CITY OF NEWPORT NEWS

Department of Planning and Development

Wetlands Survey and Analysis

Applied Research Center

Patrick Henry CommerCenter

Oakland Plantation Industrial Park

Newport News (Va.). Dept. of Planning and Development.

Wetlands Survey and Analysis

Applied Research Center
Patrick Henry CommerCenter
Oakland Plantation Industrial Park

U.S. DEPARTMENT OF COMMERCE NOAA
COASTAL SERVICES CENTER
2234 SOUTH HOBSON AVENUE
CHARLESTON, SC 29405-2413

Produced in part through financial support from the Virginia Council on the Environment, pursuant to Coastal Resources Program Grant # NA90AA-H-CZ796 *from the National Oceanic and Atmospheric Administration*

LIST OF MAPS

MAP

WETLANDS IDENTIFICATION SURVEY

Introduction

The following is a comprehensive report documenting the evaluations of three designated project locations for the purpose of identifying nontidal wetlands. These properties which are managed by the Industrial Development Authority of Newport News, are the Applied Research Center, Oakland Plantation Industrial Park, and Patrick Henry CommerCenter. For the most part, these industrial parks are in the planning stages and/or the early development phases.

Questionable sites within the industrial parks were identified by preliminary investigation using standard and infrared aerial photography, and NWI maps. On-site wetland delineations were conducted in accordance with the 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands. Each site was tested for the presence of the three wetland criterion (hydrophytic vegetation, hydric soils, wetland hydrology) using the routine method as outlined in the manual.

The results and findings of the wetland investigations include inventory, field notes, data sheets, and maps of potential nontidal wetland areas. Background information on soils is insufficient because no soil survey exists for the cities of the Lower Peninsula including the City of Newport News. Also, native vegetation dominating Southeastern Virginia meets the hydrophytic criteria.

Applied Research Center

A field investigation was conducted for the presence of nontidal wetlands on 74.66 acres of the ARC Development Site in Newport News. Normal environmental conditions exist and there is no evidence of significant disturbance of the site. Overall, the site is generally flat with vegetation indigenous to the area.

There were no obvious visual signs to indicate the presence of nontidal wetland areas (e.g. ground surface inundation, soil saturation). However, there was a questionable area near the William and Mary property. A small nontidal wetland area indicated on the NWI maps (see Map 1.1). Therefore, 3 test plots were explored in the main portion of the ARC site along Oyster Point Road (see Map 1.2). These plots were chosen in areas that might have been inundated at some time (e.g. tufts of grass, small depressions, raised trees, slight buttressing). An 18" pit was dug and the 3 wetland criterion were analyzed at each plot. Using the 50/20% Dominance Rule, the vegetation at each plot met the hydrophytic vegetation criterion, which as mentioned before is typical for Newport News. Also, at each plot no water was found in the 18" deep pit. The sandy-clay soil (80:20 ratio) was well-drained. The hydric soil criterion and the wetland hydrology criterion appear not to have been met. From the data provided, the test areas do not provide sufficient evidence to support the presence of nontidal wetlands.

Oakland Industrial Park

This site in Oakland Industrial Park investigated for the presence of nontidal wetlands consisted of two parcels adjacent to Option, Inc. Normal environmental conditions exist and the vegetation, soil, and hydrology have not been significantly disturbed.

Area 1- Although the initial routine investigation of vegetation, soil, and hydrology did not support the evidence of nontidal wetlands, there are two questionable low lying areas on site (see Map 2.2). In these areas, were evidence of water stained leaves and minor tree buttressing, but there was no evidence of prolonged ground surface inundation. Also, no standing water nor water in the test plot was found and the soil appeared not to be saturated.

Area 2- Findings at this site across Enterprise Drive were similar to those parcels adjacent to Option, Inc. Although no freestanding water was observed in the test plot no in the ground surface, a depressed area of water stained leaves and slight tree buttressing was noted. Again the hydrophytic vegetation criterion was met, but the evidence for the presence of hydric soils and wetland hydrology was weak.

Area 3- A field survey of 3 adjacent land parcels was conducted for the possible presence of nontidal wetland areas. A major portion of the 3 parcels is disturbed land consisting mainly of field grasses, tree seedlings, and other brush responding to natural succession. In the center of the site is a thick area of brush consisting largely of blackberry and raspberry shrubs. The rear of the site is bounded by a heavily wooded ravine. The question of possible wet areas lies mostly in the relatively flat disturbed area.

There is a small (12") ditch which bisects the 9.3 acre parcel. On the 9.7 acre parcel near Enterprise Drive there are several tiny wet areas complete with emerging cattails and 2-3" standing water (see Map 2.3). These wet areas are confined to wheel cut trenches 4-5" deep, which were a result of the land being cleared by large equipment. Note that these "wet areas" in question are small and isolated, lacking a hydrologic connection and are located on a disturbed site. Soil excavated from the construction of drainage ditches is being stockpiled on the 12.2 acre parcel. Otherwise, no questionable areas were noted.

Patrick Henry CommercCenter

A site survey was conducted at several parcels within the Patrick Henry CommerCenter property off Bland and McManus Boulevards. Five specific areas were studied as shown on the attached map. In each of these areas, three wetland criteria were assessed: hydrophytic vegetation, hydric soils, and wetland hydrology.

In all 5 sites, normal environmental conditions exist, and the vegetation, soils, and/or hydrology have not been significantly disturbed within the last 20 years. During the years that the site operated as a prison camp, several roads and drainage ditches were cut throughout the property, creating knolls and swales that naturally would not have occurred in this area. Over the years, the growth of vegetation in these areas could have possibly altered the drainage.

Attached is a map of the entire property surveyed (see Map 3.1).

Area 1- The ground surface of this site is partially inundated with water at a depth of 1"-4" as indicated on the detailed map. This is probably a result of poor drainage. The vegetation in this area was not indicative of hydrophytic vegetation, except in those areas of obvious standing water. The test plot revealed no standing water in the hole, however, the soil test revealed a low chroma number of 2 (coloring agent of soil) with light colored mottles. A low chroma number (2 or less) is a possible indicator of soil reducing properties caused by saturation. There were no signs of a hydrologic connection; therefore, the wetlands would be isolated (see Map 3.2).

Area 2- The majority of this site appears to be free of wetlands except for a small area on the southeast boundary along the proposed Turnberry Boulevard extension. The vegetation was not characteristic of hydrophytic vegetation. However, the text plot revealed a capillary flow of water 12" below the ground surface, and the soil test showed a chroma number of 2 and iron/orange color mottles. Iron concretions are a sign of soil reducing properties. The hydric soil and wetland hydrology criterion seems to have been met; therefore, this area should be checked for the actual extent of the wetland boundary. Again there were no signs of a hydrologic connection. When the preliminary clearing for the proposed road occurred, the drainage appears to have been disturbed in this area (see Map 3.3).

Area 3- A good portion of area 3 indicates the presence of wetlands. There seems to be an area of standing water (pond) and a series of drainage channels and swales throughout the area. Furthermore, an apparent hydrologic connection exists between these drainage patterns and Lucas Creek. Although the hydrophytic vegetation criterion has not been met, the test plot revealed saturated soil and a 10"-12" depth to capillary flow of water. Other field evidence recorded were buttressed tree trunks and multi-trunk trees. The soil test noted a low chroma number and the presence of hydrogen sulfide (emitting an odor of rotten eggs), which supports evidence of soil saturation in a soil reducing environment. Further investigation is suggested to detail the boundaries of these wetland channels.

Area 4- There are a series of minor drainage ditches along old road beds throughout this site (see Map 3.4). Although the hydrophytic vegetation criterion was met on this site, there is no supporting evidence from the soils and hydrology to indicate the presence of wetlands.

Area 5- On this large site, the northern and western portion appeared to be dry. Although the hydrophytic vegetation criterion was met on this portion of the site; there was no further field evidence (e.g. soils, hydrology) to support the presence of wetland areas. Note that there is a drainage ditch along or near the northwest property line, and several concrete foundations along the northern property line (see Map 3.5).

There is a small low-lying area that is in question located along the upper southeastern boundary line. The hydrophytic vegetation was met in this area as well as the test plot revealed saturated soil, 9" depth to freestanding water, and minor buttressed tree trunks. The soil test showed an extremely low croma number of 1, which indicates soil reducing properties. There were not signs of an hydrologic connection; therefore, this is a potential isolated nontidal wetland.

The southeastern corner of the site is a marsh-like area with water 3"-8" deep. On the other side of a berm, northeast of this area appears to be a potential nontidal wetland area. A hydrologic connection is questionable. Surface inundation was scattered throughout this area at a depth of 1/2"-1". Other field evidence of previous surface inundation of soil saturation were water stained leaves, extreme buttressing of tree trunks (90% of trees in this area), and a large amount of debris and tree litter. The vegetation in this area met the hydrophytic vegetation criterion by 100%.

Conclusions

The survey revealed no significant evidence to indicate the presence of wetlands in the ARC site. The Oakland and CommerCenter sites contained a few, what appear to be isolated areas, meeting some of the identification criteria. The recommended approach to dealing with these questionable areas is a site-specific detail analysis prior to any development taking place on them.

PC.DW.CRMGR
12/31/91

Corporate Author: Newport News (Va.). Dept. of Planning and Development.

Title: Wetlands survey and analysis : Applied Research Center, Patrick Henry CommerCenter, Oakland Plantation Industrial Park / [City of Newport News, Department of Planning and Development].

Publication info: Newport News, Va. : The Dept., [1991]

General Note: "Produced in part through financial support from the Virginia Council on the Environment, pursuant to Coastal Resources Program Grant # NA90AA-H-CZ796 from the National Oceanic and Atmospheric Administration."

Local note: "This publication was funded by the Coastal Zone Management Act (CZMA) as administered by NOAA's Office of Ocean and Coastal Resource Management."

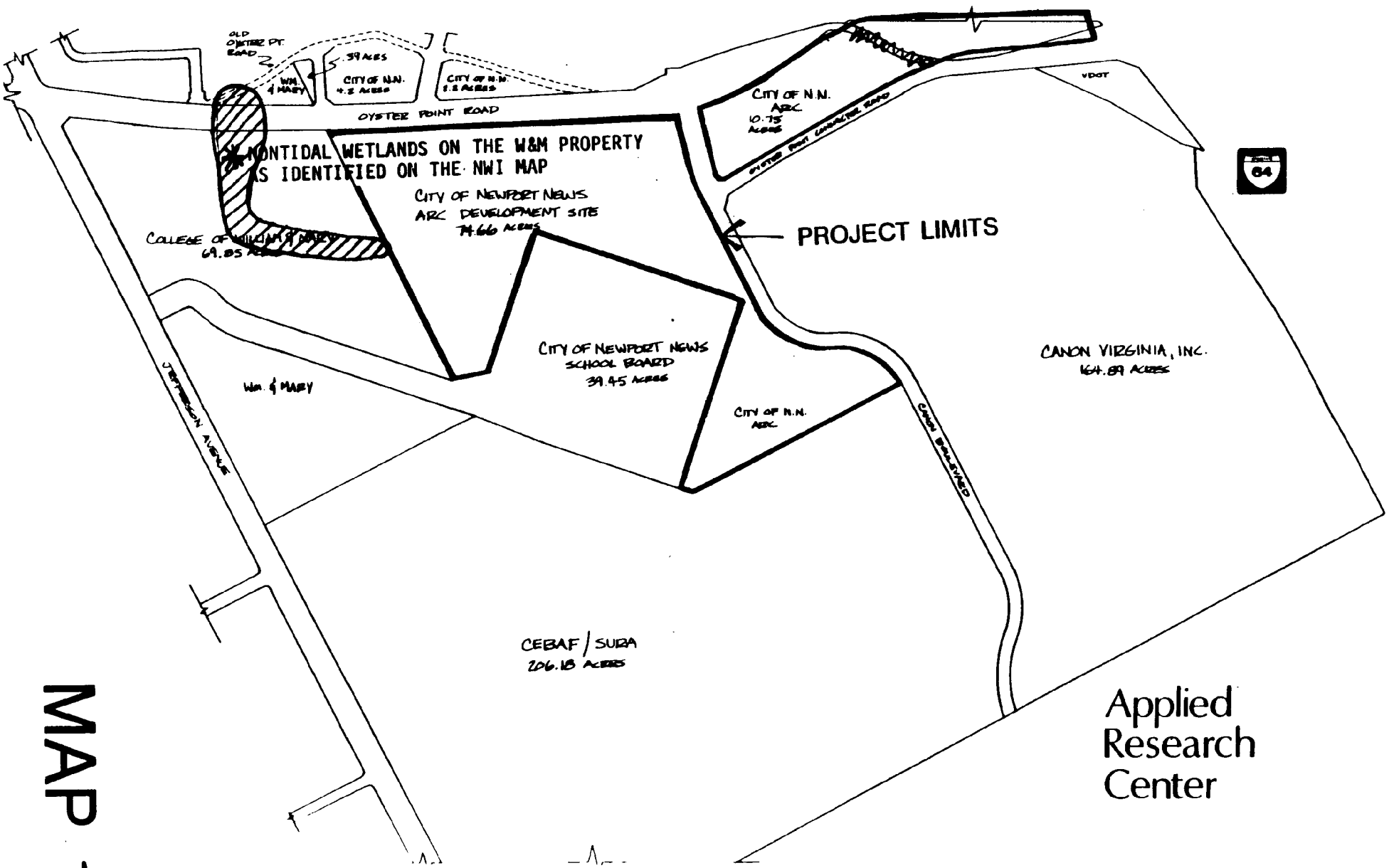
Subject term: Wetlands--Virginia--Newport News.

