

# PRESCRIBED BURN PLAN

## IRVINE PRAIRIE 2024 1 of 1

**SITE/TRACT:** Irvine Prairie- South Tract, East Unit

**LANDOWNER/OPERATOR:** Tallgrass Prairie Center, University of Northern Iowa

**ADDRESS:** 1173 55<sup>th</sup> St, Dysart, IA 52224

**ACRES TO BURN:** 29.0

**TOWNSHIP:** Bruce, T86NR12W    **SECTION:** 32

**PLANNED DATE FOR BURN:** 4-01-24

**EXPIRATION DATE:** 5-20-24

### Notification of units of government:

**Local Fire Dept.:** Dysart Fire Department\* (City of Dysart)

**Phone:** 319-476-5690

**Sheriff/County Dispatch:** Benton County Sheriff Office

**Phone:** 319-472-2337

**Other:** Tama County Sheriff Office

**Phone:** 641-484-3760

### Notification of neighbors (in advance and day of):

**Name:** Cathy Irvine (north)

**Phone:** 319-640-5919 (cell)

**Name:** Larry Fleschner (northeast)

**Phone:** 319-342-2729 (landline)

**Name:** Shane Vogeler (south)

**Phone:** 319-231-6619 (cell)

**Name:** Ed Hach (west)

**Phone:** 319-538-1211 (cell)

**Name:** Brian Pippert (east)

**Phone:** 319-231-5453 (cell)

## A. DESCRIPTION OF BURN AREA:    Program/Land use: NA

### A1) Woody Plant Species (list species, size, and plants/acres):

None

### A2) Herbaceous Plant Species (list species, height, condition):

Tallgrass prairie vegetation throughout, approximately 5ft vegetation height. Dense warm season grasses, with forbs co-dominant. About 7 acres of shorter prairie with annual weed cover.

### A3) Fuel Load:

Fine fuel (grass/forbs)	Tons/acre	%Volatile Fuels
Predominant fuel ht. 2-6 ft	~ 2	None

A4) Soil Types:	Slope%	Aspect:	%Area
Dinsdale silty clay loam	2-9%	W	~85
Colo-Ely silty clay loam complex	0-5%	W	~15

## B. OBJECTIVE AND TIMING OF BURN

General objective is to remove accumulated dead biomass to promote native prairie growth. Other objectives include suppressing non-native cool season grass, perennial noxious weeds, and trees/shrubs.

## C. SPECIFIED CONDITIONS FOR DAY OF BURN

Condition	Preferred:	Lowest Acceptable:	Highest Acceptable:
Air temperature	50-65 F	40 F	75 F
Relative humidity	40-50%	30%	70%
Wind speed	10-15 mph	7 mph	20 mph
Wind direction	N, NW, W, SW, S, SE, E, NE		

## D. PREPARATION OF AREA FOR BURNING (see attached burn plan map)

- 1. Firebreak Construction: (type of fire line, width in feet. Also indicate on burn plan map.)**  
South, west, north breaks 15ft wide. Mowed breaks into existing prairie, stubble height 2in, thatch thrown out of breaks.  
East break consists of Level B road.
- 2. Existing firebreaks: (streams, roads, tilled field, etc. Show on burn plan map)**  
Road to north and east provides existing fire break.
- 3. Items to address: (protection of power line poles, signs, cable/phone junction boxes, dead tree removal, etc.)**  
Weather station should be protected with fire breaks and fire should be suppressed within 15ft of station. Short fuels make defense straightforward.
- 4. Potentially Hazardous Areas within Burn Area: (power lines, snags, structure, obstacles to vehicle access, plastic drain tile, under-ground utilities, etc.)**  
None.

## E. ADJACENT AREAS

### 1. Vegetation and Fuels Description:

The area bordering the west boundary is tallgrass prairie vegetation. The field bordering the south boundary is chopped corn residue. The area bordering the east boundary (other side of road) is chopped corn residue. The farm to the north consists of mixed mowed cool season grass, cool-season ornamental forbs, shrubs 15-30 ft tall, and trees 30-60 ft tall. The field bordering the north boundary is oat cover crop.

### 2. Special Precaution Areas: (also drawn on attached burn plan map)

The primary special precaution area is Irvine Farm, north of the road.

### 3. Smoke Management Plan:

Avoid sending smoke to the north. Irvine residence is appx. 200 ft. to the north of the burn area and gravel road is appx. 50 ft. to the north. Flaggers and signage should be assigned to 55<sup>th</sup> St. on the east and west boundaries of Irvine Prairie if smoke is expected to cross the road (southerly winds). If smoke is on the road, flaggers will direct traffic.

