DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

REPLY TO
ATTENTION OF

APRIL 11 2012

Regulatory Division
SAS-2011-00937

JOINT PUBLIC NOTICE
Savannah District/State of Georgia

The Savannah District has received an application for a Department of the Army Permit, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), as follows:

Application Number: SAS-2011-00937

Applicant: Mr. Chuck Taylor
Georgia Southern University
Post Office Box 8012
Statesboro, Georgia 30460

Agent: Mr. Alton Brown
Resource & Land Consultants
41 Park of Commerce Way, Suite 303
Savannah, Georgia 31405

Location of Proposed Work: The project site is located at the intersection of Golf Club Road and Burkhalter Road, south of the City of Statesboro, Bulloch County, Georgia (Latitude 32.3663, Longitude -81.7802).

Description of Work Subject to the Jurisdiction of the US Army Corps of Engineers: The reconstruction/rehabilitation of an existing golf course on a 167-acre tract of land. The project as proposed would impact 0.89 acre of wetland, 1.62 acres of open water golf course ponds, and 0.11 acre of jurisdictional ditches. 0.33 acre of wetland would be filled for course re-configuration. 0.40 acre of wetland would be excavated for construction of golf course lagoons. 0.15 acre of wetland would be cleared for golf play. 1.62 acres of existing lagoon and 0.1 acre of ditch would be filled for course reconfiguration. 0.01 acre of ditch would be excavated for lagoon construction. The applicant is proposing no compensatory mitigation for lagoon or ditch impacts, as the proposed project would result in an overall increase in these resources. The applicant is proposing to purchase 6.2 wetland mitigation credits from Margin Bay Mitigation Bank or Black Creek Mitigation Bank, both of which serve this area in their primary service area.

BACKGROUND

This Joint Public Notice announces a request for authorizations from both the US Army Corps of Engineers and the State of Georgia. The applicant's proposed work may also require local governmental approval.

STATE OF GEORGIA

Water Quality Certification: The Georgia Department of Natural Resources, Environmental Protection Division, intends to certify this project at the end of 30 days in accordance with the provisions of Section 401 of the Clean Water Act, which is required for a Federal Permit to conduct activity in, on, or adjacent to the waters of the State of Georgia. Copies of the application and supporting documents relative to a specific application will be available for review and copying at the office of the Georgia Department of Natural Resources, Environmental Protection Division, Water Protection Branch, 4220 International Parkway, Suite 101, Atlanta, Georgia 30354, during regular office hours. A copier machine is available for public use at a charge of 25 cents per page. Any person who desires to comment, object, or request a public hearing relative to State Water Quality Certification must do so within 30 days of the State's receipt of application in writing and state the reasons or basis of objections or request for a hearing. The application can be reviewed in the Savannah District, US Army Corps of Engineers, Regulatory Division, 100 West Oglethorpe Avenue Savannah, Georgia 31401-3640.

State-owned Property and Resources: The applicant may also require assent from the State of Georgia, which may be in the form of a license, easement, lease, permit or other appropriate instrument.

US ARMY CORPS OF ENGINEERS

The Savannah District must consider the purpose and the impacts of the applicant's proposed work, prior to a decision on issuance of a Department of the Army Permit.

Cultural Resources Assessment: Review of the latest published version of the National Register of Historic Places indicates that no registered properties or properties listed as eligible for inclusion are located at the site or in the area affected by the proposed work. Presently unknown archaeological, scientific, prehistorical or historical data may be located at the site and could be affected by the proposed work. No Phase I surveys have been completed for the proposed project. However, as the project area contains an existing golf course surrounded by residential development, no impacts to cultural resources are anticipated.

Endangered Species: Pursuant to Section 7(c) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), we request information from the US Department of the Interior, Fish and Wildlife Service, the US Department of Commerce, the National Oceanic and Atmospheric Administration, and the National Marine Fisheries Service; or, any other interested party, on whether any species listed or proposed for listing may be present in the area. A survey for Threatened and Endangered species and associated habitat has been completed. No listed

species or habitats associated with these species were observed during the survey. The US Army Corps of Engineers has determined that the proposed project would have no effect on any Threatened or Endangered species or their habitats and requests concurrence from the above listed agencies with this determination.

Public Interest Review: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors, which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and in general, the needs and welfare of the people.

Consideration of Public Comments: The US Army Corps of Engineers is soliciting comments from the public; federal, state, and local agencies and officials; Native American Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the US Army Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Application of Section 404(b)(1) Guidelines: The proposed activity involves the discharge of dredged or fill material into the waters of the United States. The Savannah District's evaluation of the impact of the activity on the public interest will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency, under the authority of Section 404(b) of the Clean Water Act.

Public Hearing: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application for a Department of the Army Permit. Requests for public hearings shall state, with particularity, the reasons for requesting a public hearing. The decision whether to hold a public hearing is at the discretion of the District Engineer, or his designated appointee, based on the need for additional substantial information necessary in evaluating the proposed project.

Comment Period: Anyone wishing to comment on this application for a Department of the Army Permit should submit comments in writing to the Commander, US Army Corps of Engineers, Savannah District, Attention: Mr. William M. Rutlin, 100 West Oglethorpe Avenue Savannah, Georgia 31401-3640, no later than 30 days from the date of this notice. Please refer to the applicant's name and the application number in your comments.

If you have any further questions concerning this matter, please contact Mr. William M. Rutlin, Regulatory Specialist, Coastal Branch at 912-652-5893.

Enclosures

1. Georgia Southern University Golf Course Rehabilitation Project Project Description, 11 pages
2. Figures 1 & 2, 2 pages
3. Wetlands Impact, Scenario 1, 11 pages
4. Compensatory Mitigation Calculations, 1 page
5. Mitigation Bank Selection Worksheet, 1 page

Georgia Southern University
Golf Course Rehabilitation Project
Bulloch County, Georgia
Project Description
January 2012

1.0 Introduction:
Georgia Southern University (GSU) is proposing a golf course rehabilitation project which includes general improvements to the former Southern Links Golf Course. The project area totals approximately 167 acres located in the north west quadrant of Country Club Road and High Tower Road within Bulloch County, Georgia (32.432016°, -81.756573°) (Figure 1/Appendix A).

2.0 Background & Project Need/Purpose:

2.1 Background: Southern Links Golf Course was an 18 hole golf course designed and constructed in the early 1980's, opened in 1985 and closed in 2009. The University purchased the course in late 2010 to facilitate needed expansion of recreation offerings for a growing student enrollment. The property was acquired by the GSU Housing Foundation which is a non-profit corporation established to acquire and develop real estate. The proposed expansion will allow the University to provide additional activities such as a walking/cross country course, golf, and disc golf. In addition, long term plans also include using the facility for a variety of academic purposes including teaching classes at the complex. As documented by the University, the purchase of this property will allow GSU to continue to expand its recreation and education opportunities to a student enrollment of nearly 20,000. Georgia Southern has continued to see a record level of interest from prospective students and further growth is anticipated in future years.

2.2 Project Need/Purpose: The proposed project will provide a needed addition to the current recreational and educational program provided by GSU. Just like football facilities, baseball facilities, basketball facilities, etc., most, if not all, major Universities throughout the country own and operate a golf course. The acquisition and rehabilitation of this course will accommodate a need for GSU and provide students, faculty and alumni access to a University owned golf course. The overall project purpose is to rehabilitate the existing abandoned golf course to provide a suitable facility for operation by the University and to support the educational and recreational program Georgia Southern University.

3.0 Existing Site Conditions:
As verified by the U.S. Army Corps of Engineers (USACE) in the jurisdictional determination letter dated 14 November 2011 (SAS 2001-00937), the 167.025 acre project area contains approximately 138.475 acres of upland, 21.68 acres of open water/golf course lagoons, 6.23 acres of wetland, and 0.64 acre of man-made ditch (Appendix B). The following provides a brief description of each habitat while photographs depicting typical conditions of each habitat can be found in Appendix C.

3.1 Upland: The majority of the upland area consists of abandoned fairways, greens, tees associated with the abandoned golf course. Vegetation dominating these areas consist of loblolly pine (*Pinus taeda*), sweetgum (*Liquidambar styraciflua*), live Oak (*Quercus virginiana*), dog fennel (*Eupatorium capillifolium*) and Bermuda grass (*Cynodon dactylon*).

3.2 Golf Course Lagoon & Ditches: These areas consist of excavated man-made features with a relatively deep open-water aquatic habitat and/or defined bed and bank. These areas contain a minimal amount of herbaceous vegetation along the waters edge.

3.3 Wetland: Forested wetland areas are dominated by sweetgum, red maple (*Acer rubrum*), swamp tupelo (*Nyssa biflora*), red bay (*Persea borbonia*), water oak (*Quercus nigra*), inkberry (*Ilex glabra*), giant cane (*Arundinaria gigantea*), greenbrier (*Smilax laurilfolia*), Virginia chain-fern (*Woodwardia virginica*), netted chain-fern (*Woodwardia aerolata*), royal fern (*Osmunda regalis*), and blackberry (*Rubus spp.*).

4.0 Project Purpose and Description:

The purpose of the proposed project includes the general rehabilitation of the existing golf course. The majority of the golf course renovation work will occur within upland (existing golf course footprint) and will include activities such as adjusting greens, elevating greens and fairways, construction of new lagoons, irrigation installation, sod installation, and the repair and replacement of the existing golf course drainage system. Location and limits of proposed impacts are depicted in the permit drawings provided in Appendix D. Impacts associated with the project include the following:

Table 1.

Habitat	Activity	Impact Acreage
Wetland	General Fill/Course Reconfiguration	0.332
Wetland	Excavation for Golf Course Lagoon Construction	0.396
Wetland	Clearing for Golf Play	0.154
Golf Course Lagoon	General Fill/Course Reconfiguration	1.619
Ditch	General Fill/Course Reconfiguration	0.101
Ditch	Excavation for Golf Course Lagoon Construction	0.01
	Total	2.612

5.0 ALTERNATIVE ANALYSIS:

Prior to preparation of this permit application and during design of the project, the applicant considered both off-site and on-site alternatives. The following provides a description of other tracts considered during the development plan review process as well as on-site alternatives considered in an effort to avoid and minimize impacts to on-site wetlands to the greatest extent practicable.

5.1 Site Screening Criteria: As part of the alternative site analysis, the following site screening criteria were applied to the overall project.

- **Proximity to Georgia Southern University (GSU) campus.** The proposed golf course facility will be utilized as an educational and recreational facility for students and faculty. Distances that would not allow students to travel back and forth within a reasonable time frame from the GSU campus to physical education classes were deemed an unacceptable alternative. Georgia Southern University will also market the proposed facility to prospective students and alumni, therefore closer proximity to the campus will encourage use of the facility. For the aforementioned reasons a maximum search radius of 15 miles from the GSU campus was established for the review area.

- **Size.** A standard golf course envelope encompasses between 120 to 180 acres; therefore, the applicant used these acreages as the minimum and maximum size criteria for site selection.

- **Availability.** Numerous sites were of suitable size and proximity to campus are present within the 15 mile radius of the GSU campus. However, only tracts that are available for acquisition were considered for alternative site analysis.