Subject term: Industrial districts--Virginia--Newport News.

Subject term: City planning--Virginia--Newport News.

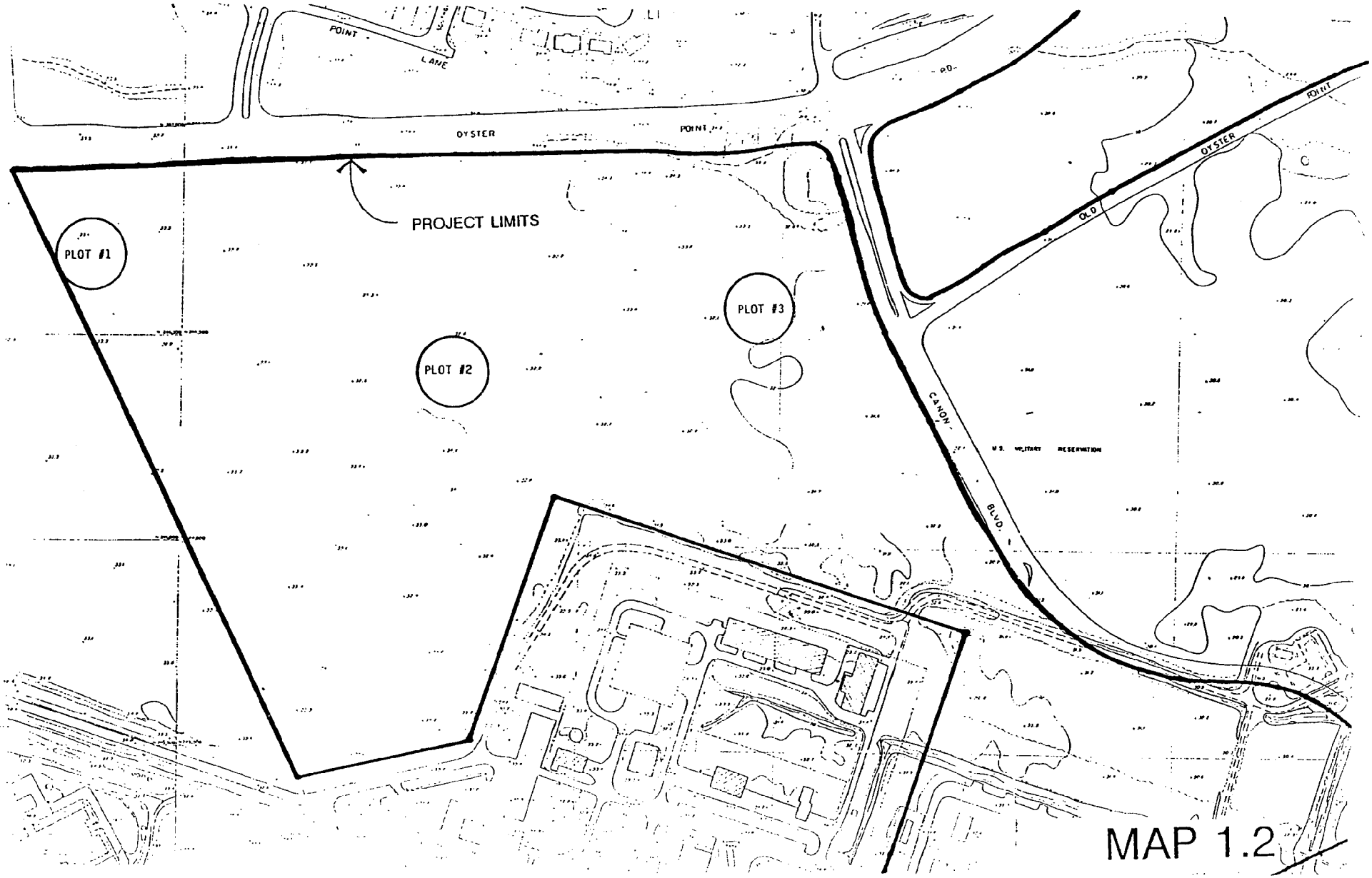
Added Author: Virginia. Council on the Environemnt.

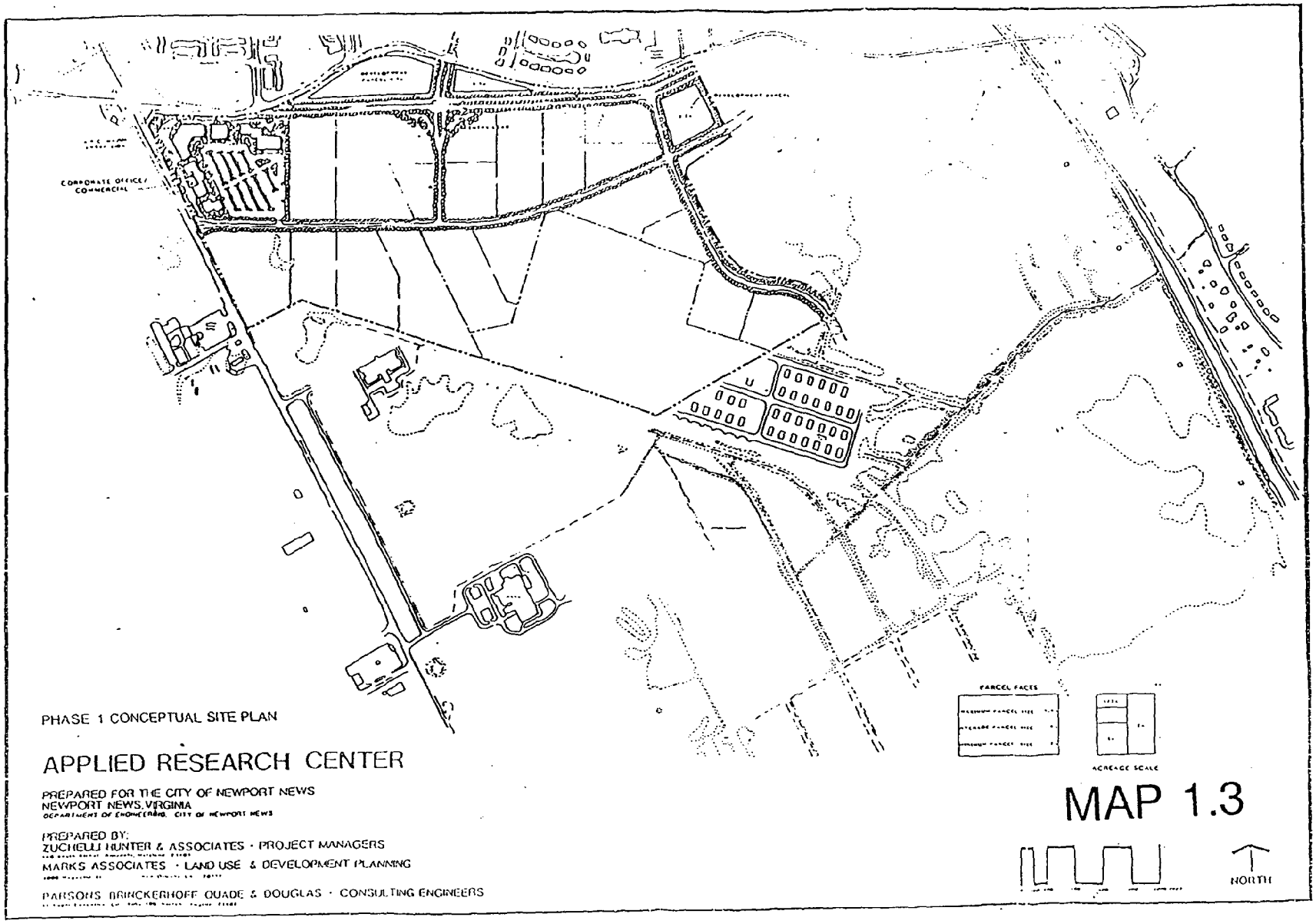
Added Author: United States. National Oceanic and Atmospheric Administration.



MAP 1.1

Applied Research Center


POINT
LANE
OYSTER
POINT
PROJECT LIMITS
PLOT #1
PLOT #2
PLOT #3
OYSTER
POINT
CANON
BLVD.
MAP 1.2



PHASE 1 CONCEPTUAL SITE PLAN

APPLIED RESEARCH CENTER

PREPARED FOR THE CITY OF NEWPORT NEWS
NEWPORT NEWS, VIRGINIA
DEPARTMENT OF ENGINEERING, CITY OF NEWPORT NEWS

PREPARED BY:
ZUCHELLI HUNTER & ASSOCIATES · PROJECT MANAGERS
MARKS ASSOCIATES · LAND USE & DEVELOPMENT PLANNING
PARSONS BRINCKERHOFF QUADE & DOUGLAS · CONSULTING ENGINEERS

MAP 1.3

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): Ken Whipple/Steve Summerfield Date: 5/16/91
Project/Site: ASC Site (Test Site #1) State: VA County: N.N.
Applicant/Owner: N.N. Plant Community #/Name: _____
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes ✓ No _____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes _____ No ✓ (If yes, explain on back)

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
1. Loblolly Pine 30%	FAC-	T d	11.		
2. White Oak 30%	FACU	T d	12.		
3. Red Maple 30%	FAC	T d	13.		
4. Willow Oak 1%		T	14.		
5. Sweetgum 20%	FAC	Sa d	15.		
6. Oak 30%	FACU	Sa d	16.		
7. Red Maple 20%	FAC	Sh d	17.		
8. Smilax 5%		H	18.		
9. Grass 20%		H d	19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 67%
Is the hydrophytic vegetation criterion met? Yes X No _____
Rationale: 50% of dominant vegetation is FAC, FACW, or OBL

SOILS

Series/phase: Not Known Subgroup:[2] ✓
Is the soil on the hydric soils list? Yes _____ No _____ Undetermined ✓
Is the soil a Histosol? Yes _____ No _____ Histic epipedon present? Yes _____ No _____
Is the soil: Mottled? Yes _____ No _____ Gleyed? Yes _____ No X
Matrix Color: 7.5 YR 5/2 Mottle Colors: Yellow; Orange
Other hydric soil indicators: _____
Is the hydric soil criterion met? Yes _____ No X
Rationale: although soil may be frequently flooded, soil appears to be well-drained and no water found in test hole.

