



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

December 14, 1999

Mr. Darrell McBroom  
Linda Brown Realty  
1666 Oak Ridge Turnpike  
Oak Ridge, Tennessee 37830

Dear Mr. McBroom:

I understand from talking with Mr. Craig Brandt of Boeing Realty Corporation that you are representing a client who has a contract to purchase property in Oak Ridge, Tennessee, from Boeing Tennessee Incorporated (BTI). The purpose of this correspondence is to inform you that the land in question contains ecologically, historically and archaeological sensitive areas, as well as populations of plant species of state concern. We have enjoyed a very cooperative and positive relationship with Boeing regarding the protection of these resources and hope to continue that relationship with your client should they indeed purchase the property.

Of particular concern and interest to us is an area within the Boeing property known as Crowder Cemetery Barrens and Campbell Bend Barrens. On February 3, 1987, BTI and the State of Tennessee entered into a formal cooperative agreement recognizing Crowder Cemetery Barrens, Campbell Bend Barrens, and several other unnamed areas within the Boeing property, as a Registered State Natural Area. I have enclosed a copy of this document for your review. We would very much like to meet with you and your client to discuss this agreement, and ways to ensure that these areas are not disturbed by future development. I am also enclosing a 1984 report entitled "The Crowder Cemetery Barrens" for your review.

We are also enclosing information relative to occurrences of plant and animal species of state and federal concern for Roane County that may occur on the property in question where suitable habitat exists. This information could be very helpful in planning future development of this property in environmentally sensitive ways, as well as in addressing regulatory issues with the federal and state agencies relative to such resources. Additionally, it is our understanding there may be archaeological and/or historical resources on the property that may require coordination with state and/or federal agencies.

I hope that this information is helpful to you, and look forward to hearing from you soon.

Sincerely,

A handwritten signature in black ink, appearing to read "Reginald G. Reeves".

Reginald G. Reeves  
Director

c: Craig Brandt  
Brian Bowen

enclosures

## THE CROWDER CEMETERY CEDAR BARRENS

Located at the extreme western edge of the Oak Ridge Reservation, Roane County, Tennessee, the Crowder Cemetery Cedar Barrens are floristically rich examples of an edaphic climax found in the Ridge and Valley Physiographic Province. The cedar barren plant community occurs on extremely thin, cherty silt loam over dolomitic limestone. Each barren consists of an open area dominated by grasses, legumes, and composites (see attached floristic list); active invasion by redcedar (Juniperus virginiana) is evident. Adjacent to the cemetery is a particularly good example of the cedar barren plant community. Several unusual plants occur here, but it is the plant community itself, not merely the presence of a few rare plants, that is particularly noteworthy on its own accord. As of this writing, no cedar barren plant communities have been designated as State Natural Areas. Furthermore, this plant community appears to be limited to the Ridge and Valley in Tennessee. It is not in any way equivalent to the oak barrens on the Highland Rim, and certainly not to the cedar glades found in the Central Basin. Dwarf chinquapin oak (Quercus prinoides) and one of the scurf-peas (Psoralea onobrychis) are uncommon Tennessee plants, yet are not on our rare plants list. These two taxa are frequent on these barrens.

As can be seen on the sketch map, there are at least three barrens represented in the proposed tract - a small one near the road on the southern edge of the tract, an isolated smaller one, and the more extensive barren along a small side road near a pine plantation.

## Persons familiar with this site:

Tom Patrick &  
Dr. Hal DeSelm  
Department of Botany  
University of Tennessee  
Knoxville, TN 37996-1100

Linda K. Mann &  
Pat Parr  
Bldg 1505  
P. O. Box X  
Oak Ridge National Lab  
Oak Ridge, TN 37830

