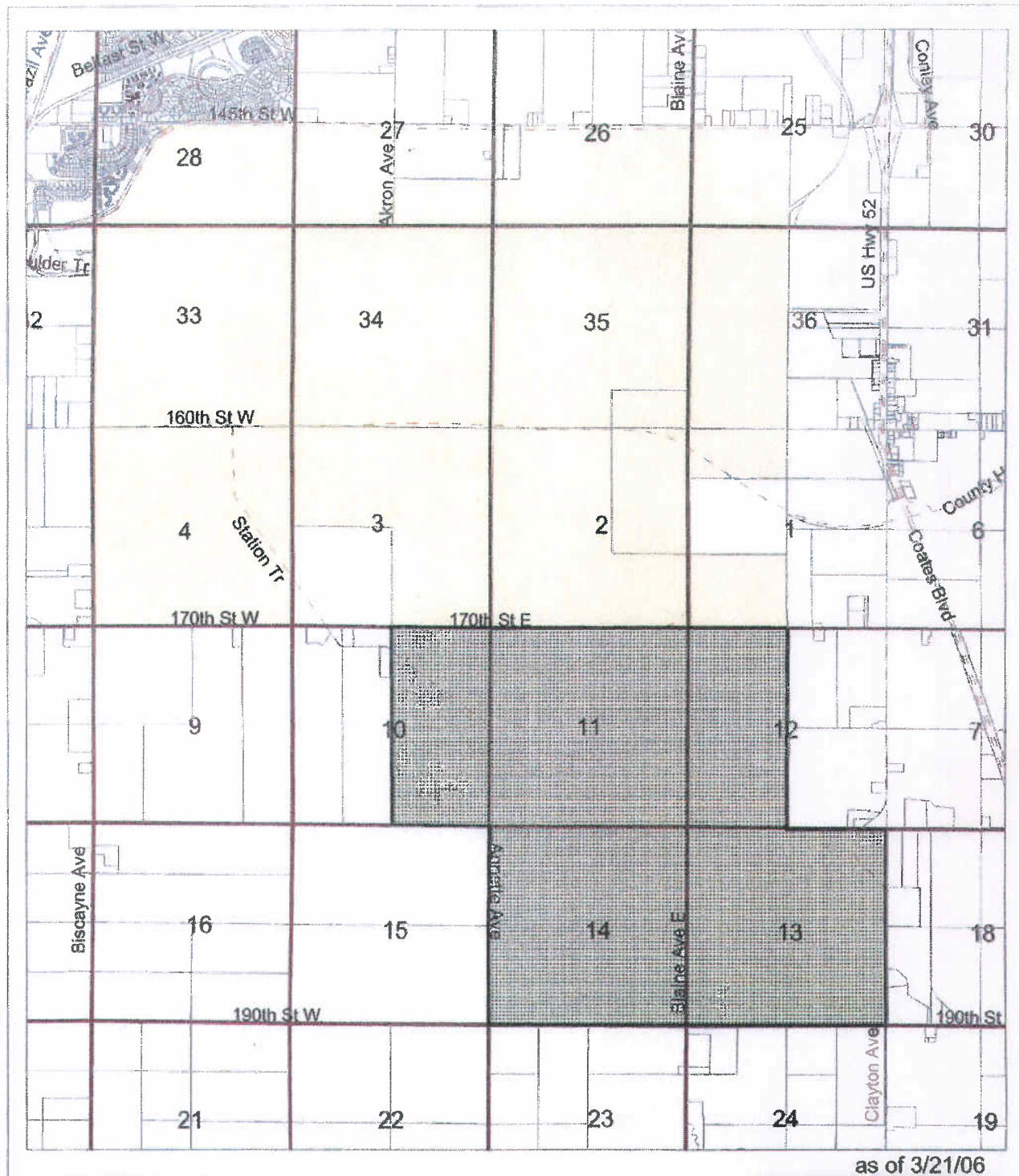


FIGURES

## FIGURES

Figure 1	Property Boundary
Figure 2	FGOW Production Areas
Figure 3	East Acid Area and Oleum Plant
Figure 4	West Acid Area
Figure 5	Smokeless Gun Powder Production Lines
Figure 6	East Powder Manufacturing
Figure 7	West Powder Manufacturing
Figure 8	Powder Storage & Shipping
Figure 9	Powder Testing – 3 Areas North, South, and West
Figure 10	Main Shop Area
Figure 11	Power Plants
Figure 12	Wastewater Treatment Area
Figure 13A-B	FGOW Structure Locations Prior to 1945
Figure 14	Debris Disposal Area





as of 3/21/06

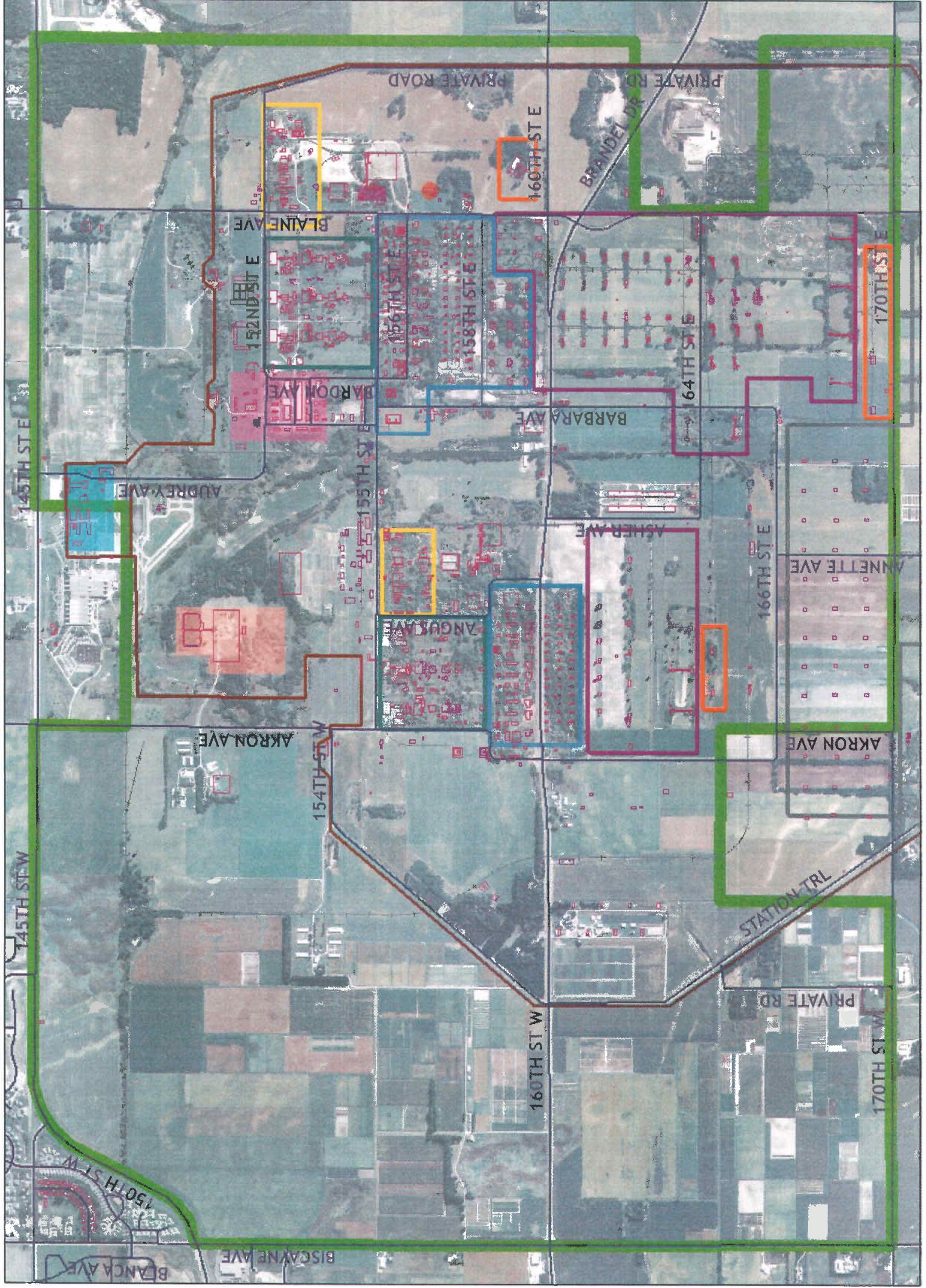
University of  
Minnesota  
Real Estate Office

**FIGURE 1**  
**Environmental Services**  
**RFP (Yellow Area)**  
**UMore Park**

This map is intended  
to be used for planning  
puposes only and  
should not be used if  
a survey is required.





# FGOW Production Areas



## 2002 Conditions

### Key

- |   |                             |   |                 |
|---|-----------------------------|---|-----------------|
|  | Gun Cotton Production       |  | Plant Buildings |
|  | Solvent Area                |  | Water Towers    |
|  | Powder Manufacturing        |  | Perimeter Fence |
|  | Powder Storage and Shipping |  | Streets         |
|  | Powder Testing              |  | Railroads       |
|  | Acids and Oleum Plant       |  | Study Area      |
|  | Administration              |   |                 |
|  | Main Shops Area             |   |                 |
|   | Burning Grounds             |   |                 |
|     | Sewage Treatment Plant      |   |                 |
|      | Power Plant A               |   |                 |