HYDROLOGY

Is the ground surface inundated? Yes _____ No X Surface water depth: N/A
Is the soil saturated? Yes _____ No X
Depth to free-standing water in pit/soil probe hole: No water (18" depth hole - dry)
List other field evidence of surface inundation or soil saturation.
moss; grass tufts; small depressions (bumpy land), raised trees
Is the wetland hydrology criterion met? Yes _____ No X
Rationale: no strong supporting evidence

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes _____ No X
Rationale for jurisdictional decision: _____

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): Ron Whipple (Steve Summerfield) Date: 5/16/91
Project/Site: ABC (Test Site #2) State: VA County: N.N.
Applicant/Owner: N.N. Plant Community #/Name: _____
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No X (If yes, explain on back)

VEGETATION

Dominant Plant Species		Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
1. Oak	60%	FACW	T d	11.		
2. Loblolly Pine	30%	FAC-	T d	12.		
3. Sweetgum	20%	FAC	Sa d	13.		
4. Oak	20%	FACW	Sa d	14.		
5. Red Maple	40%	FAC	Sa d	15.		
6. Blackgum	15%	FAC	Sh d	16.		
7. Highbush Blueberry	10%		Sh	17.		
8. Red Maple	25%	FAC	Sh d	18.		
9. Sweetgum	20%	FAC	Sh d	19.		
10. Highbush Blueberry	10%	FACW-	H d	20.		

Percent of dominant species that are OBL, FACW, and/or FAC 78%
Is the hydrophytic vegetation criterion met? Yes X No
Rationale: over 50% of dominant vegetation is OBL, FACW, and/or FAC

SOILS

Series/phase: Not Known Subgroup:[2] _____
Is the soil on the hydric soils list? Yes ~~N/A~~ No ____ Undetermined ✓
Is the soil a Histosol? Yes N/A No ____ Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ____ No ____ Gleyed? Yes ____ No X
Matrix Color: 5YR 5/2 Mottle Colors: N/A
Other hydric soil indicators: Sandy clay; well drained
Is the hydric soil criterion met? Yes ____ No X
Rationale: although ground may be frequently flooded, soil appears to be well drained and no water was found in test hole

HYDROLOGY

Is the ground surface inundated? Yes ____ No X Surface water depth: N/A
Is the soil saturated? Yes ____ No X
Depth to free-standing water in pit/soil probe hole: No water (18" depth hole - dry)
List other field evidence of surface inundation or soil saturation.
low area; few multi-trunk trees; minor tree buttress
Is the wetland hydrology criterion met? Yes ____ No X
Rationale: no strong supporting evidence

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes ____ No X
Rationale for jurisdictional decision: _____

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): DON WHIPPLE / STEVE SIMMERFIELD Date: 5/16/91
Project/Site: ARC (TEST SITE #3) State: VA County: N. N.
Applicant/Owner: _____ Plant Community #/Name: _____
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No X (If yes, explain on back)

VEGETATION

Dominant Plant Species		Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
1. Red Maple	10%		Sh	11.		
2. Sweetgum	10%		Sh	12.		
3. Am. Holly	5%		Sh	13.		
4. Highbush Blueberry	50%	FACW-	Sh d	14.		
5. Oak	50%	FACU	Sa d	15.		
6. Sweetgum	20%	FAC	Sa d	16.		
7. Red Maple	20%	FAC	Sa d	17.		
8. Loblolly Pine	20%	FAC-	T d	18.		
9. Oak	60%	FACU	T d	19.		
10. Red Maple	10%		T	20.		

Percent of dominant species that are OBL, FACW, and/or FAC 67%
Is the hydrophytic vegetation criterion met? Yes X No ____
Rationale: 50% of dominant vegetation is OBL, FACW, and/or FAC

SOILS

Series/phase: Not Known Subgroup:[2] _____
Is the soil on the hydric soils list? Yes ____ No ____ Undetermined X
Is the soil a Histosol? Yes N/A No ____ Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ____ No ____ Gleyed? Yes ____ No X
Matrix Color: 5YR 6/2 Mottle Colors: N/A
Other hydric soil indicators: Sandy clay, well drained (ex: 20 ratio)
Is the hydric soil criterion met? Yes ____ No ____
Rationale: _____

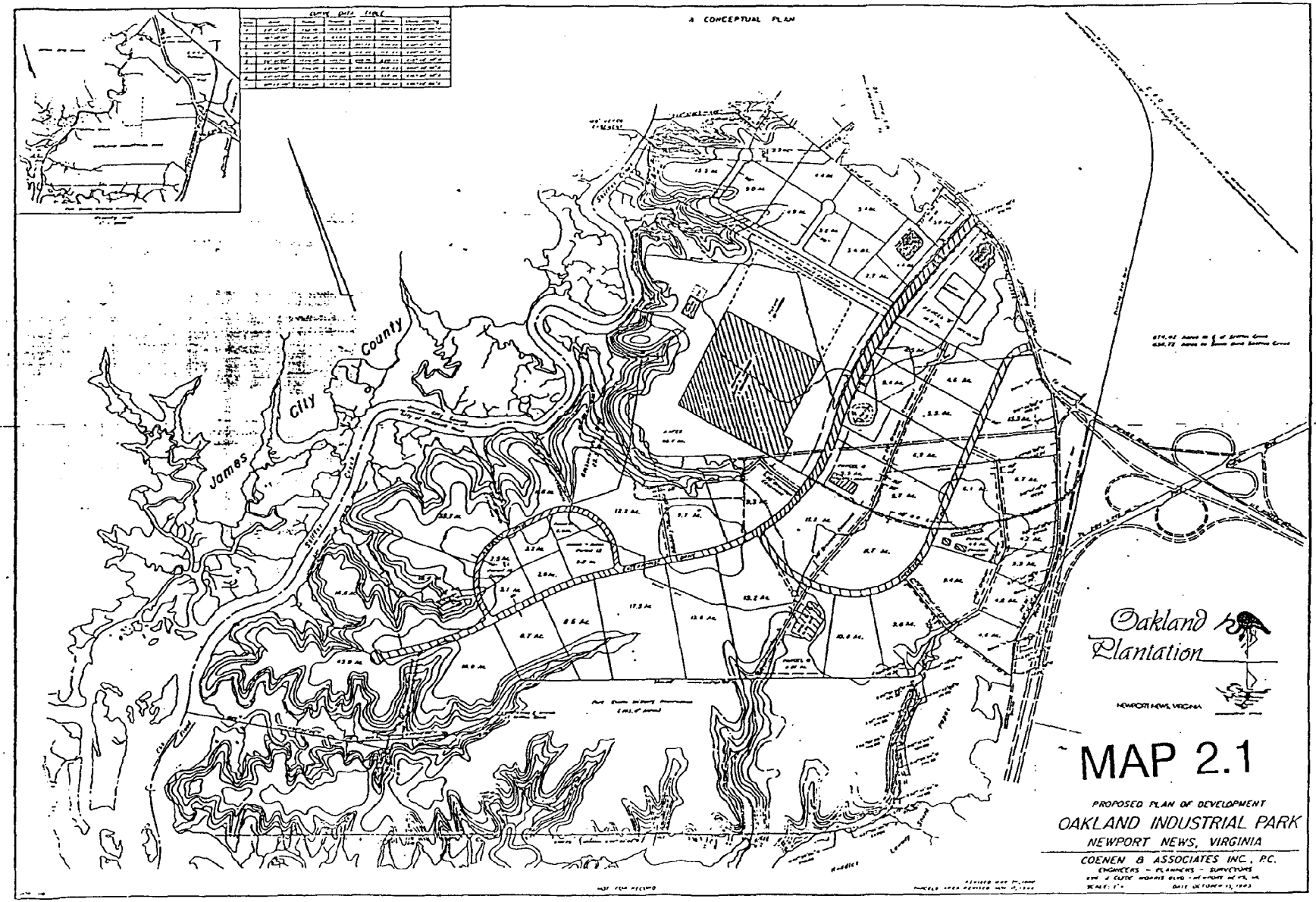
HYDROLOGY

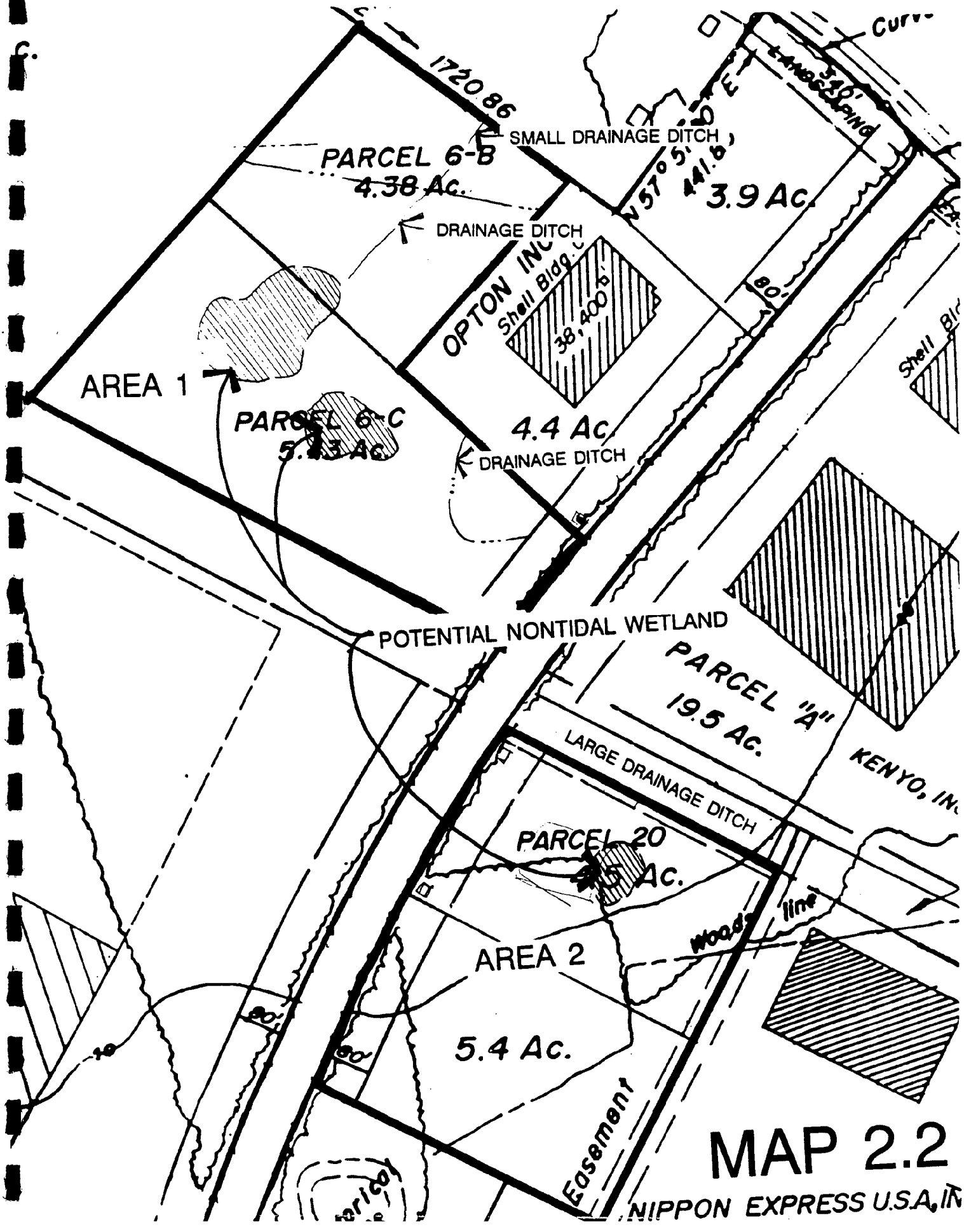
Is the ground surface inundated? Yes ____ No X Surface water depth: N/A
Is the soil saturated? Yes ____ No X
Depth to free-standing water in pit/soil probe hole: No water (18" depth hole - dry)
List other field evidence of surface inundation or soil saturation.
low area; slight tree buttress; few multi-trunk trees.
Is the wetland hydrology criterion met? Yes ____ No X
Rationale: no strong support evidence

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes ____ No X
Rationale for jurisdictional decision: _____

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."