5.2 Summary of Alternative Sites Screened for Practicability: The following provides a summary of each alternative site and application of the project site screening criteria. A location and site maps for each alternative are provided in Appendix E.

a. **Applicants Preferred Alternative:** The applicant's preferred alternative site totals 167 acres and is located within the identified geographic area of review. The site is currently owned by the applicant, Georgia Southern University.

b. **Alternative Site 1.** This site totals 130 acres and falls within the prescribed size criteria. This site is also located within the identified geographic area of review. The site is currently available for acquisition. Alternative Site 1 is a practicable alternative.

c. **Alternative Site 2.** This tract is totals 120 acres and falls within the size criteria. The tract is located within the identified geographic area of review and is available for acquisition. Alternative Site 2 is a practicable alternative.

d. **Alternative Site 3.** This tract is available for purchase and is located within the identified geographic area of review. However, this alternative site totals 84 acres which falls below the minimum acreage needed for a golf course and is therefore not practicable.

e. **Alternative Site 4.** Site 4 is available for acquisition and is located within the geographic area of review. The tract totals 92 acres and does not meet the minimum size requirement; therefore, Site 4 is not a practicable alternative.

Based on the site analysis above, a total of three sites were determined to be practicable including the Preferred Alternative, Alternative Site 1, and Alternative Site 2. Table 2 provides an overall summary of site screening criteria to each alternative site.

Table 2.

Site Screening Selection Criteria	Applicant's Preferred	Alt1	Alt 2	Alt 3	Alt 4
Proximity to Georgia Southern University	Yes	Yes	Yes	Yes	Yes
Availability	Yes	Yes	Yes	Yes	Yes
Size	Yes	Yes	Yes	No	No

5.3 Review of Practicable Alternatives: Following consideration of alternative sites using the site screening criteria, the applicant completed an analysis of practicable alternatives to analyze and identify the least environmentally damaging practicable alternative pursuant to 40 CFR 230.7(b)(1). The purpose of the below analysis is to ensure that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem". The applicant evaluated potential environmental impacts that would result from construction of the proposed facility. This evaluation was completed by considering several environmental factors listed below.

- Stream Impacts (quantitative). The linear footage of potential stream impact was evaluated for each practicable alternative.

- Stream Impacts (qualitative). The functional value of potential stream impact areas was evaluated for each practicable alternative.

- Wetland Impacts (quantitative). The acreage of potential wetland impact was evaluated for each practicable alternative.

- Wetland Function (qualitative). The functional value of potential wetland impact areas was evaluated for each practicable alternative.

- Impacts to Other Waters (quantitative). The acreage of open water impact for each site was considered during review of each practicable alternative.

- Other Waters Functions (qualitative). The functional value of any open water impact areas was evaluated for each practicable alternative.

- Federally Listed Threatened or Endangered Species. A preliminary assessment of each practicable alternative was conducted to determine the potential occurrence of animal and plants species (or their preferred habitats) currently listed as threatened or endangered by state and federal regulations [Federal Endangered Species Act of 1973 (16 USC 1531-1543)]. As depicted in Appendix B, the U.S. Fish and Wildlife Service (USFWS) lists the following plant and animal species as endangered or threatened in Bulloch County, Georgia:

  PLANTS
  Georgia plume (*Elliottia racemosa)*
  Parrot pitcher-plant (*Sarracenia psittacina*)
  Sweet pitcher-plant (*Sarracenia rubra)*

  BIRDS
  Bald eagle (*Haliaeetus leucocephalus)*
  Red-cockaded woodpecker (*Picoides borealis*)
  Wood stork (*Mycteria americana*)

  REPTILES
  Eastern indigo snake (*Drymarchon corias couperi*)
  Gopher tortoise (*Gopherus polyphemus*)

  INVERTERATE
  None Listed

- Cultural Resources. A preliminary assessment of cultural resources was conducted for each site by reviewing available State Historic Preservation Office information at http://www.nr.nps.gov/.

- Flood Plain Impact. The acreage of potential flood plain impact was evaluated for each practicable alternative.

- Stream Buffer Impact. The linear footage of potential stream buffer impact was evaluated for each practicable alternative.

5.3.1. Proposed Action or Applicant's Preferred Alternative: The applicant's preferred alternative totals 167 acres and is located 4 miles south of the GSU campus. The jurisdictional area present within the tract includes 21.68 acres of open water/golf course lagoons, 6.23 acres of wetland, and 0.64 acre of man-made ditch. The upland area consists of abandoned fairways, greens, and tee boxes associated with the abandoned golf course. Vegetation dominating the upland areas consist of loblolly pine (*Pinus taeda*), sweetgum *(Liquidambar styraciflua*), live Oak (*Quercus virginiana*), dog fennel *(Eupatorium capillifolium*) and Bermuda grass (*Cynodon dactylon*). The golf course lagoon and ditch areas consist of excavated man-made features with a relatively deep open-water aquatic habitat and/or defined bed and bank. These areas contain a minimal amount of herbaceous vegetation along the water's edge. The wetland area contains forested wetland areas dominated by sweetgum, red maple (*Acer rubrum*), swamp tupelo (*Nyssa biflora*), red bay (*Persea borbonia*), water oak (*Quercus nigra*), inkberry (*Ilex glabra*), giant cane (*Arundinaria gigantea*), greenbrier (*Smilax laurilfolia*), Virginia chain-fern (*Woodwardia virginica*), netted chain-fern (*Woodwardia aerolata*), royal fern (*Osmunda regalis*), and blackberry (*Rubus spp.*).

- Stream Impacts (quantitative). No stream impacts are associated with this alternative.

- Stream Impacts (qualitative). No stream impacts are associated with this alternative.

- Wetland Impacts (quantitative). The applicant's preferred alternative includes 0.882 acre of wetland impact.

- Wetland Function (qualitative). The functions and value of wetlands within the project site has been altered by the original construction of the golf course and adjacent residential development; due to the change in surface water drainage patterns, forest fragmentation, etc., the functional value of the wetlands would be considered low.

- Impacts to Other Waters (quantitative). The current site contains 21.68 acres of pond area. A total of 1.619 acres of pond will be filled and 2.488 acres of ponds will be created. Total ditch fill and excavation will be 0.101 acre and 0.010 acre, respectively. In addition to the filling and excavating of ditches 0.020 acre of ditches will be created.

- Other Waters Functions (qualitative). Based on the total acreage of ponds within the site the net impact of 0.869 acres of pond creation would not impact the functional value of the ponds. Primary impacts to the ditches contained in the property will result in a net decrease of ditches.

- Federally Listed Threatened or Endangered Species. Based on location of the tract and current site conditions, neither the listed species nor habitat typically associated with these species are present within the Preferred Alternative. Thus, no adverse impacts to federally listed threatened and endangered species are expected.

- Cultural Resources. A Phase I cultural resource survey has not been completed within the project area. However, based on a query of the NHR database, no sites are known to occur within this site.

- Flood Plain Impact. According to the Bulloch County GIS, the applicant's preferred site contains approximately 2.75 acres of flood plain impacts.

- Stream Buffer Impact. No stream buffer impacts are associated with this alternative.

- Zoning. The property currently contains a golf course and is zoned for the intended use.

- Existing Utilities. Water, sewer and electrical services are available to and within the property.

- Existing Infrastructure. The project site contains an existing golf course with greens, tees, irrigation, etc. While rehabilitation of this infrastructure will be required, some will be incorporated into the new design.

5.3.2 No Action Alternative: Obviously with every project, a "no action" alternative must be considered. The proposed project has been initiated to facilitate rehabilitation of an existing golf course purchased by GSU to support the needs of the University. Due to the existing condition and design of the course, use of the course in its current/abandoned condition is not practical. Due to the lack of maintenance prior to GSU purchasing the property, fairways and greens have deteriorated and are in disrepair. In addition, the project includes redesigning the course and updating the drainage and irrigation to create a sustainable golf course meeting today's standards. Clearly, without the proposed project, the existing course is not usable and will not meet the needs of GSU. While the "no-action alternative" avoids any impacts to wetland resources, this alternative would not meet the overall project purpose to create a playable and sustainable golf course for the University. For this reason, the "no-action" alternative is not feasible.

5.3.3 Off-Site Alternatives: Because the project consists of rehabilitation of an existing golf course, off-site alternatives were not a reasonable consideration for this project. The proposed project requires impacts to a minimal 0.882 acre of jurisdictional wetland. All remaining jurisdictional area impacts are associated with man-made lagoons and ditches. A standard golf course envelope encompasses between 120 and 180 acres and construction of a new golf course on an alternate 160 acre site would require a greater acreage of jurisdictional area impact. This has been documented by every golf course project permitted by the Savannah District and constructed within the Coastal Plain of Georgia and South Carolina. In addition to the direct impacts associated with the footprint of the course, secondary impacts associated with utility extension, forest fragmentation, cart path installation, road improvements, drainage and irrigation installation etc. are also typically associated with these projects and encompass a much larger area outside the direct footprint of fairways and greens. For these reasons, rehabilitation of the existing course on this site complies with Section 404(b)(1) Guidelines. Past golf course design and construction projects within new sites as permitted by the Savannah District clearly demonstrate that off-site alternatives would not result in less adverse impacts than the proposed project. Although preliminary consideration of off-site alternatives would clearly be cost prohibitive and necessitate greater impacts to jurisdictional wetlands, the applicant evaluated two practicable off-site alternatives that fit within the parameters prescribed above for construction of a new golf course. This evaluation was conducted to confirm that the project complies with Section 404(b)(1) Guidelines.

5.3.3.1 Alternative Site 1: This tract consists of approximately 130 acres of agricultural land. The site is located in Register, Bulloch County, Georgia, approximately 10 miles away from the GSU campus. Based on review of aerial photography the majority of the tract consists of agricultural fields and habitats appear typical of Bulloch County, Georgia.

- Stream Impacts (quantitative). No stream impacts are associated with this alternative.

- Stream Impacts (qualitative). No stream impacts are associated with this alternative.

- Wetland Impacts (quantitative). This tract contains approximately 5.5 acres of wetlands. Because the size of the tract (130 acres) is at the bottom of the specified criteria and required acreage for a golf course development, any course construction would require impacts to all 5.5 acres of jurisdictional wetlands.

- Wetland Function (qualitative). Based on review of the NWI, topographic survey, and aerial photography the historic limits of the wetlands have been impacted by standard agricultural practices in the area. Therefore, the functional value of the wetland would be relatively low.

- Impacts to Other Waters (quantitative). No "Other Waters" impacts are associated with Alternative Site 1.

- Other Waters Functions (qualitative). No "Other Waters" impacts are associated with Alternative Site 1.

- Federally Listed Threatened or Endangered Species. Based on location of the tract and current site conditions, neither the listed species nor habitat typically associated with these species are present within Alternative Site 1. Thus, no adverse impacts to federally listed threatened and endangered species are expected.

- Cultural Resources. A Phase I cultural resource survey has not been completed within the project area. However, based on a query of the NHR database, no sites are known to occur within this site.

- Flood Plain Impact. According to the Bulloch County GIS, Alternative Site 1 would not contain any flood plain impacts.

- Stream Buffer Impact. No stream buffer impacts are associated with this alternative.

- Zoning. Construction of a golf course within the property would require rezoning.

- Existing Utilities. Electrical services are afforded but water and sewer are not. Construction of the golf course would require extension of public utilities or operation on well and septic.

- Existing Infrastructure. Utilization of this property would require installation of all infrastructure required for operation of a golf course.

5.3.3.2 Alternative Site 2: This tract consists of approximately 120 acres of forested land. The site is located in Bulloch County, Georgia approximately 10 miles away from the GSU campus. Based on review of aerial photography the majority of the tract consists of pine forest and habitats appear to be typical of Bulloch County, Georgia.

- Stream Impacts (quantitative). No stream impacts are associated with this alternative.

- Stream Impacts (qualitative). No stream impacts are associated with this alternative.