## F. TOOLS/EQUIPMENT NEEDED:

*Include type and number of rakes, swatters, drip torches, backpack pump, other*

### F1) Equipment Checklist

2 Pumper Vehicles (Polaris Ranger w/ 50 gal tank, Chevy Silverado w/ 225 gal tank)

2 Drip torches (Igniters must wear all-leather boots)

1 Personal weather station (burn boss)

5 Two-way radios

5 gal Drip torch fuel (30 gas:70 diesel)

4 Flappers

5 gal Drinking water (or 2 case bottled water)

5 gal Pumper engine fuel (unleaded gas)

4 Rakes

4 Lighters (line leaders and igniters)

4 Backpack pumps

12 NOMEX coveralls, leather gloves, safety glasses

1 Fencing tool

## G. PERSONNEL REQUIRED FOR BURN

*Include number of people and their role. It's recommended that burning be done by certified personnel.*

<b>Position</b>	<b>Name</b>
Fire Boss	Justin Meissen (FFT2 Coursework)
A Team Line Leader	Laura Walter (FFT2 Coursework)
B Team Line Leader	Andy Olson (FFT2 Coursework)
A Team Igniter	Mallory Sage or volunteer, must wear all-leather boots
B Team Igniter	Andrea Fager (FFT2 Coursework) or volunteer, must wear all-leather boots
A Team Pumper/Driver	TPC Research Assistant 1 or volunteer
B Team Pumper/Driver	TBD volunteer
A Team Mop/Spotter	TBD volunteer
B Team Mop/Spotter	TBD volunteer
Traffic Control (S winds only)	TBD volunteer
Traffic Control (S winds only)	TBD volunteer

## H. SPECIAL CONSIDERATIONS

### Precautions to prevent fire escape

Wide burn breaks make escape unlikely, but airborne embers may cause spot fires in heavy fuels. Look-outs will be assigned to watch and extinguish spot fires downwind from airborne embers.

## I. SUPPRESSION PLAN IF FIRE ESCAPES

*Note any contingency plans, i.e. secondary firebreaks: creeks, roads, disked breaks, authorities to contact. Provide burn map to fire dept. noting field access, hazards, etc.*

Roads exist along the entire north and east edges of the property. A creek and cool season waterway runs northwest to southeast in the adjacent southern property. If fire escapes to the west and cannot be suppressed at escape location safely from the flanks, crews should follow the main road west and access the neighboring fields from the west. If fire escapes to the south, crews should suppress fire in the field from the flanks. If fire escapes to the east and cannot be suppressed at escape location safely from the flanks, crews should move to the dirt road/field bordering the east and prepare to suppress spot fires across the road. Engine crews should be prepared to suppress spot fires in the adjacent fields (see Map 5). Call 911 if fire in fields cannot be suppressed.

## J. PATROL AND MOP UP PLAN

Look-outs should be assigned to periodically watch for spot fires downwind from airborne embers. Crews will extinguish or spread out any smoking material within 100 ft of burn perimeter. Crew may be dismissed 30 min. after no-smokes. Burn boss will remain on site for 1 hr 30 min after crew dismissed to ensure no flare ups.

## K. IGNITION PLAN (See attached burn plan map)

### 1. Ignition Time:

10am-1pm

### 2. Method of Firing/Firing Sequence:

For north winds (Map 1): Ignite on the southeast corner. Team A should back fire to the west to DP1 to create initial black line as Team B waits. Black line should be >50ft before proceeding. Team B should then begin slowly flank firing along the east lines towards DP3, while Team A slowly burns the corner north of DP1 and continues slowly headfiring the corner toward DP2. Once teams have reached DP2/3, Team B should proceed toward DP4 as efficiently as possible. Lower fuels may require more time to establish black. As Team B moved toward DP4, Team A should move slowly toward DP5, keeping pace with Team B, but not too slowly that the main fire gets ahead. Each team should hold at DP5/DP4 until the other team reaches their drop point. Both teams can then begin head firing toward DP6.

For northwest winds (Map 2): Ignite on the southeast corner. Both teams begin back firing up the south and east lines to create sufficiently wide black line, Team A on the south and B on the east. Team A and B should move approximately the same speed toward DP1 and DP2 respectively. Team B will encounter lower fuel loads on the northern half of the unit and this may cause them to move more slowly. Both Teams should hold at DP1, DP2 until black lines >50 ft wide. Team A should then begin head fires along the west line until reaching DP4, while Team B holds at DP2. Both teams may then proceed headfiring across northern/northwestern line towards DP5 once team A reaches DP4.

For west winds (Map 3): Ignite on the southeast corner. Team B should start the backing fire along north line to DP1. Teams should hold until black lines >50 ft wide. Team B will encounter lower fuel loads on the northern half of the unit and this may cause them to move more slowly. Once Team B reaches DP1, Team A may begin igniting a flank fire toward DP3, while Team B may ignite flank fires toward DP2. Each team should hold at DP2/DP3 until the other reaches DP2/DP3. Both teams may then begin headfires toward DP4.

For southwest winds (Map 4): Ignite in the northeast corner. Both teams begin back firing on the north and east lines to create sufficiently wide black line, Team A on the north and B on the east. Team A should hold at DP3 until Team B reaches DP1. Teams should hold until black lines >50 ft wide. Team B should begin head firing toward DP2, while Team A head fires toward DP4. Both teams should try to reach their drop points at about the same time and should hold until other team reaches their drop point. Once DP4 and DP2 are reached, both teams should move in sync toward DP5, with Team A always ahead slightly.

For southeast winds (Map 5): Ignite in the northwest corner. Both teams begin back firing on the north and west lines to create sufficiently wide black line, Team A on the west and B on the north. Team B should hold at DP4 until Team A reaches DP1. Teams should hold until black lines >50 ft wide. Team B should begin head firing toward DP5, while Team A head fires toward DP2. Team A should continue headfiring toward DP5 and will meet Team B near DP5.

