

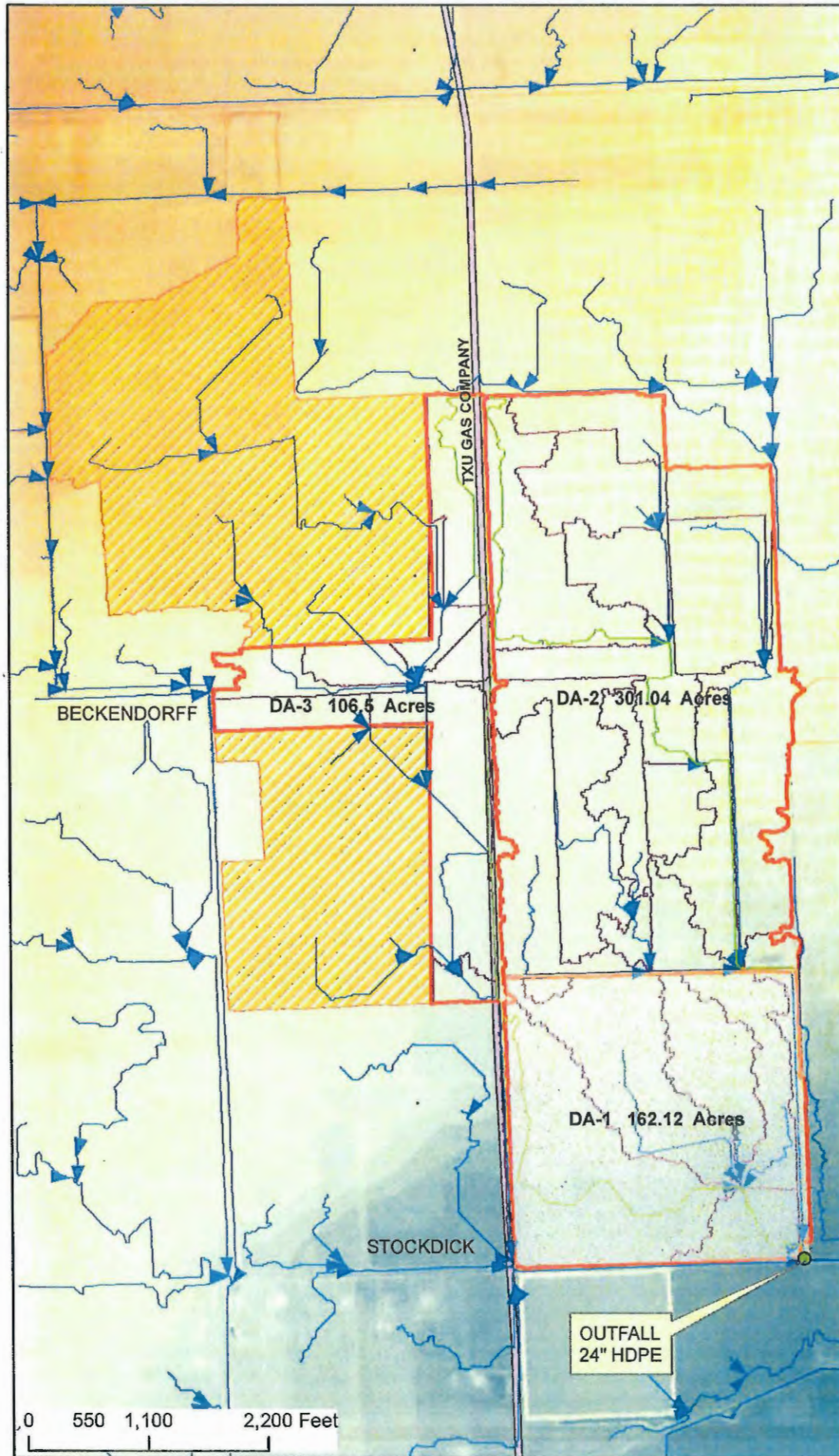
**BROOKS & SPARKS, INC.**  
CONSULTING ENGINEERS

**OMEGA**  
ENGINEERS, INC.

**Wetland Site  
Location Map  
Exhibit 1**

Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013





- Legend**
- PROJECT LOCATION
  - LONGEST FLOW PATH
  - DRAINAGE LINE
  - DRAINAGE AREA
  - SUBBASINS
  - PIPELINE
- ELEVATION**
- High : 182.923
  - Low : 159.291
- RICE FIELDS