Prepared by,

*Thomas S. Patrick*

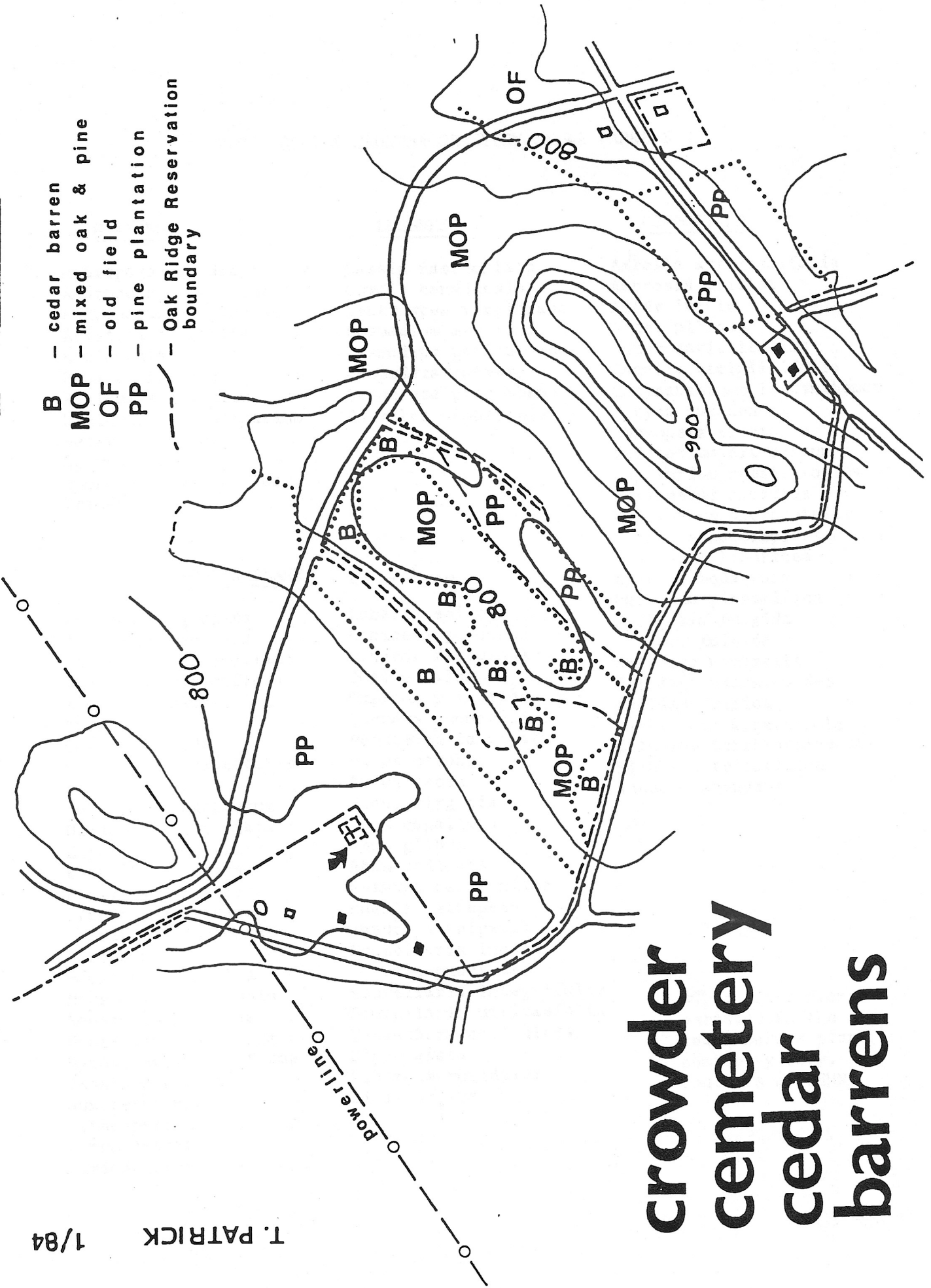
Thomas S. Patrick  
January, 1984

Further botanical note: Dr. DeSelm has informed me that an additional species of Houstonia occurs along the road portion of the major barren in the arm to the northeast near the B between the two MOP's. This is Houstonia nigricans, a species heretofore thought more typical of Middle Tennessee cedar glades. This report is in need of voucher verification.