- Wetland Impacts (quantitative). This tract contains approximately 14 acres of wetlands. The size of the tract is at the lower end of the specified criteria for a golf course development and it is likely that any course construction would likely require impacts to all 14 acres of jurisdictional wetlands.

- Wetland Function (qualitative). Based on review of the NWI, topographic survey, and aerial photography the historic limits of the wetlands have been impacted by standard silviculture practices on the tract. The functional value of the wetland would be in the low to medium range.

- Impacts to Other Waters (quantitative). No "Other Waters" impacts are associated with Alternative Site 1.

- Other Waters Functions (qualitative). No "Other Waters" impacts are associated with Alternative Site 1.

- Federally Listed Threatened or Endangered Species. Based on location of the tract and current site conditions, neither the listed species nor habitat typically associated with these species are present within the Alternative Site 2. Therefore, no adverse impacts to federally listed threatened and endangered species are expected.

- Cultural Resources. A Phase I cultural resource survey has not been completed within the project area. However, based on a query of the NHR database, no sites are known to occur within this site.

- Flood Plain Impact. According to the Bulloch County GIS, Alternative Site 2 would not contain any flood plain impacts.

- Stream Buffer Impact. No stream buffer impacts are associated with this alternative.

- Zoning. Construction of a golf course within the property would require rezoning.

- Existing Utilities. Electrical services are afforded but water and sewer are not. Construction of the golf course would require extension of public utilities or operation on well and septic.

- Existing Infrastructure. Utilization of this property would require installation of all infrastructure required for operation of a golf course.

5.3.4 Summary of Off-Site Alternatives Analysis: The existing site plan cannot function in its current state of disrepair. For this reason the "No Action" alternative would not satisfy the goals of the proposed project. When comparing the practicable alternatives, the applicant's preferred alternative requires less wetland impact than Alternative Site 1 and Alternative Site 2. When considering environmental impacts, the preferred alternative represents the least environmentally damaging.

In addition to the decreased overall environmental impact, the applicant's preferred alternative site is located on a former golf course site and is currently owned by the applicant, Georgia Southern University. Alternative Site 1 and Alternative Site 2 would require capital investments to secure the properties and greater site development would be necessary as compared to the applicant's preferred alternative. Alternative Site 2 would also require the clearing of forested lands. Current zoning regulations of the applicant's preferred site allow for the site to be used as a golf course, whereas the two alternative sites would necessitate re-zoning for the proposed project. The applicant's preferred site currently has existing utilities (water, sewer, and power), as well as infrastructure for vehicle access, parking, and a clubhouse. Alternative Site 1 and Alternative Site 2 would require establishment of utilities and infrastructure to facilitate the goals of the proposed golf course facility.

Based on the assessment of alternatives analysis completed above, the applicant's preferred alternative is the least damaging practicable alternative. Table 3 provides a summary of the practicable alternatives and the values for each factor.

Table 3.

FACTORS Environmental Factors	No Action Alternative	Applicant's Preferred (proposed & permitted)	Alt 1	Alt 2
Stream Impacts (Linear Feet)	None	None	None	None
Loss in Stream Function	None	None	None	None
Wetland Impacts (Acres)	None	0.882 ac	5.5 ac	14 ac
Loss in Wetland Function	None	Low	Low	High
Impacts to Other Waters (Acres)	None	1.73	No	No
Loss of Other Waters Functions	None	Low	No	No
Federal Endangered Species	N/A	No	No	No
Cultural Resources	N/A	No	No	No
Flood Plain	N/A	2.75 ac	No	No
Stream Buffer	N/A	No	No	No
Other Factors				
Appropriate Zoning	N/A	Yes	No	No
Existing Utilities	N/A	Yes	No	No
Existing Infrastructure	N/A	Yes	No	No
LEDPA	No	Yes	No	No

5.4 On-Site Alternatives & Avoidance/Minimization: In addition to determination that the applicant's preferred project site was the most practicable and least damaging alternative, the applicant considered on-site alternatives which would avoid wetland impacts. The applicant, engineer and golf course architect considered three rehabilitation alternatives. The proposed plan is the result of numerous design alternatives where the applicant focused on maintaining the existing footprint of the course, proposing modifications within upland and previously disturbed and excavated open water areas and avoiding forested wetlands. Table 4 provides an outline of the three on-site alternatives which were considered. Exhibits depicting each alternative are provided in Appendix F.

Table 4.

Alternative	Project Area (Acres)	Wetland Impact (acres)	Pond Impact (acres)	Ditch Impact (acres)	Total (acres)
Scenario 1 (Proposed)	167.02	0.88	1.62	0.11	2.61
Scenario 2	167.02	2.74	1.92	0.229	4.889
Scenario 3	167.02	3.26	4.52	0.229	8.009

When considering the overall development plan, location of proposed impacts compared to location and quality of preservation areas, the applicant continually considered opportunities for avoidance and minimization. Although

alternative plans which provided flexibility for general course design were preferred, these alternative site plans required a greater acreage of forested wetland impact. The applicant's plan restricts and limits the activities to upland area, avoids and preserves the larger wetland systems, avoids and preserves forested wetland systems to the greatest extent practicable, and proposes impacts to a minimal acreage of wetland.

Based on review of alternative site plans, it is the applicant's opinion that the current site design and layout has avoided and minimized wetland impacts to the greatest extent practicable while still satisfying the overall project purpose.

6.0 THREATENED AND ENDANGERED SPECIES:

RLC conducted a threatened and endangered species survey to determine the potential occurrence of animal and plants species (or their preferred habitats) currently listed as threatened or endangered by state and federal regulations [Federal Endangered Species Act of 1973 (16 USC 1531-1543)]. As depicted in Appendix G, the U.S. Fish and Wildlife Service (USFWS) lists the following plant and animal species as endangered or threatened in Bulloch County, Georgia:

PLANTS
Georgia plume (*Elliottii racemosa)*
Parrot pitcher plant (*Sarracenia psittacina)*
Sweet pitcher-plant (*Sarracenia rubra)*

BIRDS
Bald Eagle (*Haliaeetus leucocephalus)*
Red Cockaded woodpecker (*Picoides borealis)*
Wood stork (*Mycteria Americana)*

REPTILES
Eastern indigo snake (*Drymarchon corais couperi)*
Gopher tortoise (*Gopherus polyphemus*)

INVERTEBRATES
None Listed

Neither the listed species nor habitat typically associated with these species was observed during the survey. Due to the condition and location of the project area (consists of an existing golf course surrounded by residential development) and absence of both habitat and listed species, the project is not likely to adversely impact any threatened or endangered species.

7.0 CULTURAL RESOURCES:

A Phase I cultural resources and historical assessment has not been completed within the project area. However, since the project area contains an existing golf course surrounded by residential development, no impacts to cultural or archeological resources is anticipated. A copy of known sites listed on the National Historic Register Web Site can be found in Appendix H.

8.0 STORM WATER MANAGEMENT:

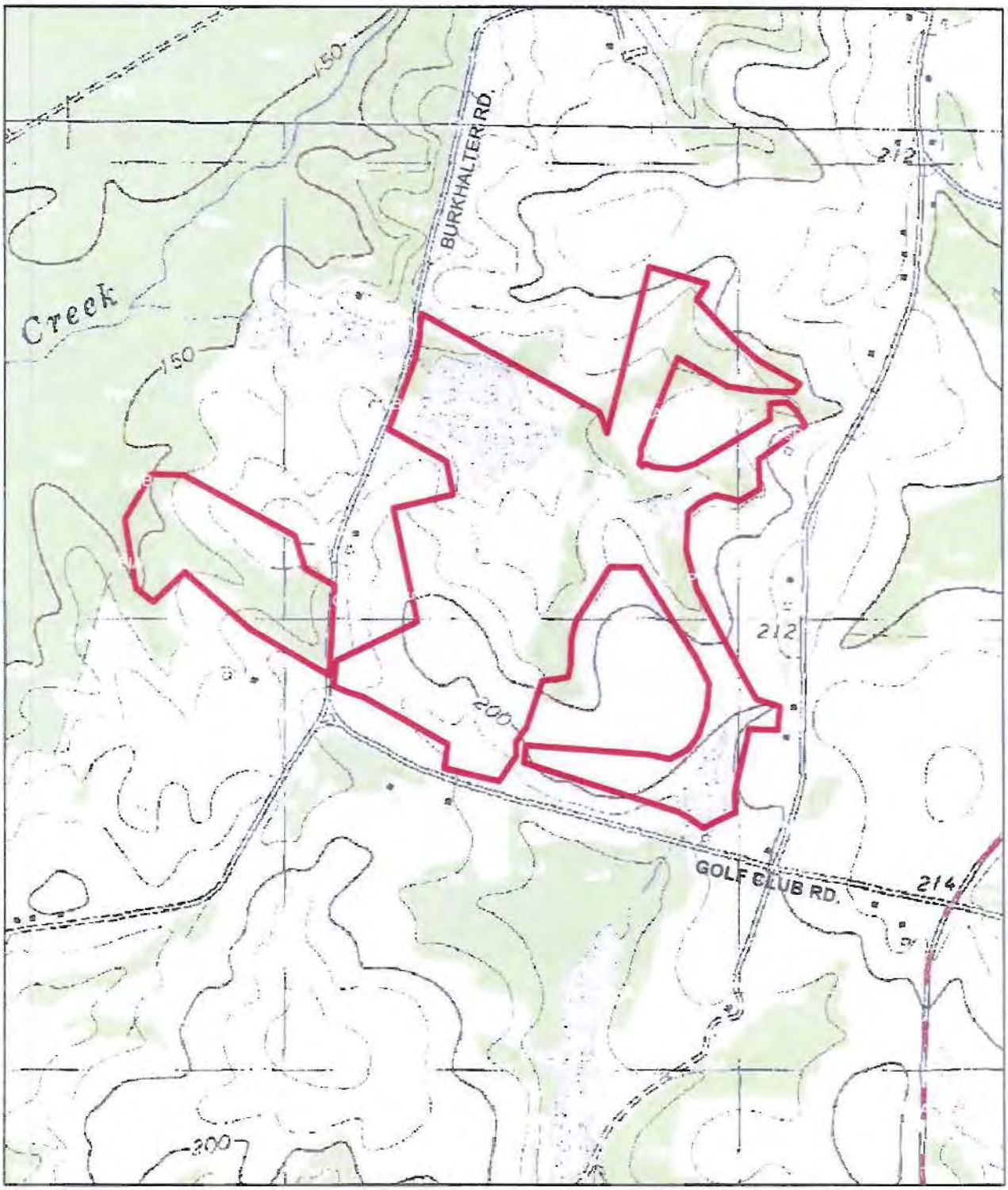
A storm water management plan has been designed by Maxwell-Reddick & Associates, Inc., the consulting engineer, and although this plan has not yet been finalized, preliminary design includes construction of stormwater ponds which are being designed to accommodate the storm water volume associated with development of the site. The final plan will meet any and all storm water management requirements of the local authorities. No impact to wetland and/or stream is proposed as a result of the construction of the storm water detention ponds.

9.0 COMPENSATORY MITIGATION:

As indicated above, the proposed project requires 0.332 acre of wetland fill for general course development, 0.396 acre of wetland excavation for lagoon reconfiguration, 0.154 acre of wetland clearing for golf play across wetlands, 1.619 acres of lagoon fill, 0.101 acre of ditch fill, and 0.010 acre of ditch excavation. In addition, the project includes 2.486 acres of lagoon creation and 0.020 acre of ditch creation. Since the project will result in an overall increase in open-water lagoon/ditch habitat, no compensatory mitigation is proposed for lagoon or ditch impacts. However, the applicant is proposing to purchase mitigation credits for the 0.882 acre of wetland impact. Preliminary mitigation credit calculations indicate that the proposed wetland impact requires 6.4 wetland mitigation credits to compensate for the 0.882 acre of unavoidable wetland impact (Appendix I). Upon approval of the proposed project and prior to initiation of authorized wetland impacts, the applicant will purchase 6.4 wetland mitigation credits from Margin Bay Wetland Mitigation Bank and/or Black Creek Mitigation Bank whose primary service area is the Ogeechee River Watershed.