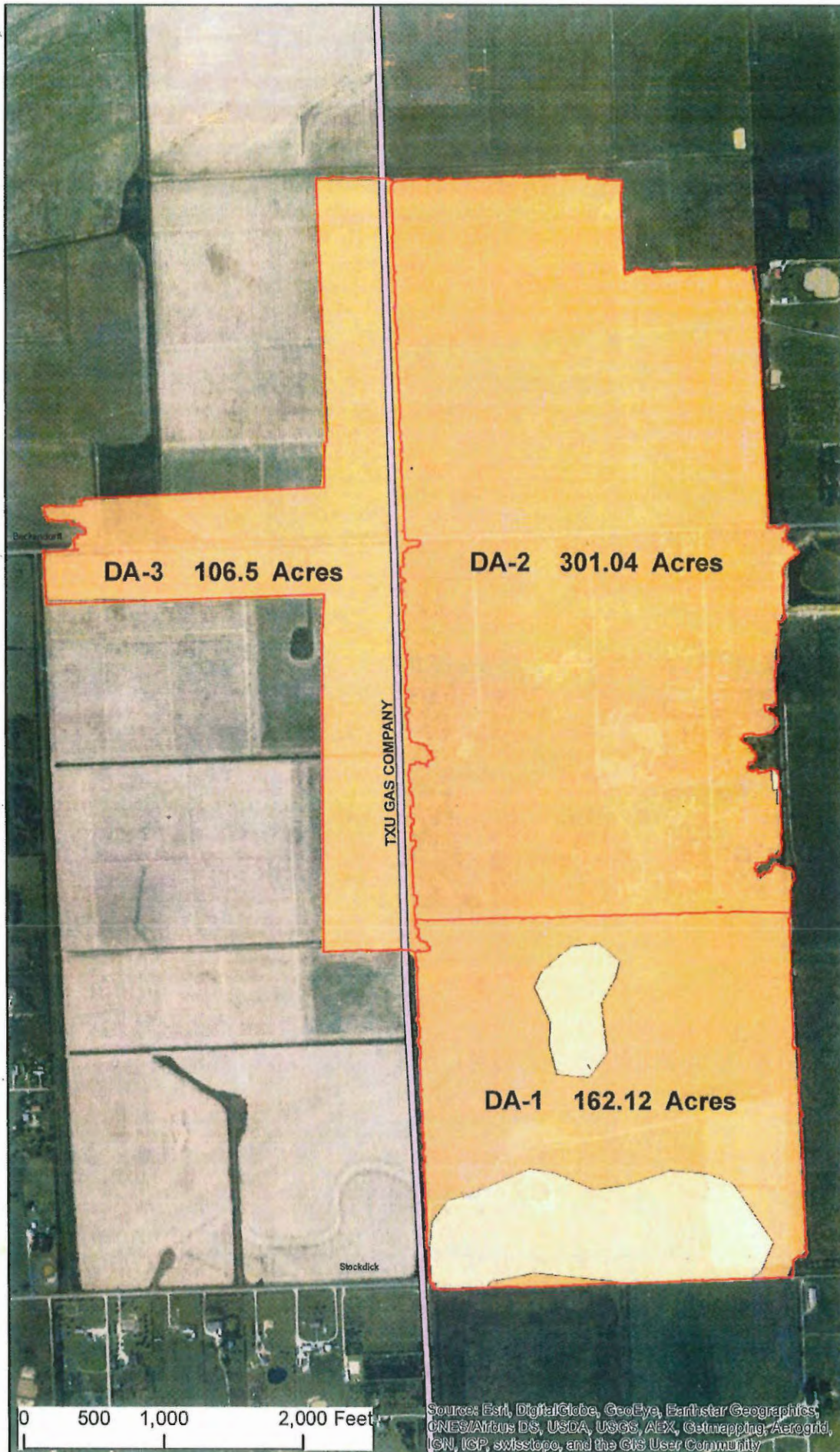


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**Wetland Site  
 Drainage Area Map  
 Exhibit 2**





