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Mr. Mike Bell
US Army Corps of Engineers
Regulatory Division
Box 1000
Washington, NC 27889

Dear Mike,

Following discussions I had yesterday with Mike Smith concerning the Seven Springs Mitigation Plan, I have prepared two figures to add to the Plan. The first figure (Figure 17) shows the location of the reference site, and the location of monitoring wells, vegetation, and soil sampling points at the reference site and restoration site. The second figure (Figure 18) shows the location and description of the 2 ditch plugs and culverts.

Please let me know if there are any additional changes you would like.

Sincerely,

Triangle Wetland Consultants, Inc.

Doug

Douglas Frederick, Ph.D.

cc: Mr. Mike Smith, COE
Ms. Brooke Lamson, COE
Mr. Ron Ferrell, DEM
Ms. Robin Little, NCDOT
Ms. Deborah Nowachek
Mr. Bill Lane

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Figure 13 - Monthly estimated water balance for Proposed Wetland Mitigation near Seven Springs, Goldsboro, NC using long-term (1950-80) monthly rainfall and adjusted Thornthwaite PET for Goldsboro, NC. 25

Figure 14 - Monthly estimated water balance for Proposed Wetland Mitigation near Seven Springs, Goldsboro, NC using about normal spring year 1993 monthly rainfall and adj. Thornthwaite PET for Goldsboro, NC. 25

Figure 15 - Monthly estimated water balance for proposed Wetland Mitigation near Seven Springs, Goldsboro, NC using about normal spring year 1993 monthly rainfall and adj. Thornthwaite PET for Goldsboro, NC. 28

Figure 16 - Monthly estimated water balance for proposed Wetland Mitigation near Seven Springs, Goldsboro, NC using the driest year 1990 monthly rainfall and adjusted Thornthwaite PET for Goldsboro, NC. 28

Figure 17 - Neuse River mitigation project, Seven Springs Section, plot locations. 43

Figure 18 - Neuse River mitigation project, Seven Springs Section, ditch plug and culvert locations. 44

An annual report summarizing the current year's assessments will be submitted to the Corps each December. The report will indicate if corrections are required or if more comprehensive monitoring is needed to interpret wetland conditions. The report will also document significant changes at the site from the as-built conditions since the last routine assessment was submitted. The annual assessment should be filed with the permanent Project records so that it is available for future reference. Following the review of the Annual Reports or field reviews by the regulatory agencies, modifications may be recommended for implementation.

4.2 Regulatory Release

Monitoring efforts will continue for a minimum of four years (one year completed) or until the following standards are attained:

1. A mean density of 320 planted trees per acre are growing at the mitigation site consisting of preferred canopy species (8-12 species) which average 6 feet tall, based on a permanent 0.1 acre circular plot at each monitoring station. Natural regeneration recruitment by species will also be measured using a 0.05 acre circular plot at each monitoring station.
2. Hydrological conditions, as determined by visual observation, monitoring wells, and iron rod testing, will meet the 1987 Corps Manual
3. Hydric soil criteria are met as specified in the 1987 Corps Manual and based on field sampling will be obtained. Redox potential determined by platinum electrodes will also be recorded to determine degree of soil anaerobiosis.

4.3 Mitigation Implementation Sequence

Many of the tasks for implementing this Mitigation Plan have already been undertaken. However, several tasks are contingent on Plan approval and negotiations with regulators. Following is the mitigation implementation sequence for this Project:

- Survey and topography of mitigation Projecting area.
- Location and full description of reference areas for restoration (Figure 17).
- Final planting map showing planting zones by species within restoration areas.
- Establishment and location of groundwater monitoring wells, iron rods, and redox electrodes.
- Location of all vegetation sampling plots.
- Measurement of 0.05 acre vegetation plots will include:

- survival by tree/shrub species
- height and growth each year of overstory through age 5
- assessment of natural regeneration using radius plots