A CONCEPTUAL PLAN
James City County
Oakland Plantation
NEWPORT NEWS, VIRGINIA
MAP 2.1
PROPOSED PLAN OF DEVELOPMENT
OAKLAND INDUSTRIAL PARK
NEWPORT NEWS, VIRGINIA
COENEN & ASSOCIATES INC., P.C.
ENGINEERS - PLANNERS - SURVEYORS


1720.86
SMALL DRAINAGE DITCH
PARCEL 6-B
4.38 Ac.
DRAINAGE DITCH
N 57° 5'
441.6'
3.9 Ac
OPTON INC
Shell Bldg.
38,400 ft
80'
AREA 1
PARCEL 6-C
5.13 Ac.
4.4 Ac
DRAINAGE DITCH
POTENTIAL NONTIDAL WETLAND
PARCEL "A"
19.5 Ac.
LARGE DRAINAGE DITCH
KENYO, IN
PARCEL 20
Woods line
AREA 2
5.4 Ac.
80'
60'
Easement
MAP 2.2
NIPPON EXPRESS U.S.A. IN

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): DON WHIPPLE / ANNE M. Date: ______
Project/Site: OPTON - OAKLAND IND State: VA County: ______
Applicant/Owner: AREA 1 Plant Community #/Name: ______
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ___ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ___ No X (If yes, explain on back)

VEGETATION

* Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
* 1. WILLOW OAK	FAC+	T	11. SWEETGUM	FAC	H
• 2. BLACKGUM	FAC	T	12. (NON WETLAND) GRASSES		H
* 3. BLACKGUM	FAC	S2	13.		
• 4. LOBLOLLY PINE	FAC-	S2	14.		
• 5. HIGHBUSH BLUEBERRY	FACW-	Sh	15.		
* 6. HOLLY	FACU+	Sh	16.		
• 7. SWEETGUM	FAC/FACW	Sh	17.		
8. RED MAPLE	FAC	Sh	18.		
* 9. SMILAX	FAC	H	19.		
• 10. HIGHBUSH B.B.	FACW-	H	20.		

• Codominant Species

Percent of dominant species that are OBL, FACW, and/or FAC 90%
Is the hydrophytic vegetation criterion met? Yes X No ___
Rationale: 90% > 50%

SOILS

Series/phase: unknown Subgroup:[2] ______
Is the soil on the hydric soils list? Yes ___ No ___ Undetermined X
Is the soil a Histosol? Yes ___ No ___ Histic epipedon present? Yes ___ No ___
Is the soil: Mottled? Yes ___ No X Gleyed? Yes ___ No X
Matrix Color: 7.5 YR 5/5 Mottle Colors: N/A
Other hydric soil indicators: crumbly, flaky soil, dry appearance
Is the hydric soil criterion met? Yes ___ No X
Rationale: ______

HYDROLOGY

Is the ground surface inundated? Yes ___ No X Surface water depth: N/A
Is the soil saturated? Yes ___ No X
Depth to free-standing water in pit/soil probe hole: no freestanding water present
List other field evidence of surface inundation or soil saturation.
minor water stained leaves, minor butressing, no standing water, no multi-trunk tree
Is the wetland hydrology criterion met? Yes ___ No X
Rationale: not enough supporting evidence, inconclusive soils

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes ___ No X
Rationale for jurisdictional decision: questionable whether site is an isolated nontidal wetland - portions of site appear to be poorly drained, however significant soil and hydrology factors are not present.

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): [illegible] WHIPPLE / ANNE Date: ______
Project/Site: OAKLAND AREA 2 State: ______ County: ______
Applicant/Owner: ______ Plant Community #/Name: ______
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ___ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ___ No X (If yes, explain on back)

VEGETATION

*Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
* 50% 1. SMILAX	FAC	WV	11.		
• 15% 2. RED MAPLE	FAC	T	12.		
• 15% 3. SWEETGUM	FAC/FACW	T	13.		
* 30% 4. OAK	FACU	T	14.		
* 5. OAK	FACU	Sa	15.		
• 6. RED MAPLE	FAC	Sa	16.		
* 7. HIGHBUSH BLUEBERRY	FACW-	Sh	17.		
• 20% 8. HOLLY	FACU+	Sh	18.		
9.			19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 62.5%
Is the hydrophytic vegetation criterion met? Yes X No ___
Rationale: > 50% of dominant vegetation is FAC, FACW, or OBL.

SOILS

Series/phase: unknown Subgroup:[2] ______
Is the soil on the hydric soils list? Yes ___ No ___ Undetermined X
Is the soil a Histosol? Yes ___ No X Histic epipedon present? Yes ___ No X
Is the soil: Mottled? Yes ___ No X Gleyed? Yes ___ No X
Matrix Color: 7.5 YR 5/2 Mottle Colors: N/A
Other hydric soil indicators: ______
Is the hydric soil criterion met? Yes ___ No X
Rationale: ______

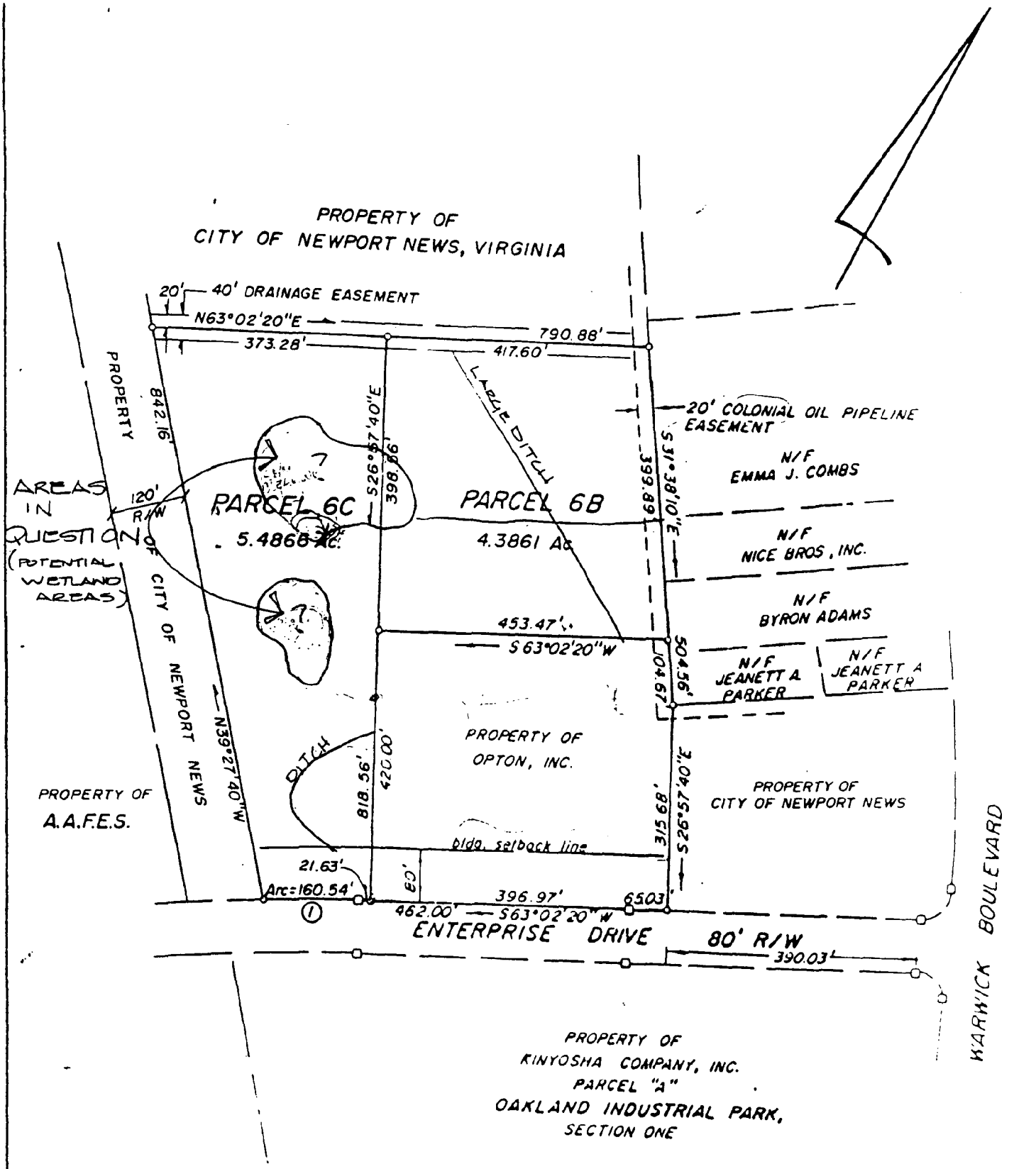
HYDROLOGY

Is the ground surface inundated? Yes ___ No X Surface water depth: N/A
Is the soil saturated? Yes ___ No ___
Depth to free-standing water in pit/soil probe hole: no freestanding water present
List other field evidence of surface inundation or soil saturation.
large depression w/ areas of water stained leaves; slight buttressing
Is the wetland hydrology criterion met? Yes ___ No ___
Rationale: ______

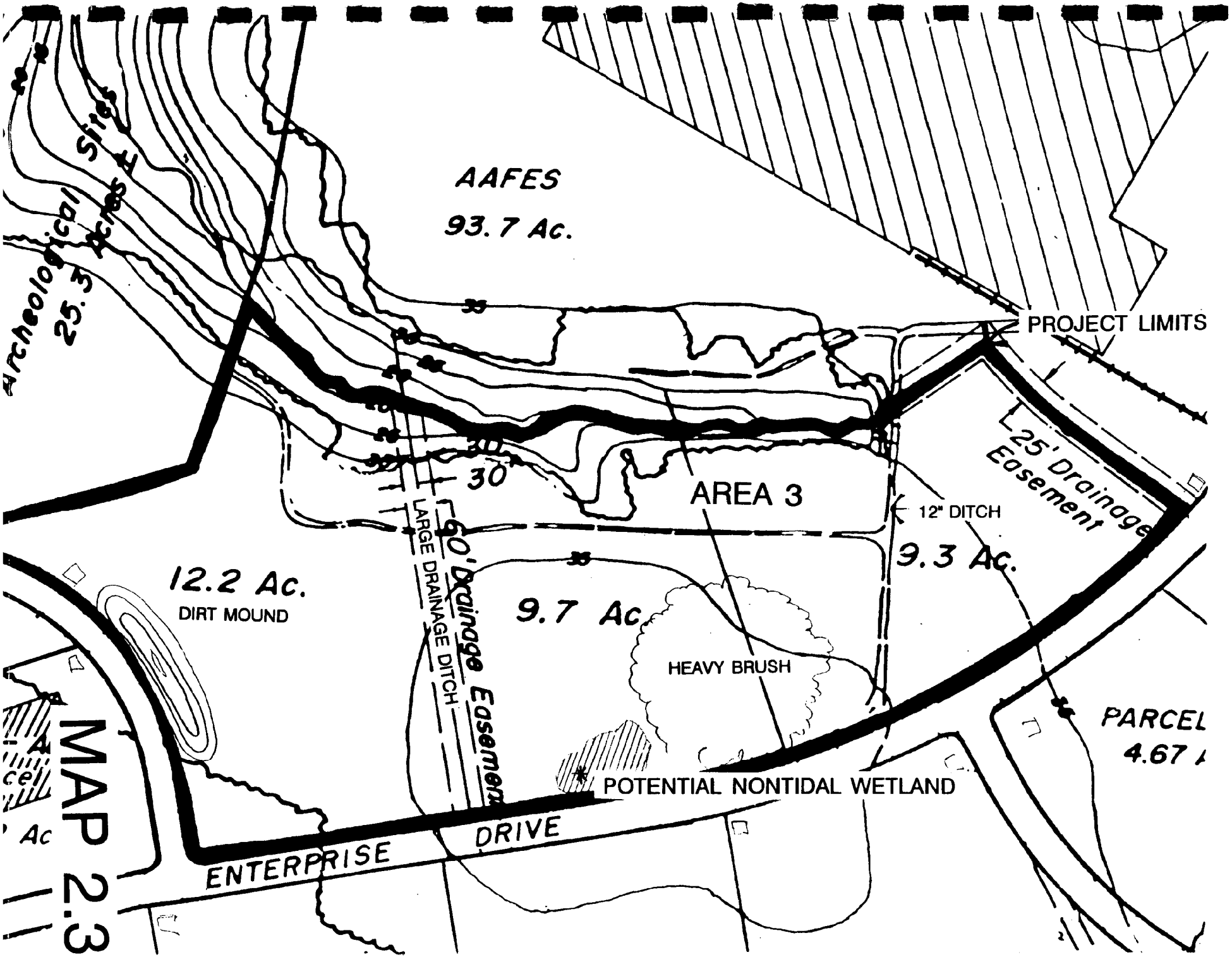
JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes ___ No X
Rationale for jurisdictional decision: Although hydrophytic vegetation is present [illegible] of prolonged inundation to bring about wetland condition is weak

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."