T.S.P. 10 Feb 1984

N  
▲  
465 FEET

- B - cedar barren
- MOP - mixed oak & pine
- OF - old field
- PP - pine plantation
- - - Oak Ridge Reservation boundary



1/84

T. PATRICK

# crowder cemetery cedar barrens

TENNESSEE DEPARTMENT OF CONSERVATION REGISTRATION AGREEMENT  
TO PROTECT A NATURAL AREA

This Agreement is entered into as of February 3, 1987,  
between the Tennessee Department of Conservation (the "Department")  
and Boeing Tennessee Incorporated, a Delaware corporation ("BTI").

RECITALS

- A. BTI has acquired certain real property (the "Property") located in Roane County, Tennessee. A legal description of the Property is attached to this Agreement as Attachment 1.
- B. Portions of the Property contain plant species or natural features which the Department wishes to conserve and protect as part of the scenic, natural, and aesthetic values of the Property as permitted by the Natural Areas Preservation Act of 1971 (TCA 11-14-101 et. seq.). The areas containing species and natural features which the Department wishes to protect are indicated on the map of the Property attached as Attachment 2 as areas marked either "1", "2", or "3". Such areas are referred to in this Agreement as the Level 1, Level 2, or Level 3 Natural Areas, respectively. The species and natural features which the Department wishes to conserve and protect are listed in Attachment 3.

AGREEMENTS

1. The Department has furnished to BTI a management plan relating to the Natural Areas. The management plan is attached as Attachment 4. During the term of this Agreement, the Department will furnish technical and administrative assistance to BTI in connection with the management of the Natural Areas at BTI's request.
2. BTI agrees, during the term of this Agreement, to manage the Natural Areas in accordance with the management plan.
3. The Department may designate up to ten (10) individuals who shall have the right, on behalf of the Department, to visit the Property during the term of this Agreement for the purpose of conducting research and for the purpose of assisting BTI, as BTI may request, in implementing the management plan. Such designation shall be by written notice to BTI. The list of individuals so designated may be changed by the Department as the Department desires. Such individuals may enter the Property with the prior written consent of BTI. The occasion

of each entry will be limited to those times and places as are consistent with the efficient conduct of BTI's business and with BTI's safety and security rules and regulations. It is the understanding of both parties that any individual visiting the property on behalf of the Department pursuant to this Agreement shall have executed an instrument in form satisfactory to BTI releasing BTI and its parent corporation from all liability for injury to or death of any such individual and for loss of or damage to any property. The release will in no way limit the legal rights of the State.

4. The State shall have the right to request access for the purposes of monitoring and management of the sensitive features listed in Attachment 3. Such requests shall not be unreasonably denied.
5. This Agreement may be terminated by either party by giving thirty (30) days advance written notice to the other party or by the sale of the Property by BTI. Upon any such termination all obligations of both parties to this Agreement shall terminate. Until and unless this Agreement is terminated, this Agreement shall remain in effect between the parties, subject to such modifications and amendments as may be mutually agreed in writing.

6. All notices required under this agreement shall be in writing and addressed as follows:

If to the Department:           Tennessee Department of Conservation  
  Division of Ecological Services  
  701 Broadway, Customs House  
  Nashville, TN 37219-5237

  Attention: Mr. Earl Cunningham  
  Natural Areas Administrator

If to BTI:                               Boeing Tennessee Incorporated  
  767 Boeing Road  
  P.O. Box 851  
  Oak Ridge, TN 37830

  Attention: ~~T.J.~~ Sanders

7. BTI will notify the Department of any proposed or anticipated changes in ownership, use, or management of the Property.
8. This agreement does not involve any change of title or any transfer of ownership rights. Nothing in this Agreement shall be deemed to give the Department any rights in the Property.

EXECUTED IN DUPLICATE as of the date first appearing above.

TENNESSEE DEPARTMENT OF CONSERVATION

By Edward J. Lile  
Its \_\_\_\_\_

BOEING TENNESSEE INCORPORATED

By A. Van Dine  
Its President

Attachments:

1. Legal Description of Property.
2. Map of Property showing Natural Areas.
3. List of Species and Natural Features.
4. Management Plan.

Attachment 1

LEGAL DESCRIPTION



**LEGEND**

Protected environmental study areas (Priority 1) 28.4 acres.