**Legend**

DRAINAGE AREA

PIPELINE

**Soil Type**

C

D



DA-3 106.5 Acres

DA-2 301.04 Acres

TXU GAS COMPANY

DA-1 162.12 Acres

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COMPUTER GRAPHICS

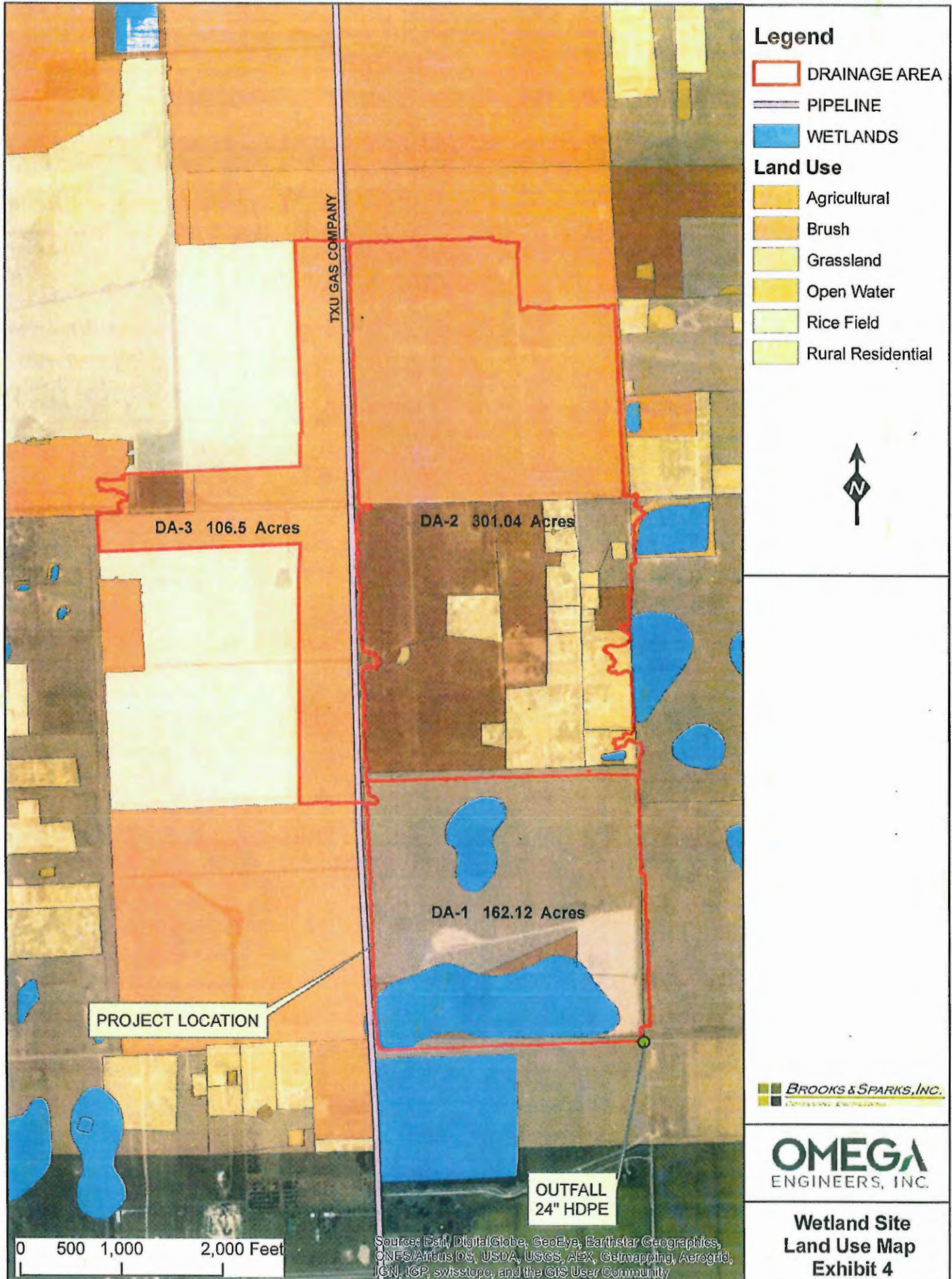
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**Wetland Site  
Soil Map  
Exhibit 3**