CURVE DATA TABLE						
NO.	DELTA	RADIUS	TANGENT	ARC	CHORD	CHORD BEARING
1	2°35'54"	3,540.00'	80.28'	160.54'	160.52'	S 61° 44'23"W


AAFES
93.7 Ac.
Archeological Site
25.3 Acres
PROJECT LIMITS
25' Drainage Easement
AREA 3
12" DITCH
9.3 Ac.
30
60' Drainage Easement
LARGE DRAINAGE DITCH
12.2 Ac.
DIRT MOUND
9.7 Ac
HEAVY BRUSH
PARCEL
4.67
POTENTIAL NONTIDAL WETLAND
ENTERPRISE DRIVE
MAP 2.3

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): DON WHIPPLE/S. SUMMERFIELD Date: _____
Project/Site: OAKLAND IND. PARK AREA 3 State: VA County: N.N.
Applicant/Owner: CITY Plant Community #/Name: _____
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes X No ____ (If yes, explain on back)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum		Dominant Plant Species	Indicator Status	Stratum
*	1. FIELD GRASS	N/A	H	11.			
•	2. SCOTCHBROOM	N/A	Sh	12.			
	3. WAXMYRTLE	FAC	Sh	13.			
*	4. HONEYSUCKLE	FAC-	WV	14.			
•	5. EASTERN RED CEDAR	FACU	Sh	15.			
•	6. BLACK LOCUST	FACU-	Sh	16.			
*	7. BLACK LOCUST	FACU-	Sa	17.			
	8.			18.			
	9.			19.			
	10.			20.			

Percent of dominant species that are OBL, FACW, and/or FAC 25%
Is the hydrophytic vegetation criterion met? Yes ____ No X
Rationale: 25% is less than 50%

SOILS

Series/phase: N/A Subgroup:[2] _____
Is the soil on the hydric soils list? Yes ____ No ____ Undetermined ____
Is the soil a Histosol? Yes ____ No ____ Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ____ No ____ Gleyed? Yes ____ No ____
Matrix Color: N/A Mottle Colors: _____
Other hydric soil indicators: _____
Is the hydric soil criterion met? Yes ____ No N/A
Rationale: soil has been significantly disturbed - high clay content

HYDROLOGY

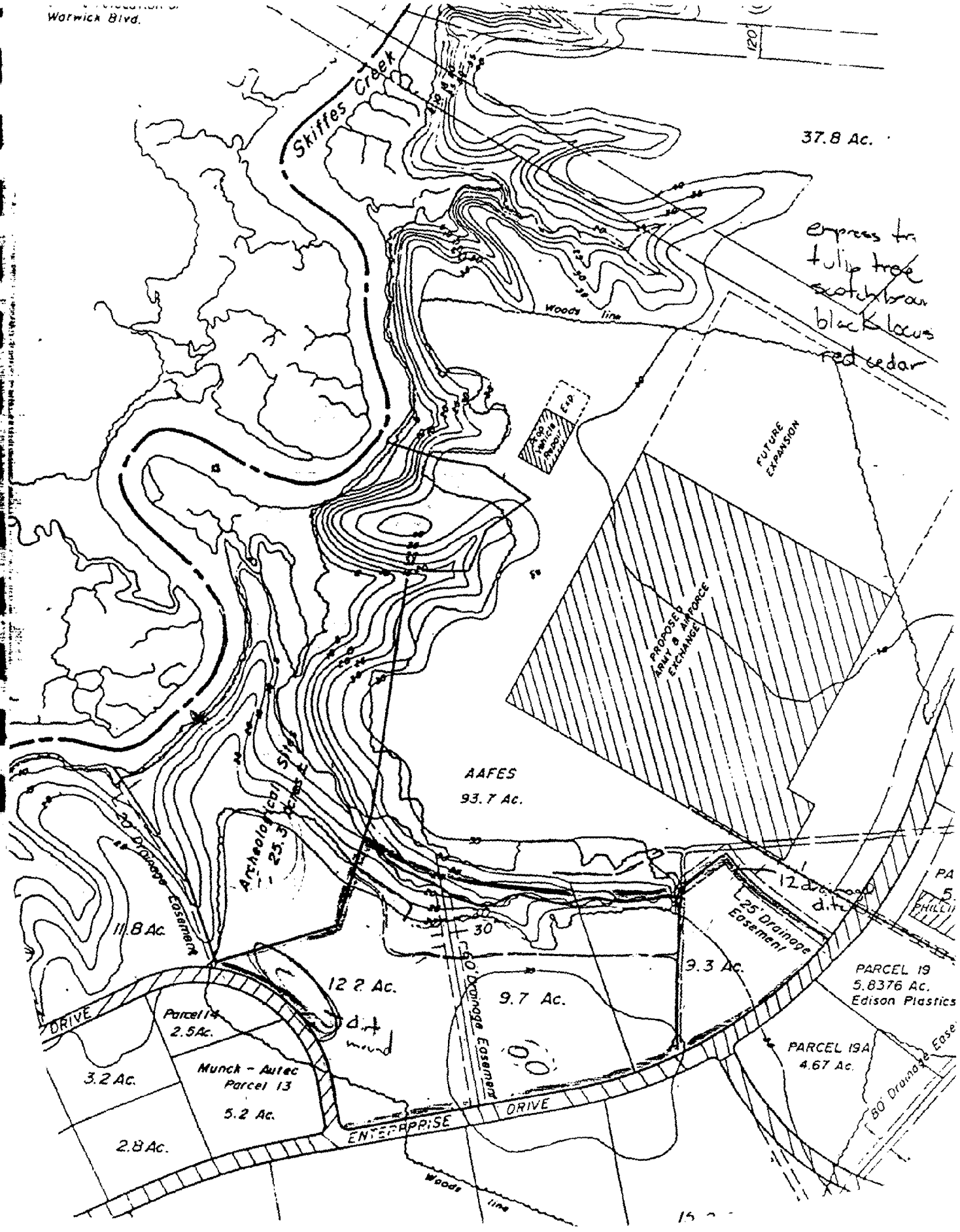
Is the ground surface inundated? Yes X No ____ Surface water depth: 1-2"
Is the soil saturated? Yes X No ____
Depth to free-standing water in pit/soil probe hole: N/A
List other field evidence of surface inundation or soil saturation.
water standing in wheel ruts
Is the wetland hydrology criterion met? Yes ____ No ____
Rationale: _____