10.0 CONCLUSION:

In summary, GSU is proposing expansion of recreational and educational facilities through rehabilitation of an existing golf course located near Statesboro, Bulloch County, Georgia. The proposed project is the result of numerous design plan reviews during which the applicant, engineer and golf course architect were able to further avoid and minimize wetland impacts. While the applicant has avoided and minimized impacts to jurisdictional waters to the greatest extent practicable, the project will require impacts to 0.882 acre of wetland to facilitate the improvements to tees, greens, fairways, and water hazards (golf course lagoons). As compensatory mitigation for the proposed impacts, the applicant is proposing the purchase of 6.4 wetland mitigation credits from a USACE approved mitigation bank within the Ogeechee River Service Area. All development activities will be conducted using best management practices to prevent unintended or secondary impacts to wetlands and waters adjacent to the project site.



USGS TOPOGRAPHIC MAP STATESBORO & NEVILS QUADS	
DRAWING DATE: JANUARY 2012	
MAP SCALE : 1 INCH = 1000 FEET	
PREPARED BY: DB	
RLC PROJECT NO.: 11-085	

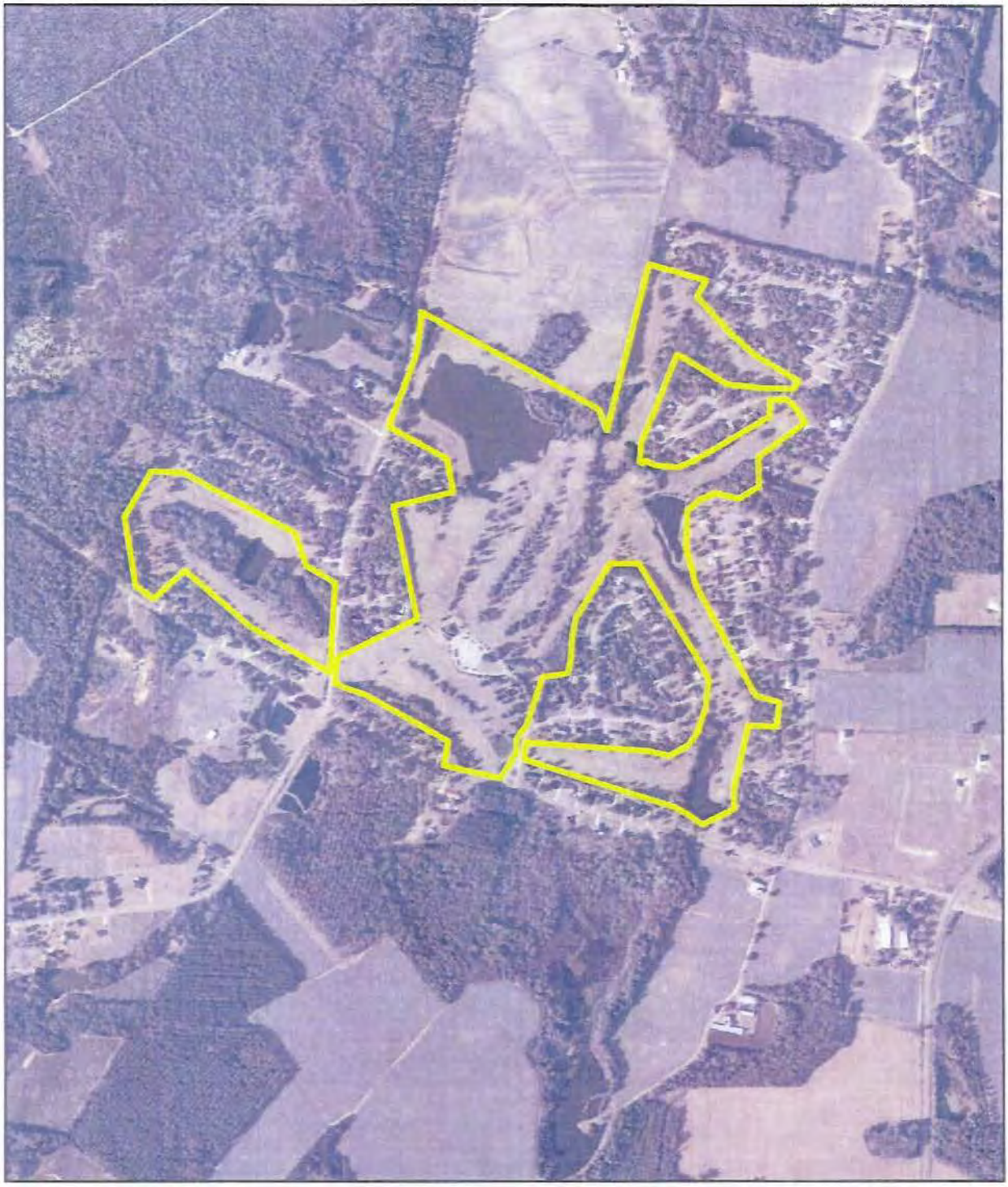
FIGURE 1
GEORGIA SOUTHERN UNIVERSITY
SOUTHERN LINKS GOLF COURSE
PREPARED FOR:
GEORGIA SOUTHERN UNIVERSITY

1,000 500 0 1,000 Feet

F

RLC

RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste 302
Savannah, Georgia 31405
912.443.5896 www.rlcinsc.com



ORTHO-IMAGERY: BULLOCH COUNTY, GEORGIA	
DRAWING DATE: JANUARY 2012	
MAP SCALE : 1 INCH = 1000 FEET	
PREPARED BY: DB	
RLC PROJECT NO.: 11-085	

FIGURE 2
GEORGIA SOUTHERN UNIVERSITY
SOUTHERN LINKS GOLF COURSE

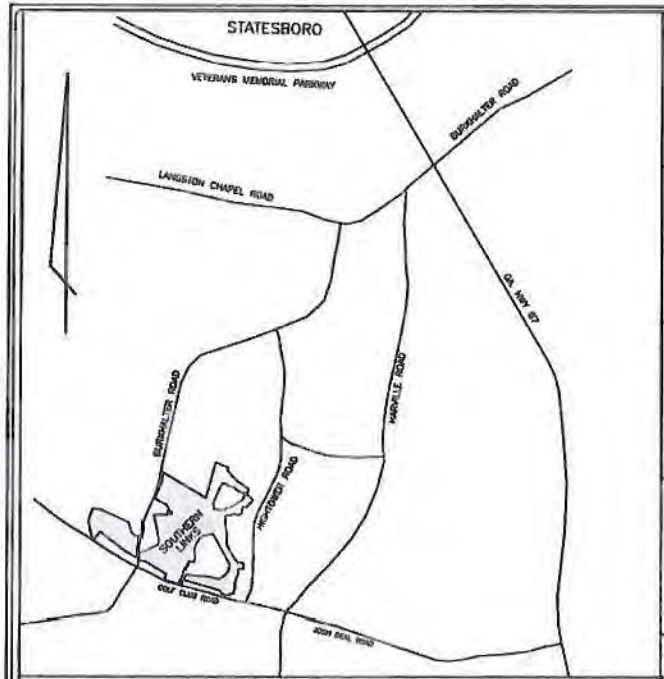
PREPARED FOR:
GEORGIA SOUTHERN UNIVERSITY

1,000 500 0 1,000 Feet

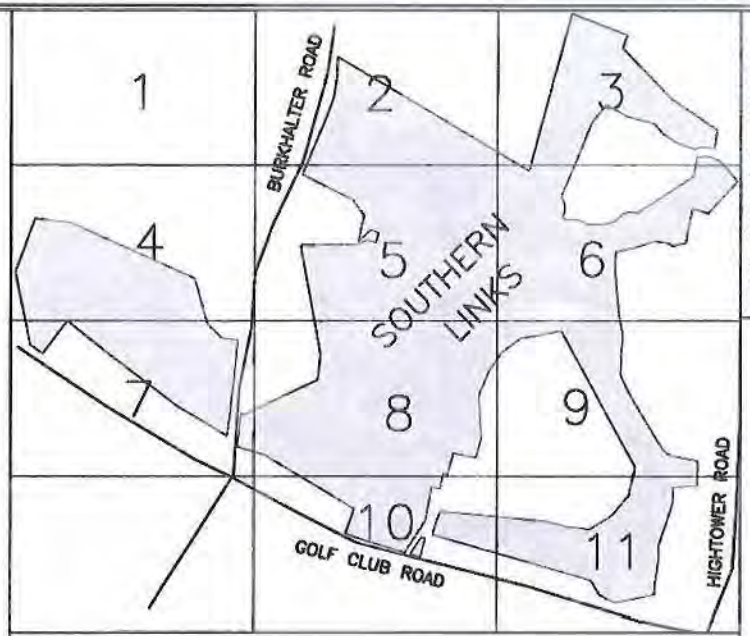
F

RLC

RESOURCE+LAND
CONSULTANTS
41 Park at Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5896 www.landrc.com



LOCATION MAP



SHEET INDEX

PERMIT APPLICATION SUMMARY TABLE

TOTAL PROJECT AREA	- 167.025 ACRES
TOTAL UPLAND AREA	- 138.475 ACRES
TOTAL POND AREA	- 21.66 ACRES
TOTAL WETLAND AREA	- 8.23 ACRE
TOTAL DITCH AREA	- 0.64 ACRE
TOTAL POND FILL	- 1.618 ACRES - 10834 CY
TOTAL POND EXCAVATION	- 0.0 ACRE
TOTAL POND CREATION	- 2.488 ACRES - 22884 CY
TOTAL WETLAND FILL	- 0.332 ACRE - 902 CY
TOTAL WETLAND EXCAVATION	- 0.396 ACRE - 1365 CY
TOTAL WETLAND CLEARING	- 0.154 ACRE
TOTAL DITCH FILL	- .101 ACRE - 313 CY
TOTAL DITCH EXCAVATION	- 0.010 ACRE - 16 CY
TOTAL DITCH CREATION	- 0.020 ACRE - 48 CY

WETLANDS

"ALL TIDAL AND NON-TIDAL TRIBUTARIES, MARSH AREAS AND WETLANDS ARE UNDER THE JURISDICTION OF THE CORPS OF ENGINEERS AND/OR THE STATE OF GEORGIA DEPARTMENT OF NATURAL RESOURCES. OWNERS ARE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE OF THESE PROTECTED AREAS WITHOUT PROPER PERMIT APPLICATION AND APPROVAL FROM THOSE AGENCIES."