For east winds (Map 6): Ignite at the trail intersection in the middle of the west line. Both teams begin back firing on the west line to create sufficiently wide black line, Team A south to DP1 and B north to DP4. Team B should hold until Team A reached DP1. Teams should hold until black lines >50 ft wide. Team A may then begin flank firing on the south edge, with Team B

beginning a flank fire on the north edge when Team A reaches the top of the hill. Both Teams should then continue at the same pace toward DP5 and DP2 and then hold. Teams may then begin headfiring toward DP3.

For northeast winds (Map 7): Ignite in the southwest corner. Both teams begin back firing on the west and south lines to create sufficiently wide black line, Team A on the south and B on the west. Team A should hold at DP2 until Team B reaches DP4. Teams should hold until black lines >50 ft wide. Team A can then begin headfires toward DP3. Once Team A reaches DP3, Team B may begin headfires toward DP5, in tandem with Team A as both teams move toward DP5.

**Plan Prepared By:**

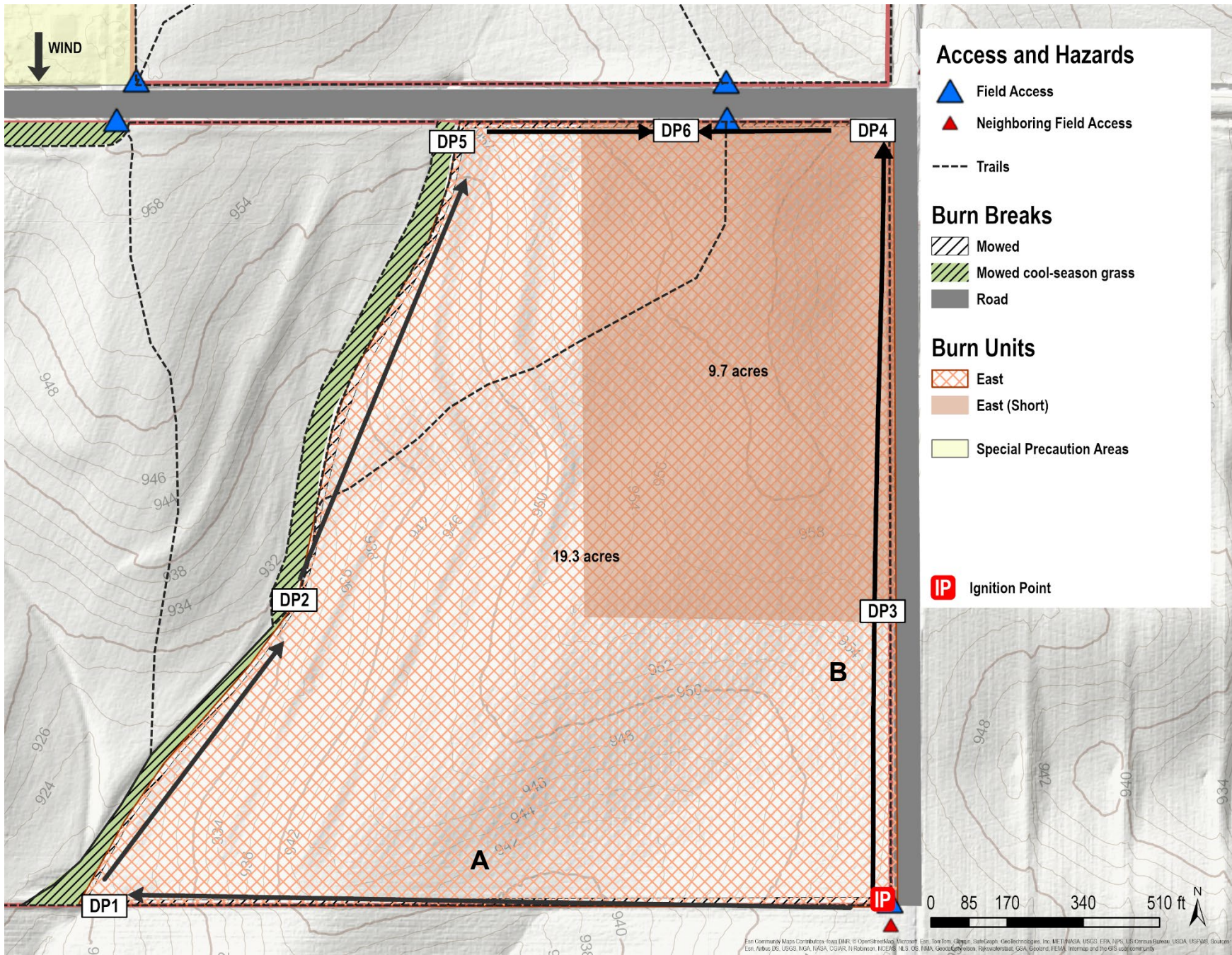
Justin Meissen

Research and Restoration Program Manager, Tallgrass Prairie Center, University of Northern Iowa

