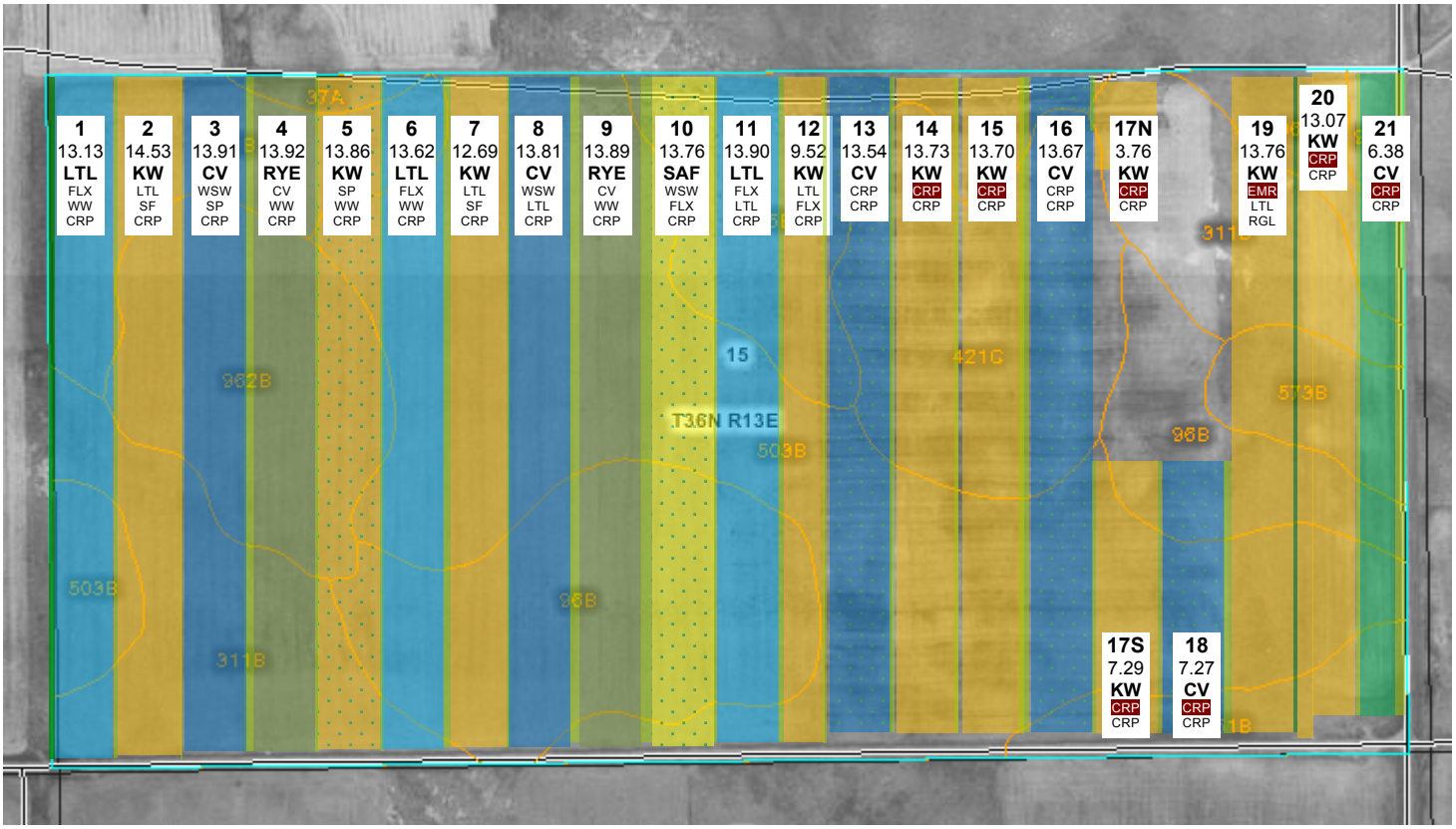
Appendix 1: Farm Map and Rotation Plan, Courtesy of Vilicus Farms, Havre, MT (VBSC grower)