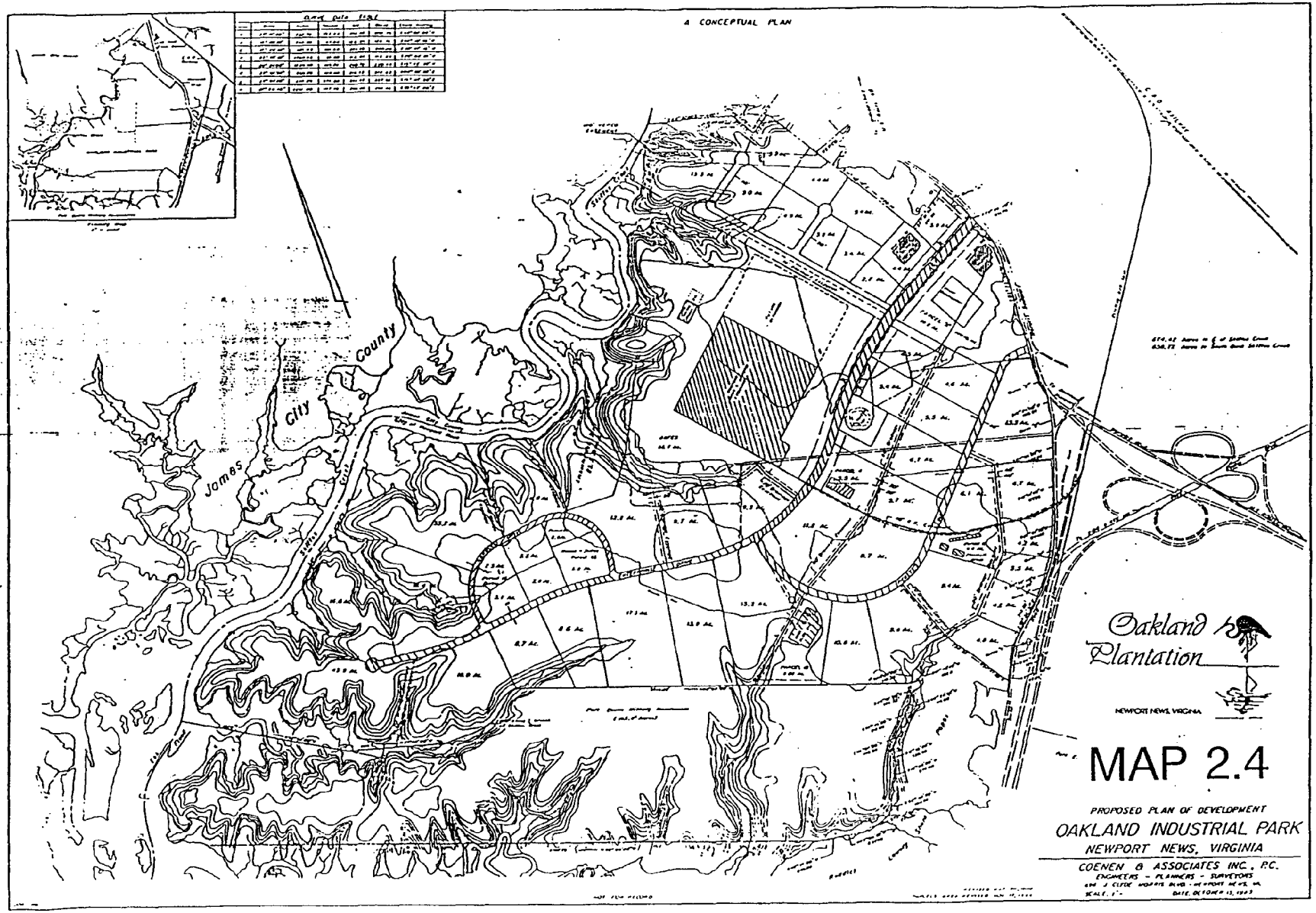
JURISDICTIONAL DETERMINATION AND RATIONALE

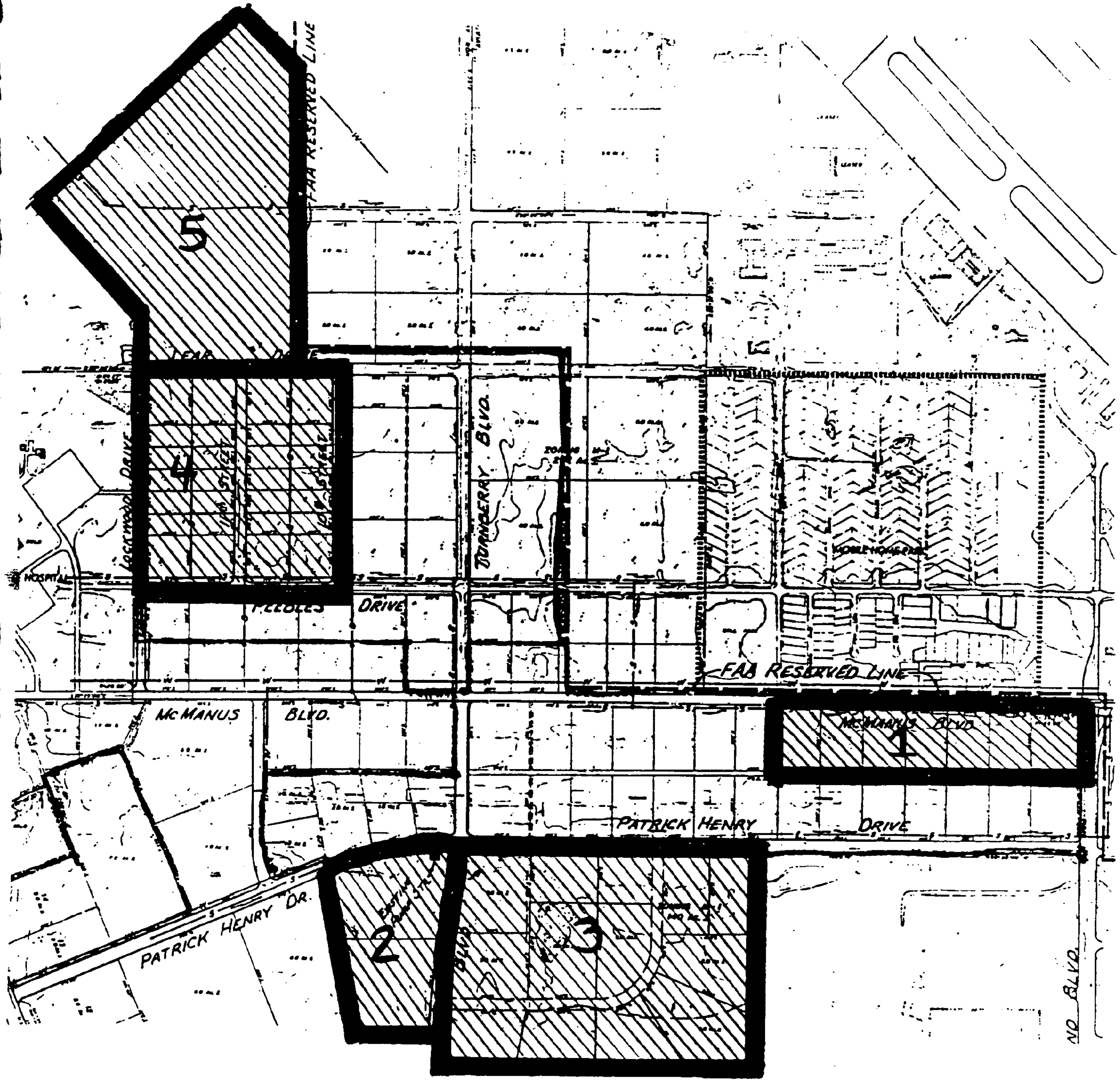
Is the plant community a wetland? Yes ____ No X
Rationale for jurisdictional decision: surface inundation is localized to a small area of tractor wheel ruts - water is not able to drain.

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

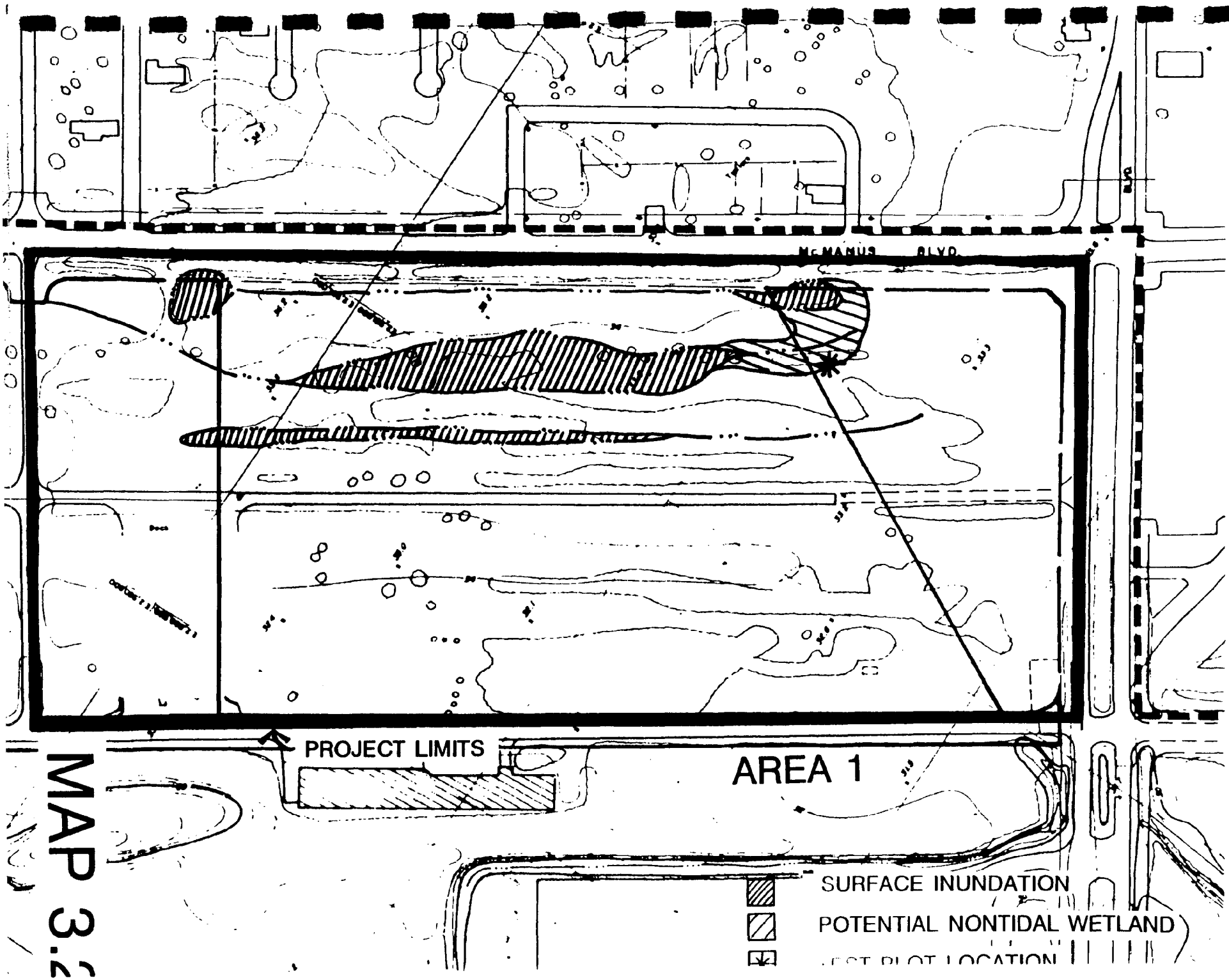
* SITE HAS BEEN CLEAR CUT + DISTURBED


Warwick Blvd.
120'
Skiffes Creek
37.8 Ac.
express tr.
tulip tree
scarlet oak
black locus
red cedar
Woods line
EXP
FUTURE EXPANSION
PROPOSED ARMY & AIR FORCE EXCHANGE
AAFES
93.7 Ac.
Archaeological Site
20' Drainage Easement
11.8 Ac.
12.2 Ac.
d.t
mound
30
60' Drainage Easement
9.7 Ac.
9.3 Ac.
25' Drainage Easement
12' d.t
PARCEL 19
5.8376 Ac.
Edison Plastics
PARCEL 19A
4.67 Ac.
80' Drainage Ease
ENTERPRISE DRIVE
Parcel 14
2.5Ac.
3.2 Ac.
Munck - Autec
Parcel 13
5.2 Ac.
2.8Ac.
Woods line

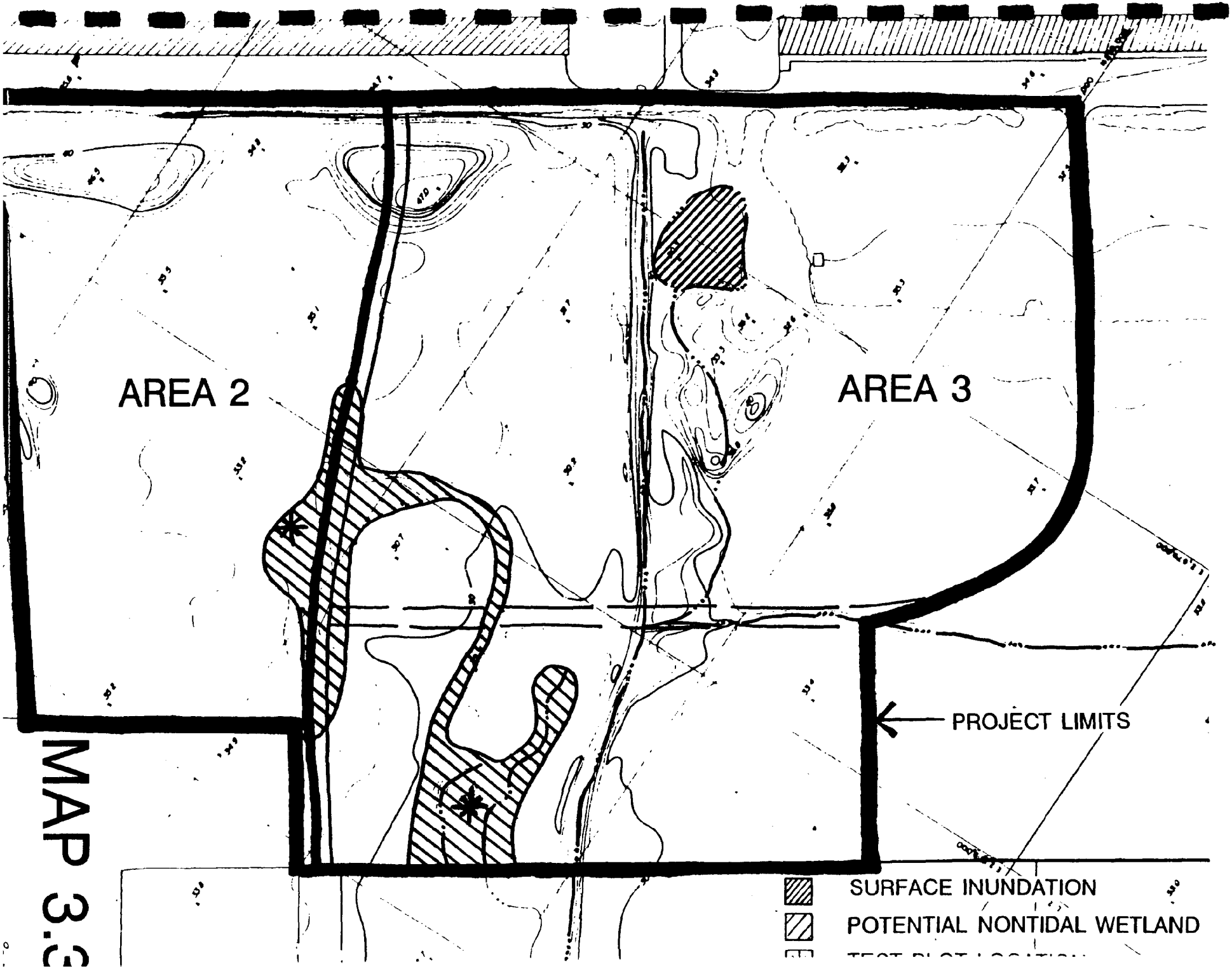

A CONCEPTUAL PLAN
James City County
Oakland Plantation
NEWPORT NEWS, VIRGINIA
MAP 2.4
PROPOSED PLAN OF DEVELOPMENT
OAKLAND INDUSTRIAL PARK
NEWPORT NEWS, VIRGINIA
COENEN & ASSOCIATES INC., P.C.
ENGINEERS - PLANNERS - SURVEYORS


5
4
3
2
1
FAA RESERVED LINE
LEAR DRIVE
LOCKWOOD DRIVE
TURNBERRY BLVD.
PEEBLES DRIVE
HOSPITAL
MOBILE HOME PARK
FAA RESERVED LINE
McMANUS BLVD.
McMANUS BLVD.
PATRICK HENRY DRIVE
PATRICK HENRY DR.