Tel: 319-273-7957

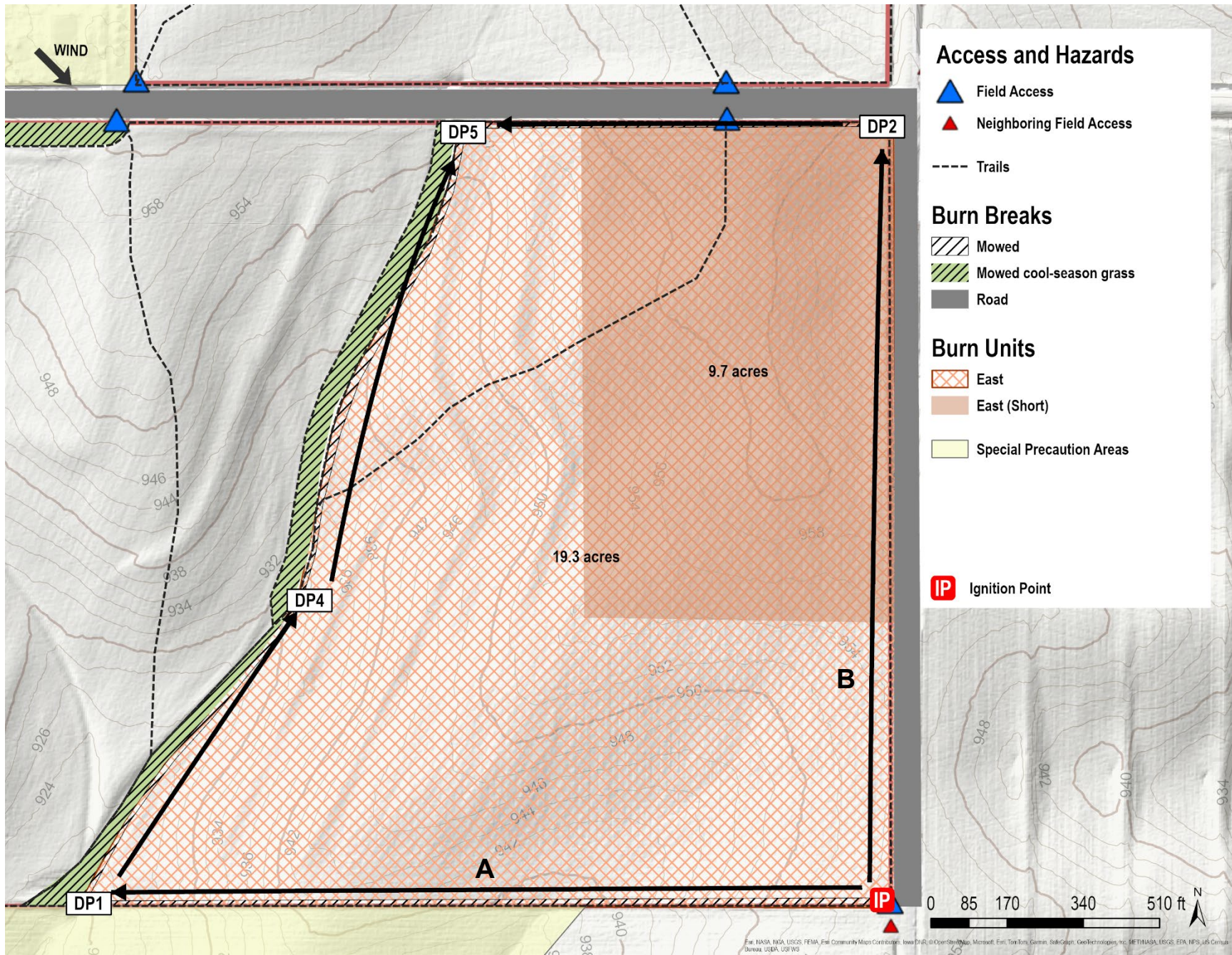
Email: [justin.meissen@uni.edu](mailto:justin.meissen@uni.edu)