0 500 1,000 2,000 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community





**Legend**

DRAINAGE AREA

PIPELINE

WETLANDS

**Land Use**

Agricultural

Brush

Grassland

Open Water

Rice Field

Rural Residential



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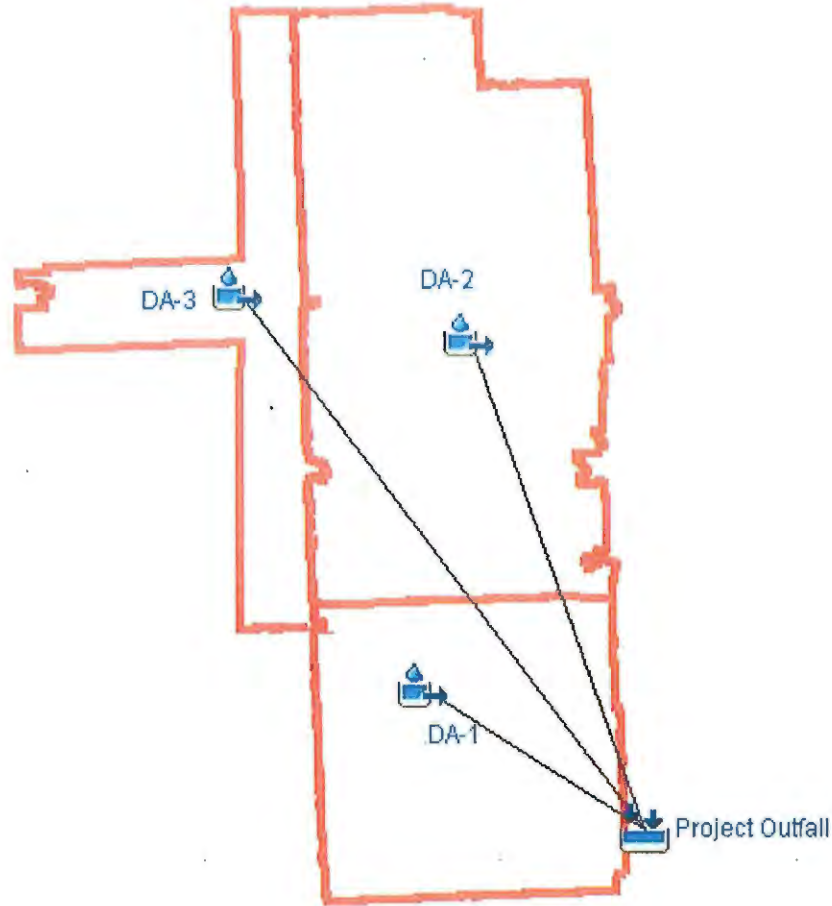
**Wetland Site  
Land Use Map  
Exhibit 4**

0 500 1,000 2,000 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

# APPENDIX-3 HMS Input

## HEC-HMS SCHEMATIC



## HEC-HMS INPUT PARAMETERS

Drainage Area ID	Size (acres)	CN	% Impervious (Percent)	Lag time (minutes)
Onsite DA-1	162.12	74.41	0.60	87.00
Offsite DA-2	301.04	72	3.74	77.40
Offsite DA-3	106.50	73.48	0	73.80