WETLANDS SHOWN ON THIS MAP WERE DELINEATED BY RESOURCE+LAND CONSULTANTS IN AUGUST OF 2011

ALL COORDINATES ARE STATE PLANE COORDINATES GEORGIA EAST ZONE NAD 1983

PROPOSED POND FILL

PROPOSED POND CREATION

PROPOSED WETLAND FILL

PROPOSED WETLAND EXCAVATION

PROPOSED WETLAND CLEARING

PROPOSED DITCH FILL

PROPOSED DITCH EXCAVATION

PROPOSED DITCH CREATION

PROPOSED FAIRWAY SAND TRAPS

PROPOSED TEE BOX

PROPOSED GREENS RADIUS

PROPOSED CART PATH

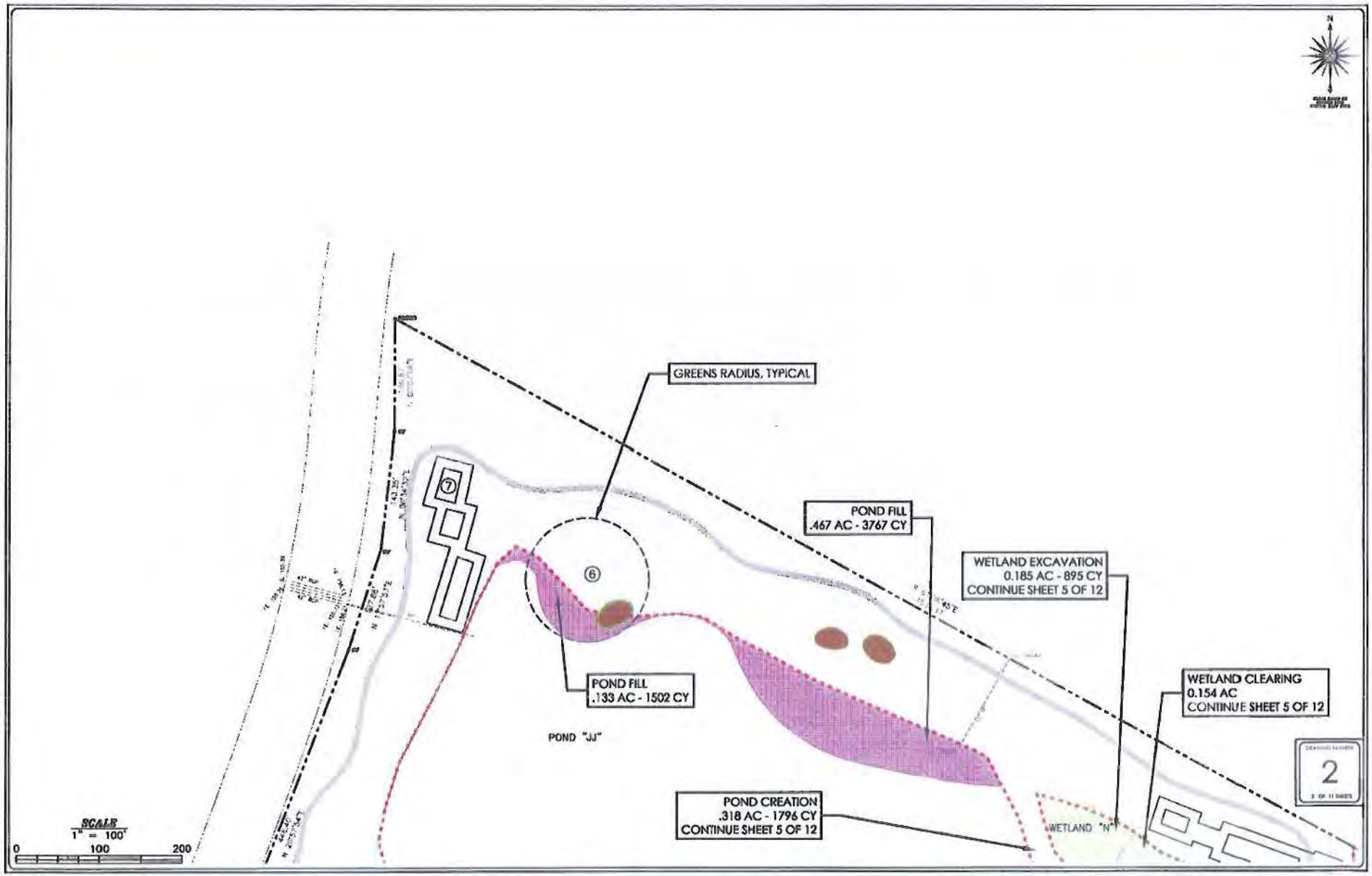
EXISTING DITCH, POND, OR WETLANDS LINE

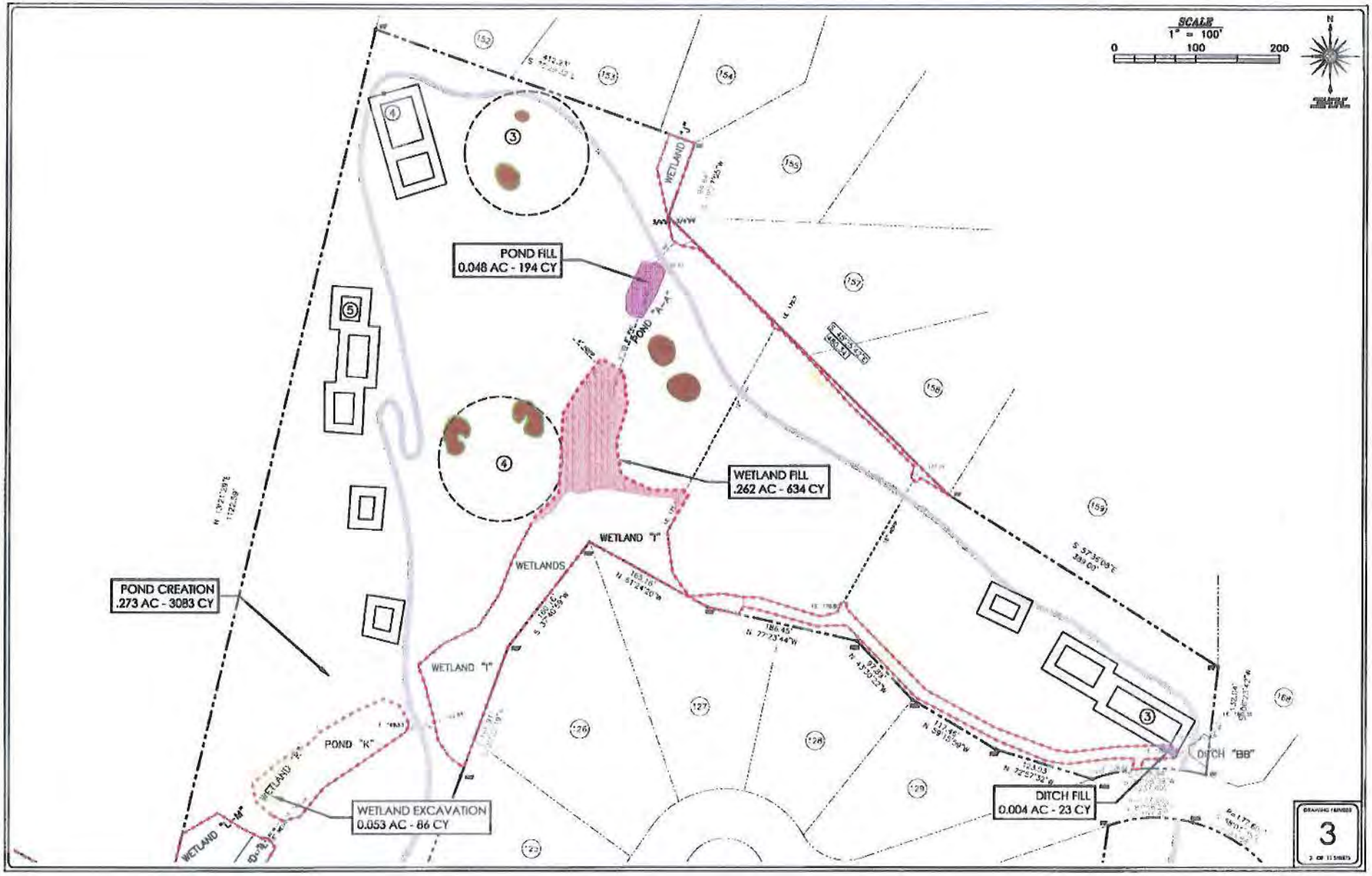
MAXWELL-REDDICK AND ASSOCIATES
ARCHITECTURAL • ENGINEERING • LAND SURVEYING

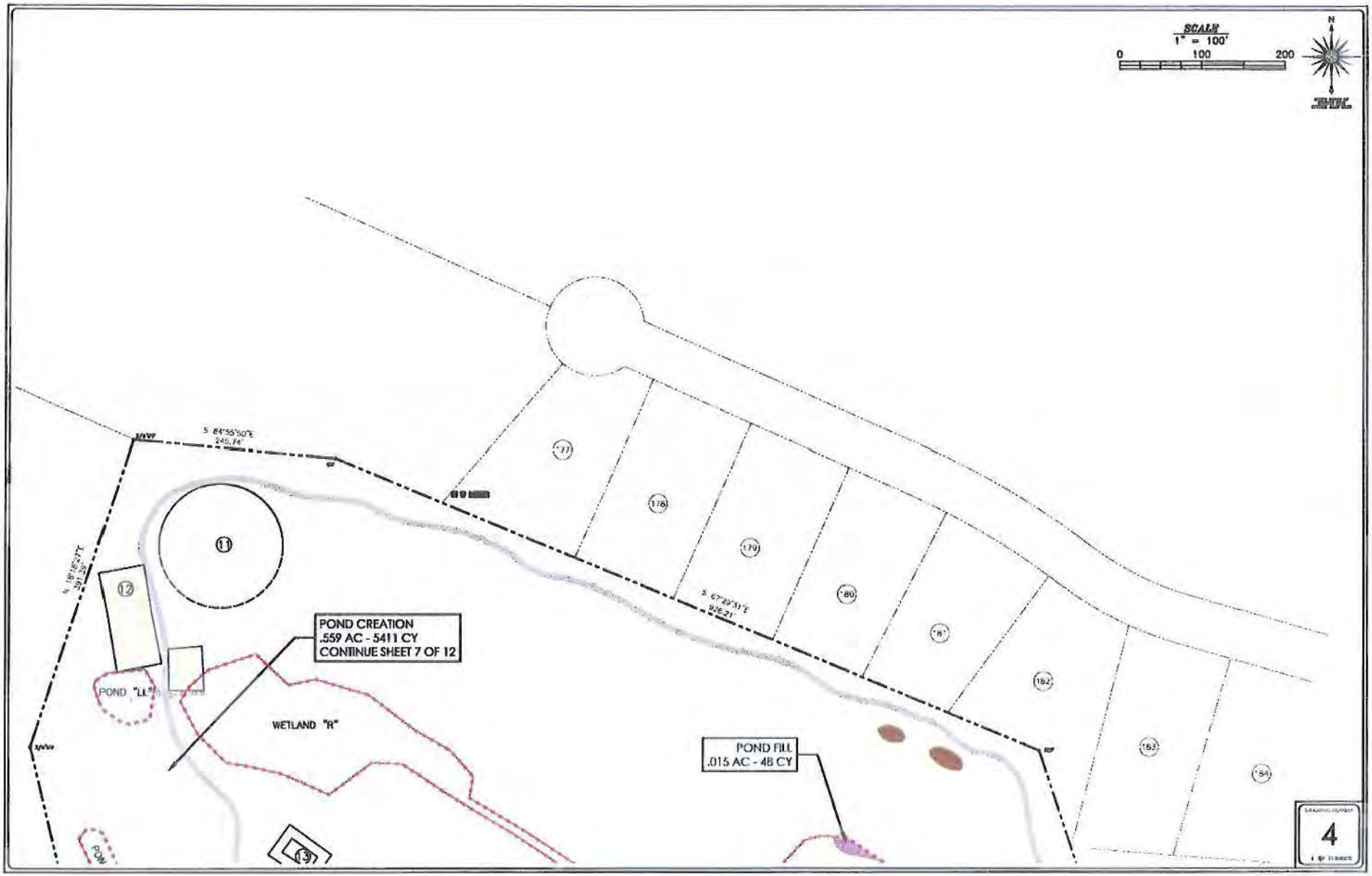
GEORGIA SOUTHERN UNIVERSITY
SOUTHERN LINKS GOLF COURSE
BULLOCH COUNTY, STATESBORO, GA