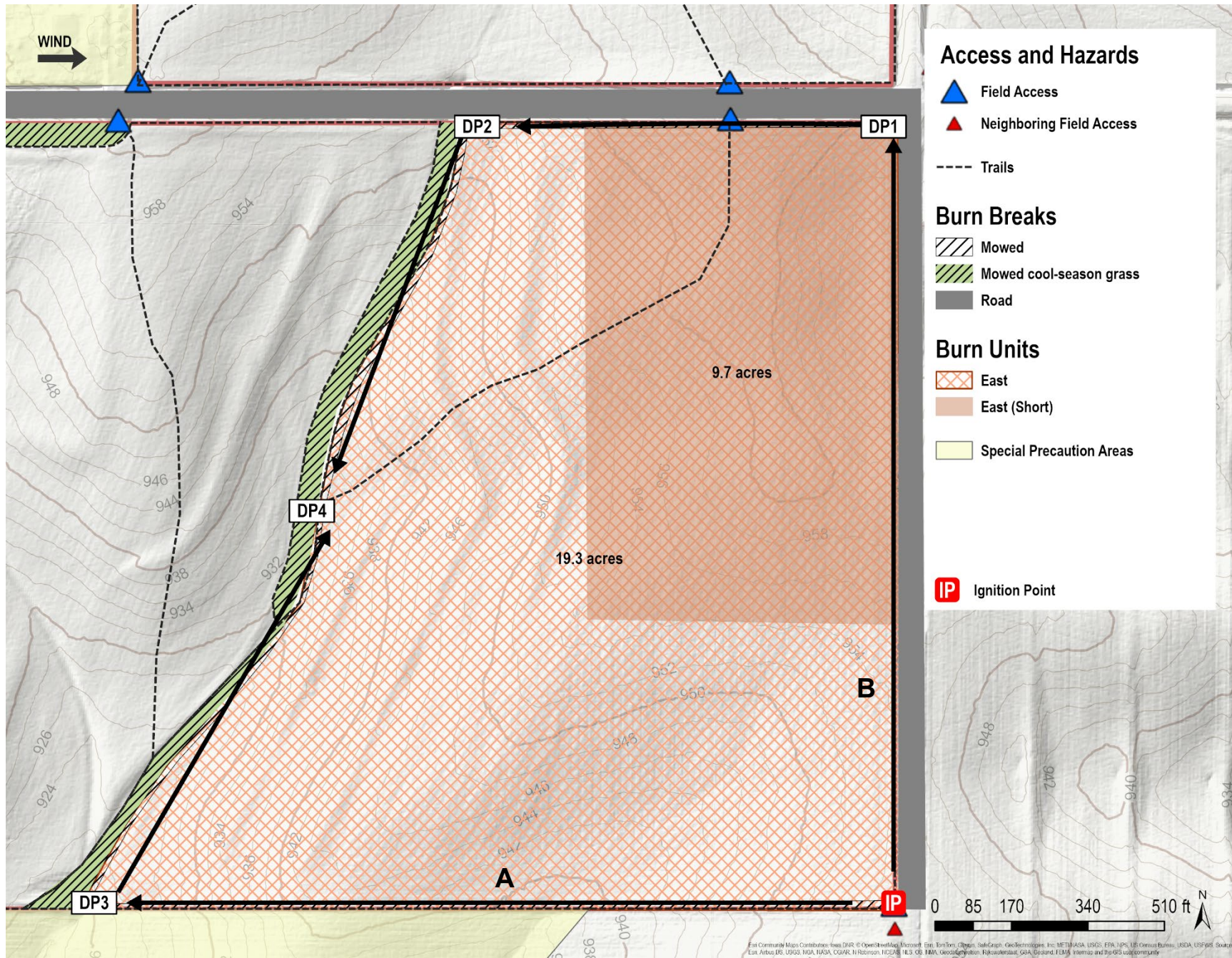
Map 1. East Unit (South Tract) Ignition Plan for North Winds





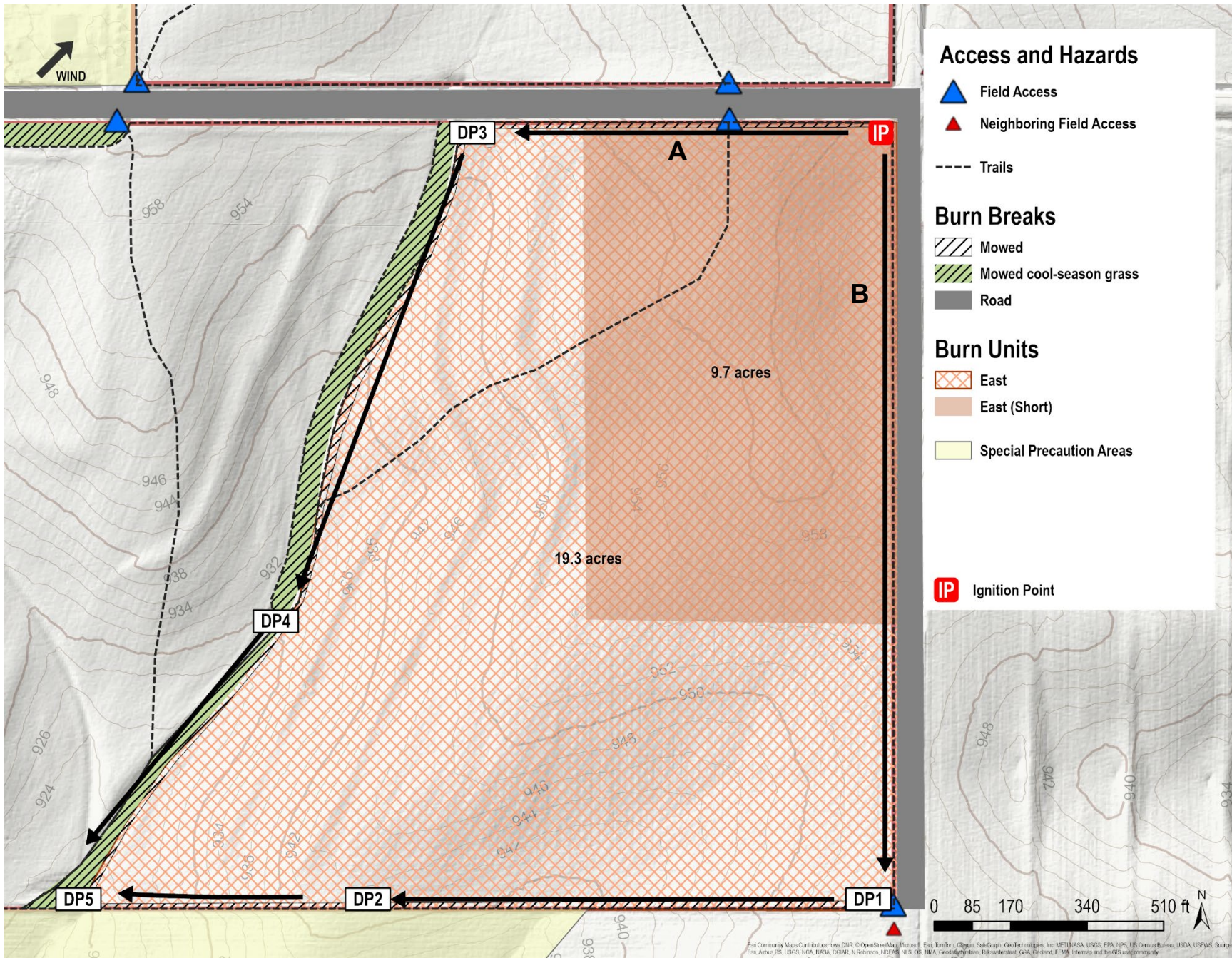
Map 2. East Unit (South Tract) Ignition Plan for Northwest Winds