Air Photo is from 2002



FIGURE 2  
Project Number : 5974.0012

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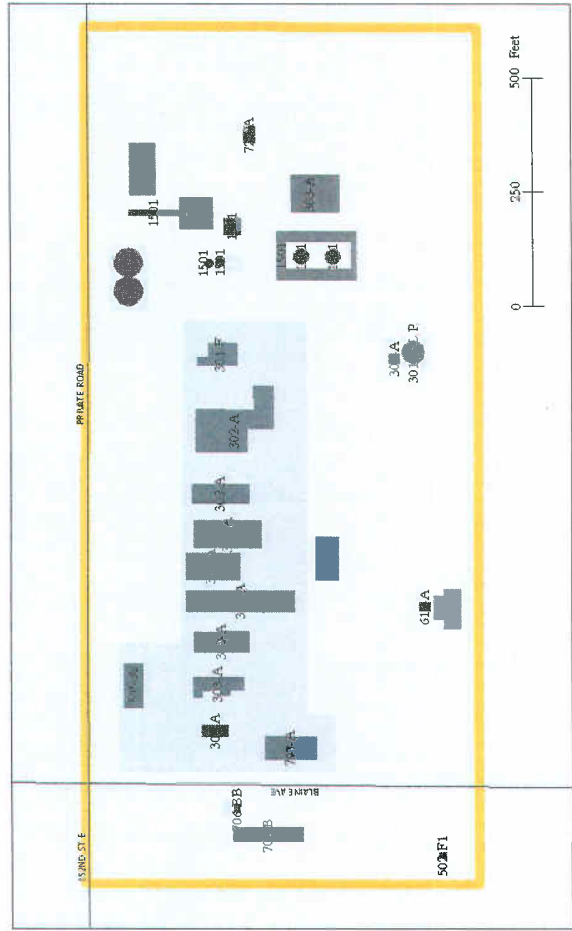
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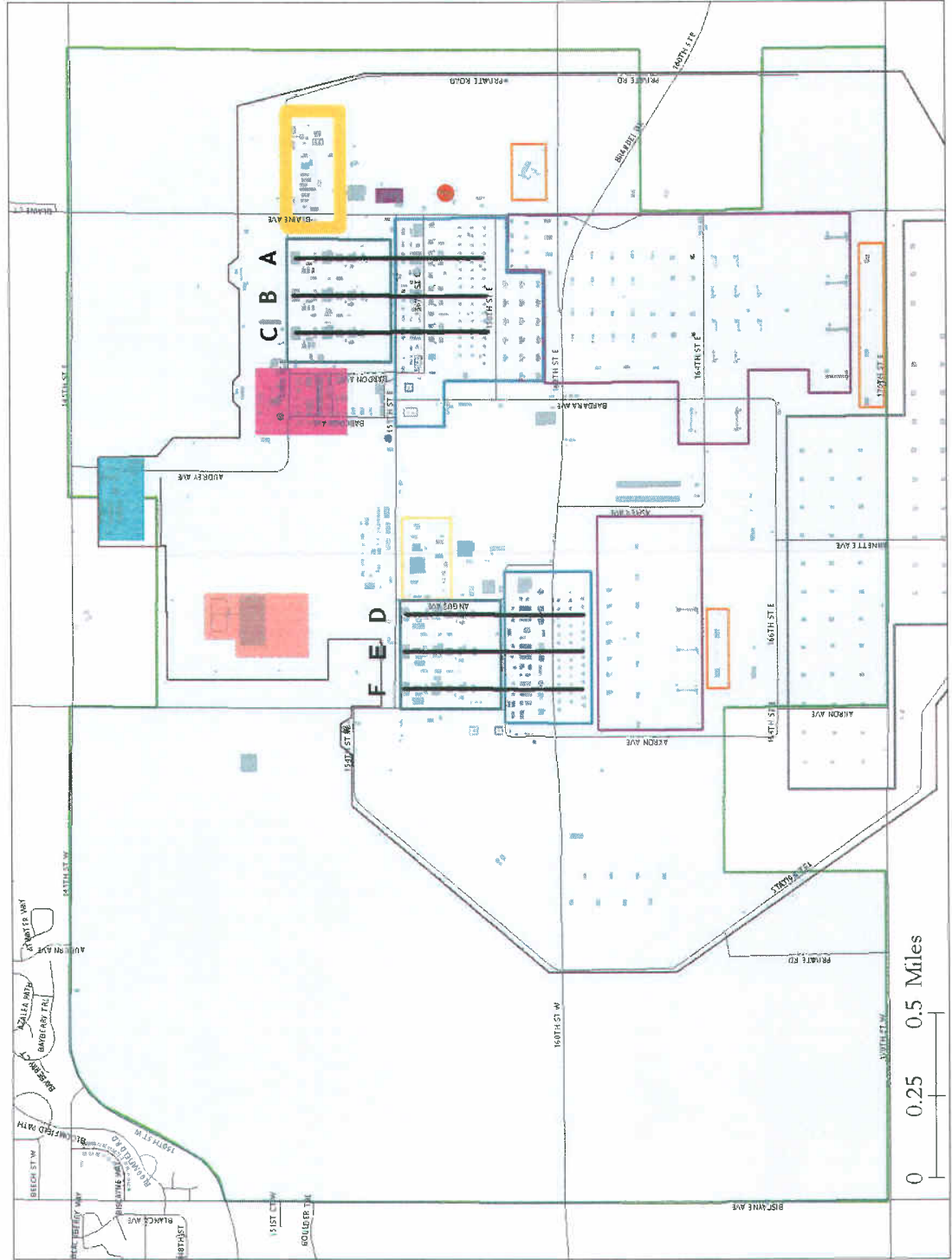
# Gopher Ordnance Works

## East Acid Area and Oleum Plant

Detail



Building #	Building Name
1500	Acid Storage
1501	L.P. Gully Ammonia Storage
1502	Oleum Plant Tanks
1503	Area Shop
1504	Oleum Plant Tanks
1505	S.A. Sulphuric Acid Towers
1506	Oleum Blow Down
1507	Acid Area Change House
1508	Acid area shop
1509	Supps Office and Lab
1510	Acid Storage
1511	S.A. Sulphuric Acid Towers
1512	Acid Storage
1513	Acid Storage
1514	Acid Storage
1515	Acid Storage
1516	Acid Storage
1517	Acid Storage
1518	Acid Storage
1519	Acid Storage
1520	Acid Storage
1521	Acid Storage
1522	Acid Storage
1523	Acid Storage
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1696	Acid Storage
1697	Acid Storage
1698	Acid Storage
1699	Acid Storage
1700	Acid Storage





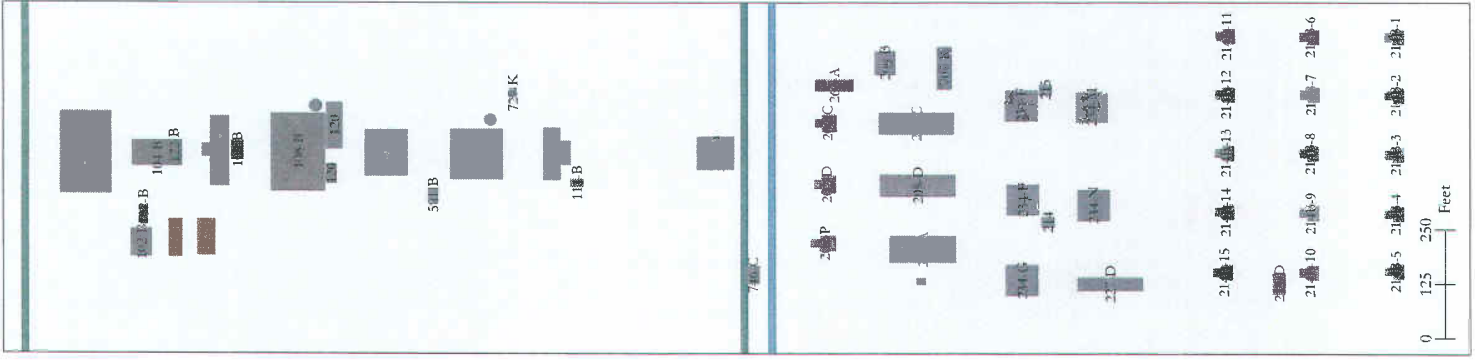


# Gopher Ordnance Works

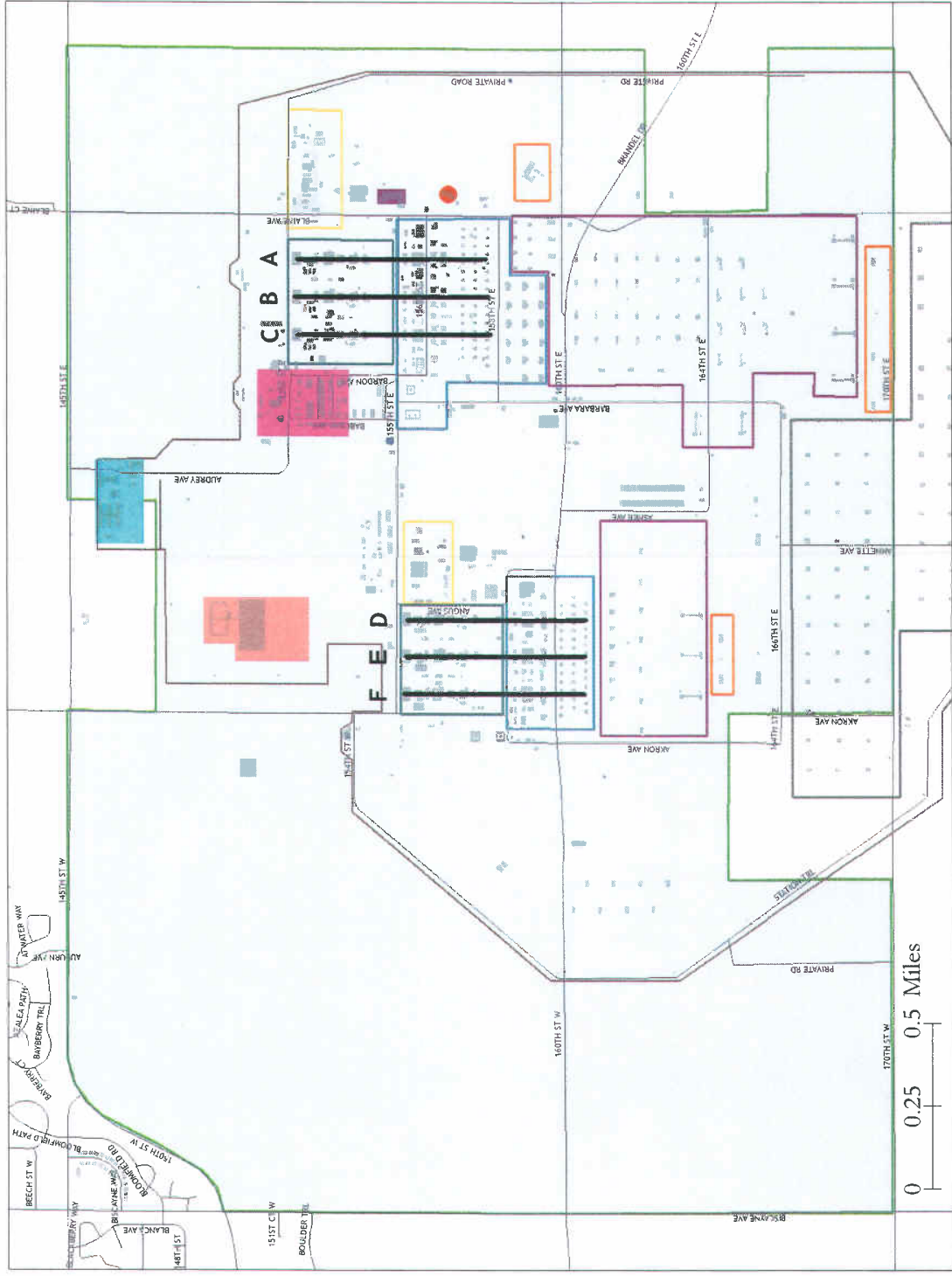
## Smokeless Gun Powder Production Lines