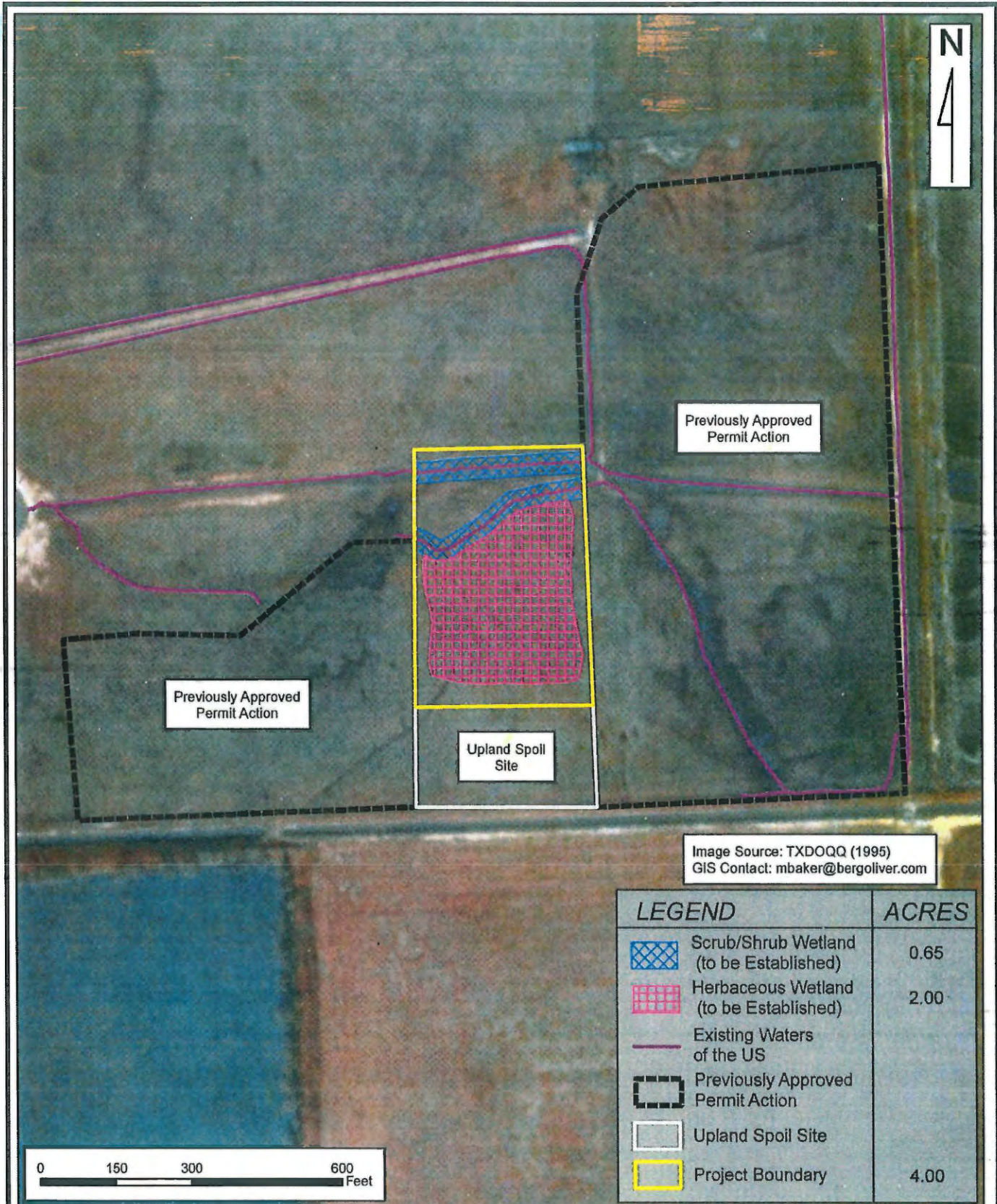


Image Source: TXDOQQ (1995)  
GIS Contact: mbaker@bergoliver.com

LEGEND	ACRES
Scrub/Shrub Wetland (to be Established)	0.65
Herbaceous Wetland (to be Established)	2.00
Existing Waters of the US	
Previously Approved Permit Action	
Upland Spoil Site	
Project Boundary	4.00