MAP 3.1

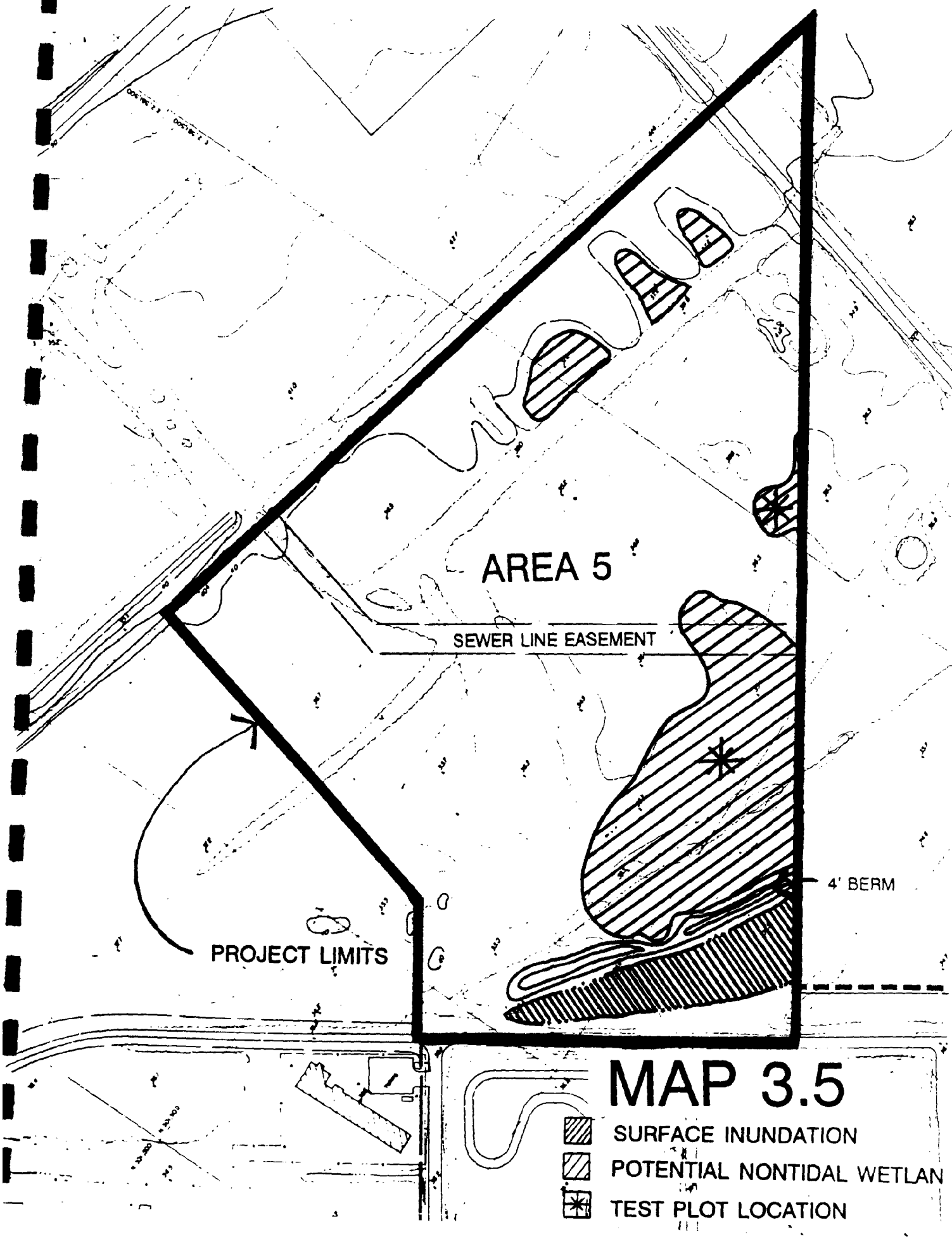

McMANUS BLVD.
PROJECT LIMITS
AREA 1
SURFACE INUNDATION
POTENTIAL NONTIDAL WETLAND

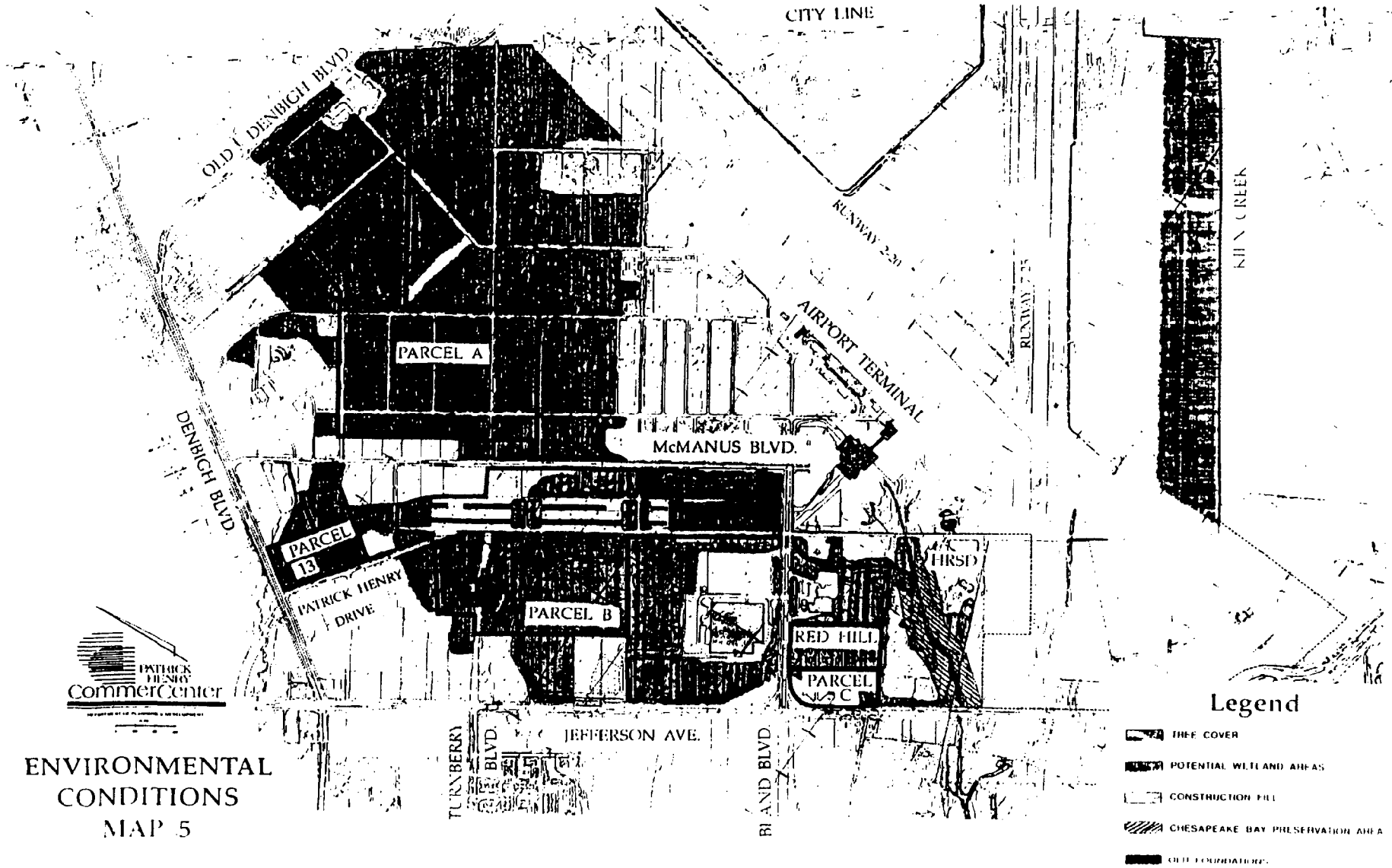
MAP 3.2


AREA 2
AREA 3
PROJECT LIMITS
SURFACE INUNDATION
POTENTIAL NONTIDAL WETLAND

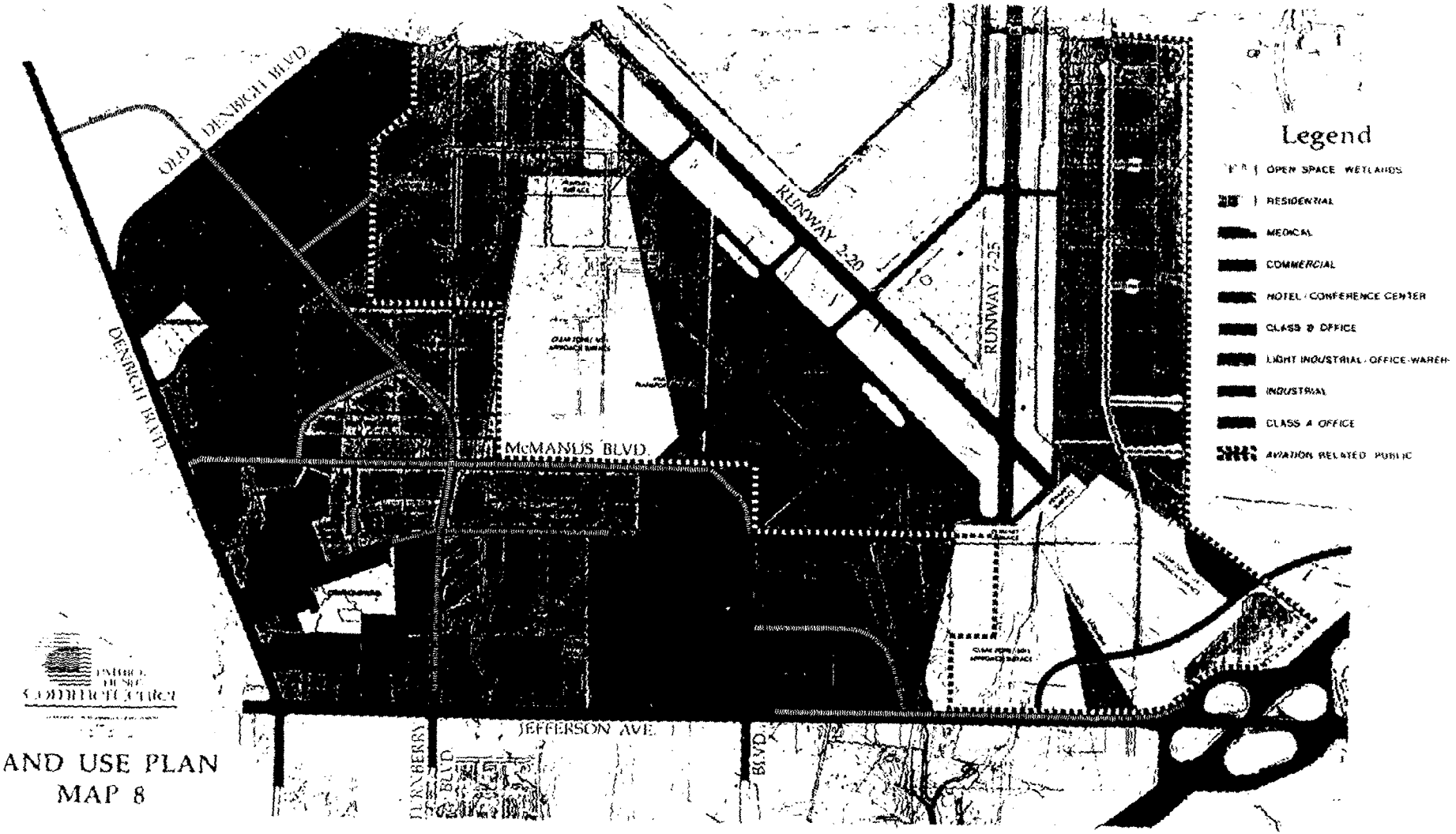
MAP 3.3

MAP 3.4


AREA 5
SEWER LINE EASEMENT
4' BERM
PROJECT LIMITS
MAP 3.5
SURFACE INUNDATION
POTENTIAL NONTIDAL WETLAN
TEST PLOT LOCATION



ENVIRONMENTAL CONDITIONS MAP 5



AND USE PLAN
MAP 8

DATA FORM

ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): DAW/AAM Date: 4/10/90

Project/Site: PHC AREA 1 State: VA County: _____

Applicant/Owner: NN Plant Community #/Name: _____

Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?

Yes ✓ No ____ (If no, explain on back)

Has the vegetation, soils, and/or hydrology been significantly disturbed?

Yes ____ No ✓ (If yes, explain on back) Not within the last 20yrs.