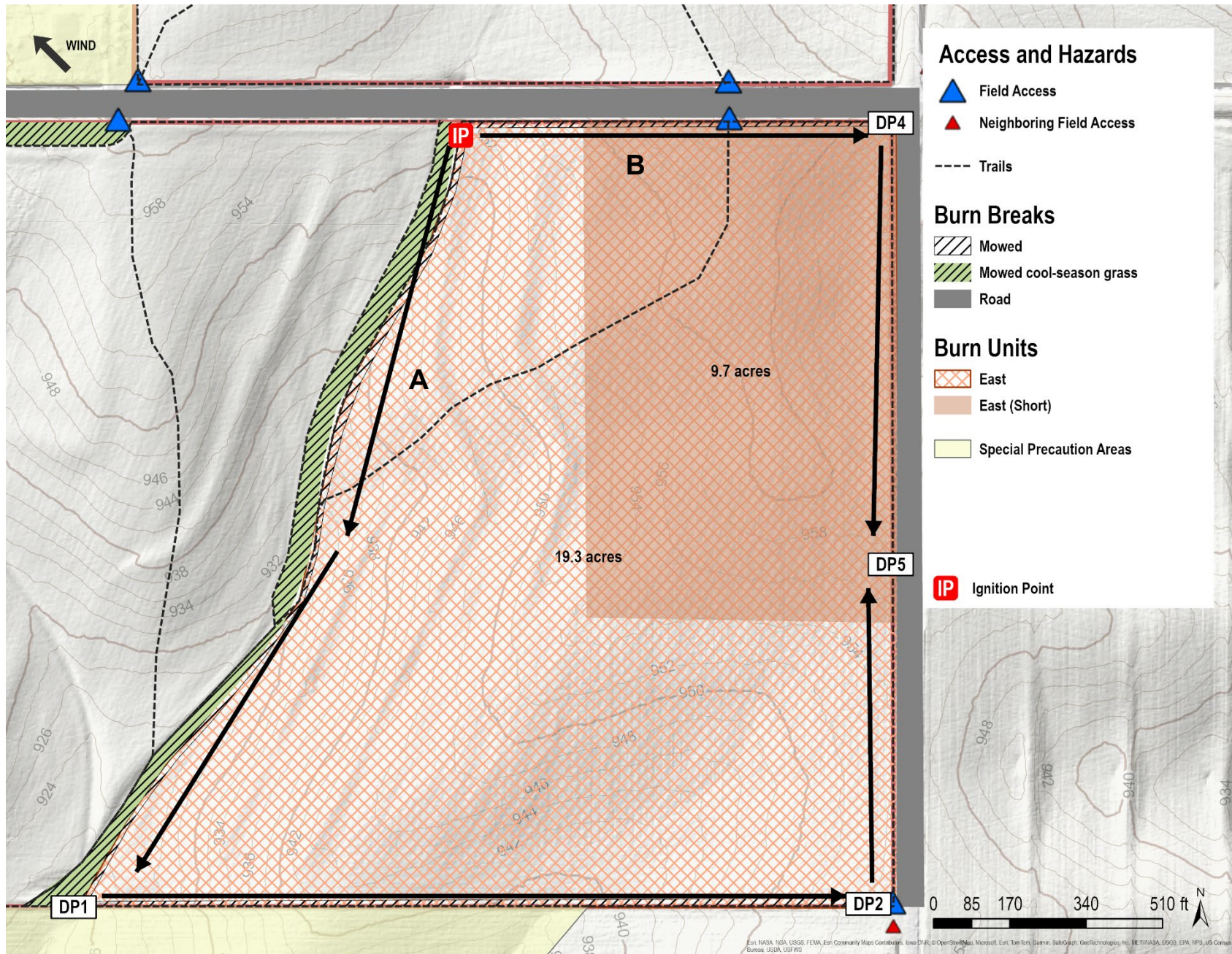
Map 3. East Unit (South Tract) Ignition Plan for West Winds





