

JOINT
PUBLIC NOTICE

CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A Hagood Avenue
Charleston, South Carolina 29403-5107
and

THE S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
Office of Environmental Quality Control
Water Quality Certification and Wetlands Programs Section
2600 Bull Street
Columbia, South Carolina 29201

REGULATORY DIVISION
Refer to: P/N #2003-1D-012

24 JANUARY 2003

Pursuant to Sections 401 and 404 of the Clean Water Act (33 U.S.C. 1344), and the South Carolina Coastal Zone Management Act (48-39-10 et seq.) an application has been submitted to the Department of the Army and the S.C. Department of Health and Environmental Control by

VAUGHN DEVELOPMENT, INC.
c/o: **BILL WARNER**
558-B COLLEGE PARK ROAD
LADSON, SC 29456

for a permit to place fill material in

ANCRUM SWAMP

located at The Hamlets in the Crowfield Plantation Development near Ladson in Berkeley County, South Carolina.

In order to give all interested parties an opportunity to express their views

NOTICE

is hereby given that written statements regarding the proposed work will be received by both of the above mentioned offices until

12 O'CLOCK NOON, MONDAY, 24 FEBRUARY 2003

from those interested in the activity and whose interests may be affected by the proposed work.

The proposed work consists of impacting freshwater wetlands associated with the development of Sections C19 and C20 in The Hamlets Subdivision of the Crowfield Plantation Development. In detail, the work will impact approximately 0.03 acres of a wetland drainage ditch for the construction of a road crossing, the construction of 3 storm water drainage outfalls that will impact 0.01 acres of wetlands, and the installation of a sewer line beneath the wetland drainage that will impact 0.02 acres of wetlands. Upon completion of the sewer line installation, pre-project contours will be restored. Also proposed is the enlargement of a 680' segment of the existing ditch that will impact 0.33 acres of wetlands. All excavated material removed in the ditch enlargement will be disposed of on highland. Since the area of proposed wetland impacts is part of an easement that has been deed restricted for mitigation purposes tied to permit #99-1X-267 for other wetland impacts associated with the Crowfield Development, the applicant has been required to provide rationale on why these impacts were not foreseen, what alternatives were considered and additional mitigation to offset the loss of the original mitigation

Refer to: P/N #2003-1D-012

as well as that being impacted by the proposed new work. This information has been included with the drawings that are attached to this public notice. The purpose of this work is to make the necessary improvements for the development of a single family residential community.

NOTE: Plans depicting the work described in this notice are available and will be provided, upon receipt of a written request, to anyone that is interested in obtaining a copy of the plans for the specific project. The request must identify the project of interest by public notice number and a self-addressed stamped envelope must also be provided for mailing the drawings to you. Your request for drawings should be addressed to the

**U.S. Army Corps of Engineers
ATTN: REGULATORY DIVISION
69A Hagood Avenue
Charleston, South Carolina 29403-5107.**

The District Engineer has concluded that the discharges associated with this project, both direct and indirect, should be reviewed by the South Carolina Department of Health and Environmental Control in accordance with provisions of Section 401 of the Clean Water Act. As such, this notice constitutes a request, on behalf of the applicant, for certification that this project will comply with applicable effluent limitations and water quality standards. The work shown on this application must also be certified as consistent with applicable provisions of the South Carolina Coastal Zone Management Act (15 CFR 930). The District Engineer will not process this application to a conclusion until such certifications are received. The applicant is hereby advised that supplemental information may be required by the State to facilitate the review. Persons wishing to comment or object to State certification must submit all comments in writing to the S.C. Department of Health and Environmental Control at the above address within thirty (30) days of the date of this notice.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Implementation of the proposed project would impact 0.39 acres of freshwater wetlands associated with downstream estuarine substrates and emergent wetlands utilized by various life stages of species comprising the red drum, shrimp, and snapper-grouper management complexes. Our initial determination is that the proposed action would not have a substantial individual or cumulative adverse impact on EFH or fisheries managed by the South Atlantic Fishery Management Council and the National Marine Fisheries Service (NMFS). Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

Pursuant to Section 7(c) of the Endangered Species Act of 1973 (as amended), the applicant has provided a protected species survey for the property associated with the activity described above. Based upon this report, the District Engineer has determined that the project is not likely to adversely affect any Federally endangered, threatened, or proposed species or result in the destruction or adverse modification of designated or proposed critical habitat. The U.S. Fish and Wildlife Service has concurred with this determination by letter dated September 5, 2002, FWS Log No. 4-6-02-I-390.

The District Engineer has consulted the latest published version of the National Register of Historic Places for the presence or absence of registered properties, or properties listed as being eligible for inclusion therein, and this worksite is not included as a registered property or property listed as being eligible for inclusion in the Register. Consultation of the National Register constitutes the extent of cultural resource investigations by the District Engineer, and he is otherwise unaware of the presence of such resources. Presently unknown archaeological, scientific, prehistorical, or historical data may be lost or destroyed by the work to be accomplished under the requested permit.

24 JANUARY 2003

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for a public hearing shall state, with particularity, the reasons for holding a public hearing.

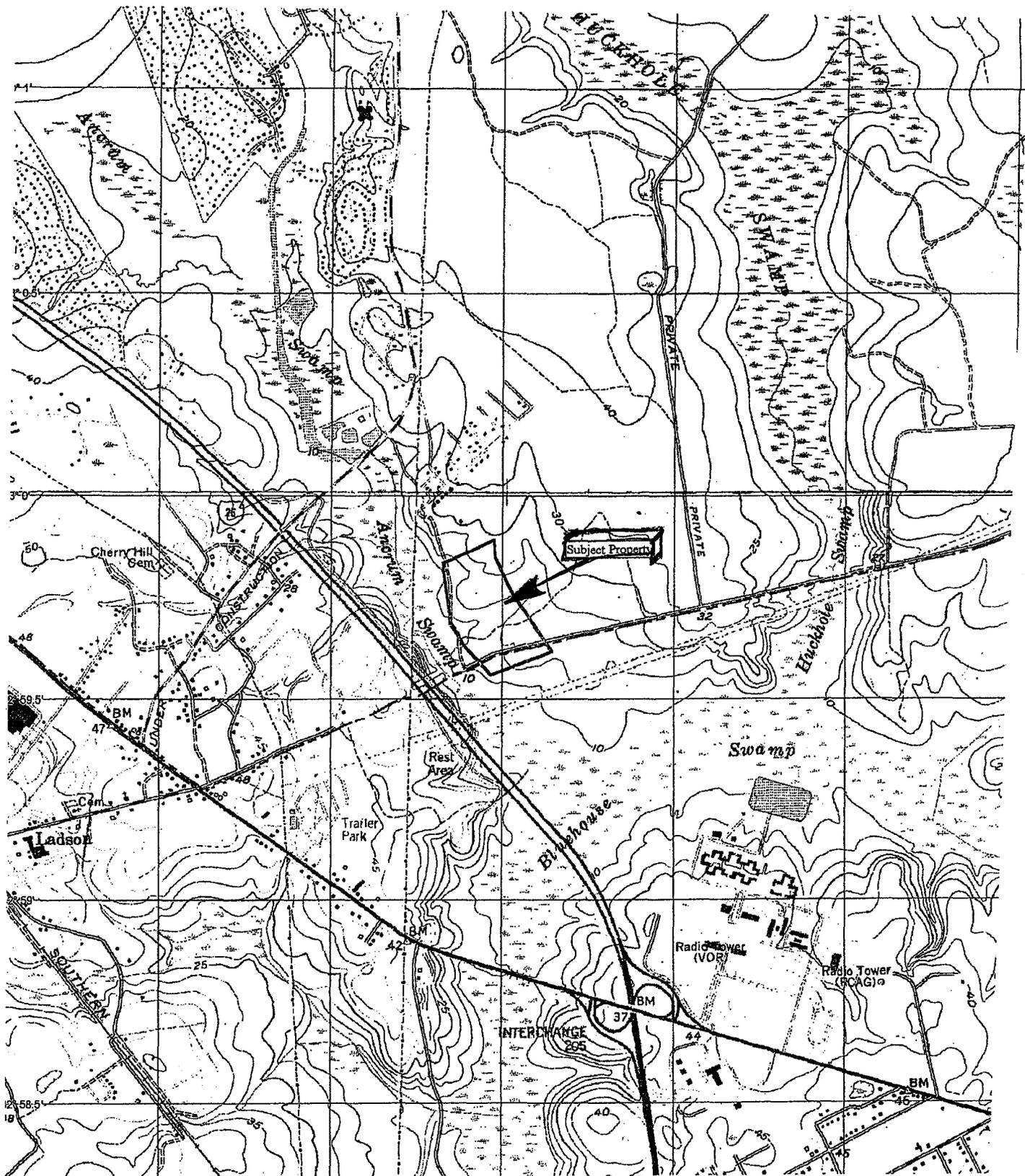
The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the activity on the public interest and will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency (EPA), under authority of Section 404(b) of the Clean Water Act and, as appropriate, the criteria established under authority of Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended. 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 project must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the project 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 and, in general, the needs and welfare of the people. A permit will be granted unless the District Engineer determines that it would be contrary to the public interest. In cases of conflicting property rights, the Corps of Engineers cannot undertake to adjudicate rival claims.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this project. 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 activity.