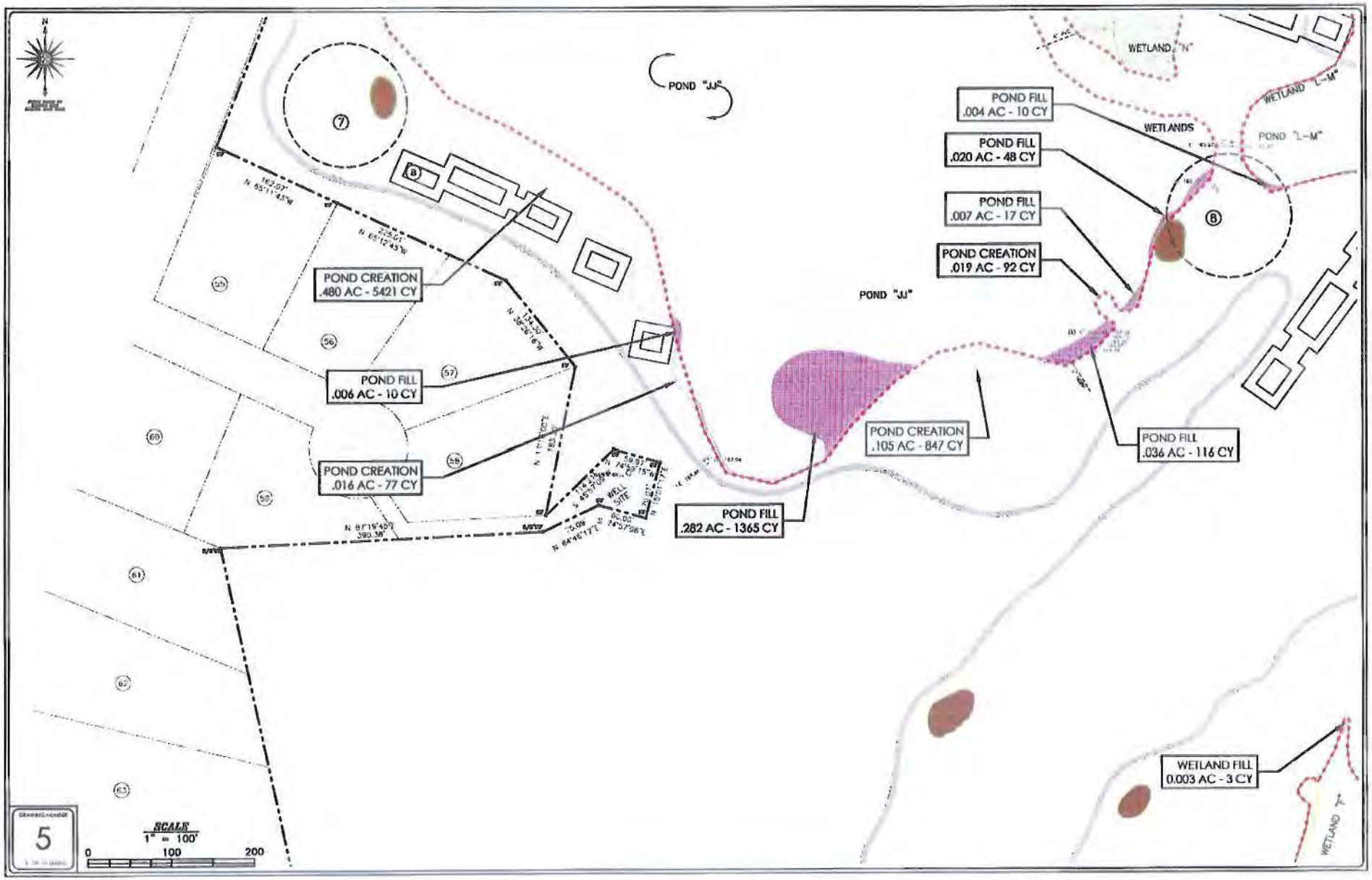
WETLANDS IMPACT - SCENARIO 1

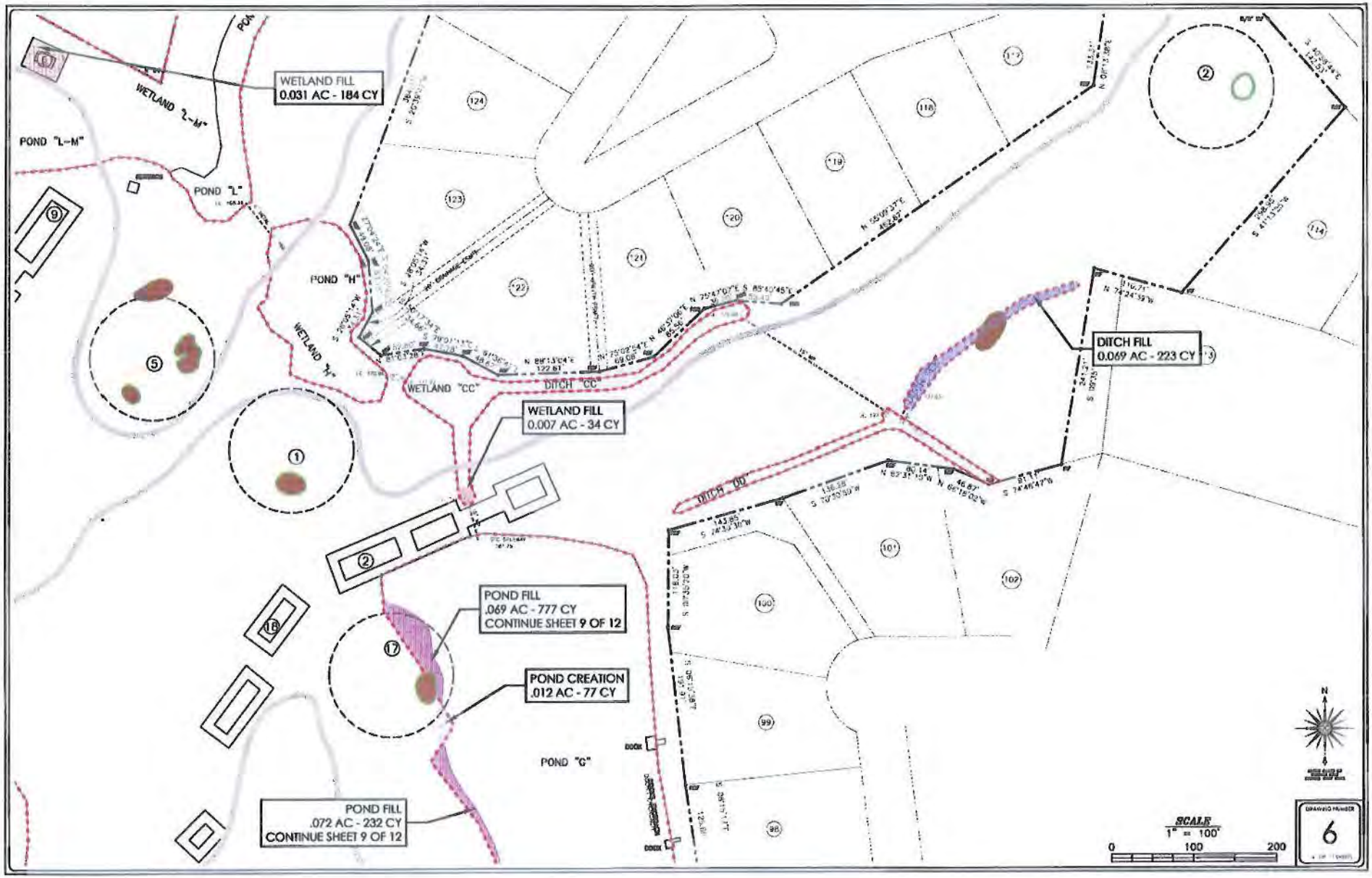
DRAWING NUMBER
1
1 OF 11 SHEETS

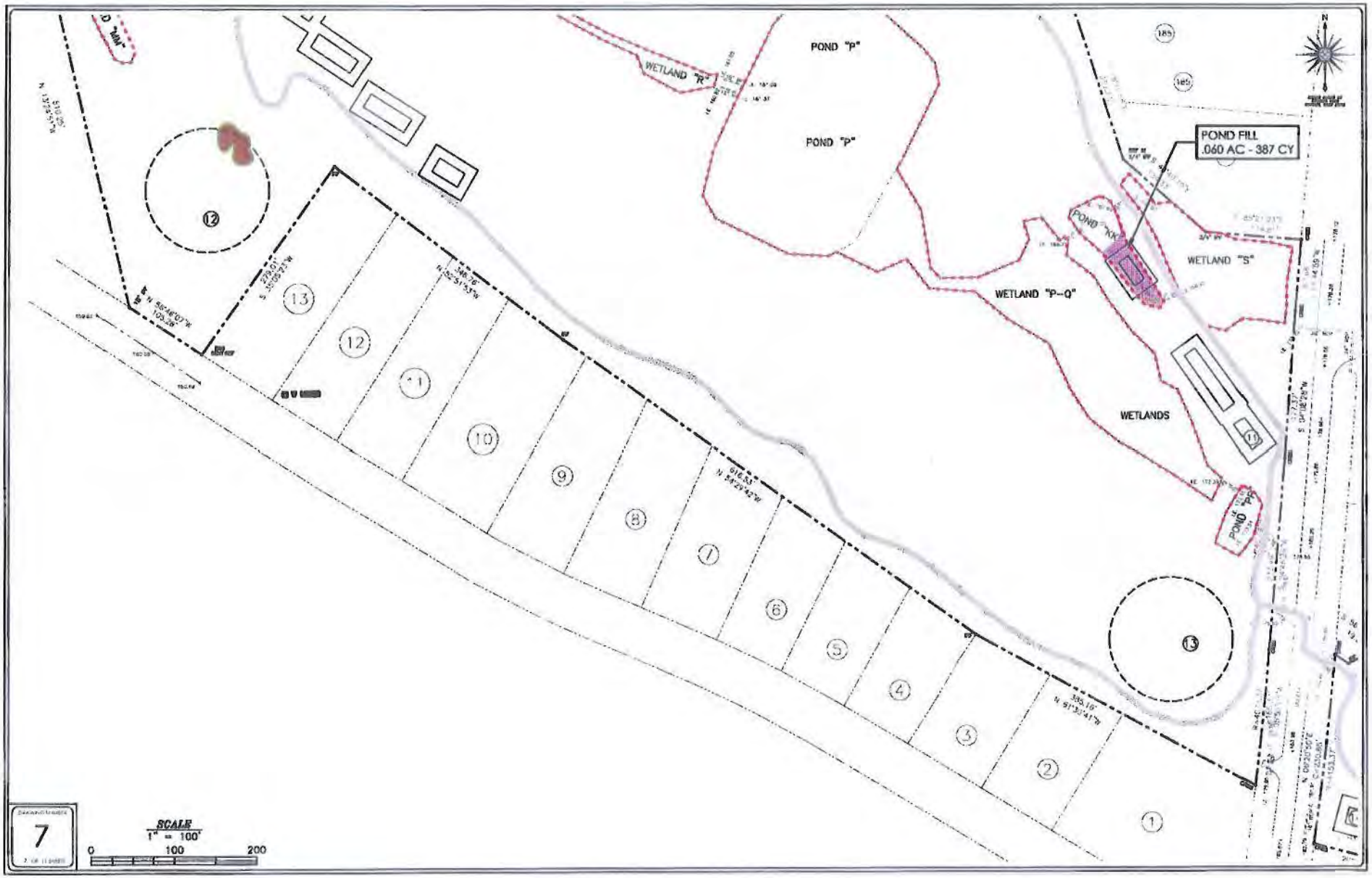

GREENS RADIUS, TYPICAL
POND FILL
.467 AC - 3767 CY
WETLAND EXCAVATION
0.185 AC - 895 CY
CONTINUE SHEET 5 OF 12
WETLAND CLEARING
0.154 AC
CONTINUE SHEET 5 OF 12
POND FILL
.133 AC - 1502 CY
POND "JJ"
POND CREATION
.318 AC - 1796 CY
CONTINUE SHEET 5 OF 12
WETLAND "N"
SCALE
1" = 100'
0
100
200
2