Building #	Building Name
109-B	Pulping House
120	Save All Pit
120	Hot Water Tank
108-B	Boiling Tub House
201-B	Nitrocellulose Lag Storehouse
111-B	Nitrocellulose Slurry Tank
113-B	Blending Tub & Final Wringer
113-B	Hot Water Tank
112-B	Poacher Tub House
501-B	Transformer Substation
106-B	Spent Acid Filters
105-B	Nitrating House
104-B	Cotton Dry House
122-B	Wood Pulp Dry House
101-B	Pre-Treated Purified Cotton Storehouse
727-K	Comfort Station
102-B	Acid Tanks on Saddles
102-B	Acid Tanks on Saddles
102-B	Acid Tanks on Saddles
102-B	Nitrocel Area Tank Farm-Acid Tanks
214B-5	Solvent Recovery Houses
214B-3	Solvent Recovery Houses
214B-2	Solvent Recovery Houses
214B-4	Solvent Recovery Houses
214B-7	Solvent Recovery Houses
214B-8	Solvent Recovery Houses
214B-10	Solvent Recovery Houses
217-A	Knife Grind & Die Shop
214B-9	Solvent Recovery Houses
215-D	Solvent Tank Shelters
214B-13	Solvent Recovery Houses
214B-14	Solvent Recovery Houses
214B-12	Solvent Recovery Houses
214B-15	Solvent Recovery Houses
227-D	Dry Ingredients Storehouse K2SO4
234-M	Vertical Press Houses
234-N	Vertical Press Houses
214	Solvent Recovery Receiver
234-F	Vertical Press Houses
234-G	Vertical Press Houses
234-F	Vertical Press Houses
707-R	First Stage Change House
208-D	Mixer House Macerator & Blocking
208-C	Mixer House Macerator & Blocking
206-B	Ether Mix House
202-P	Dehydrating Press House
202-C	Dehydration Press House (alcohol added)
202-D	Dehydration Press House (alcohol added)
746-C	Field Canteen
263-A	DNT Unloading Ramp
215	Solvent Recovery Receiver
214B-1	Solvent Recovery Houses
214B-6	Solvent Recovery Houses
214B-11	Solvent Recovery Houses

Typical Building Numbers and Names



Typical Smokeless Gun Powder Line (B)



### Key

 Administration	 Production Lines
 Main Shops Area	 Streets
 Burning Grounds	 Perimeter Fence
 Sewage Treatment Plant	 Tank Farms
 Powder Storage and Shipping	 Study Area
 Powder Testing	
 Acids and Oleum Plant	

**Production Areas**

 Gun Cotton Production	 Solvent Area
 Powder Manufacturing	 Powder Storage and Shipping
 Powder Testing	 Acids and Oleum Plant

**NOTE**  
D, E, and F Lines were never finished.

FIGURE 5  
Project Number 5874.0012



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# Gopher Ordnance Works

## East Powder Manufacturing

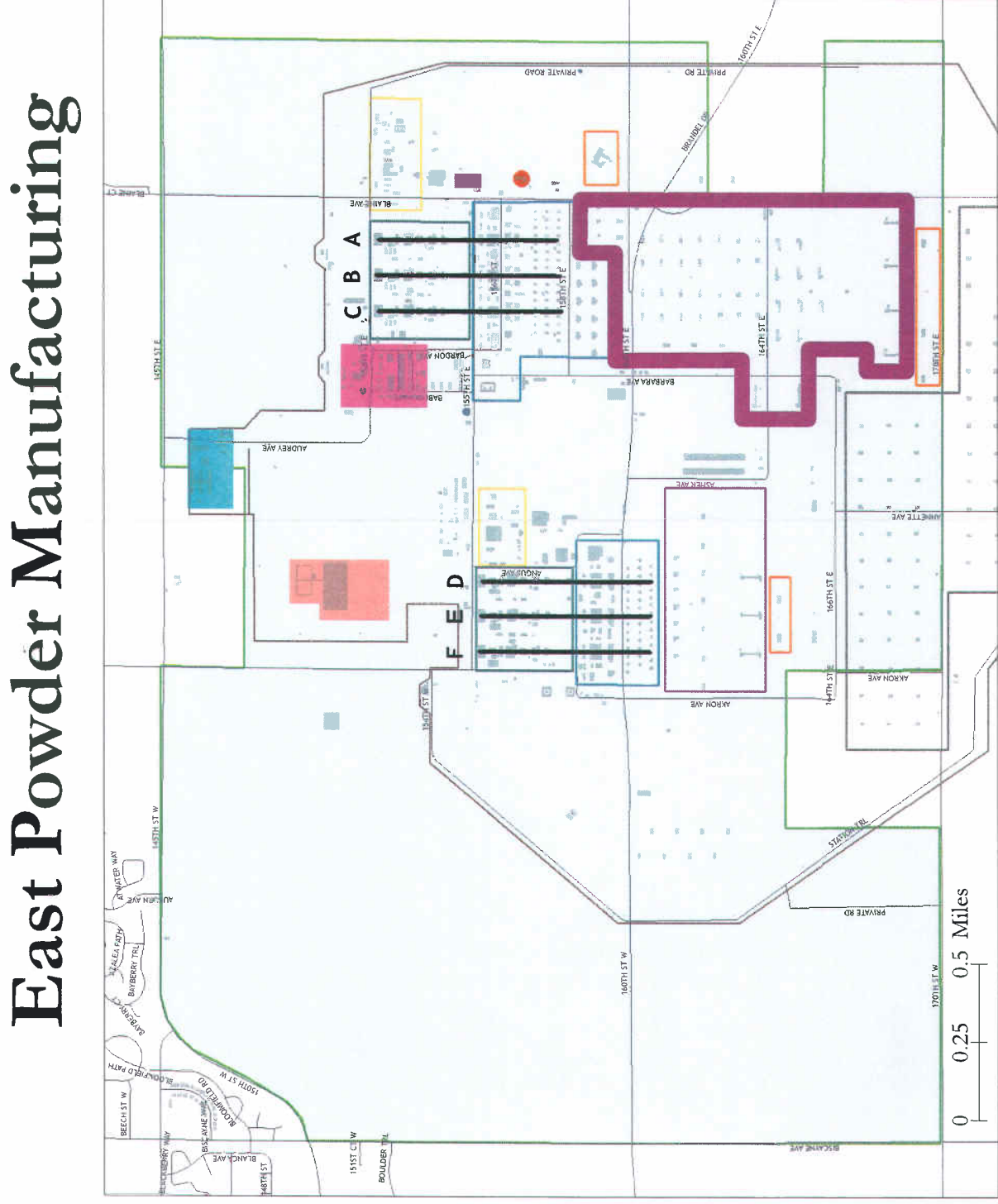
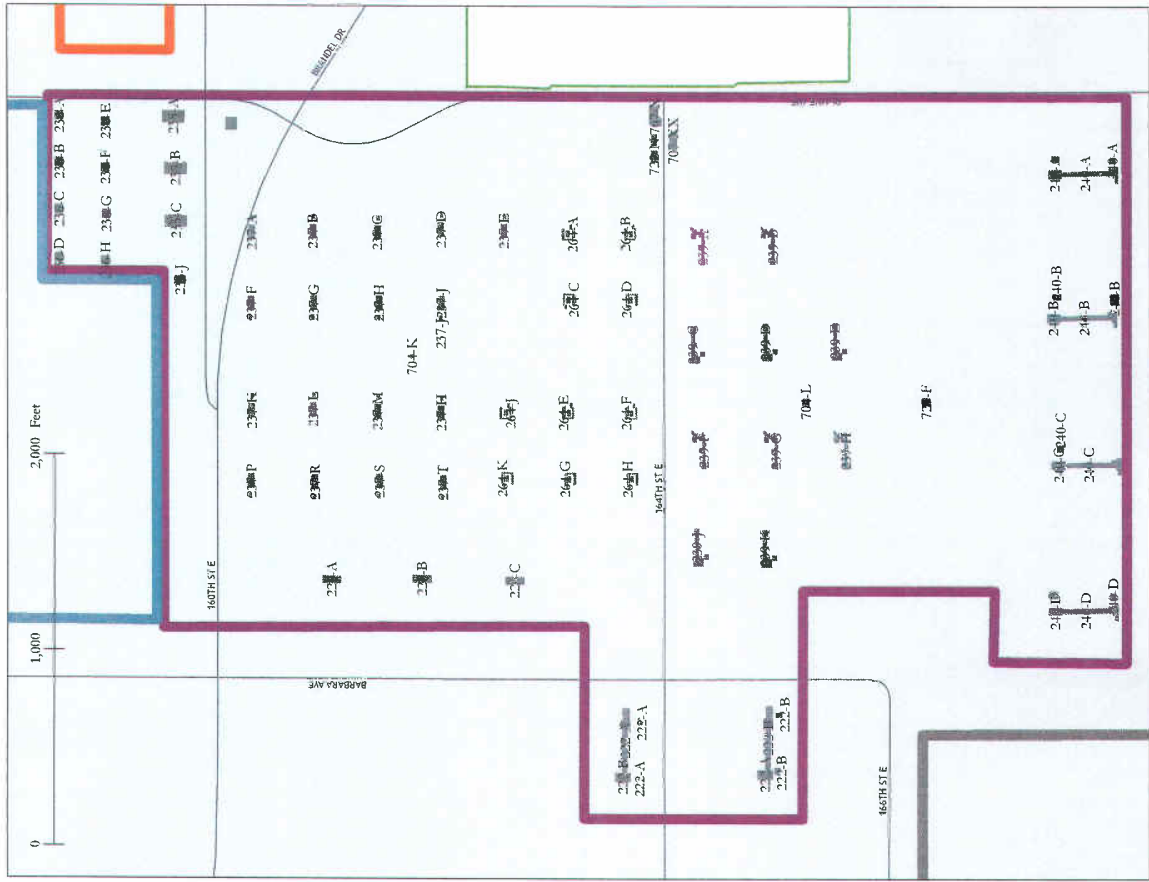