If there are any questions concerning this public notice, please contact me at 843-329-8044 or toll free at 1-866-329-8187.



Dean Herndon
Project Manager
Regulatory Division
U.S. Army Corps of Engineers



Location Map

Ladson, SC Quadrangle

Latitude: 32°59.8' Longitude: 80° 05.25'

Project Title: The Hamlets C19 & C20

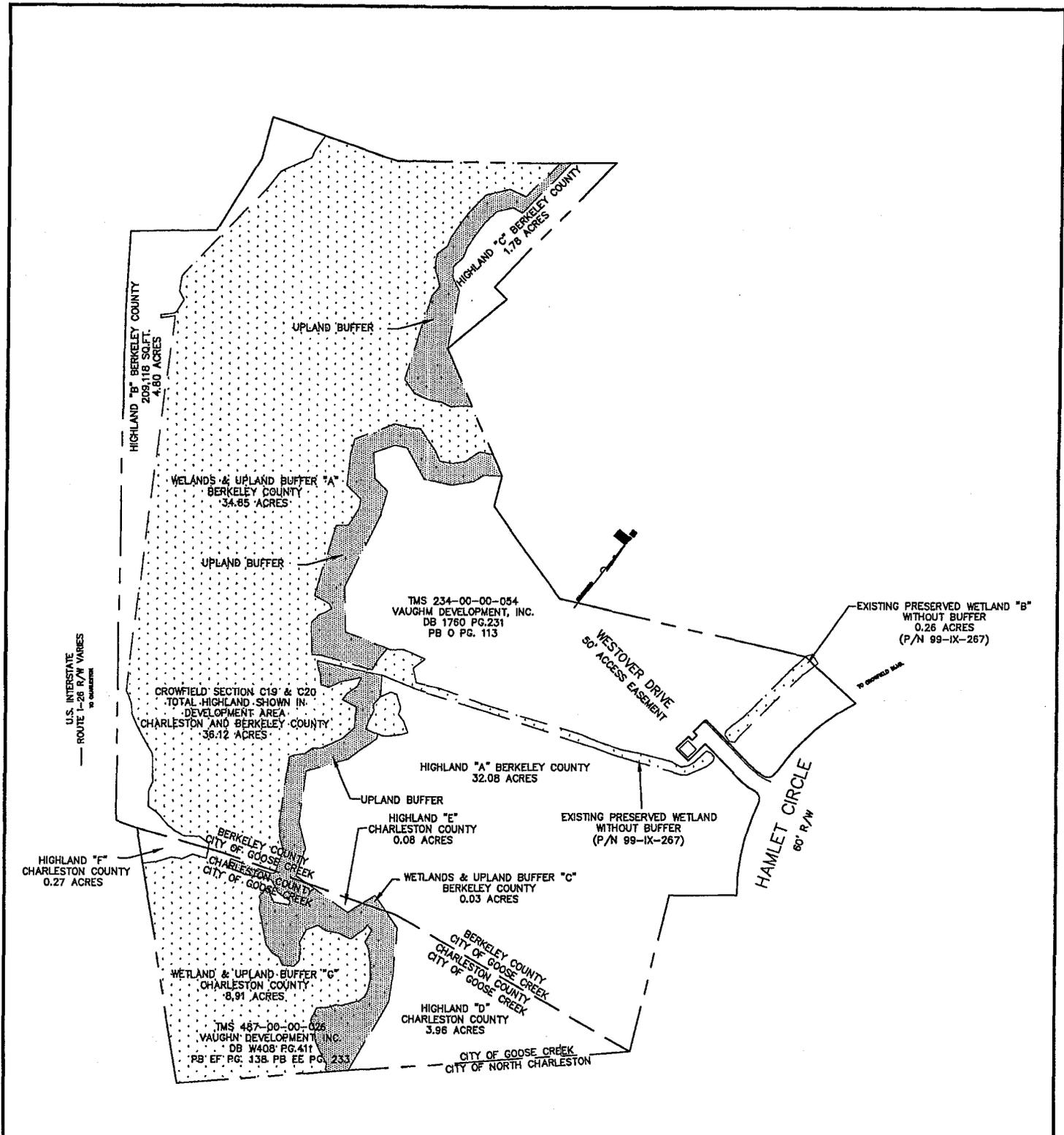
Location: Crowfield Plantation (Berkeley County)

Scale: 1 inch = 2000 ft. (approximate)

Date: 9/26/2002

S&ME Project Number: 1134-02-463

Sheet 1 of 4.



EXISTING TRACT LAYOUT

1" = 400'