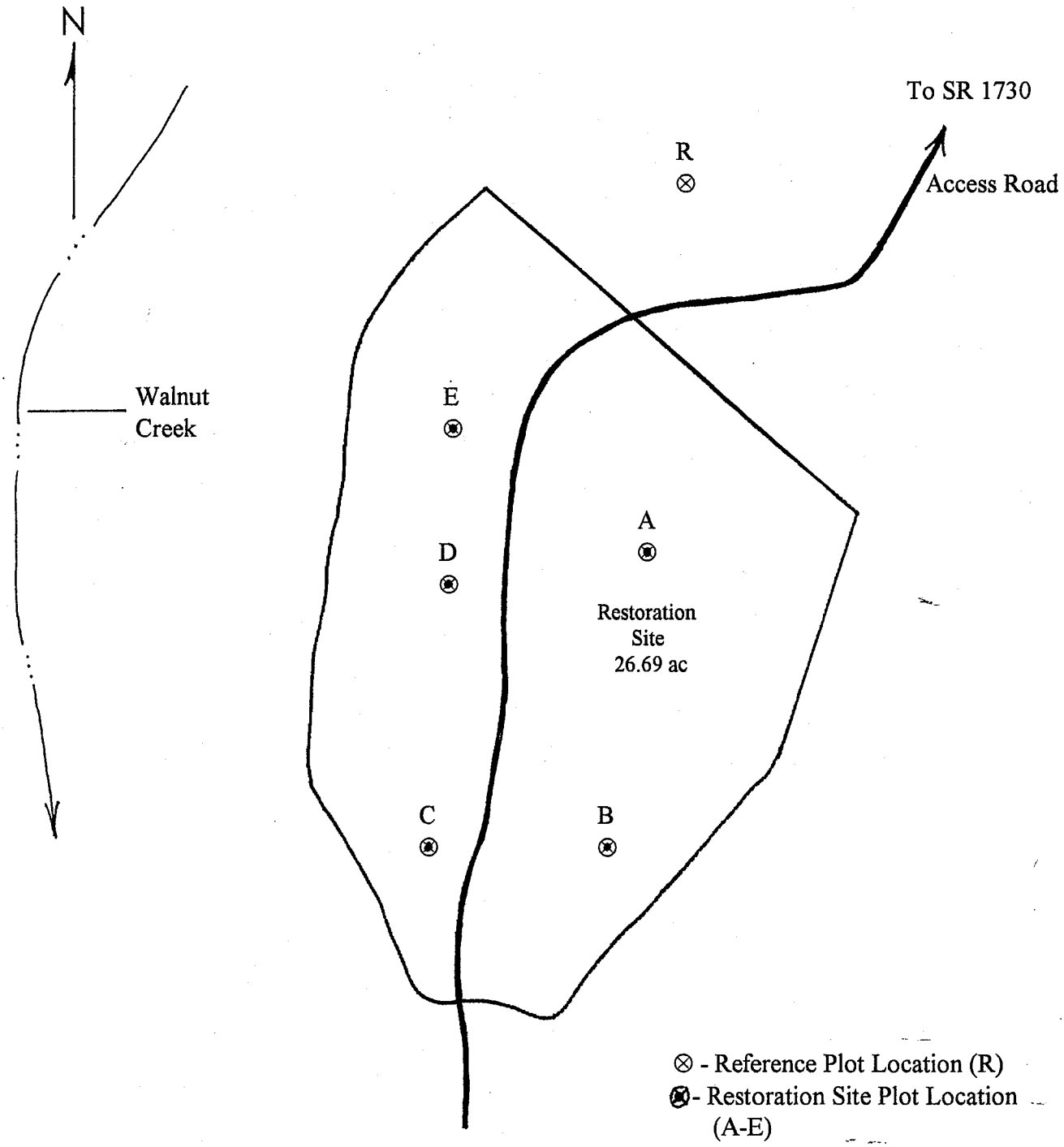
- A description and verification of hydrological connections.
  --Perimeter ditches will be blocked at two locations and two culverts installed on the site access road as recommended by USACOE and NCDEM (Figure 18).
- A description and verification of soils.
- Finalize the conservation easement
- Approval of the Mitigation Implementation Plan Notebook

Mitigation work will be managed by a qualified, experienced firm/contractor regularly engaged in forested wetland creation and restoration.