FIGURE 6  
Project Number: 5974.0012

### Detail



Building #	Building Name	Building #	Building Name	Building #	Building Name
240-A	Powder Blend Tower	237-K	Tray Dryers	236-D	Sweetie Barrel House
240-D	Blend Tower and Pack house	237-L	Tray Dryers	236-C	Sweetie Barrel House
240-C	Powder Blend Tower	237-M	Tray Dryers	236-B	Sweetie Barrel House
240-B	Powder Blend Tower	237-N	Tray Dryers	No Number	Temporary Warming Station/Old Farm House
727-F	Comfort Station	237-O	Tray Dryers	222-A	Blend Tower and Pack House Heater House
239-H	Shaker Sieve Houses	237-P	Tray Dryers	222-A	Blend Tower and Pack House Heater House
239-E	Shaker Sieve Houses	237-Q	Tray Dryers	222-B	Blend Towers and Pack House Starter House
704-L	Sepic Tank	237-R	Tray Dryers	222-B	Blend Towers and Pack House Heater House
239-G	Shaker Sieve Houses	237-S	Tray Dryers	240-D	Rifle Powder Blend Tower Starter House
239-D	Shaker Sieve Houses	237-T	Tray Dryers	240-D	Rifle Powder Blend Tower Starter House
239-K	Shaker Sieve Houses	237-U	Tray Dryers	240-A	Powder Blend Tower Heater House
239-B	Shaker Sieve Houses	237-V	Tray Dryers	240-B	Powder Blend Tower Starter House
222-B	Blend Towers and Pack Houses	237-W	Tray Dryers	240-C	Rifle Powder Blend Tower Starter House
239-J	Shaker Sieve Houses	237-X	Tray Dryers	240-C	Rifle Powder Blend Tower Starter House
239-F	Shaker Sieve Houses	237-Y	Tray Dryers		
239-A	Shaker Sieve Houses	237-Z	Tray Dryers		
239-C	Shaker Sieve Houses				
707-XX	Change House				
704-E	Supervisors Office				
722-N	Paint & Riggers Shop				
707-X	Change House				
238-H	Glaze Barrel House				
238-F	Glaze Barrel House				
238-G	Glaze Barrel House				
238-D	Glaze Barrel House				
264-H	glaze barrel house barricades				
264-D	glaze barrel house barricades				
264-F	glaze barrel house barricades				
264-B	glaze barrel house barricades				
222-A	blend towers and pack houses				
238-E	Glaze Barrel House				
238-G	Glaze Barrel House				
238-C	Glaze Barrel House				
238-A	Glaze Barrel House				
264-G	glaze barrel house barricades				
264-C	glaze barrel house barricades				
264-E	glaze barrel house barricades				
264-A	glaze barrel house barricades				
220-C	Controlled Circulation Dry				
238-K	Glaze Barrel House				
238-J	Glaze Barrel House				
237-E	Tray Dryers				
264-K	glaze barrel house barricades				
237-E	glaze barrel house barricades				
264-J	glaze barrel house barricades				
237-T	Tray Dryers				
237-H	Tray Dryers				
237-D	Tray Dryers				
237-T	Tray Dryers				
237-J	Tray Dryers				
237-I	Tray Dryers				
237-H	Tray Dryers				
237-D	Tray Dryers				
220-B	Controlled Circulation Dry				
704-K	Sup. Office - Finishing Operations				
237-S	Tray Dryers				
237-H	Tray Dryers				
237-M	Tray Dryers				
237-C	Tray Dryers				
237-S	Tray Dryers				
237-H	Tray Dryers				
237-M	Tray Dryers				
237-C	Tray Dryers				
220-A	Controlled Circulation Dry				
237-R	Tray Dryers				
237-L	Tray Dryers				
237-B	Tray Dryers				
237-R	Tray Dryers				
237-L	Tray Dryers				
237-B	Tray Dryers				
237-G	Tray Dryers				
237-G	Tray Dryers				

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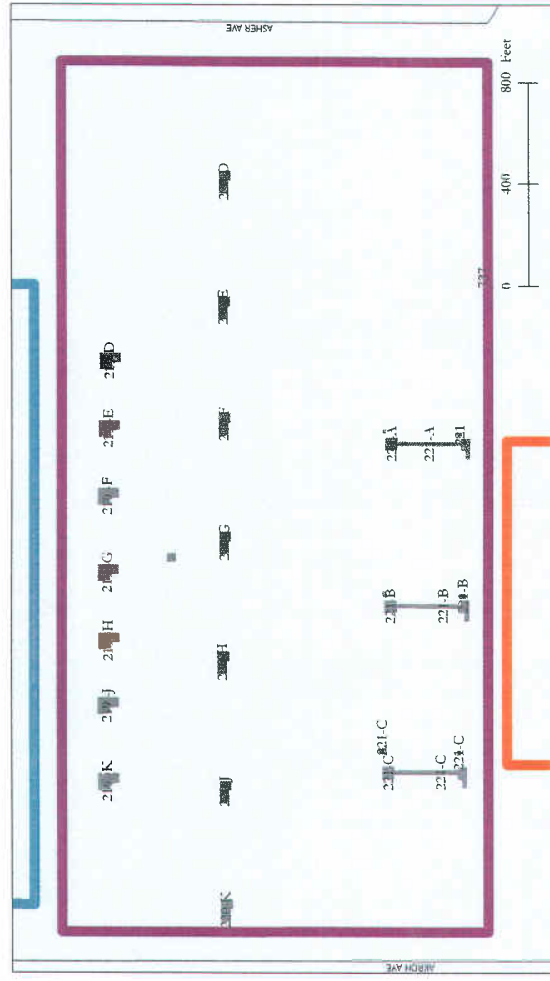




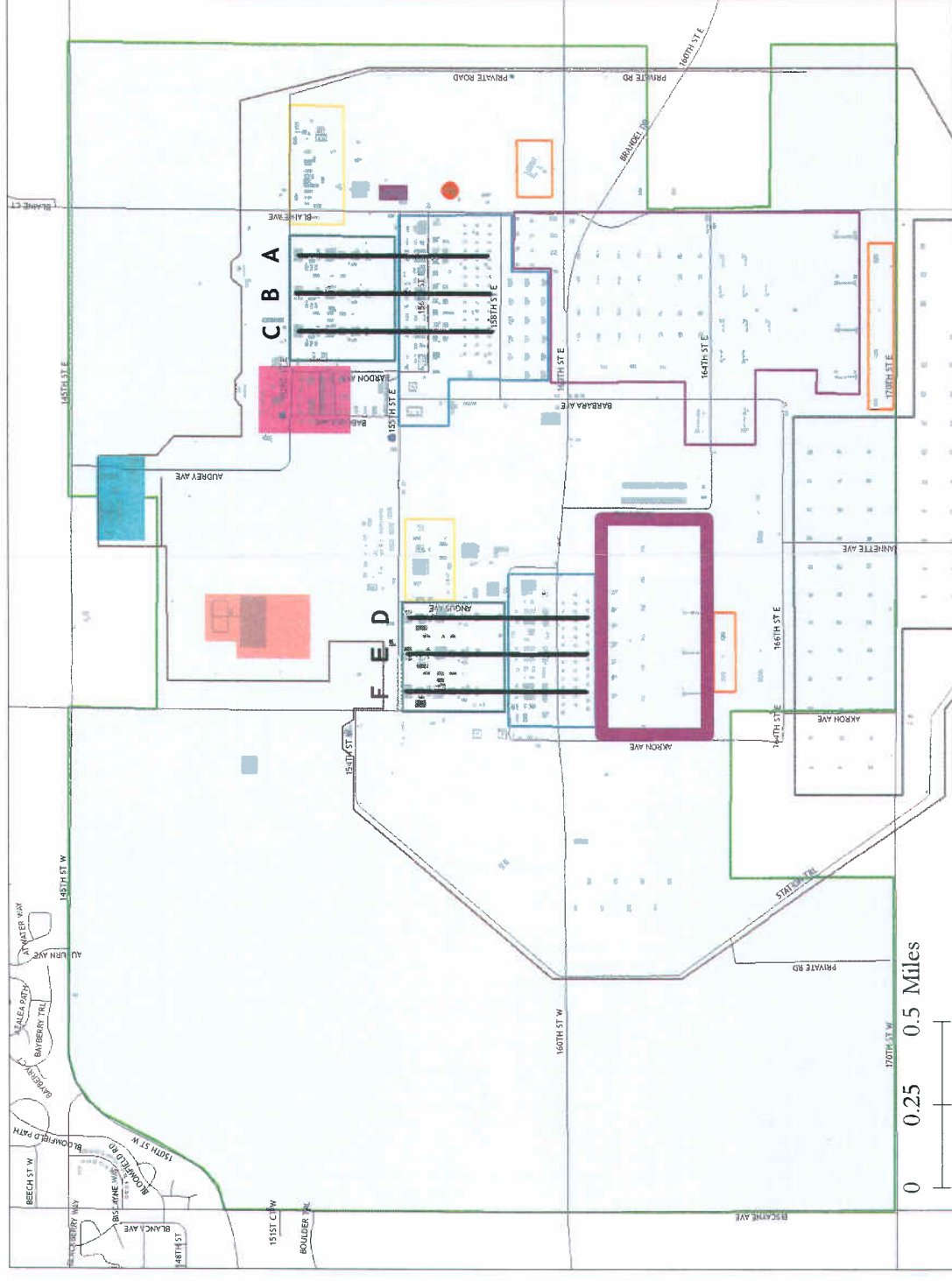
# Gopher Ordnance Works

## West Powder Manufacturing

Detail



Building #	Building Name	Building #	Building Name
221-A	Blend Tower and Pack House	727	Comfort Station
221-B	Blend Tower and Pack House	221	Blend Tower and Pack House Starter House
221-C	Blend Tower and Pack House	221	Blend Tower and Pack House Heater House
220-K	Controlled Circulation Dry	No Number	Unidentified
220-J	Controlled Circulation Dry	221-B	Blend Tower and Pack House Starter House
220-G	Controlled Circulation Dry	221-B	Blend Tower and Pack House Heater House
220-D	Controlled Circulation Dry	221-C	Blend Tower and Pack House Starter House
220-F	Controlled Circulation Dry	221-C	Blend Tower and Pack House Heater House
220-E	Controlled Circulation Dry	221-A	Blend Tower
220-H	Controlled Circulation Dry	221-B	Blend Tower
219-D	Water Dry House?	221-C	Blend Tower
219-H	Water Dry House?		
219-E	Water Dry House?		
219-G	Water Dry House?		
219-F	Water Dry House?		
219-K	Water Dry House?		
219-J	Water Dry House?		



Key

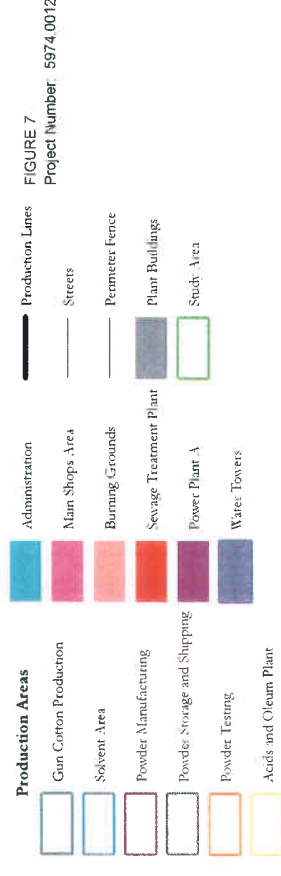
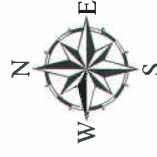