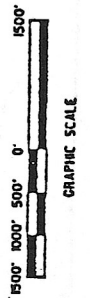
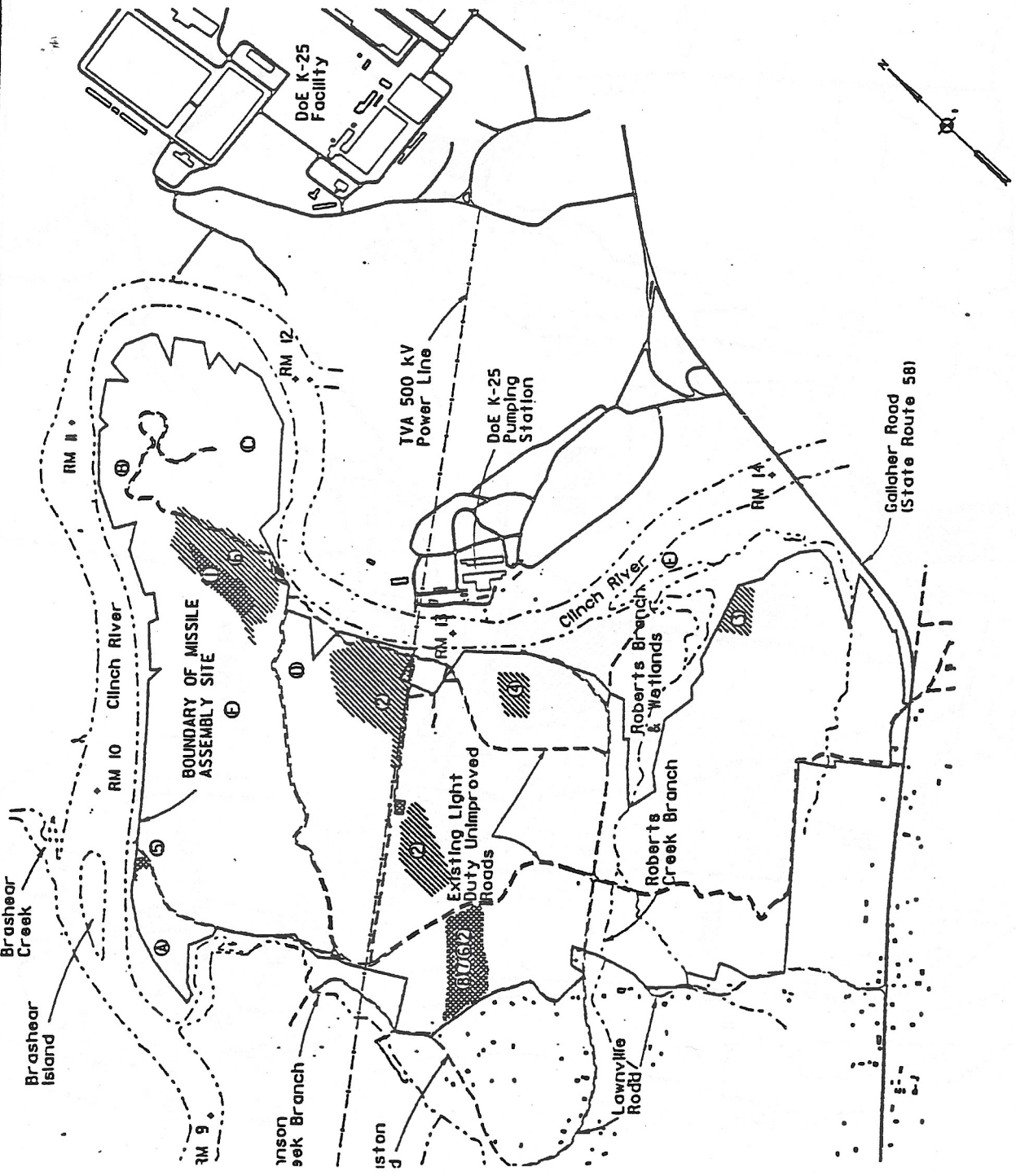
Supplemental environmental study areas (Priority 2) 79 acres.

LOCATIONS OF THREATENED OR ENDANGERED PLANT SPECIES.