Map 4. East Unit (South Tract) Ignition Plan for Southwest Winds



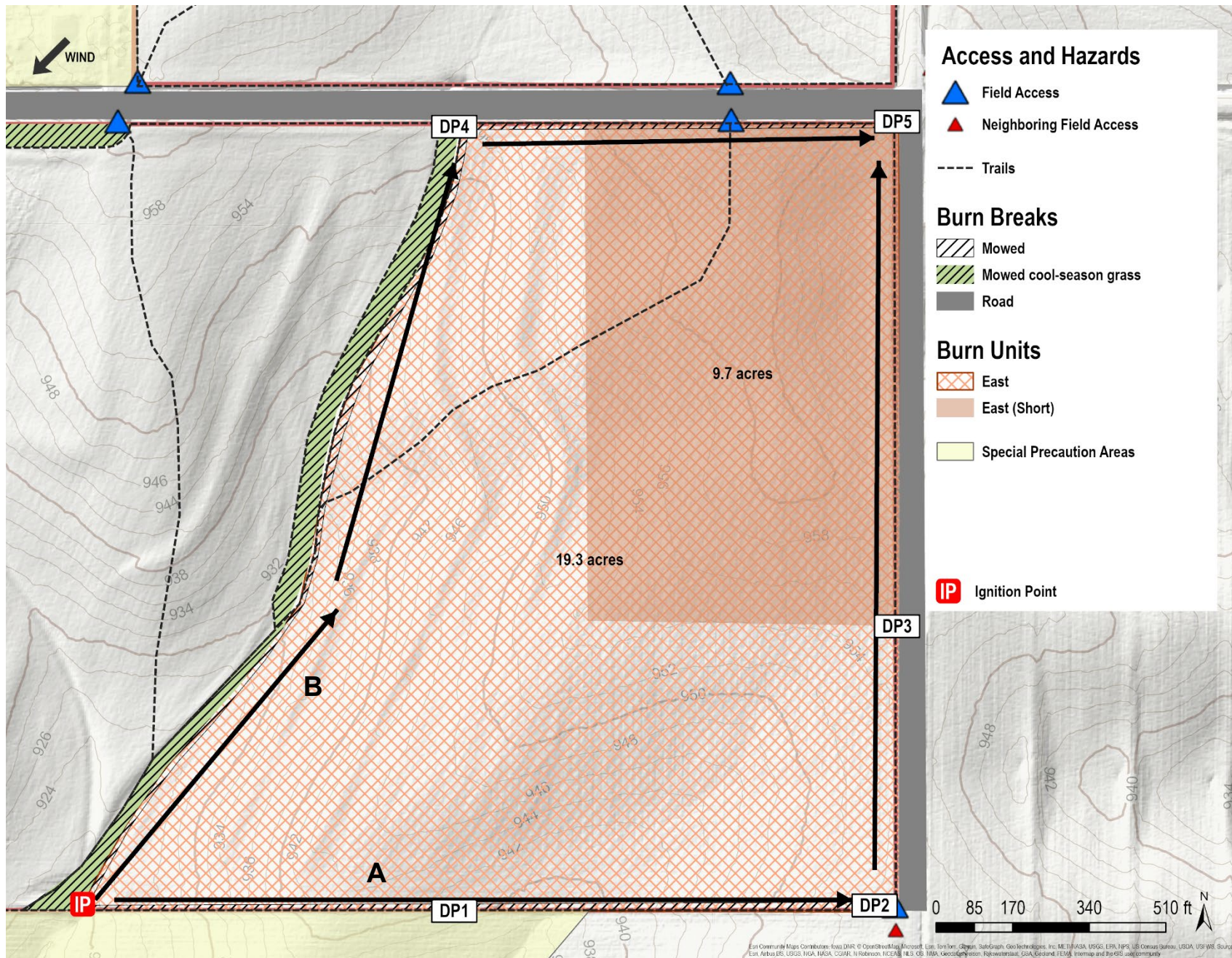


Map 5. East Unit (South Tract) Ignition Plan for Southeast Winds



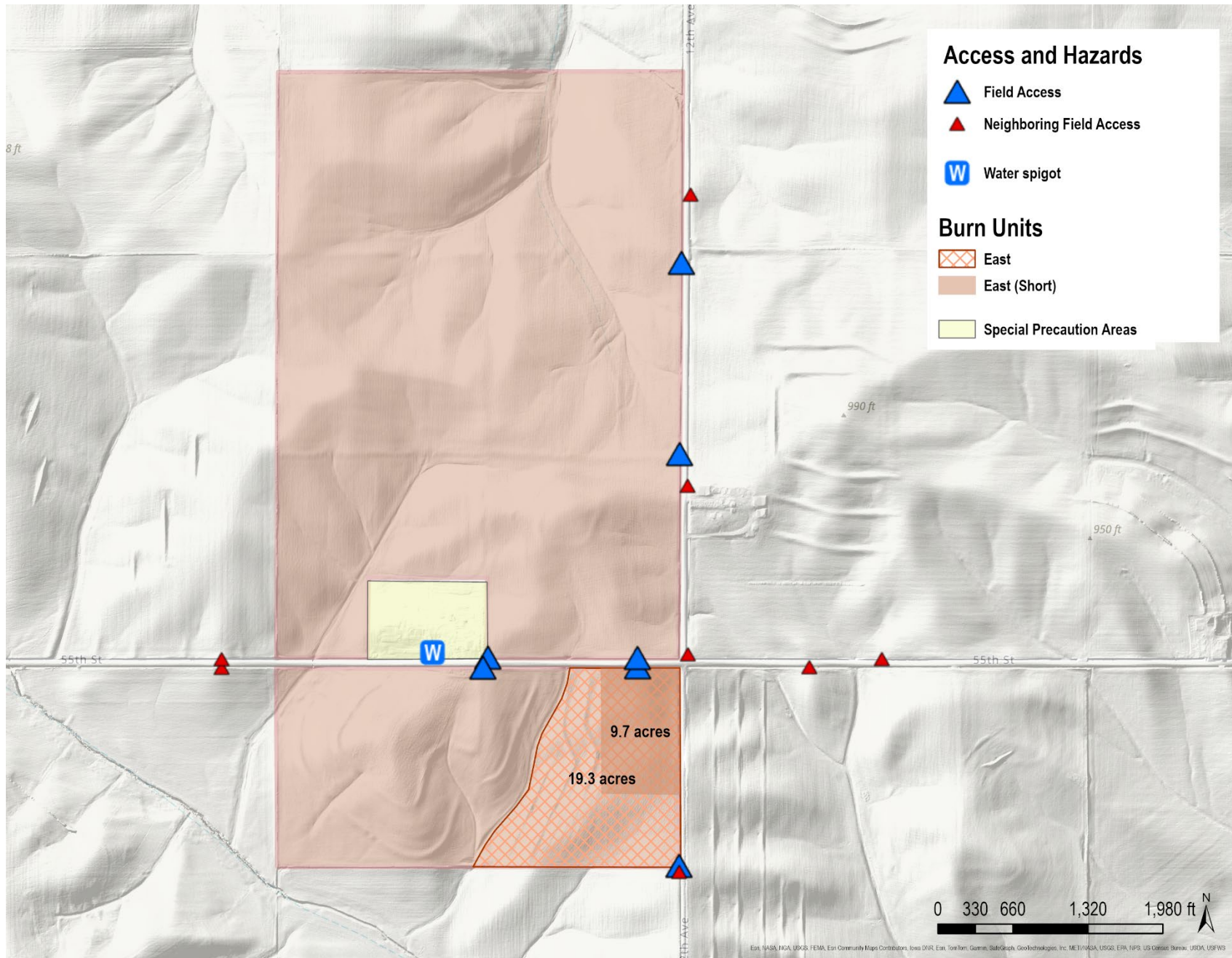






Map 7. East Unit (South Tract) Ignition Plan for Northeast Winds





Map 7. Burn Area Overview

# PRESCRIBED BURN CHECKLIST

*For review and completion day of burn*

## A. Pre-burn Checklist:

- |  |     |    |
|--|-----|----|
| 1. Weather forecast favorable                | YES | NO |
| 2. Necessary firebreaks constructed          | YES | NO |
| 3. Potential hazards accounted for           | YES | NO |
| 4. Special precaution areas noted            | YES | NO |
| 5. Safety equipment adequate                 | YES | NO |
| 6. Tools/equipment on-site                   | YES | NO |
| 7. Personnel needed available                | YES | NO |
| 8. Special considerations reviewed with crew | YES | NO |

## B. IF ANY OF ABOVE ARE ANSWERED "NO", DO NOT BURN

### 1. Actual weather at burn

- |  |                         |           |                |
|--|-------------------------|-----------|----------------|
| i. Acceptable Conditions:                  | Preferred:              | Actual:   | Time Recorded: |
| ii. Air temperature (40-75 F)              | 60 F                    | _____ F   | _____          |
| iii. Relative humidity (30-60 %)           | 40%                     | _____ %   | _____          |
| iv. Soil damp to touch                     |                         | _____     | _____          |
| v. Wind speed (7-20 mph)                   | 12 mph                  | _____ mph | _____          |
| vi. Acceptable wind direction steady from: | N, NW, W, SW, SE, E, NE |           | YES NO         |
| vii. Preferred wind direction steady from: | SE, E, NE               |           | YES NO         |