FIGURE 7  
Project Number: 6974.0012



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# Gopher Ordnance Works

## Powder Storage and Shipping

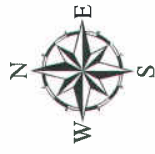
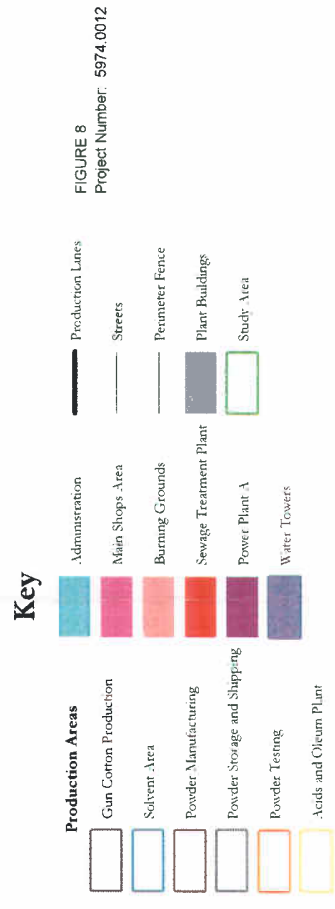
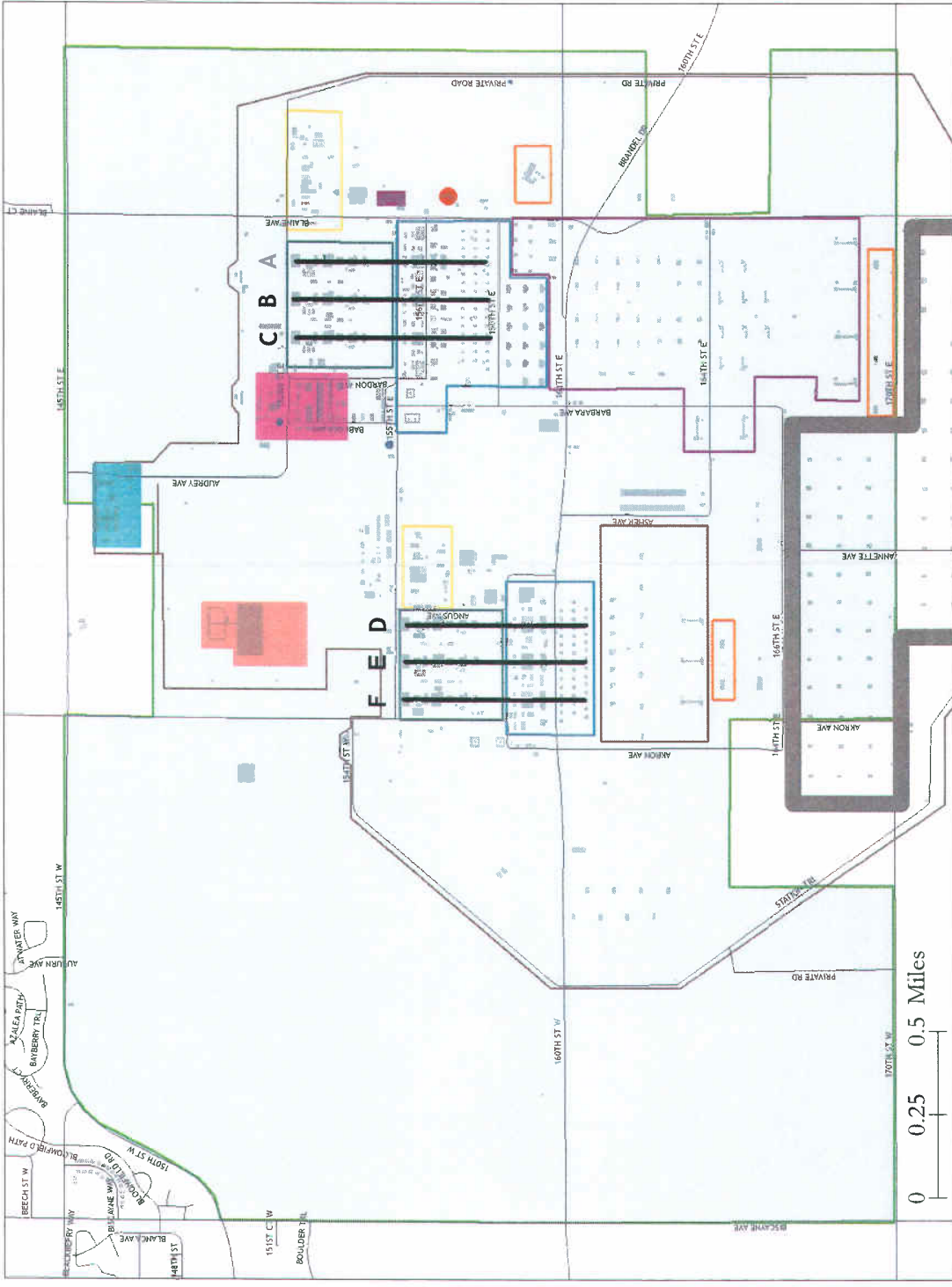
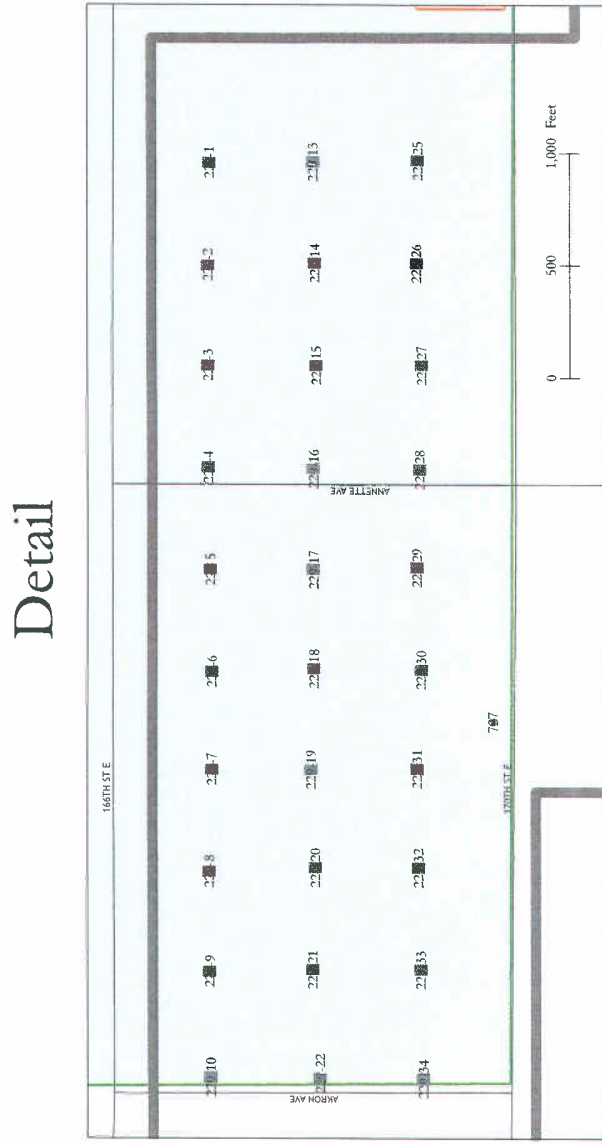


FIGURE 8  
Project Number: 5874.0012



Building #	Building Name	Building #	Building Name
229-34	Shipping House	229-7	Shipping House
229-27	Shipping House	229-6	Shipping House
229-30	Shipping House	229-10	Shipping House
229-33	Shipping House	229-5	Shipping House
229-28	Shipping House	229-1	Shipping House
229-32	Shipping House	229-9	Shipping House
229-25	Shipping House	229-8	Shipping House
229-31	Shipping House	229-4	Shipping House
229-29	Shipping House	229-3	Shipping House
229-26	Shipping House	229-2	Shipping House
229-22	Shipping House	727	Comfort Station
229-15	Shipping House		
229-20	Shipping House		
229-14	Shipping House		
229-18	Shipping House		
229-17	Shipping House		
229-16	Shipping House		
229-13	Shipping House		
229-21	Shipping House		
229-19	Shipping House		



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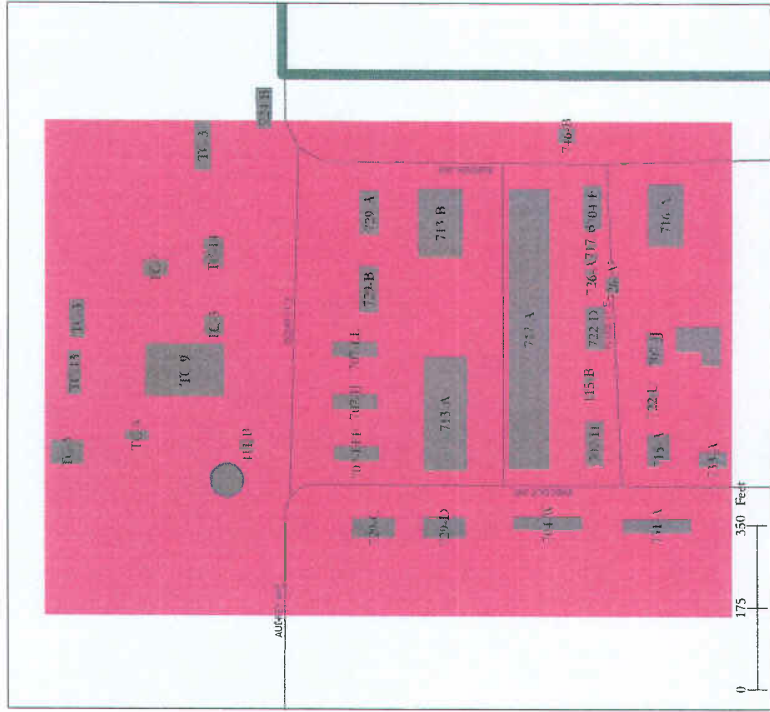