HAMLETS SECTION C19 & C20
SUBDIVISION

SHEET: 1A OF 8

PROPOSED ACTIVITY: WETLAND IMPACTS FOR ROADWAY CROSSING, SEWER CROSSING, STORM DRAIN & RIP RAP

COUNTY: BERKELEY

DATE: 12/04/02

PROPOSED NEW BUFFER #1
1.55 ACRES

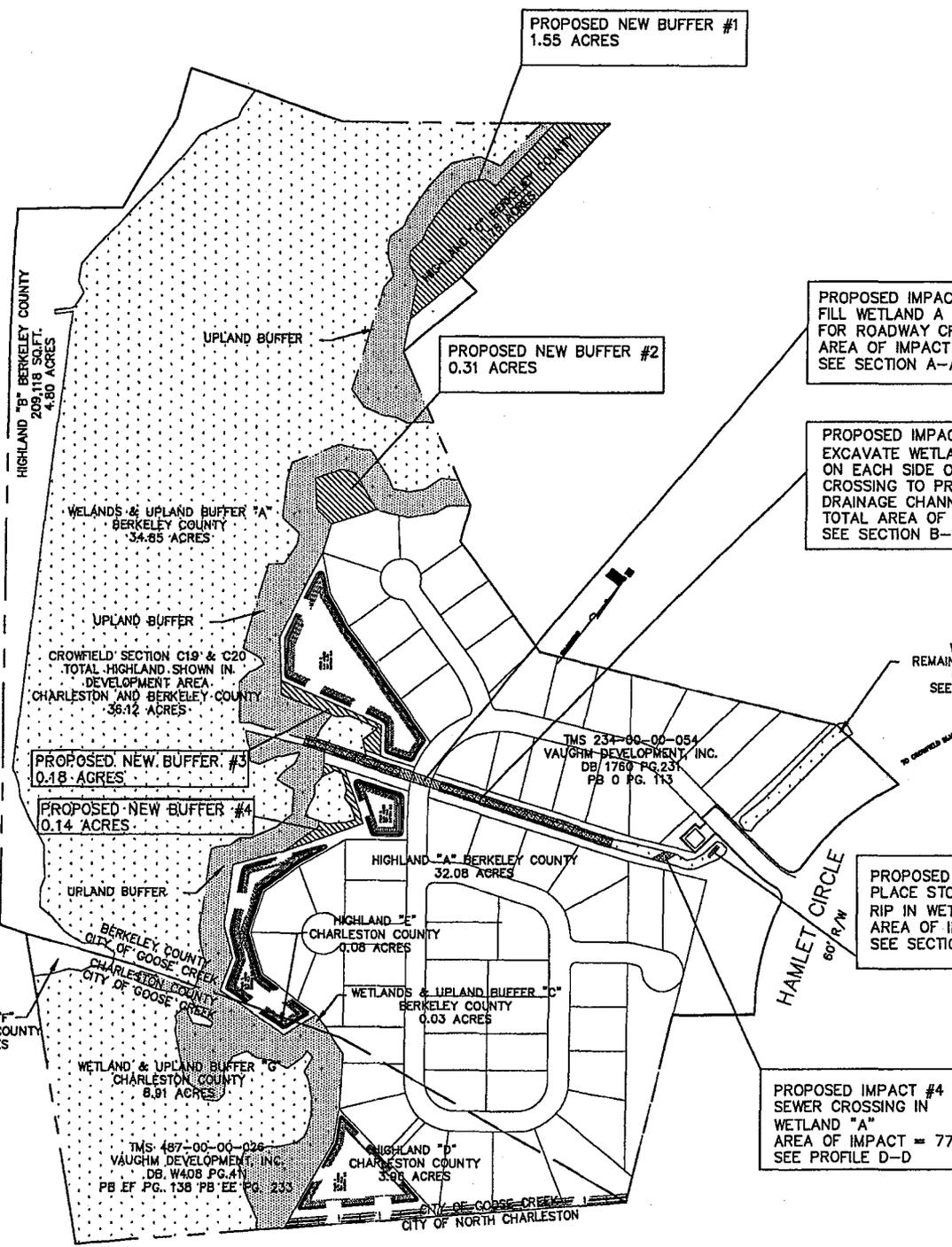
PROPOSED IMPACT #1
FILL WETLAND "A"
FOR ROADWAY CROSSING
AREA OF IMPACT = 2,350 SF
SEE SECTION A-A

PROPOSED IMPACT #2
EXCAVATE WETLAND "A"
ON EACH SIDE OF PROPOSED
CROSSING TO PROVIDE NECESSARY
DRAINAGE CHANNEL
TOTAL AREA OF IMPACT = 14,190 SF
SEE SECTION B-B

WETLANDS B
REMAINING UNDISTURBED
0.28 ACRES
SEE SHEET 1 OF 8

PROPOSED IMPACT #3
PLACE STORM DRAIN OUTLET &
RIP IN WETLAND "A"
AREA OF IMPACT = 200 SF
SEE SECTION C-C

PROPOSED IMPACT #4
SEWER CROSSING IN
WETLAND "A"
AREA OF IMPACT = 775 SF
SEE PROFILE D-D



WETLAND ALTERATION PLAN
1" = 400'

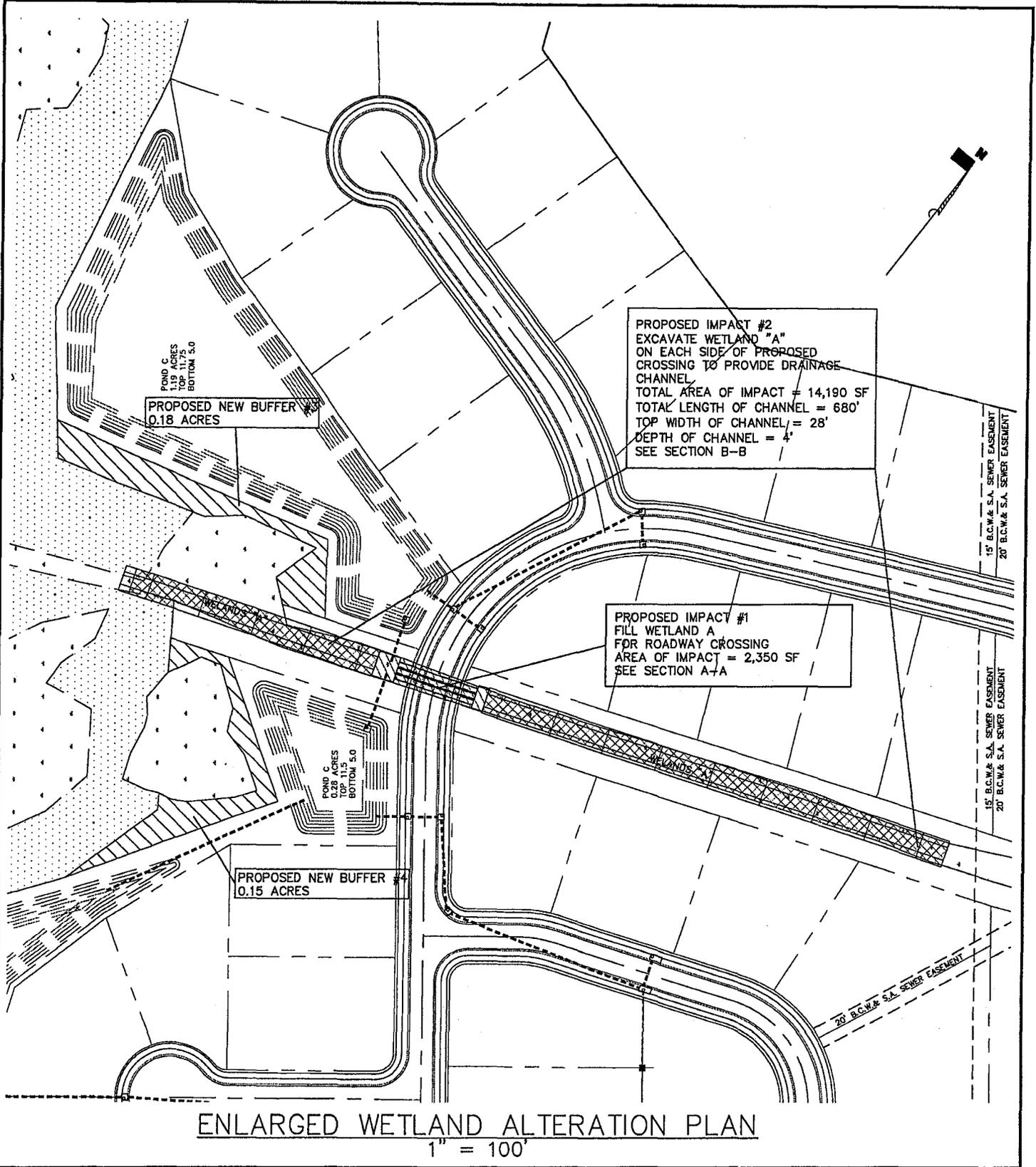
**HAMLETS SECTION C19 & C20
SUBDIVISION**