**PROPOSED MITIGATION PLAN**  
**1995 INFRARED AERIAL**

Project #: 8949  
For: Iverness  
Location: 162 Acres  
Waller County, Texas

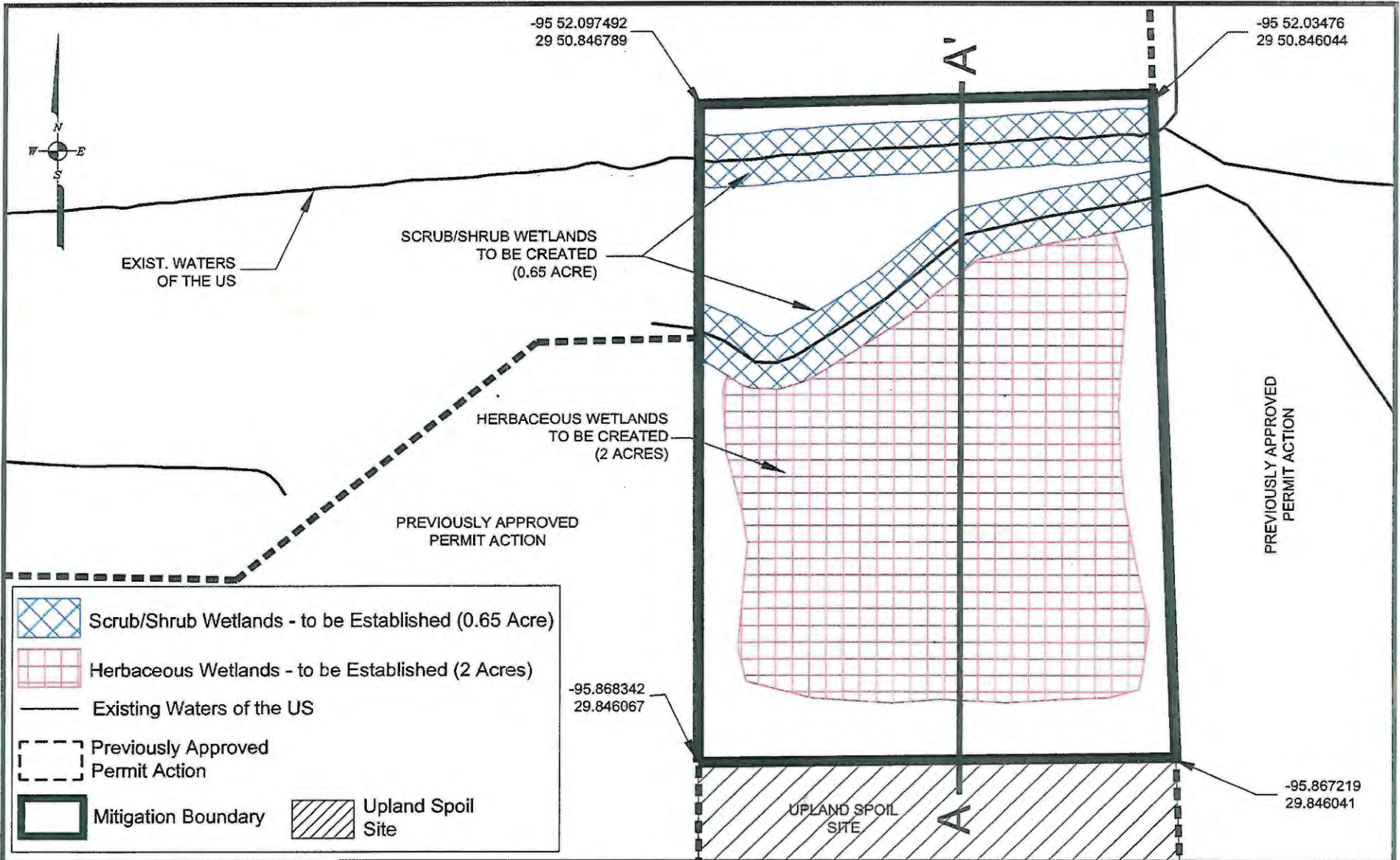
REVISIONS

**BERG•OLIVER ASSOCIATES, INC.**

ENVIRONMENTAL SCIENCE & LAND USE CONSULTANTS  
14701 ST. MARY'S LANE, SUITE 400  
HOUSTON, TEXAS 77079 PHONE (281)589-0898 <http://www.bergoliver.com>



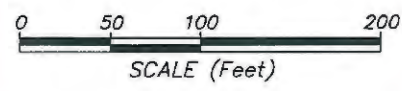




**Legend:**

- Scrub/Shrub Wetlands - to be Established (0.65 Acre)
- Herbaceous Wetlands - to be Established (2 Acres)
- Existing Waters of the US
- Previously Approved Permit Action
- Mitigation Boundary