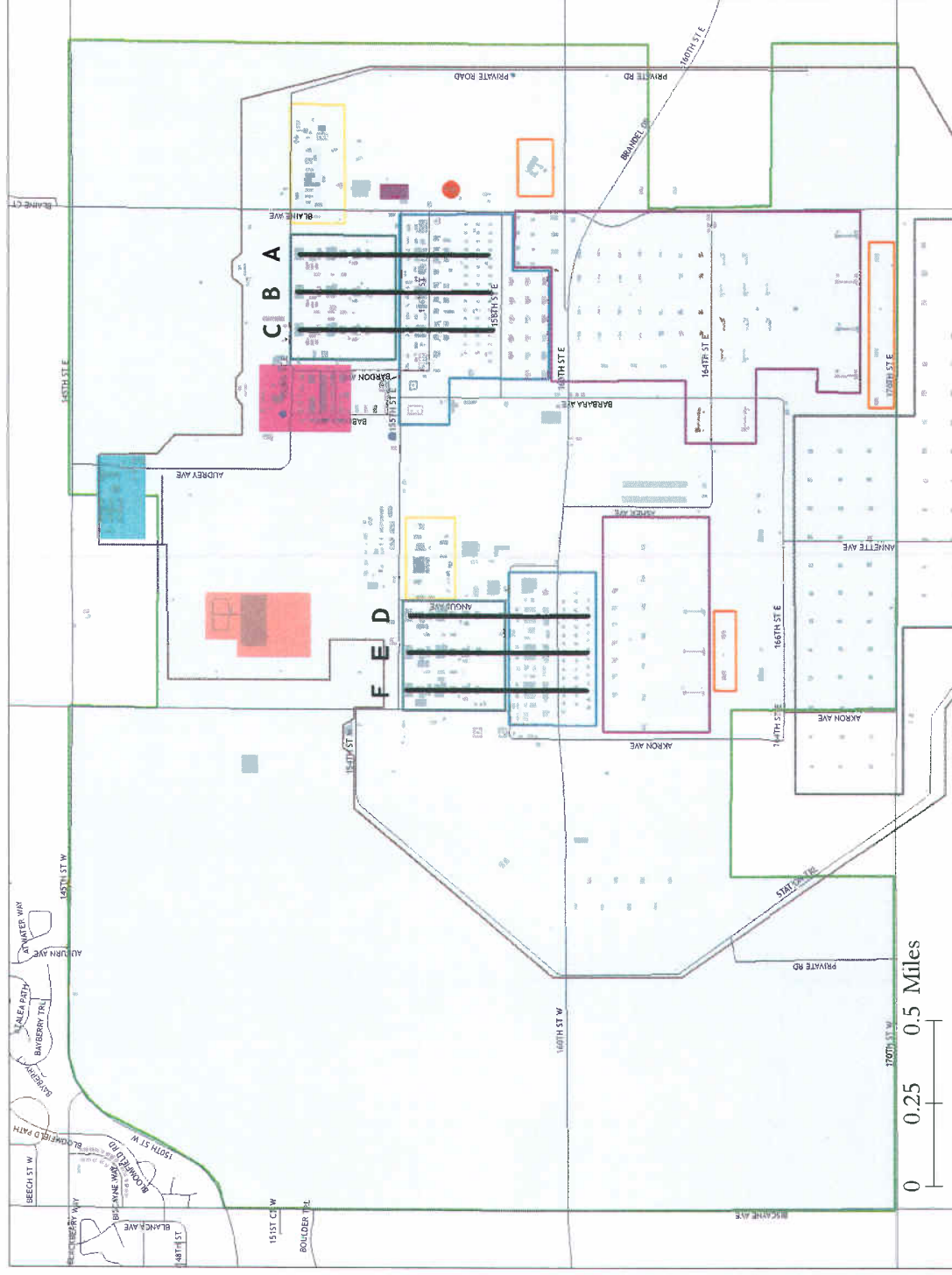
# Gopher Ordnance Works

## Main Shop Area

### Detail



Building #	Building Names	Building #	Building Names
731-A	Salvage Building	707-FFF	Transportation Change House
726-A?	Acetylene Storage	707-JJ	Change House
722-D	Area Shop-paint	707-LL	Shops Change House
707-H	Shops Change House	No Number	Drinking Water Storage Tank
704-F	Sup. Office - Transportation	TC-3	Const Millwright Office
726-A	Acetylene Storage	TC-3	Foreman Shack
746-B	Field Canteen	TC-14	Const Paint Rigger Shop
733-A	Service House	TC-9	Const Machine Shop
715-A	Oil and Paint Storage	TC-?	Crane Repair Shop Const.
722-U	Rigger Shop	TC-8	Clock Alley
707-JJ	Transportation Change House	TC-13	Carpenter Shop
716-A	Garage and Repair Shop	TC-3	Foreman Shack
717-A	Combined Shops	TC-3	Foreman's Shack
704-W	Sup. Office-Maintenance	724-B	Gas Station
713-A	General Storehouse	717-B	Sand Blast
729-D	Spare Storehouse	No Number	Various Sheds?
729-B	Spare Machinery Storage	115-B	Paint Storage
729-A	Spare Machinery Storage	411-B	Drinking Water Pump House
729-C	Spare Machinery Storage		



### Key

**Production Areas**

- Gun Cotton Production
- Solvent Area
- Powder Manufacturing
- Powder Storage and Shipping
- Powder Testing
- Acids and Oleum Plant

**Administration**

- Administration
- Main Shops Area
- Planting Grounds
- Sewage Treatment Plant
- Power Plant A
- Water Towers
- Plant Buildings

**Production Lines**

- Production Lines
- Streets
- Perimeter Fence
- Tank Farms
- Study Area

**NOTE**  
Shops are dispersed throughout plant.

**FIGURE 10**  
Project Number: 5974.0012

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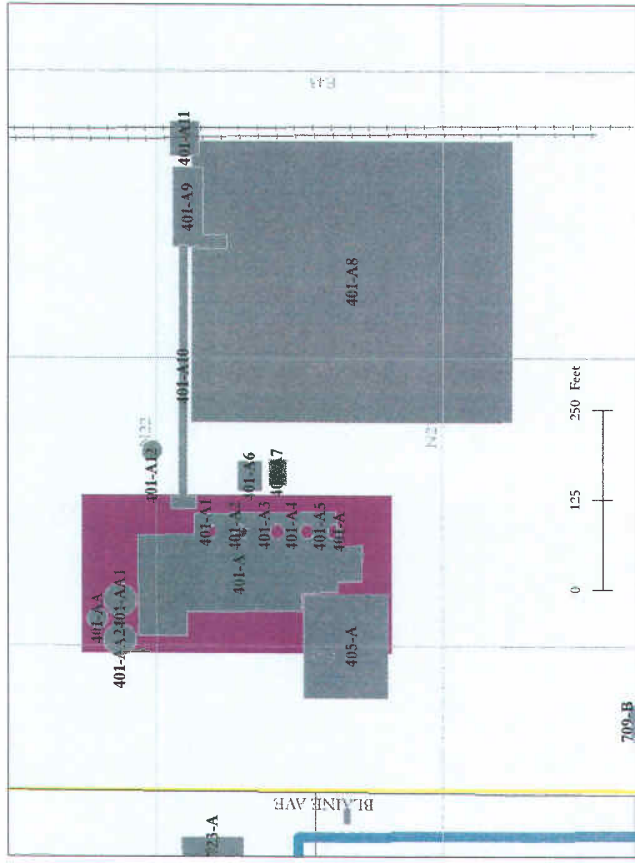




# Gopher Ordnance Works

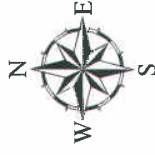
## Power Plants

### Power Plant A

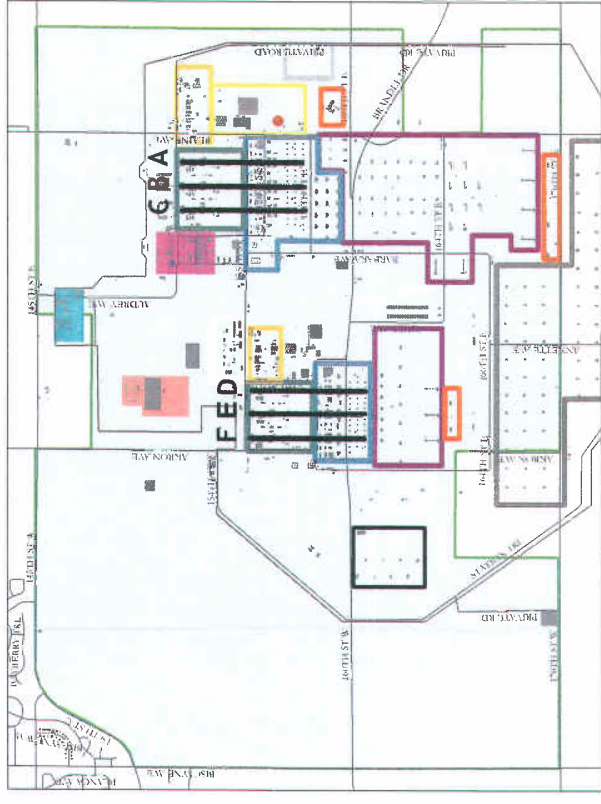


Building #	Building Name
401-A5	Power house Smokestack
401-A4	Power house Smokestack
401-A3	Power house Smokestack
401-A2	Power house Smokestack
401-A1	Power House Smokestack
401-A	Power House
401-A12	Soften Water Tower
401-AA	Power Plant A Flash Mixer
401-AA1	Power Plant A Precipitator
401-AA2	Power Plant A Precipitator
405-A	Purchase Power Sub Station
401-A6	Fuel Oil Tanks
401-A7	Ash Pit
401-A8	Coal Storage
401-A9	Coal Crusher House
401-A11	Coal Hoppers
401-A10	Coal Conveyor

**Note**  
There are Reservoir Settling Basins (402) just north of both Power Plants.



### Overview



### Power Plant B

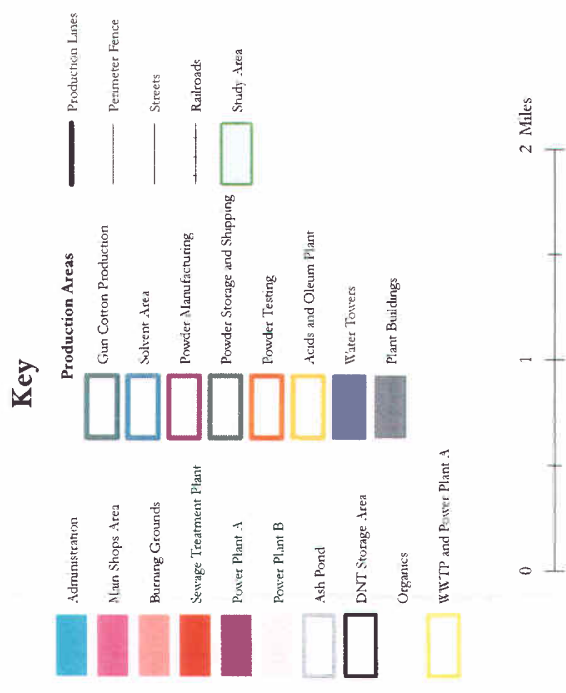
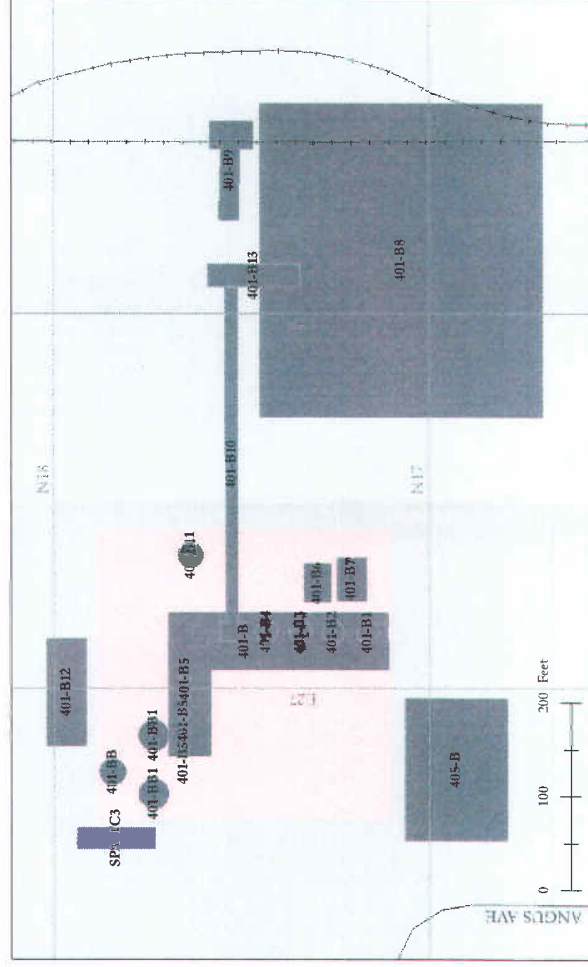