- ① Lillium canadense
- ② Delphinium exaltatum
- ③ Panax quinquefolius
- ④ Hydrastis canadensis
- ⑤ Cimicifuga rubrifolia
- ⑥ Agalinis auriculata
- ⑦ Solidago ptarmicoides
- ⑧ Liatris cylindracea
- ⑨ Aureolaria patula




**ARCHAEOLOGICAL/HISTORICAL RESOURCES**

- Ⓐ Archaeological site 40 RE 86
- Ⓑ McKinney plantation site and cemetery
- Ⓒ Cate farm and Roberts cemetery
- Ⓓ Hocker cemetery
- Ⓔ Gallaher ferry site
- Ⓕ Brooks cemetery









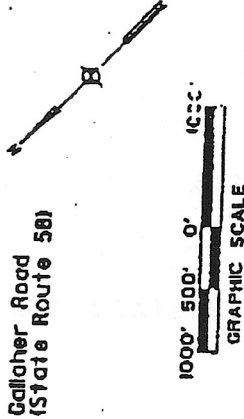
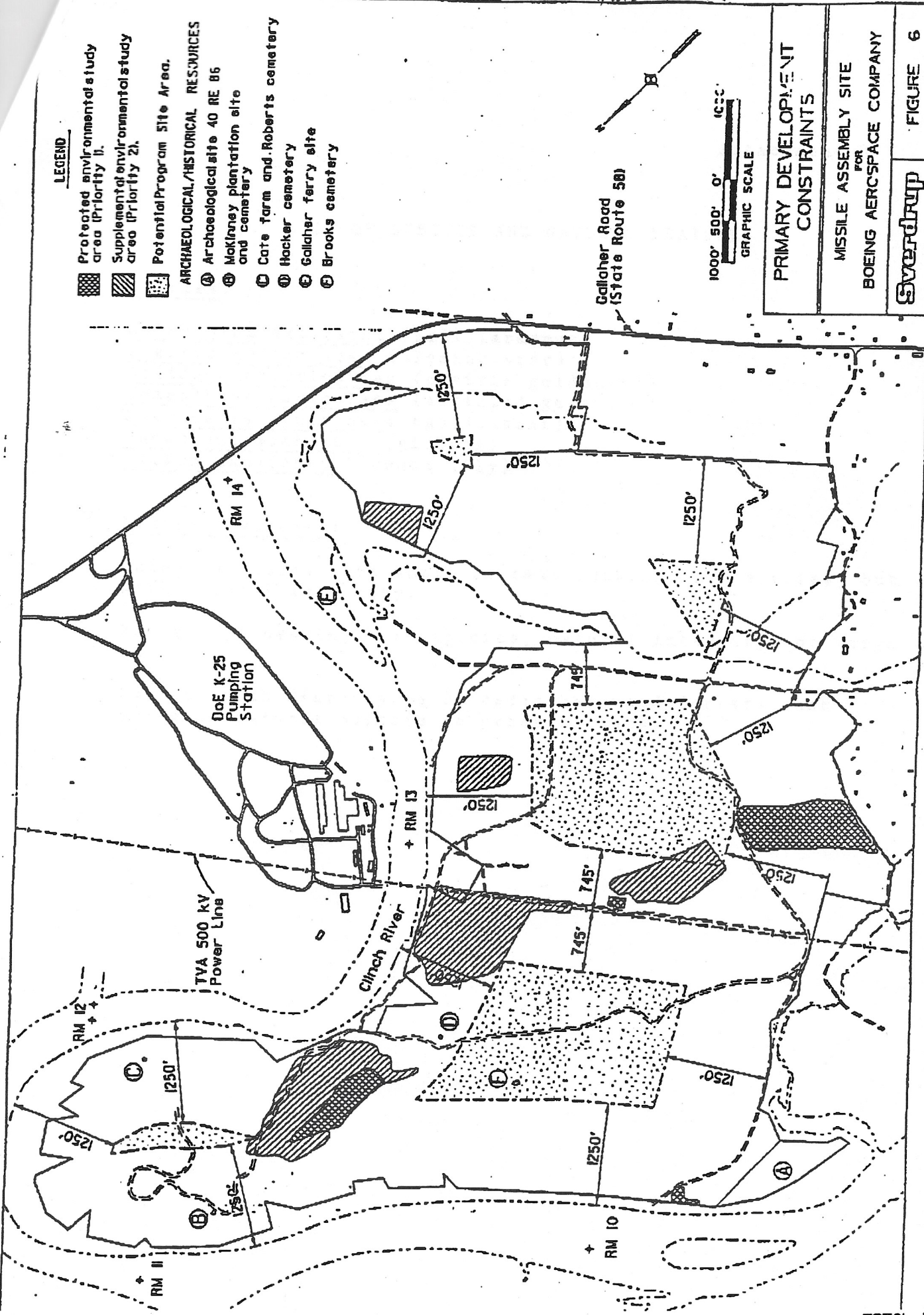
ENVIRONMENTAL AND ARCHAEOLOGICAL/HISTORICAL RESOURCES
MISSILE ASSEMBLY SITE FOR BOEING AEROSPACE COMPANY
Sverdrup
FIGURE 3