PROPOSED ACTIVITY: WETLAND IMPACTS FOR
ROADWAY CROSSING,
SEWER CROSSING,
STORM DRAIN & RIP RAP

COUNTY: BERKELEY

DATE: 12/04/02

SHEET: 2 OF 8



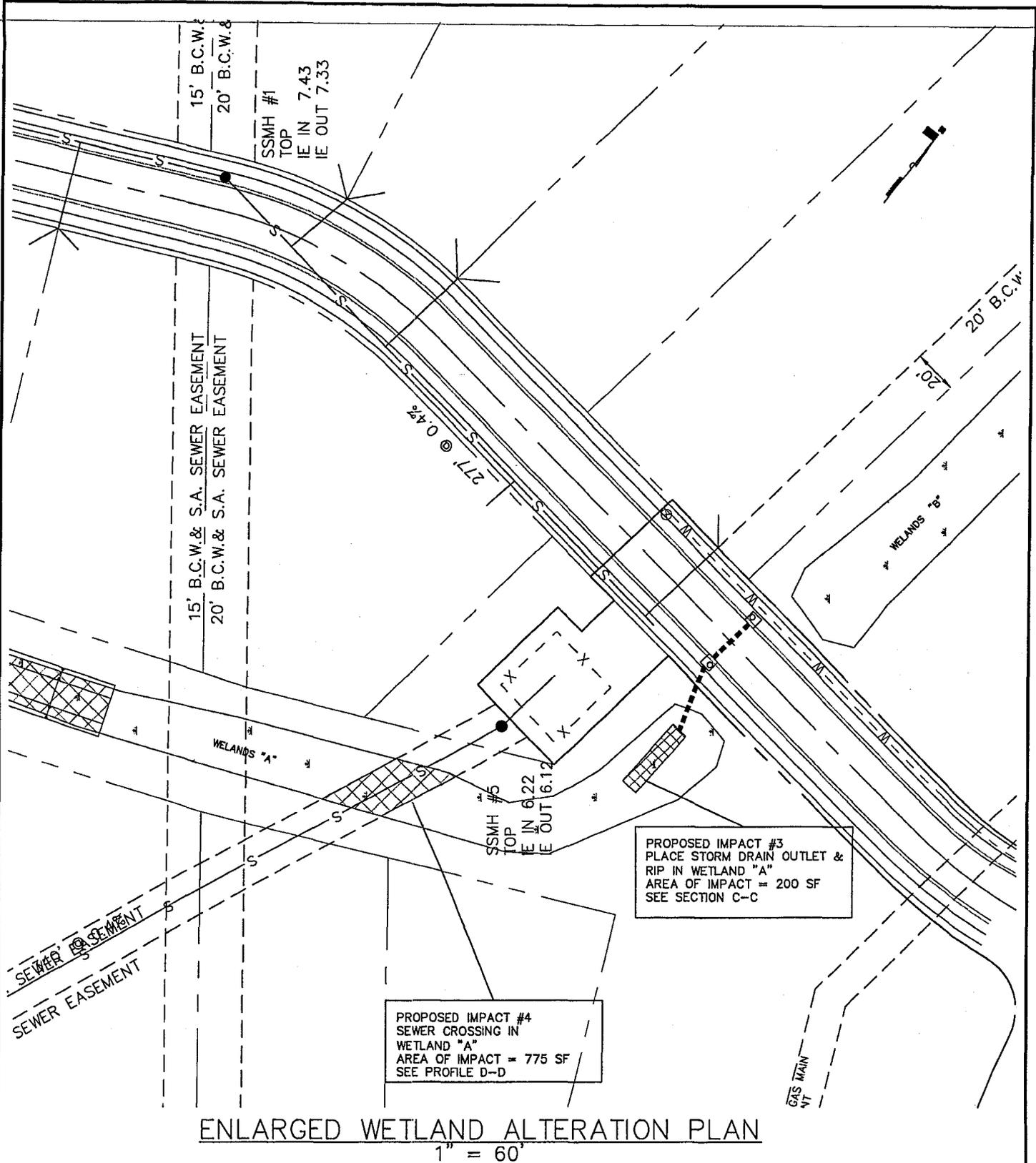
HAMLETS SECTION C19 & C20
SUBDIVISION

SHEET: 3 OF 8

PROPOSED ACTIVITY: WETLAND IMPACTS FOR
 ROADWAY CROSSING,
 SEWER CROSSING,
 STORM DRAIN & RIP RAP

COUNTY: BERKELEY

DATE: 12/04/02



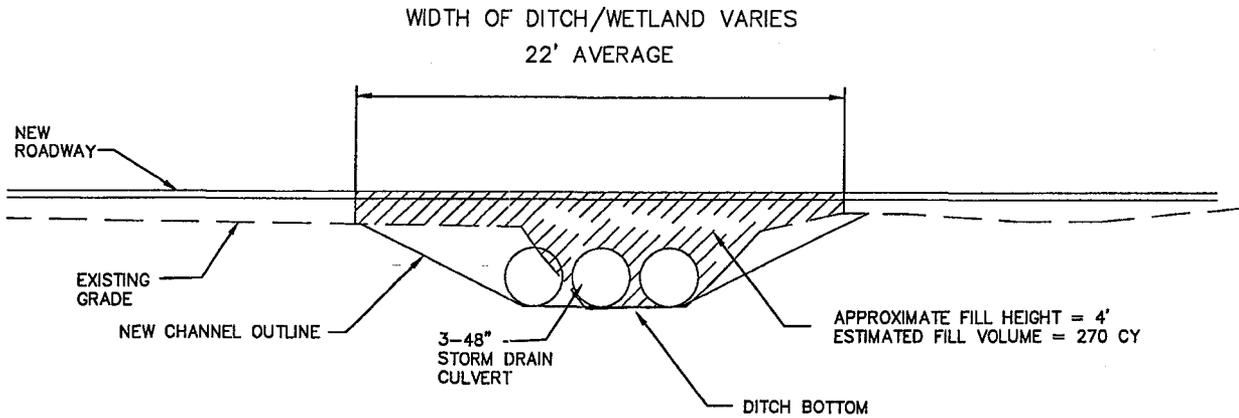
HAMLETS SECTION C19 & C20
SUBDIVISION

SHEET: 4 OF 8

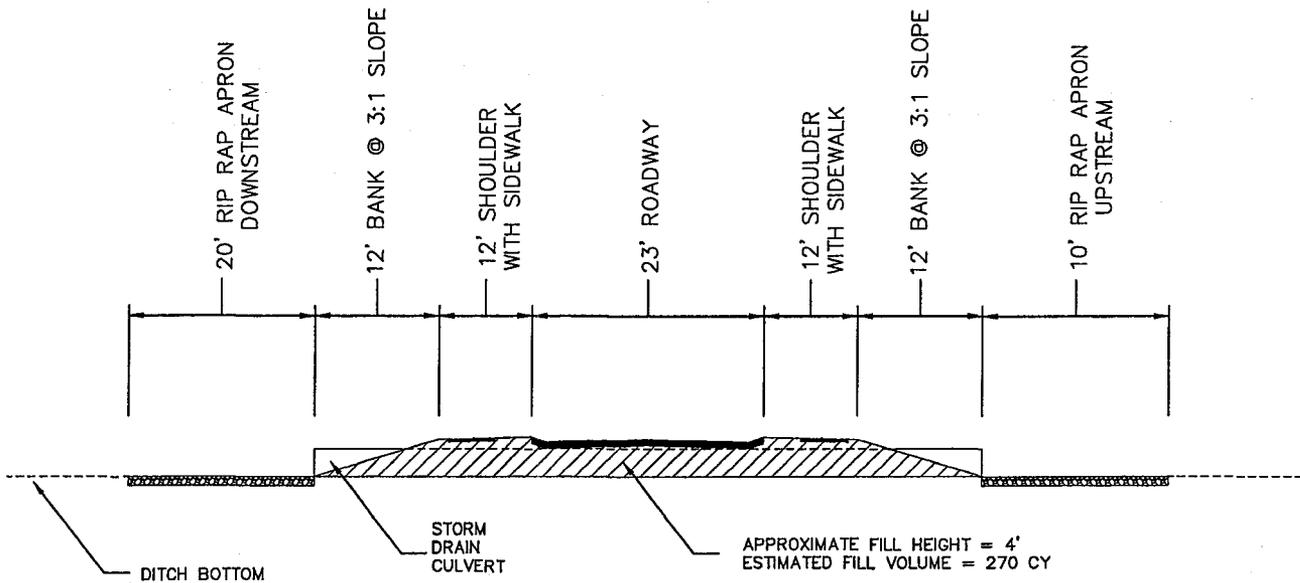
PROPOSED ACTIVITY: WETLAND IMPACTS FOR
ROADWAY CROSSING,
SEWER CROSSING,
STORM DRAIN & RIP RAP