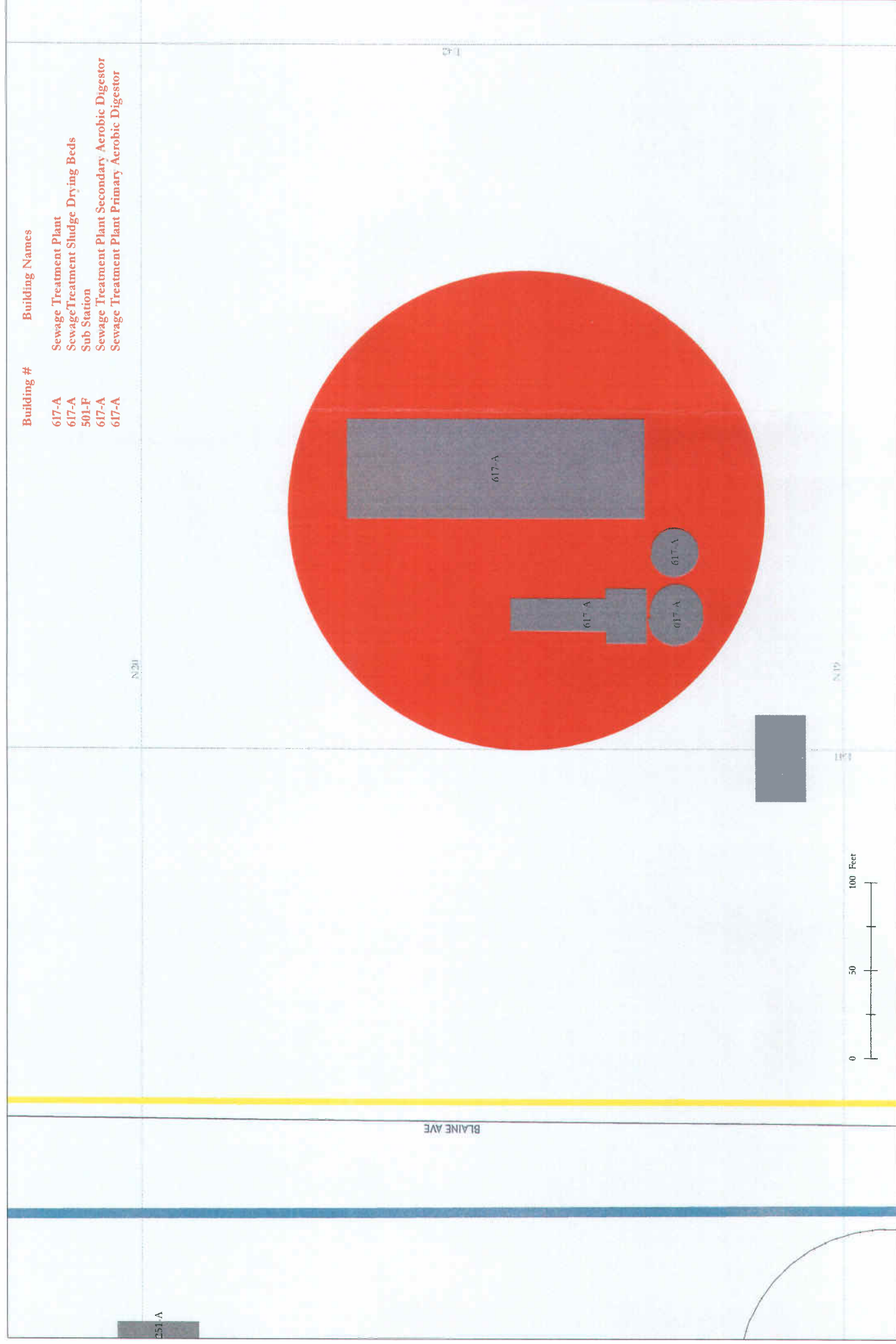
FIGURE 11  
Project Number 5974.0012

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data located in various city, county and state offices and other sources, affecting the area shown, and is to be used for reference purposes only. Dakota County is not responsible for any inaccuracies herein contained. If discrepancies are found please contact Dakota County Environmental Management Department.

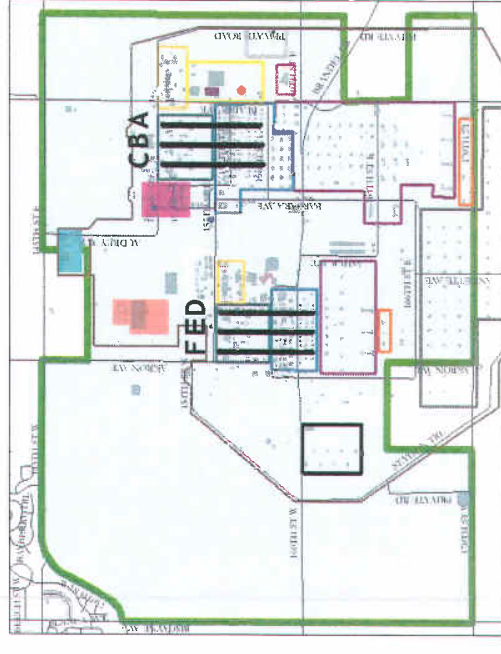
Prepared on 4 August 2006 by Dakota County Environmental Management Department staff.

# Gopher Ordinance Works

## Waste Water (Sewage) Treatment Plant



### Overview



### Key

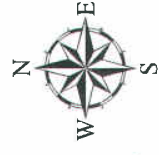
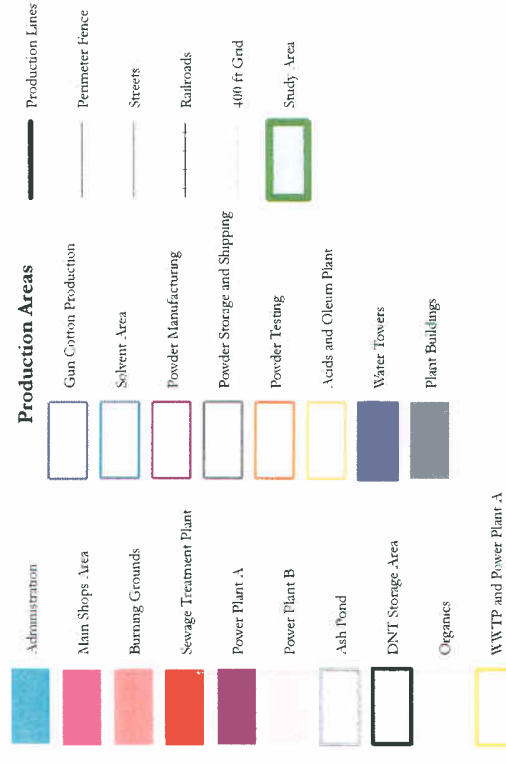


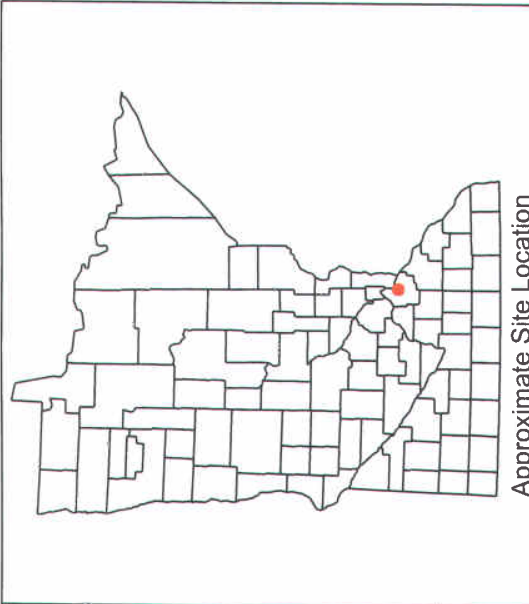
FIGURE 12  
Project Number: 5974.0012

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data located in various city, county, and state offices and other sources, affecting the area shown, and it is to be used for reference purposes only. Dakota County is not responsible for any inaccuracies herein contained. If discrepancies are found please contact Dakota County Environmental Management Department.

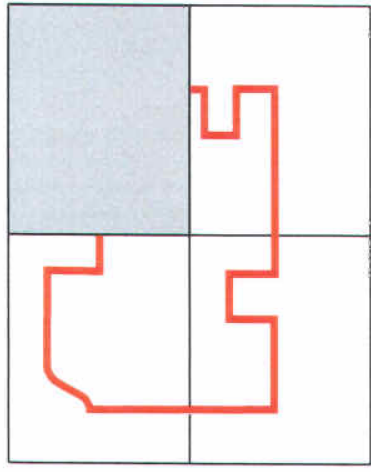
Prepared on: 4 August 2006 by: Dakota County Environmental Management Department staff.






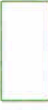




Approximate Site Location



**Legend**

-  Study Area
-  City Streets
-  County Roads
-  Buildings



500 0 500 1,000 Feet

**FIGURE 13B  
FGW STRUCTURE LOCATIONS  
PRIOR TO 1945**

**GOPHER ORDNANCE WORKS  
DAKOTA COUNTY, MINNESOTA**

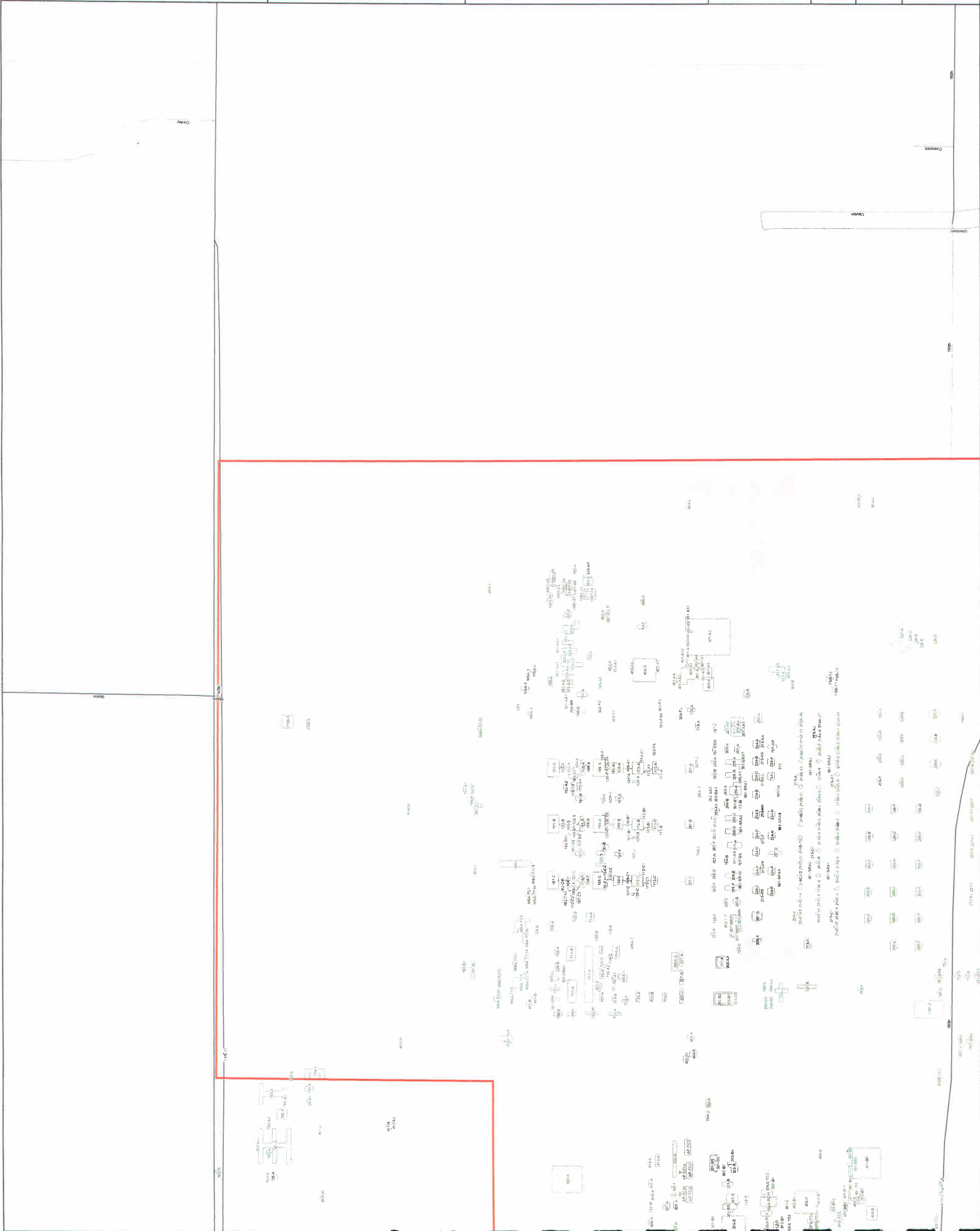


Date: 08/04/2006  
Revision:

