPOSED TREE PROTECTION FENCE
- LD — PROPOSED LIMITS OF DISTURBANCE
- PROPOSED RETAINING WALL
- FLARED END SECTION
- STORM MANHOLE
- YARD INLET
- CATCH BASIN
- FLOW ARROW
- 100.0' — PROPOSED SPOT ELEVATION
- TW=100.0' — PROPOSED GRADE AT TOP OF WALL
- BW=100.0' — PROPOSED GRADE AT BOTTOM OF WALL

DAM EMBANKMENT CONSTRUCTION NOTES

1. CONTROLLED FILL, AS SPECIFIED BY THE GEOTECHNICAL ENGINEER, IN THE DAM EMBANKMENT SHALL BE PLACED IN 6-INCH LOOSE LAYERS (3-INC LOOSE LAYERS WITHIN 3-FEET OF EITHER SIDE OF THE PRINCIPAL SPILLWAY PIPE TO A DEPTH OF 2-FEET OVER THE PIPE) AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF + OR – TWO PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D698.
2. ALL VISIBLE ORGANIC DEBRIS SUCH AS ROOTS AND LIMBS SHALL BE REMOVED FROM THE FILL MATERIAL PRIOR TO COMPACTION TO THE REQUIRED DENSITY. SOILS WITH ORGANIC MATTER CONTENT EXCEEDING 5% BY WEIGHT SHALL NOT BE USED. STONES GREATER THAN 3-INCH (IN ANY DIRECTION) SHALL BE REMOVED FROM THE FILL PRIOR TO COMPACTION.
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NORTH CAROLINA PROFESSIONAL SEAL 034332 ENGINEER JASEEH M. CRAIG
01/30/19

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CHATHAM COUNTY, NORTH CAROLINA

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Checked: JMC
Project No. 330-12
Computer Dwg. Name: 330-12 22 STORMWATER POND A2

Sheet No: 22 Of 32

P:\330 (Freehold Capital)\330-12 (Legacy Phase 6)\Design\Plansets\Construction Plans\330-12 22 STORMWATER POND A2.dwg PLOTTED: 2/7/2019 10:34 AM BY: BMUELLER