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum		Dominant Plant Species	Indicator Status	Stratum
c	1. LOBLOLLY PINE	FAC-	T	11.			
c	2. TULIP TREE	FACU	T	12.			
c	3. LOBLOLLY PINE	FAC-	Sa	13.			
c	4. TULIP TREE	FACU	Sa	14.			
c	5. RED CEDAR	FACU	Sa	15.			
d	6. HORNBEAM	FAC	Sh	16.			
c	7. CHERRY	FACU	Sh	17.			
c	8. OAK	FACU	Sh	18.			
d	9. HONEYSUCKLE	FAC-	H	19.			
	10.			20.			

Percent of dominant species that are OBL, FACW, and/or FAC ✓ 44%

Is the hydrophytic vegetation criterion met? Yes ____ No ✓

Rationale: % of dominant species is ≤ 50%

SOILS

Series/phase: N/A Subgroup:[2] N/A

Is the soil on the hydric soils list? Yes ____ No ____ Undetermined ✓

Is the soil a Histosol? Yes ____ No ____ Histic epipedon present? Yes ____ No ____

Is the soil: Mottled? Yes ✓ No ____ Gleyed? Yes ____ No ✓

Matrix Color: 2.5Y 5/2 Mottle Colors: yellow/brown

Other hydric soil indicators: charcoal fragments

Is the hydric soil criterion met? Yes ✓ No ____

Rationale: _____

HYDROLOGY

Is the ground surface inundated? Yes ✓ No ____ Surface water depth: PARTIALLY - 1"-4"

Is the soil saturated? Yes ✓ No ____

Depth to free-standing water in pit/soil probe hole: N/A

List other field evidence of surface inundation or soil saturation: water stained leaves, buttressed trunks, mult-trunks

Is the wetland hydrology criterion met? Yes ✓ No ____

Rationale: _____

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes ____ No ____

Rationale for jurisdictional decision: _____

---

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): DAW/AAM Date: 4/10/90
Project/Site: PHCC-AREA 2 State: VA County: ______
Applicant/Owner: N.N. Plant Community #/Name: ______
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes ✓ No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No ✓ (If yes, explain on back) Not within the last 20yrs.

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum		Dominant Plant Species	Indicator Status	Stratum
d 1.	OAK	FACU	T	11.			
d 2.	OAK	FACU	Sa	12.			
c 3.	RED MAPLE	FAC	Sa	13.			
c 4.	SWEETGUM	FAC	Sh	14.			
c 5.	OAK	FACU	Sh	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC 40%
Is the hydrophytic vegetation criterion met? Yes ____ No ✓
Rationale: % of dominant species is < 50%

SOILS

Series/phase: N/A Subgroup:[2] —
Is the soil on the hydric soils list? Yes ____ No ____ Undetermined ✓
Is the soil a Histosol? Yes ____ No ____ Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ✓ No ____ Gleyed? Yes ____ No ✓
Matrix Color: 2.5Y6/2 Mottle Colors: iron, orange
Other hydric soil indicators: iron concretions
Is the hydric soil criterion met? Yes ✓ No ____
Rationale: ______

HYDROLOGY

Is the ground surface inundated? Yes ____ No ✓ Surface water depth: —
Is the soil saturated? Yes ✓ No ____ below surface
Depth to free-standing water in pit/soil probe hole: 12" to capillary action - slow
List other field evidence of surface inundation or soil saturation.
iron concretions - sign of soil reducing.
Is the wetland hydrology criterion met? Yes ✓ No ____
Rationale: ______

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes ____ No ____
Rationale for jurisdictional decision: ______

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): DAW/AAM Date: 4/12/90
Project/Site: PITC - AREA 3 State: VA County: _____
Applicant/Owner: N. N. Plant Community #/Name: _____
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes ✓ No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No ✓ (If yes, explain on back) Not within last 20yrs.

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum		Dominant Plant Species	Indicator Status	Stratum
d	1. OAK	FACU	T	11.			
c	2. OAK	FACU	Sa	12.			
c	3. DOGWOOD	FACU-	Sa	13.			
c	4. RED MAPLE	FAC	Sh	14.			
c	5. OAK	FACU	Sh	15.			
c	6. HORNBEAM	FAC	Sh	16.			
	7.			17.			
	8.			18.			
	9.			19.			
	10.			20.			

Percent of dominant species that are OBL, FACW, and/or FAC 33%
Is the hydrophytic vegetation criterion met? Yes ____ No ✓
Rationale: % of dominant species < 50%

SOILS

Series/phase: N/A Subgroup:[2] —
Is the soil on the hydric soils list? Yes ____ No ____ Undetermined ✓
Is the soil a Histosol? Yes ____ No ____ Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ✓ No ____ Gleyed? Yes ____ No ✓
Matrix Color: 5YR 6/2 Mottle Color(s): brown
Other hydric soil indicators: sulfidic material (emit odor of rotten eggs)
Is the hydric soil criterion met? Yes ✓ No ____
Rationale: _____

HYDROLOGY

Is the ground surface inundated? Yes ____ No ✓ Surface water depth: —
Is the soil saturated? Yes ✓ No ____
Depth to free-standing water in pit/soil probe hole: 10-12" to capillary action
List other field evidence of surface inundation or soil saturation.
tree buttressing & multi-trunks
Is the wetland hydrology criterion met? Yes ✓ No ____
Rationale: _____

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes ____ No ____
Rationale for jurisdictional decision: _____

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): DAVID/ANN Date: 4/24/90
Project/Site: D-[illegible] AREA 4 State: VA County: _____
Applicant/Owner: N.N. Plant Community #/Name: _____
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes ✓ No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No ✓ (If yes, explain on back) Not within the last 20yrs

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
c 1. RED MAPLE	FAC	T	11.		
c 2. OAK	FACU	T	12.		
c 3. HORNBEAM	FAC	T	13.		
d 4. SWEETGUM	FAC	Sa	14.		
c 5. HORNBEAM	FAC	Sa	15.		
d 6. SMILAX	FACW	H	16.		
7.			17.		
8.			18.		
9.			19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 83%
Is the hydrophytic vegetation criterion met? Yes ✓ No ____
Rationale: 83% > 50%

SOILS

Series/phase: N/A Subgroup:[2] ?
Is the soil on the hydric soils list? Yes ____ No ____ Undetermined ✓
Is the soil a Histosol? Yes ____ No ____ Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ____ No ____ Gleyed? Yes ____ No ____
Matrix Color: N/A Mottle Colors: _____
Other hydric soil indicators: _____
Is the hydric soil criterion met? Yes ____ No ✓ (undetermined)
Rationale: _____

HYDROLOGY

Is the ground surface inundated? Yes ____ No ✓ Surface water depth: _____
Is the soil saturated? Yes ____ No ✓
Depth to free-standing water in pit/soil probe hole: N/A
List other field evidence of surface inundation or soil saturation:
series of minor drainage ditches [illegible]
Is the wetland hydrology criterion met? Yes ____ No ✓
Rationale: _____

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes ____ No ____
Rationale for jurisdictional decision: _____

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): DAW/AAM Date: 4/24/92
Project/Site: BACC AREA 5 #1 State: VA County: _____
Applicant/Owner: _____ Plant Community #/Name: _____
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes ✓ No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No ✓ (If yes, explain on back) Not within the last 20yrs.

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
d 1. LOBLOLLY PINE	FAC-	T	11.		
c 2. RED MAPLE	FAC	Sa	12.		
c 3. OAK	FACU	Sa	13.		
c 4. LOBLOLLY PINE	FAC-	Sa	14.		
5.			15.		
6.			16.		
7.			17.		
8.			18.		
9.			19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 75%
Is the hydrophytic vegetation criterion met? Yes ✓ No ____
Rationale: 75% > 50%

SOILS

Series/phase: N/A Subgroup:[2] —
Is the soil on the hydric soils list? Yes ____ No ____ Undetermined ✓
Is the soil a Histosol? Yes ____ No ____ Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ____ No ____ Gleyed? Yes ____ No ____
Matrix Color: — Mottle Colors: _____
Other hydric soil indicators: NONE
Is the hydric soil criterion met? Yes ____ No ✓
Rationale: _____

HYDROLOGY

Is the ground surface inundated? Yes ____ No ✓ Surface water depth: _____
Is the soil saturated? Yes ____ No ✓
Depth to free-standing water in pit/soil probe hole: N/A
List other field evidence of surface inundation or soil saturation.
NONE
Is the wetland hydrology criterion met? Yes ____ No ✓
Rationale: _____

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes ____ No ____
Rationale for jurisdictional decision: _____

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): DAW/AAM Date: 4/24/90
Project/Site: PHCC - AREA 5 #2 State: VA County: _____
Applicant/Owner: N.N. Plant Community #/Name: _____
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes ✓ No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No ✓ (If yes, explain on back) Not within the last 20yrs.

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum		Dominant Plant Species	Indicator Status	Stratum
d	1. LOBLOLLY PINE	FAC-	I	11.			
c	2. RED MAPLE	FAC	Sa	12.			
c	3. OAK	FACU	Sa	13.			
c	4. LOBLOLLY PINE	FAC-	Sa	14.			
d	5. SWEETGUM	FAC	Sb	15.			
c	6. DOGWOOD	FACU-	Sb	16.			
	7.			17.			
	8.			18.			
	9.			19.			
	10.			20.			

Percent of dominant species that are OBL, FACW, and/or FAC 67%
Is the hydrophytic vegetation criterion met? Yes ✓ No ____
Rationale: 67% > 50%

SOILS

Series/phase: N/A Subgroup:[2] —
Is the soil on the hydric soils list? Yes ____ No ____ Undetermined ✓
Is the soil a Histosol? Yes ____ No ____ Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ____ No ✓ Gleyed? Yes ____ No ✓
Matrix Color: 5Y 5/1 Mottle Colors: —
Other hydric soil indicators: _____
Is the hydric soil criterion met? Yes ✓ No ____
Rationale: _____

HYDROLOGY

Is the ground surface inundated? Yes ____ No ✓ Surface water depth: _____
Is the soil saturated? Yes ✓ No ____
Depth to free-standing water in pit/soil probe hole: 9" - free standing water
List other field evidence of surface inundation or soil saturation.
tree trunk buttressing ✓
Is the wetland hydrology criterion met? Yes ✓ No ____
Rationale: _____

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes ✓ No ____
Rationale for jurisdictional decision: _____

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): DAS/AAM Date: 4/24/90
Project/Site: PHCC - AREA 5 #3 State: VA County: _____
Applicant/Owner: N.N. Plant Community #/Name: _____
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes ✓ No _____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes _____ No ✓ (If yes, explain on back)

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
1. WILLOW OAK	FAC+	T	11.		
2. RED MAPLE	FAC	Sa	12.		
3. BOXELDER	FAC+	Sa	13.		
4. LOBLOLLY PINE	FAC-	Sa	14.		
5. SWEETGUM	FAC	Sh	15.		
6. BLACKGUM	FAC	Sh	16.		
7. BOXELDER	FAC+	Sh	17.		
8. HONEYSUCKLE	FAC-	H	18.		
9.			19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 100%
Is the hydrophytic vegetation criterion met? Yes ✓ No _____
Rationale: 100% > 50%

SOILS

Series/phase: N/A Subgroup:[2] ?
Is the soil on the hydric soils list? Yes _____ No _____ Undetermined ✓
Is the soil a Histosol? Yes _____ No _____ Histic epipedon present? Yes _____ No _____
Is the soil: Mottled? Yes _____ No _____ Gleyed? Yes _____ No _____
Matrix Color: N/A Mottle Colors: _____
Other hydric soil indicators: _____
Is the hydric soil criterion met? Yes _____ No _____ UNDETERMINED
Rationale: _____

HYDROLOGY

Is the ground surface inundated? Yes ✓ No _____ Surface water depth: ½-1" MARSH AREA 3-5"
Is the soil saturated? Yes ✓ No _____
Depth to free-standing water in pit/soil probe hole: N/A
List other field evidence of surface inundation or soil saturation: water stained leaves, extreme buttressing @ 90% of trees, drift lines
Is the wetland hydrology criterion met? Yes ✓ No _____
Rationale: _____

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes ✓ No _____
Rationale for jurisdictional decision: _____

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."