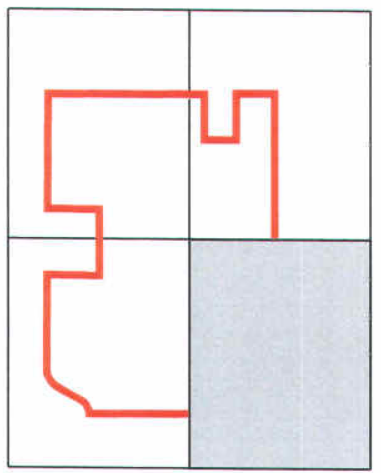
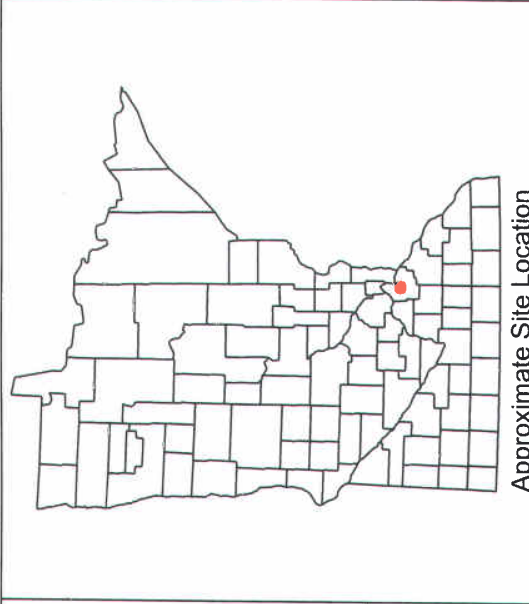
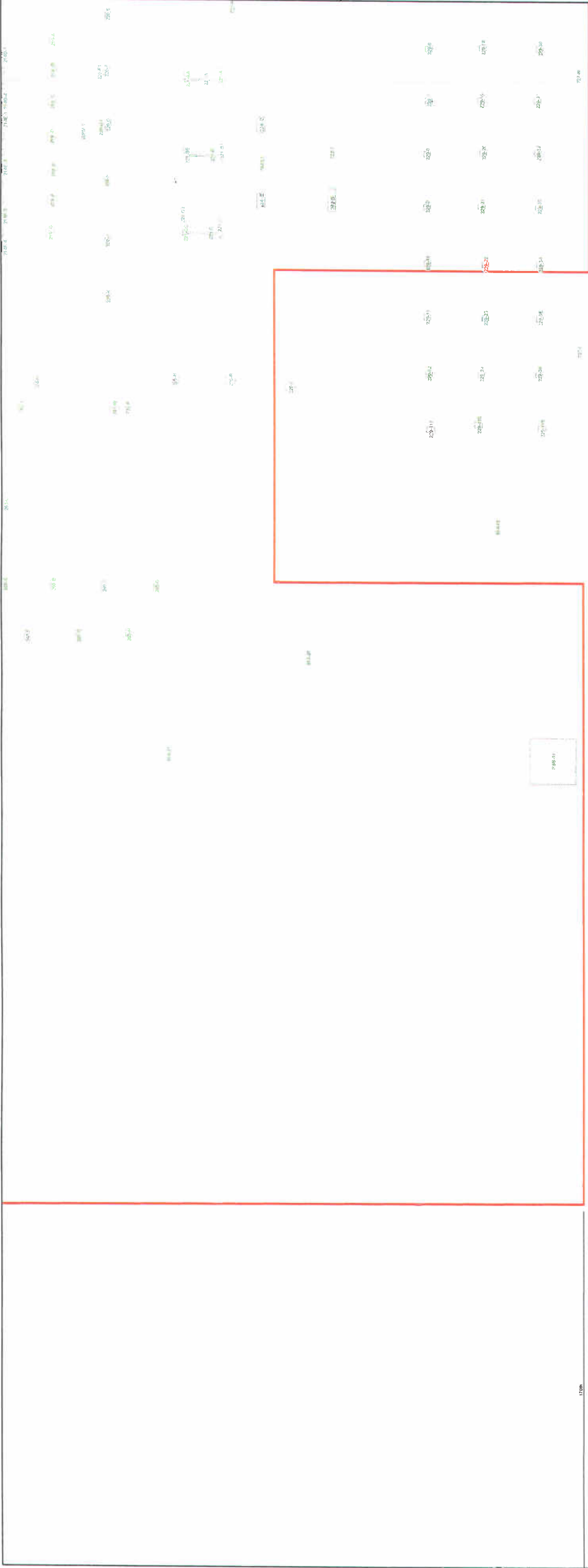
Scale: 1:12,000  
1 inch equals 1,000 feet

Project  
Number: 5974.0012





Drawn By: MKB  
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**Legend**

-  Study Area
-  City Streets
-  County Roads
-  Buildings



**FIGURE 13C  
FGOW STRUCTURE LOCATIONS  
PRIOR TO 1945**

**GOPHER ORDNANCE WORKS  
DAKOTA COUNTY, MINNESOTA**

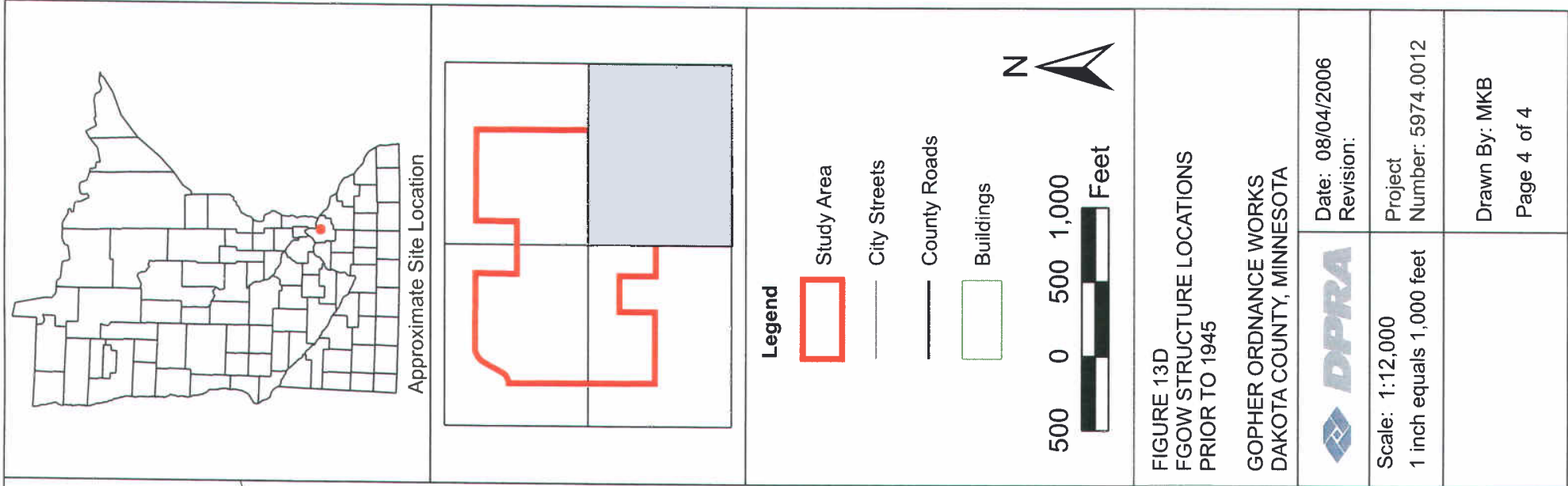


Date: 08/04/2006  
Revision:

Scale: 1:12,000  
1 inch equals 1,000 feet

Project  
Number: 5974.0012

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**FIGURE 13D**  
**FGOW STRUCTURE LOCATIONS**  
**PRIOR TO 1945**  
**GOPHER ORDNANCE WORKS**  
**DAKOTA COUNTY, MINNESOTA**

**DPRA**

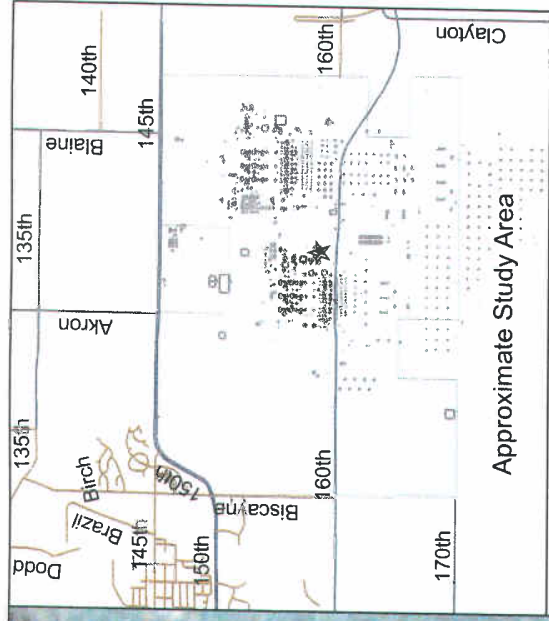
Date: 08/04/2006  
 Revision:

Scale: 1:12,000  
 1 inch equals 1,000 feet

Project  
 Number: 5974.0012

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Approximate Study Area

**Legend**



Edge of Ravine



FIGURE 14  
DEBRIS DISPOSAL AREA

GOPHER ORDNANCE WORKS  
DAKOTA COUNTY, MINNESOTA



Date: 06/30/2006  
Revision:

Scale: 1:1,200  
1 inch equals 100 feet

Project  
Number: 5974.0012

Drawn By: MKB