COUNTY: BERKELEY

DATE: 12/04/02



ROADWAY PROFILE THRU WETLAND A
NOT TO SCALE



ROADWAY CROSS SECTION A-A THRU WETLAND A
NOT TO SCALE

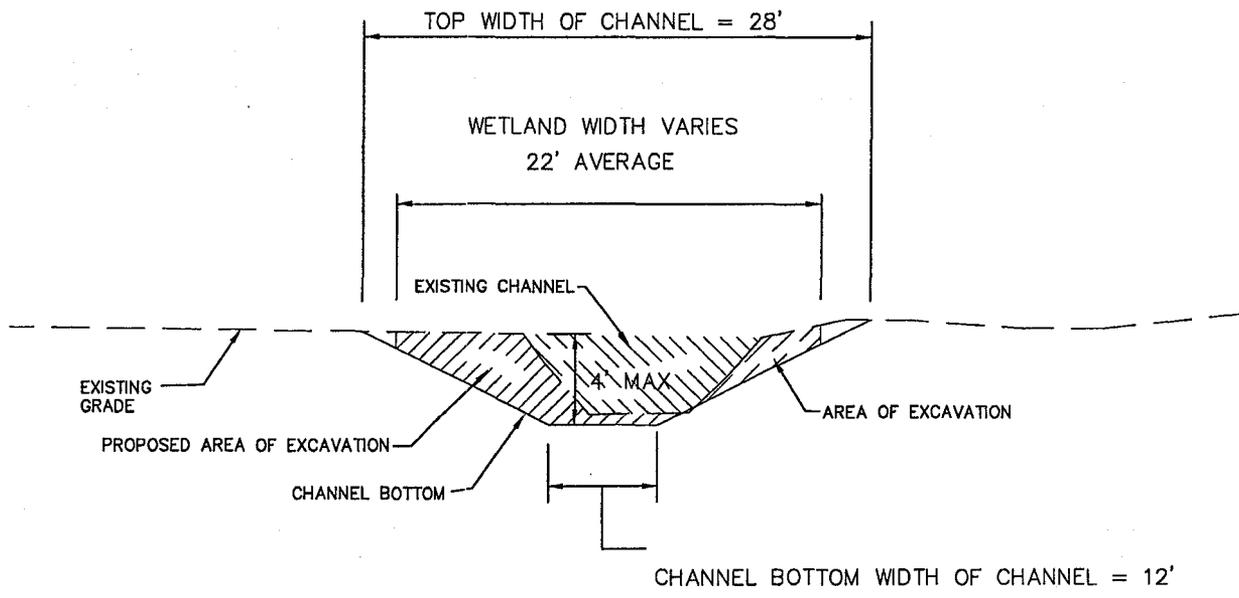
HAMLETS SECTION C19 & C20
SUBDIVISION

PROPOSED ACTIVITY: WETLAND IMPACTS FOR
ROADWAY CROSSING,
SEWER CROSSING,
STORM DRAIN & RIP RAP

COUNTY: BERKELEY

DATE: 12/04/02

SHEET: 5 OF 8



TYPICAL CHANNEL SECTION B-B
NOT TO SCALE

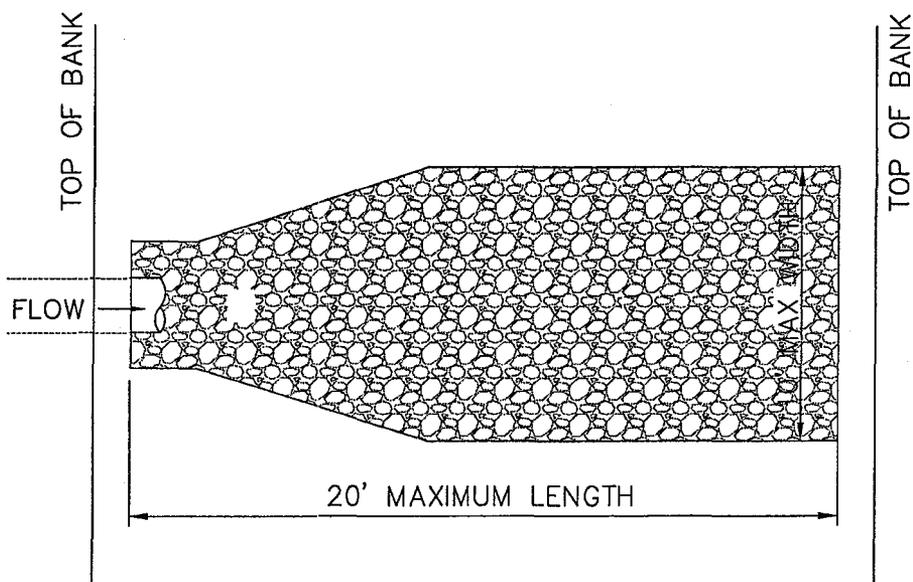
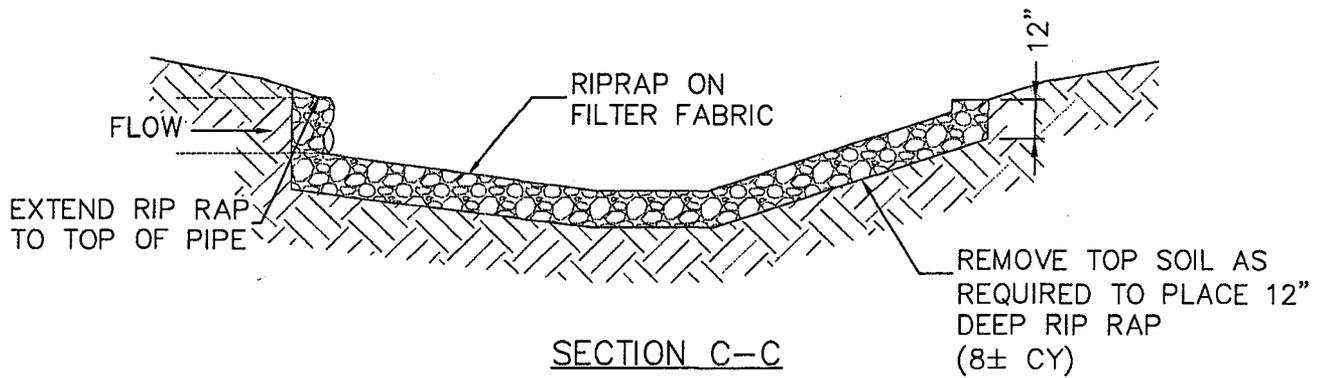
HAMLETS SECTION C19 & C20
SUBDIVISION