**LEGEND**

-  Protected environmental study area (Priority II)
-  Supplemental environmental study area (Priority 2)
-  Potential Program Site Area.

**ARCHAEOLOGICAL/HISTORICAL RESOURCES**

-  Archaeological site 40 RE B6
-  McKinney plantation site and cemetery
-  Cate farm and Roberts cemetery
-  Hacker cemetery
-  Gallaher ferry site
-  Brooks cemetery



<b>PRIMARY DEVELOPMENT CONSTRAINTS</b>
MISSILE ASSEMBLY SITE FOR BOEING AEROSPACE COMPANY
<b>Sverdrup</b>
FIGURE 6

LIST OF SPECIES AND NATURAL FEATURES

Species:

Delphinium exaltatum (tall larkspur)  
Liatris cylindracea (blazing star)  
Solidago ptarmicoides (prairie goldenrod)  
Tomanthera auriculata (auricled gerardia)  
Hydrasatis canadensis (goldenseal)  
Panax quinquefolius (ginseng)  
Lilium canadense (Canada lily)

Natural Features:

Cedar-oak woods with small barrens lacking rare species, but with natural integrity.

Barrens possessing rare species, natural integrity, or large size.

Barrens with disturbance or cedar-hardwood forests that serve as natural buffers to other barrens.

MANAGEMENT PLAN

1. Removal or cutting of trees, shrubs, or other vegetation within the Level 1 Natural Areas should be limited to situations necessary for the management of the cedar barrens community type. The Department will be advised of any such activity which may threaten the existence of the significant natural features of a Level 1 Natural Area before such activity is begun and the Department will have the opportunity to suggest alternatives. Recognized soil conservation practices should always be used. Removal or cutting of trees, shrubs, or other vegetation within the Level 2 and Level 3 Natural Areas should be limited to the extent reasonably necessary to BTI's development of the Property.
2. Trash, garbage, debris, refuse, and other unsightly or offensive material should not be disposed of by BTI on the Property.
3. Billboards and other advertising structures should not be erected on the Property.
4. The Property should not be used in ways which will alter or eliminate the species or natural features listed in Attachment 3 to the Agreement.