| viii. Actual wind direction:               | _____                   |           |                |

2. Fronts or changes expected? YES NO

### 3. Notification of units of government made:

- |                             |                       |                     |
|-----------------------------|-----------------------|---------------------|
| i. Local Fire Department    | Dysart FD* (City)     | phone: 319-476-5690 |
| ii. Sheriff/County Dispatch | Benton County Sheriff | phone: 319-472-2337 |
| iii. Other                  | Tama County Sheriff   | phone: 641-484-3760 |

### 4. Notification of neighbors

- |                                       |                                |
|---------------------------------------|--------------------------------|
| i. Name: Cathy Irvine (north)         | phone: 319-640-5919 (cell)     |
| ii. Name: Larry Fleschner (northeast) | phone: 319-342-2729 (landline) |
| iii. Name: Shane Vogeler (south)      | phone: 319-231-6619 (cell)     |
| iv. Name: Ed Hach (west)              | phone: 319-538-1211 (cell)     |
| v. Name: Brian Pippert (east)         | phone: 319-231-5453 (cell)     |

5. Necessary permits obtained (if any): YES NO NA

Checklist completed by: \_\_\_\_\_

Date: \_\_\_\_\_

**A. Post-burn Evaluation:**

1. **Burning method used** \_\_\_\_\_

2. **Start of burn** Beginning time: \_\_\_\_\_

**Mop-up completed** Ending time: \_\_\_\_\_

3. **Observed change in weather conditions during burn:**

\_\_\_\_\_

\_\_\_\_\_

4. **Fire behavior:**

i. Spotting	NO	FEW	MANY
ii. Difficult to control	NO	YES	
iii. Convection column	NO	YES	
iv. Fire whirls	NO	YES	

5. **Objective of burn met:** NO YES

6. **Post-burn management plan (if needed):**

\_\_\_\_\_

\_\_\_\_\_

7. **Other comments:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Evaluation Completed by:**

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_