PROPOSED ACTIVITY: WETLAND IMPACTS FOR
ROADWAY CROSSING,
SEWER CROSSING,
STORM DRAIN & RIP RAP

COUNTY: BERKELEY

DATE: 12/04/02

SHEET: 6 OF 8



PLAN

TYPICAL RIP RAP @ STORM DRAIN OUTLET
NOT TO SCALE

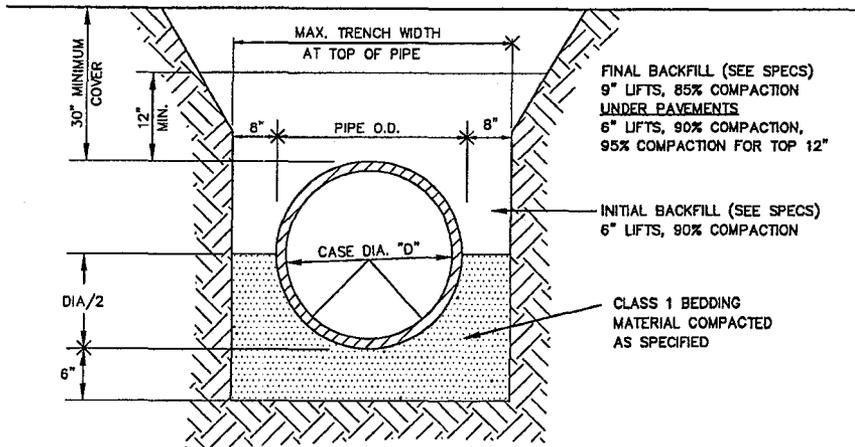
HAMLETS SECTION C19 & C20
SUBDIVISION

PROPOSED ACTIVITY: WETLAND IMPACTS FOR
ROADWAY CROSSING,
SEWER CROSSING,
STORM DRAIN & RIP RAP

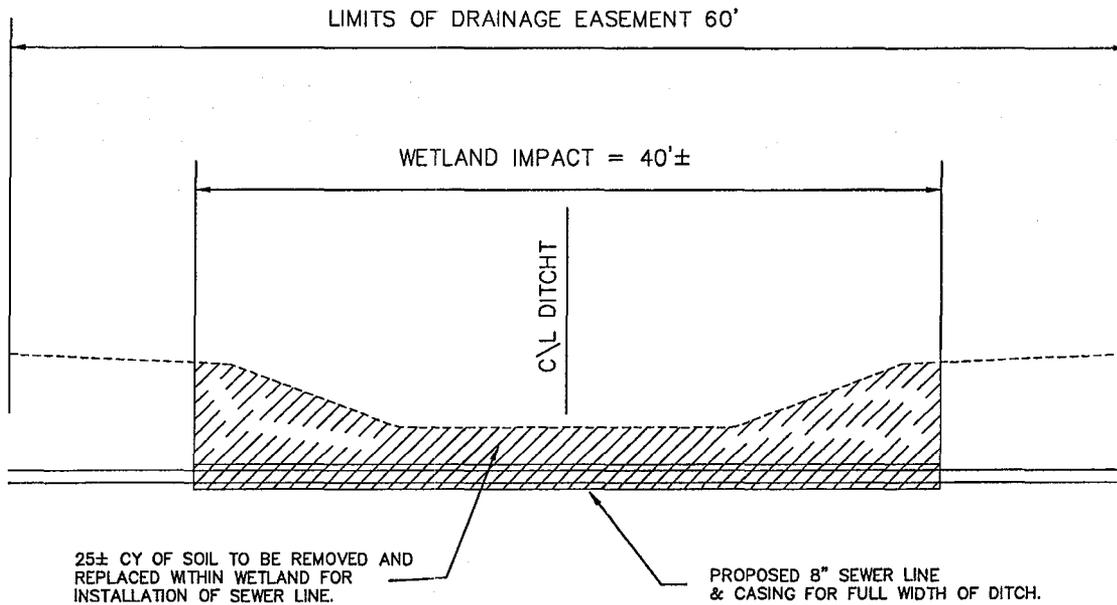
COUNTY: BERKELEY

DATE: 12/04/02

SHEET: 7 OF 8



TYPICAL SEWER INSTALLATION DETAIL
NOT TO SCALE



SEWER CROSSING PROFILE D-D THRU WETLAND A
NOT TO SCALE

HAMLETS SECTION C19 & C20
SUBDIVISION

PROPOSED ACTIVITY: WETLAND IMPACTS FOR
ROADWAY CROSSING,
SEWER CROSSING,
STORM DRAIN & RIP RAP

COUNTY: BERKELEY

DATE: 12/04/02

SHEET: 8 OF 8



December 6, 2002

United States Army Corps of Engineers
Regulatory Branch
69-A Hagood Avenue
Charleston, South Carolina 29402

Attention: Mr. Dean Herndon

Reference: **SECTION 404 PERMIT APPLICATION**
C19/C20 Crowfield Plantation – Vaughn Development Inc.
Berkeley County, South Carolina
S&ME Project No. 1134-02-463

Dear Mr. Herndon:

S&ME, Inc. (S&ME) is pleased to submit this additional information on behalf of Vaughn Development Inc. for the development of Sections C19 and C20 in Crowfield Plantation. This letter is accompanied by a modification of the original requested 0.062 acres of impact. Due to the recent drainage calculations conducted by the project engineer, it has been deemed necessary to excavate approximately 0.33 acres of the ditch, which was previously preserved.

The changes outlined on the revised drawings include the newly designed ditch excavation, and additional vegetated upland buffers along a 1.55-acre section of the existing preserved wetlands and upland buffer. This additional buffer brings the total proposed protective buffers to 2.18 acres. These 2.18 acres of buffers result in a total of 5.7 credits (see attached mitigation forms). We believe that this should sufficiently offset the loss of the existing mitigation area located in the upland cut ditch. It should provide a higher value mitigation area, as these forested buffers consist of more mature hardwood forest than that located within the ditch.

CLOSING

We are confident that this additional information is sufficient for you to continue to process this permit request. Please contact Eric J. McClanahan at (843) 884-0005 if you have any questions regarding this material or if you require any additional information. Thank you in advance for your consideration and assistance with this important project.

Sincerely,

S&ME, Inc.

Eric J. McClanahan
Wetland/Natural Resource Project Manager



Chuck Black, P.E.
Senior Environmental Engineer

ATTACHMENTS: Revised SC Joint Application Form
Revised Application Drawings
Revised Mitigation Worksheets

ADVERSE IMPACT FACTORS

Factors	Options						
Magnitude	0.05 x ΣAA_i (rounded to the nearest tenth decimal place)						
Dominant Effect	Fill 2.0	Impound 1.8	Dredge 1.6	Drain 1.4	Flood 1.2	Clear 1.0	Shade 0.5
Duration of Effects		7+ years 20	5-7 years 1.5	3-5 years 1.0	1-3 years 0.5	0-1 years 0.1	Seasonal 0.1
Existing Condition		Class 1 1.8	Class 2 1.5	Class 3 1.0	Class 4 0.5	Class 5 0.3	Class 6 0.1
Rarity Ranking			Imperiled †	Vulnerable †	Rare 2.0	Uncommon 0.5	Common 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

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

The following definition is reproduced here for ready reference.