LIST OF RARE AND ENDANGERED SPECIES BY TENNESSEE COUNTY  
27 AUG 1999

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS
**** Roane			
** ALL PLANTS			
ASPLENIUM SCOLOPENDRIUM VAR AMERICA	HART'S-TONGUE FERN	LT	E
** INVERTEBRATES - MOLLUSC			
ATHEARNIA ANTHONYI	ANTHONY'S RIVER SNAIL	LE	E
EPIOBLASMA TURGIDULA	TURGID-BLOSSOM	LE	E
FUSCONAIA CUNEOLUS	FINE-RAYED PIGTOE	LE	E
FUSCONAIA EDGARIANA	SHINY PIGTOE	LE	E
IO FLUVIALIS	SPINY RIVERSNAIL		
LAMPSILIS ABRUPTA	PINK MUCKET	LE	E
LAMPSILIS VIRESCENS	ALABAMA LAMP MUSSEL	LE	E
LITHASIA GENICULATA	ORNATE ROCKSNAIL		
PLETHOBASUS COOPERIANUS	ORANGE-FOOT PIMPLEBACK	LE	E
PLEUROBEMA RUBRUM	PYRAMID PIGTOE		
QUADRULA CYLINDRICA STRIGILLATA	ROUGH RABBITSFOOT PEARLY MUSSE	LE	
VILLOSA PERPURPUREA	PURPLE BEAN	LE	E
** Other types			
HERON ROOKERY	HERON ROOKERY		
** ALL PLANTS			
AGALINIS AURICULATA	EARLEAVED FALSE-FOXGLOVE		E
ASTER PRATENSIS	BARRENS SILKY ASTER		T
AUREOLARIA PATULA	SPREADING FALSE-FOXGLOVE		T
CIMICIFUGA RUBIFOLIA	APPALACHIAN BUGBANE		T
DELPHINIUM EXALTATUM	TALL LARKSPUR		E
DIERVILLA LONICERA	NORTHERN BUSH-HONEYSUCKLE		T
DIERVILLA SESSILIFOLIA VAR RIVULARI	MOUNTAIN BUSH-HONEYSUCKLE		T
DRABA RAMOSISSIMA	BRANCHING WHITLOW-GRASS		S
GNAPHALIUM HELLERI	HELLER'S CATFOOT		S
HYDRASTIS CANADENSIS	GOLDENSEAL		S-CE
JUGLANS CINEREA	BUTTERNUT		T
LEUCOTHOE RACEMOSA	FETTER-BUSH		T
LIATRIS CYLINDRACEA	SLENDER BLAZING-STAR		E-PT
LONICERA DIOICA	MOUNTAIN HONEYSUCKLE		S
MARSHALLIA GRANDIFLORA	LARGE-FL. BARBARA'S-BUTTONS		E
PANAX QUINQUEFOLIUS	AMERICAN GINSENG		S-CE
PEDICULARIS LANCEOLATA	SWAMP LOUSEWORT		T
SAXIFRAGA CAREYANA	CAREY'S SAXIFRAGE		S
SOLIDAGO PTARMICOIDES	PRAIRIE GOLDENROD		E
SPIRAEA VIRGINIANA	VIRGINIA SPIRAEA	LT	E
CAREX GRAVIDA	HEAVY SEDGE		S
CAREX OXYLEPIS VAR PUBESCENS	HAIRY SHARP-SCALED SEDGE		S
CYPRIPEDIUM ACAULE	PINK LADY'S-SLIPPER		E-CE
ELODEA NUTTALLII	NUTTALL'S WATERWEED		S
JUNCUS BRACHYCEPHALUS	SMALL-HEADED RUSH		S
LILIUM CANADENSE	CANADA LILY		T

The road is used during maneuvers by Army Reserve units. Horses, large track vehicles (i.e., Army tanks), and motorcycles are known disturbances. A large campfire's remains can be found near the turnaround in the largest barren. Some cedar posts have been cut in the recent past; a pile of old fence wire stands among shoots of Delphinium exaltatum. Clearly, there is some need for site protection.

The cedar barrens have a gradual slope; the larger one is poorly drained in one section. Although parched in the summer months, this wet area harbors the rare figwort, Tomanthera auriculata. This species has recently been found along a railroad track in Bledsoe Co., but the Crowder Cemetery population was the first seen in over a quarter century in Tennessee. The plant is an indicator of wet prairies in the Midwest and is considered rare in several states. Delphinium exaltatum is rare throughout its range, but, unlike the Tomanthera, its center of distribution lies to the northeast. Solidago ptarmicoides is an aggressive invader to the North, but apparently reaches its southernmost limit at this site in Tennessee (and its only other known locality about three mi. southwest in another tiny cedar barren also in Roane Co.). The occurrence of Liatris cylindracea, another plant more frequent in prairies of the Midwest, is new report for the Ridge and Valley. A cedar barrens in Meigs County also has this species. In Tennessee, the Solidago is considered Threatened, while the other three plants noted above are listed as Endangered.