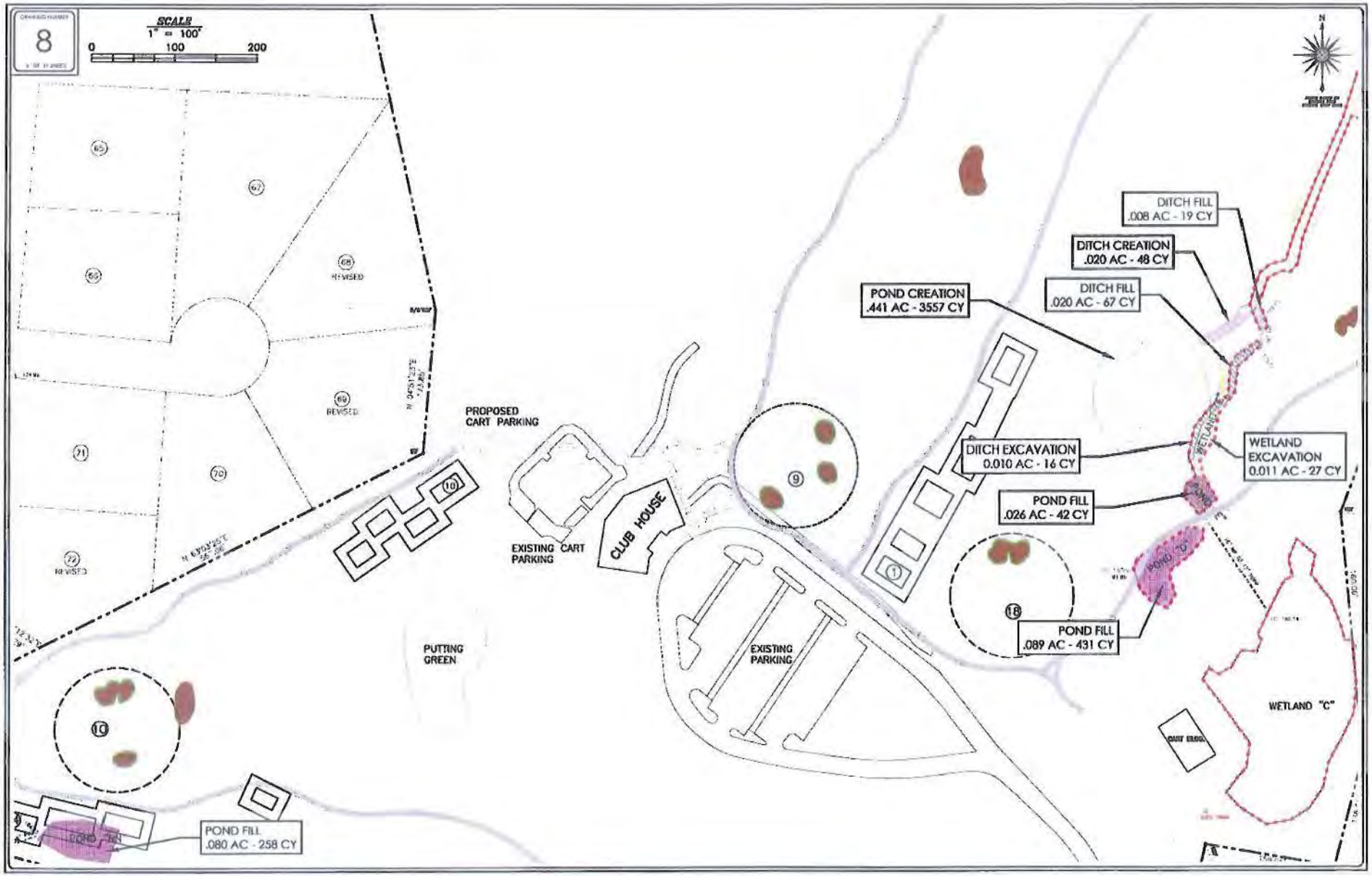

SCALE
1" = 100'
0
100
200
N
POND FILL
0.048 AC - 194 CY
WETLAND FILL
.262 AC - 634 CY
POND CREATION
.273 AC - 3083 CY
WETLAND EXCAVATION
0.053 AC - 86 CY
DITCH FILL
0.004 AC - 23 CY
WETLAND "J"
POND "A-A"
WETLAND "I"
WETLANDS
WETLAND "I"
POND "K"
WETLAND "K"
WETLAND "L-M"
DITCH "BB"
3

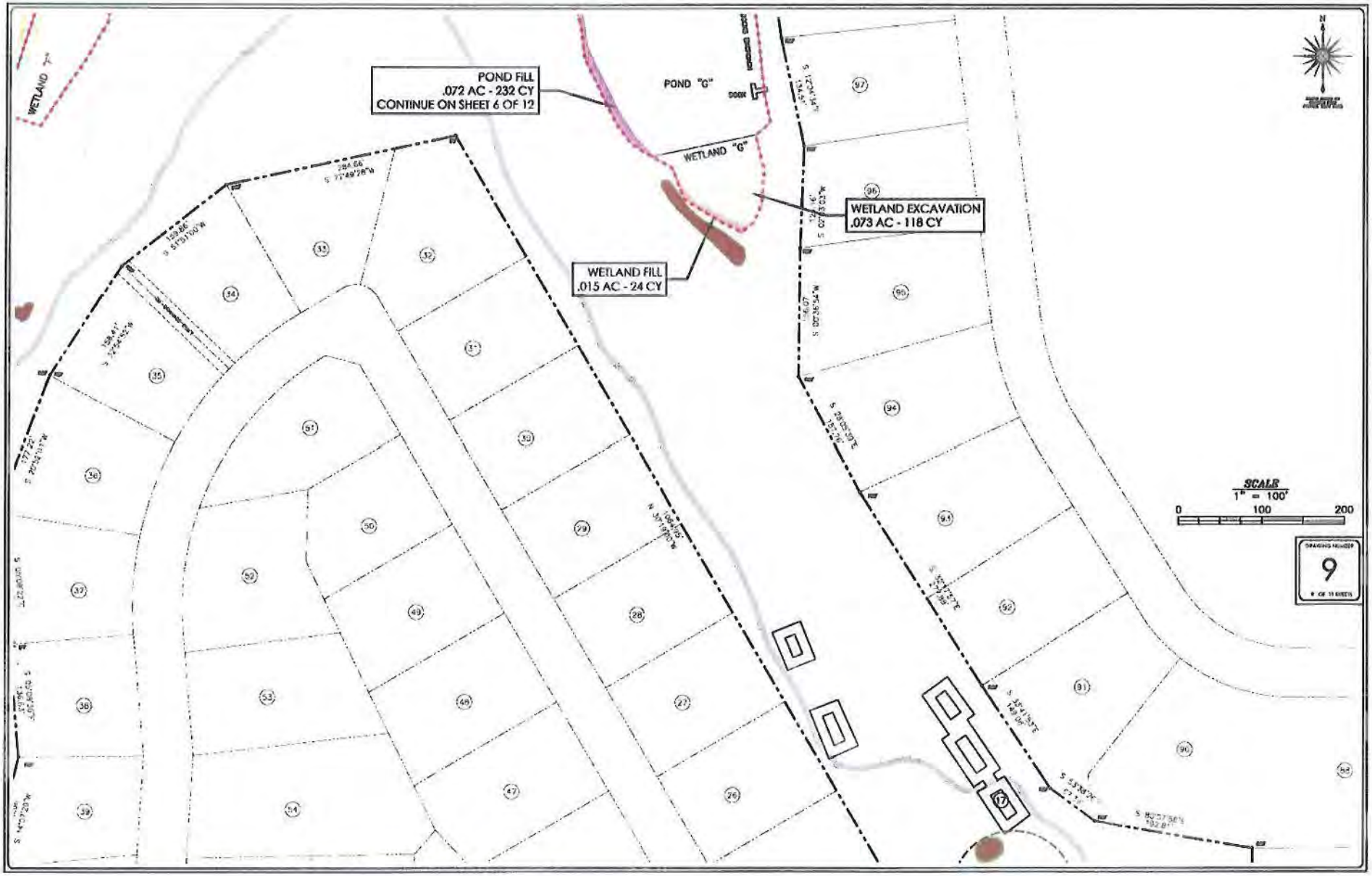

SCALE
1" = 100'
0
100
200
N
S 84°55'50"E
245.74'
N 18°18'27"E
391.39'
S 67°29'31"E
926.21'
POND CREATION
.559 AC - 5411 CY
CONTINUE SHEET 7 OF 12
POND "LL"
WETLAND "R"
POND FILL
.015 AC - 48 CY
4