Magnitude is an evaluation of the cumulative adverse impacts to aquatic sites for the overall project. This factor is proportional to the acres of impact. The formula used to calculate this value is $0.05 \times \Sigma AA_i$ where ΣAA_i stands for the sum of acres of adverse impacts to aquatic areas overall project. When computing this value, round to the nearest tenth decimal place using even number rounding. For example, 0.01 and 0.050 are rounded down to give a value of zero while 0.051 and 0.09 are rounded up to give 0.1 as the value for the magnitude factor.

Required Mitigation Credits Sample Worksheet

Factor	Road Crossing and Stormwater Outfalls	Excavation of Ditch For Drainage Improvements	Sewer excavation and clearing
Magnitude	0	0	0
Dominant Effect	2.0	1.0	1.0
Duration of Effects	2.0	2.0	2.0
Existing Condition	0.5	0.5	0.5
Rarity Ranking	0.1	0.1	0.1
Lost Kind	0.5	0.5	0.5
Preventability	0.5	0.5	0.5
Sum of r Factors	$R_1 = 5.6$	$R_2 = 4.6$	$R_2 = 4.6$
Impacted Areas	$AA_1 = 0.044$	$AA_2 = 0.33$	$AA_2 = 0.018$
R x AA	0.25	1.52	0.1

Total Required Credits = $\Sigma (R \times AA) =$ 1.9

RESTORATION AND ENHANCEMENT MITIGATION FACTORS

Factors	Options				
New Improvements	Modest Enhancement 0.1-----to-----		Excellent Restoration -----2.0		
Soils		N.A. 0	U.S.S. 0	T.S.S. 0.1	E.S.S. † 0.3
Hydrology		N.A. 0	Mechanical 0	Created 0.1	Natural † 0.3
Vegetation			N.A. 0	Natural 0.1	Planted 0.3
Maintenance		N.A. 0	Moderate 0	Low 0.1	None 0.3
Monitoring & Contingencies Plan	N.A. † 0	Minimum 0.1	Moderate 0.2	Substantial 0.3	Strong 0.4
Credits Schedule	Schedule 5 0	Schedule 4 0.1	Schedule 3 0.2	Schedule 2 0.3	Schedule 1 0.4
Kind	Category 5 0.1	Category 4 0.2	Category 3 0.3	Category 2 0.4	Category 1 0.5
Location	Zone 5 0.1	Zone 4 0.2	Zone 3 0.3	Zone 2 0.4	Zone 1 0.5

N.A. = Not Applicable

† Use this option to calculate for enhancement by buffering.

Proposed Restoration or Enhancement Mitigation Sample Worksheet

Factor	Additional Buffer Areas	
Net Improvement	0.3	
Soils	0.3	
Hydrology	0.3	
Vegetation	0	
Maintenance	0.3	
M & C Plan	0	
Credit Schedule	0.4	
Kind	0.5	
Location	0.5	
Sum of m Factors	$M_1 = 2.6$	$M_2 =$
Mitigation Area	$A_1 = 2.18$	$A_2 =$
M x A =	5.7	

Total Restoration /Enhancement Credits = $\Sigma (M \times A) =$ 5.7

Mitigation Summary Worksheet For Permit Application # _____

I. Required Mitigation

A.	Total Required Mitigation Credits =	1.9	0.392
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II. Non-Banking Mitigation Credit Summary **Credits** **Acres**

B.	Creation		
C.	Restoration and/or Enhancement	5.7	2.18
D.	Total No. Net Loss Non-Bank Mitigation = B + C		
E.	Preservation		
F.	Total Proposed Non-Bank Mitigation = D + E		

III. Banking Mitigation Credit Summary **Credits** **Acres**

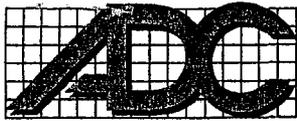
G.	Creation		
H.	Restoration and/or Enhancement		
I.	Total No Net Loss Bank Mitigation = G + H		
J.	Preservation		
K.	Total Proposed Bank Mitigation = I + J		

IV. Grand Totals **Credits** **Acres**

L.	Total Preservation Mitigation = E + J		
M.	Total Non-Preservation Mitigation = D + I	5.7	2.18
N.	Total Proposed Mitigation = F + K	5.7	2.18

Total Mitigation Credits (Row N) should be equal to or greater than the total Required Mitigation Credits (Row A) for the proposed mitigation to be acceptable. The other requirements given in the SOP must also be satisfied, e.g., Row M must equal at least 50% of Row A, etc. If the answer to either of the questions below is no, then the proposed mix and/or quantity of mitigation is not in compliance with the policy and the plan should be revised or rejected, unless a variance is approved.

	Yes	No
$PMC \geq RMC$ or in words Are the Credits in Row N greater than or equal to Row A?	X	
$PMC_{Non-Preservation} \geq \frac{1}{2} RMC$ or in words Are the Credits in Row M greater than or equal to 50% of Row A?	X	



OCT 23 2002

ADC ENGINEERING, INC.

STRUCTURAL ENGINEERS • CIVIL ENGINEERS • ROOFING AND WATERPROOFING CONSULTANTS

October 21, 2002

Via Facsimile & Mail
Page 1 of 3, Fax: 881-6149

Mr. Eric McClanahan
S&ME, Inc.
840 Lowcountry Blvd.
Mt. Pleasant, SC 29464

Subject: Hamlets Sections C19/C20
ADC Project No. 02227

Dear Eric:

Per your request, I offer the following elaboration for the necessity of proposed wetland impacts associated with the residential project located in the Hamlets of Crowfield Plantation.

ADC Engineering, Inc. has been commissioned by Vaughn Development Inc. to prepare site development plans for a new 60 lot +/- subdivision on tracts C19 and C20 of the Hamlets of Crowfield. Tracts C19 and C20 are comprised of 42.97 acres of upland and 44.05 acres of wetlands and upland buffers for a total of 87.02 acres. This development encompasses approximately 36.12 acres of uplands on the eastern side of the overall tract. The 36.12 upland area, which is proposed for development, is divided by a jurisdictional ditch, (refer to the enclosed sketch). The development plans include impacts to the jurisdictional ditch for a single roadway crossing, a single sewer line crossing, and three storm drain discharge impacts. The enclosed sketch identifies each of the impacts, which are further described herein.

It is my understanding that the proposed impacts were not included in the overall wetlands master plan for Crowfield. We believe that the impacts are consistent with the master plan intent in that they are limited to the jurisdictional ditch, which was created during the construction of the larger thoroughfare of this planned development (i.e. Hamlet Circle). This project is not intended to impact the main wetland area and will not impact any dedicated upland buffers.

Wetland impacts of this scale could not be foreseen during the master-planning and initial permitting activity of Crowfield Plantation as a whole due to the size of the original development. Westvaco Development Corporation was originally designing a large planned community encompassing several thousand acres, with smaller tracts being sold to home-builders (in this case Vaughn Development, Inc.) which would then be designed in detail to facilitate the actual construction of homes and neighborhoods.

Proposed Wetland Impact #1 - Roadway Crossing

The roadway crossing is proposed to provide access from the northern portion of the development to the southern proportion. The crossing will consist of a 50 foot right-of-way, a 22 foot wide paved surface, curb and gutter, sidewalks, storm drain culverts, and rip rap erosion control. The total impact area is anticipated to be 2,220 square feet with 270 cubic yards of fill. The roadway crossing proposed is essential in providing effective traffic flow and access throughout the development for property owners, fire, police and other public services. This option minimizes dead ends within the development, results in only one intersection on Hamlet Circle and allows for a looped water distribution system.

Alternatives for the roadway crossing have been analyzed to determine if the proposed impacts can be reduced or eliminated without other detrimental impacts to the development or surrounding community. The enclosed sketch shows two alternatives that have been evaluated and deemed detrimental.