- Upland Spoil Site

**PROPOSED MITIGATION PLAN  
PLAN VIEW**





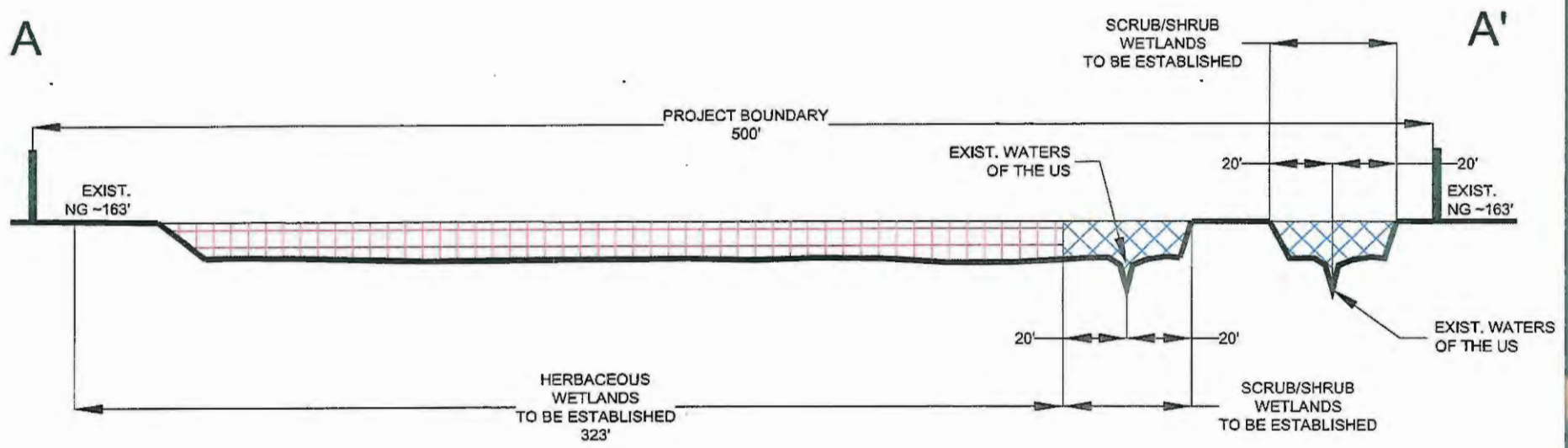
PROJECT #: 8949  
 FOR: Inverness  
 LOCATION: 182 Acres  
Waller County, Texas

REVISIONS:
May 11, 2017 by MDB

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-  Scrub/Shrub Wetlands - to be Established (0.65 Acre)
-  Herbaceous Wetlands - to be Established (2 Acres)



Page 8 of 8

**PROPOSED MITIGATION PLAN  
CROSS SECTION A-A'**

PROJECT #: 8949  
 FOR: Inverness  
 LOCATION: 162 Acres  
Waller County, Texas

REVISIONS:
May 11, 2017 by MGB

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