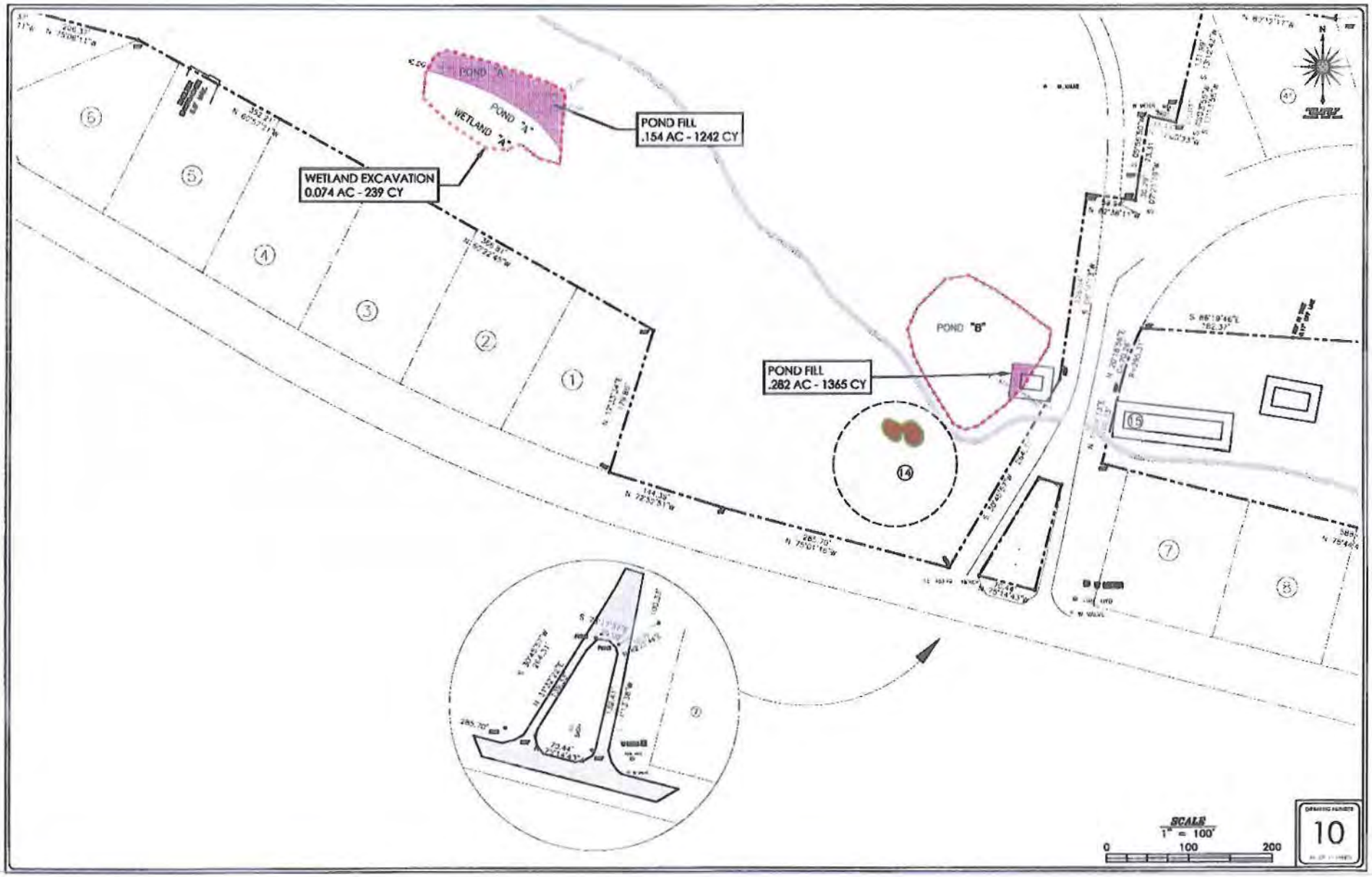

POND "JJ"
POND "JJ"
WETLAND "N"
WETLAND "L-M"
POND "L-M"
WETLANDS
WETLAND "K"
POND FILL
.004 AC - 10 CY
POND FILL
.020 AC - 48 CY
POND FILL
.007 AC - 17 CY
POND CREATION
.019 AC - 92 CY
POND CREATION
.480 AC - 5421 CY
POND FILL
.006 AC - 10 CY
POND CREATION
.016 AC - 77 CY
POND CREATION
.105 AC - 847 CY
POND FILL
.036 AC - 116 CY
POND FILL
.282 AC - 1365 CY
WETLAND FILL
0.003 AC - 3 CY
WELL SITE
SCALE
1" = 100'
0
100
200
5

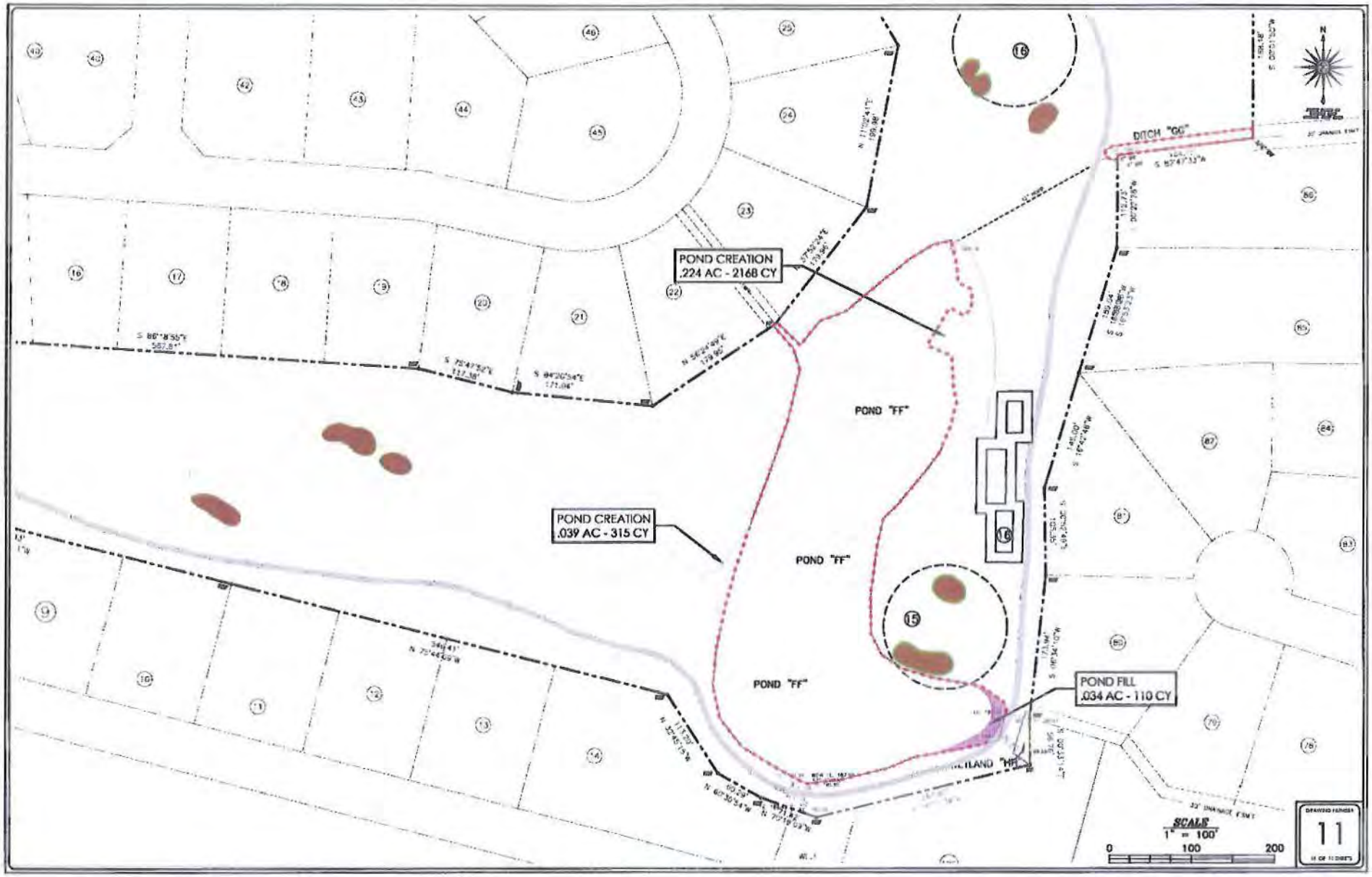

WETLAND FILL
0.031 AC - 184 CY
WETLAND "L-M"
POND "L-M"
POND "L"
POND "H"
WETLAND "H"
WETLAND "CC"
DITCH "CC"
WETLAND FILL
0.007 AC - 34 CY
DITCH FILL
0.069 AC - 223 CY
DITCH "D"
POND FILL
.069 AC - 777 CY
CONTINUE SHEET 9 OF 12
POND CREATION
.012 AC - 77 CY
POND "G"
POND FILL
.072 AC - 232 CY
CONTINUE SHEET 9 OF 12
SCALE
1" = 100'
0
100
200
N
6


POND "P"
POND "P"
WETLAND "R"
POND FILL
.060 AC - 387 CY
POND "KK"
WETLAND "S"
WETLAND "P-Q"
WETLANDS
POND "PP"
SCALE
1" = 100'
0
100
200
7


8
SCALE
1" = 100'
0
100
200
N
65
67
66
68
REVISED
69
REVISED
71
70
72
REVISED
PROPOSED
CART PARKING
EXISTING CART
PARKING
CLUB HOUSE
10
9
1
18
10
PUTTING
GREEN
EXISTING
PARKING
POND CREATION
.441 AC - 3557 CY
DITCH FILL
.008 AC - 19 CY
DITCH CREATION
.020 AC - 48 CY
DITCH FILL
.020 AC - 67 CY
DITCH EXCAVATION
0.010 AC - 16 CY
WETLAND
EXCAVATION
0.011 AC - 27 CY
POND FILL
.026 AC - 42 CY
POND "D"
POND FILL
.089 AC - 431 CY
WETLAND "C"
DAIRY BLDG.
POND "A"
POND FILL
.080 AC - 258 CY


POND FILL
.072 AC - 232 CY
CONTINUE ON SHEET 6 OF 12
POND "G"
WETLAND "G"
WETLAND EXCAVATION
.073 AC - 118 CY
WETLAND FILL
.015 AC - 24 CY
WETLAND
SCALE
1" = 100'
0
100
200
9


POND "A"
WETLAND "A"
POND FILL
.154 AC - 1242 CY
WETLAND EXCAVATION
0.074 AC - 239 CY
POND "B"
POND FILL
.282 AC - 1365 CY
SCALE
1" = 100'
0
100
200
10


POND CREATION
.224 AC - 2168 CY
POND CREATION
.039 AC - 315 CY
POND "FF"
POND "FF"
POND "FF"
POND FILL
.034 AC - 110 CY
DITCH "GG"
SCALE
1" = 100'
0
100
200
11

WETLANDS AND OPEN WATERS
MITIGATION WORKSHEETS

ADVERSE IMPACT FACTORS

Factor	Options						
Dominant Effect	Fill 2.0	Dredge 1.8	Impound 1.6	Drain 1.4	Flood 1.2	Clear 1.0	Shade 0.5
Duration of Effects	7+ years 2.0	5-7 years 1.5	3-5 years 1.0	1-3 years 0.5	< 1 year 0.1		
Existing Condition	Class 1 2.0	Class 2 1.5	Class 3 1.0	Class 4 0.5	Class 5 0.1		
Lost Kind	Kind A 2.0	Kind B 1.5	Kind C 1.0	Kind D 0.5	Kind E 0.1		
Preventability	High 2.0	Moderate 1.0	Low 0.5	None 0			
Rarity Ranking	Rare 2.0	Uncommon 0.5	Common 0.1				

† These factors are determined on a case-by-case basis.

REQUIRED MITIGATION CREDITS WORKSHEET

Factor	Wetland Fill	Wetland Excavation	Wetland Clearing	Area 4	Area 5	Area 6
Dominant Effect	2.0	1.8	1.0			
Duration of Effect	2.0	2.0	2.0			
Existing Condition	1.0	1.0	1.0			
Lost Kind	1.5	1.5	1.5			
Preventability	1.0	1.0	1.0			
Rarity Ranking	0.1	0.1	0.1			
Sum of r Factors	$R_1 = 7.6$	$R_2 = 7.4$	$R_3 = 6.6$	$R_4 =$	$R_5 =$	$R_6 =$
Impacted Area	$AA_1 = 0.332$	$AA_2 = 0.396$	$AA_3 = 0.154$	$AA_4 =$	$AA_5 =$	$AA_6 =$
$R \times AA =$	2.5	2.9	1.0			

Total Required Credits = $\sum (R \times AA) =$ 6.4

Georgia Southern Golf Course
Bulloch County, Georgia

IMPACT SITE DATA				
RESOURCE CATEGORY	SERVICE AREA HUC	DISTANCE TO IMPACT SITE	CREDITS NEEDED	
Freshwater wetland	03060202	--	6.4	
			SUFFICIENT CREDITS AVAILABLE	RECOMMENDED FOR USE
MITIGATION BANK DATA				
BLACK CREEK MITIGATION BANK				
WETLAND	PSA: 03060202	17 MILES	YES	X
MARGIN BAY MITIGATION BANK				
WETLAND	PSA:03060202	25 MILES	YES	X

*Red Color denotes Bank is located within the primary service area of the project site.