Alternative #1 shown is a second ditch crossing that offers improved access within the development and would allow additional lots. However, this alternative was abandoned in an effort to reduce the overall wetland impacts.

Alternative #2 shown is providing separate accesses to the northern and southern portions of the property and eliminating the proposed ditch road crossing. Although this would yield two additional lots, it was determined to be unacceptable because it yields the following three significant disadvantages:

1. Separate accesses will create two intersections on Hamlet Circle that would be located less than 250 feet apart. Hamlet Circle is a collector street and intersections at this close interval will create an increased potential for congestion and accidents.
2. Separate accesses will yield a 1,250 foot dead end street on the northern portion of the development. Berkeley County requires a turn-around every 800 feet. This minimizes dead-end streets to the fullest extent possible for increasing fire, police and other public service access and benefits.
3. Eliminating the ditch road crossing will yield a dead end water main on the northern portion of the parcel. Dead-end water mains result in a reduction in water quantity and quality and increases maintenance requirements such as flushing of lines.

Proposed Wetland Impact #2 - Sewer Line Crossing

The proposed development will be served by an existing lift station located immediately adjacent to the existing jurisdictional ditch. With the depth of the lift station, the grades and lengths to the most remote portions of the property, crossing of the ditch is required to provide gravity sewer service to all lots. The impact of the crossing will involve clearing within the proposed 20 foot wide sewer easement and excavation as required to install the new sewer line. No fill is required above the current natural grade.

An option for routing the sewer around the ditch was explored. However, it was determined that this resulted in a 1.5 foot higher sewer line that would prevent gravity service to approximately 15 lots on the southern portion of the tract.

Proposed Wetland Impacts #3-5 - Storm Drainage Discharges

The jurisdictional ditch provides sufficient depth to allow drainage of the proposed new detention basins. The development proposes a total of three discharge locations with a piped outfall and rip rap erosion control at each discharge. The maximum impact at each discharge location will be a 10 foot by 20 foot area for rip rap placement.

Any development of the property will result in stormwater discharges to the ditch and there are not alternatives. Placement of rip-rap in these locations will prevent erosion and will mitigate sedimentation of the ditch and the protected swamp/wetland.

Closing

I hope this information is useful. Please contact me with any questions

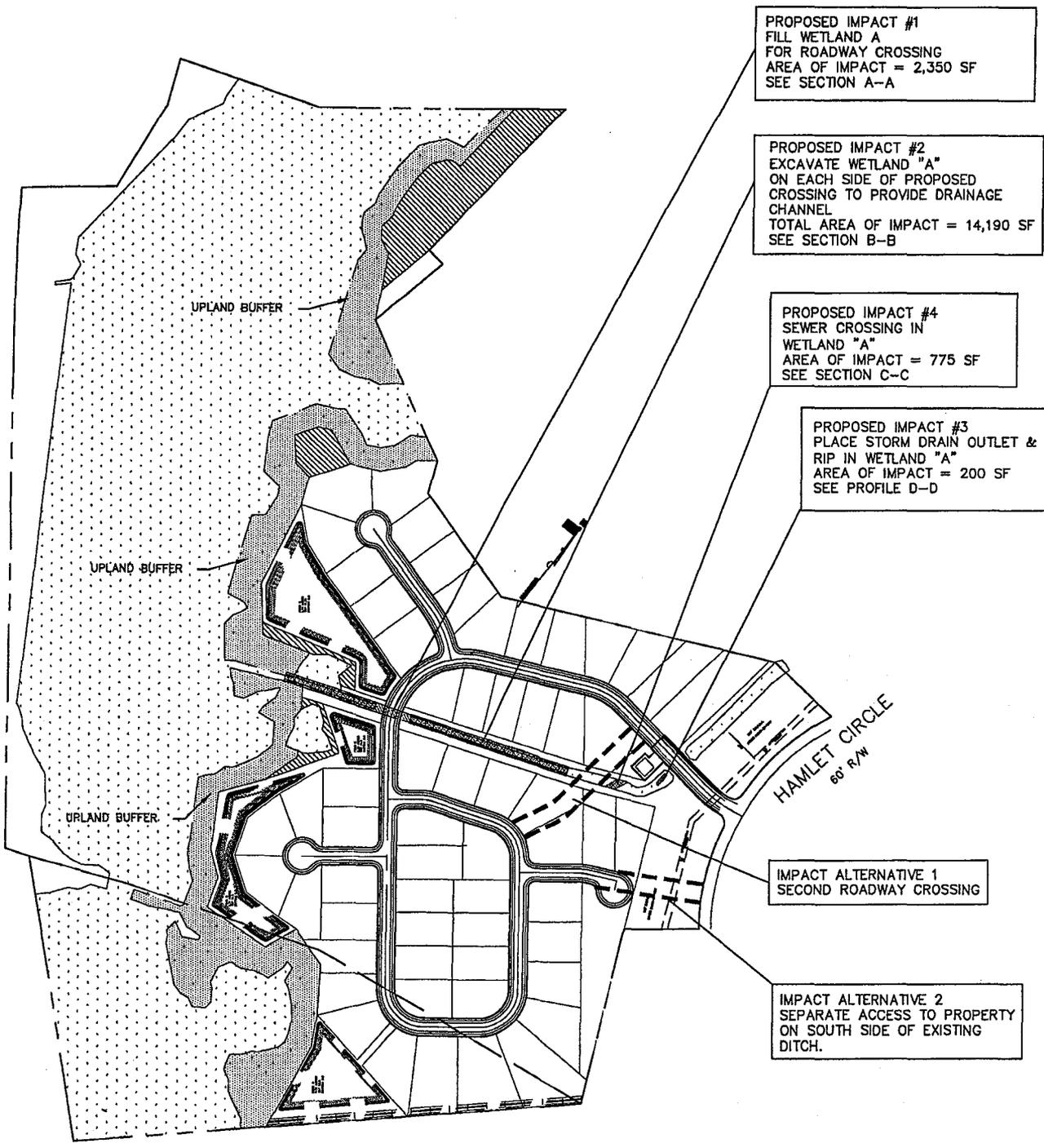
Respectfully,



Greg Jones, P.E.
ADC Engineering, Inc.

Enclosure

1. Wetland Impact Alternatives Sketch



PROPOSED IMPACT #1
 FILL WETLAND A
 FOR ROADWAY CROSSING
 AREA OF IMPACT = 2,350 SF
 SEE SECTION A-A

PROPOSED IMPACT #2
 EXCAVATE WETLAND "A"
 ON EACH SIDE OF PROPOSED
 CROSSING TO PROVIDE DRAINAGE
 CHANNEL
 TOTAL AREA OF IMPACT = 14,190 SF
 SEE SECTION B-B

PROPOSED IMPACT #4
 SEWER CROSSING IN
 WETLAND "A"
 AREA OF IMPACT = 775 SF
 SEE SECTION C-C

PROPOSED IMPACT #3
 PLACE STORM DRAIN OUTLET &
 RIP IN WETLAND "A"
 AREA OF IMPACT = 200 SF
 SEE PROFILE D-D

IMPACT ALTERNATIVE 1
 SECOND ROADWAY CROSSING

IMPACT ALTERNATIVE 2
 SEPARATE ACCESS TO PROPERTY
 ON SOUTH SIDE OF EXISTING
 DITCH.

WETLAND IMPACT ALTERNATIVES
 1" = 400'

HAMLETS SECTION C19 & C20
SUBDIVISION

PROPOSED ACTIVITY: WETLAND IMPACTS FOR
 ROADWAY CROSSING,
 SEWER CROSSING,
 STORM DRAIN & RIP RAP

COUNTY: BERKELEY

DATE: 12/04/02