5.0 Management and Compensation Protocols

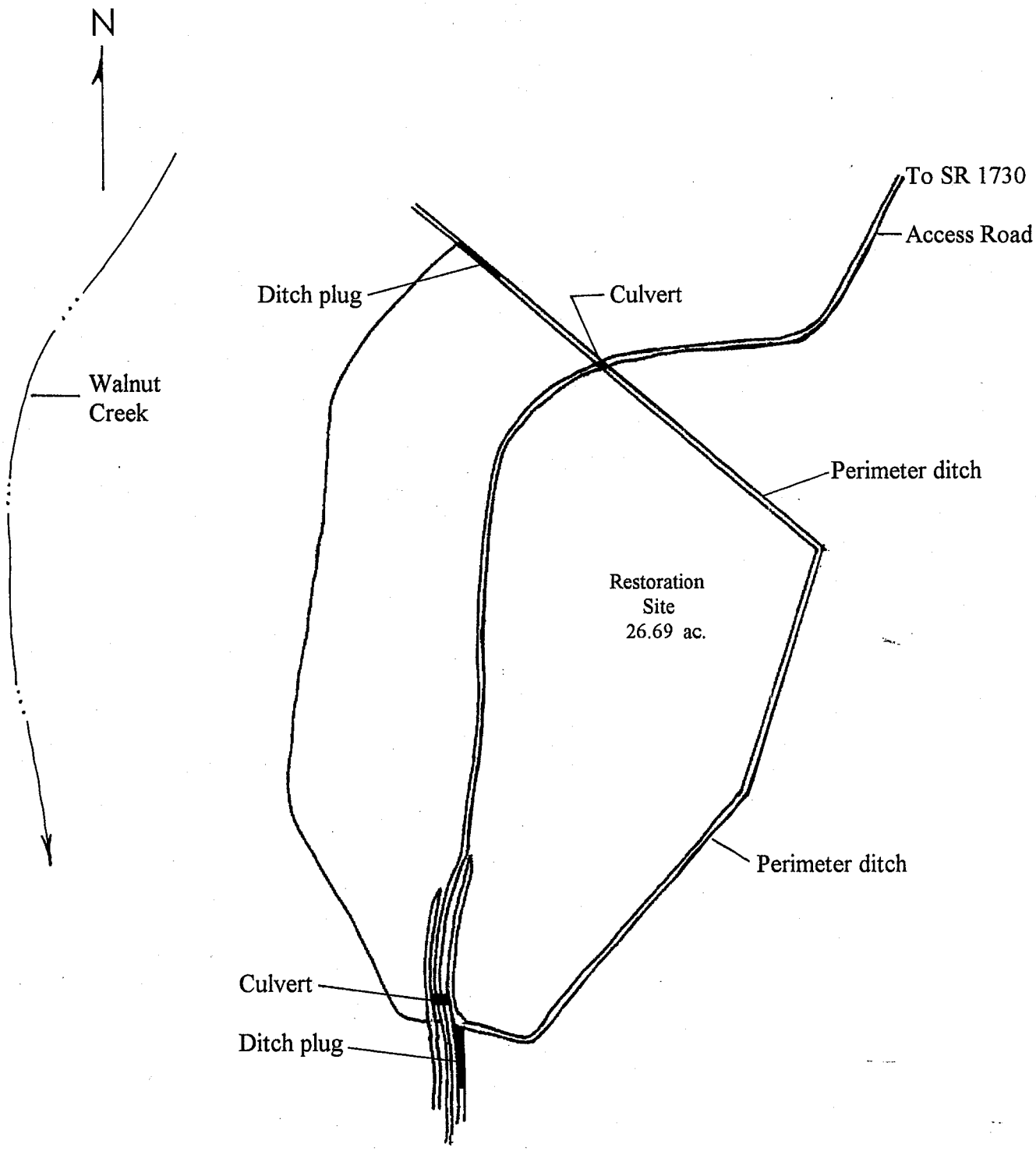
This mitigation project will compensate for 4.72 acres of impact resulting from NCDOT Project R-2422 at a 3:1 ratio resulting in a 14.16 acre debit. The remaining 10.84± acres from the 25± acre site will be used for other NCDOT projects as approved by the Corps on a case by case basis. Ratios may vary according to the type and quality of wetlands unavoidably impacted and the extent to which the restored wetlands at the Seven Springs site compensate for impacted wetlands. The Corps will make the final determination in management, monitoring and compensation ratio issues, when all credits are debited from the project and final regulatory release.

Figure 17
Neuse River Mitigation Project
Seven Springs Section
Plot Locations 1]



1] Data collected at the reference and restoration sites include vegetation, soils, and hydrology (groundwater well, iron rod, and redox electrodes).

Figure 18
Neuse River Mitigation Project
Seven Springs Section
Ditch Plug and Culvert Location 1]



1] Ditch plugs will be approximately 100 ft. long and will consist of material with similar characteristics of adjacent site. Culverts will be a minimum of 24 in. o.d.

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APPENDIX