Field Layout / 2012 Crop Plan

Field I: 317.45 acres

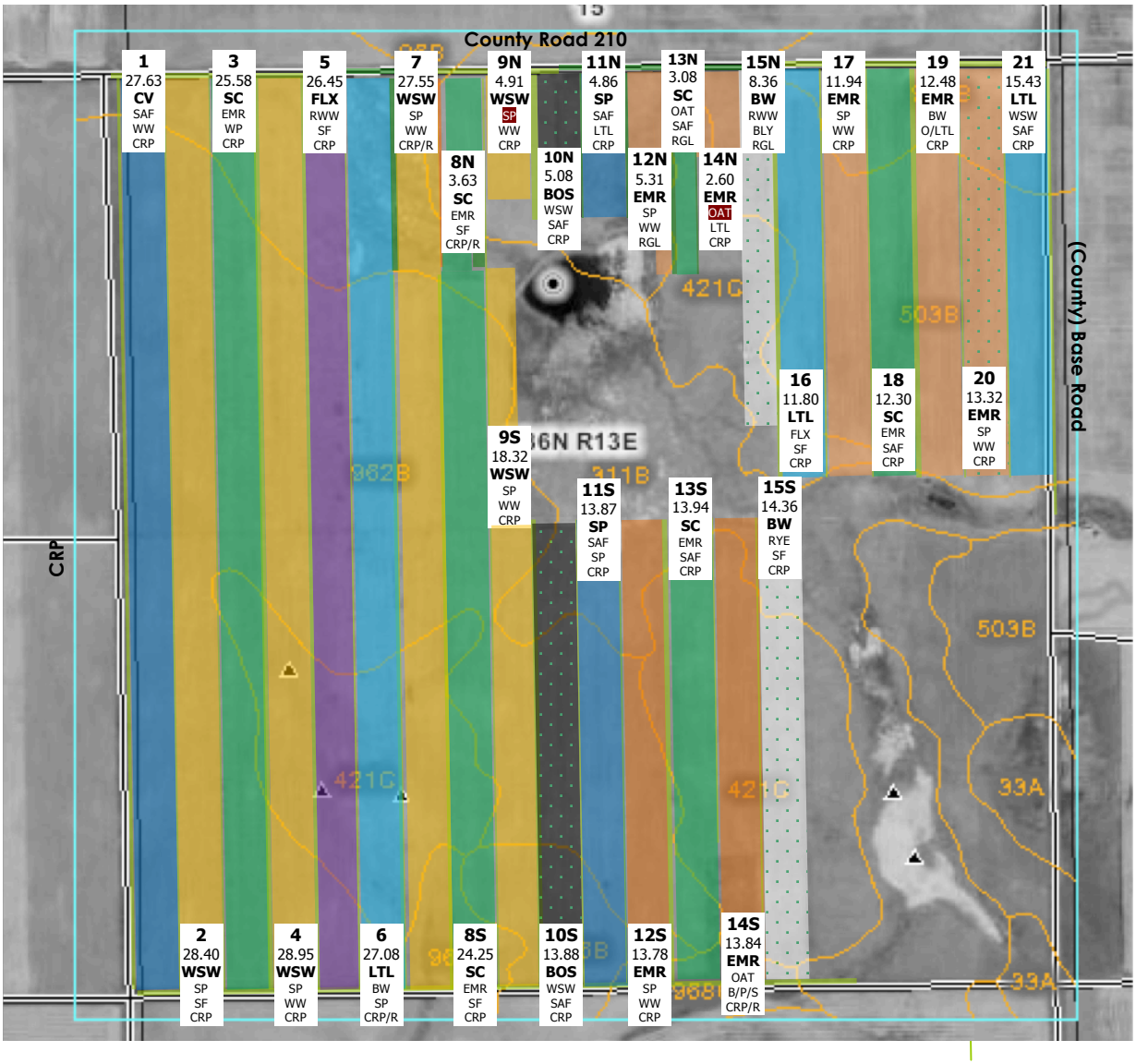
FSA Farm / Tract Numbers: 5528 – 780



CROP	STRIP(S)	ACRES	NOTES
Safflower (SAF)	10	13.76	RWW cover crop
Lentils (LTL)	1, 6, 11	40.65	
Rye (RYE)	4, 9	27.81	No-tilled into bladed CV
Chickling Vetch (CV)	3, 8, 13, 16, 18, 21	68.58	13, 16, 18, 21 RWW cover crop 3, 8, 13 Manure
Khorasan Wheat (KW)	2, 5, 7, 12, 14, 15, 17N, 17S, 19, 20	115.91	2, 7, 12 Under-seeded with Sweet Clover *20 ~3 acres finished with BW*
		TOTAL CROP ACRES:	**266.71**
		CRP	22.87
		Border Strips (non-crop):	27.87
		TOTAL FIELD ACRES:	**317.45**

Field II: 488.51 acres

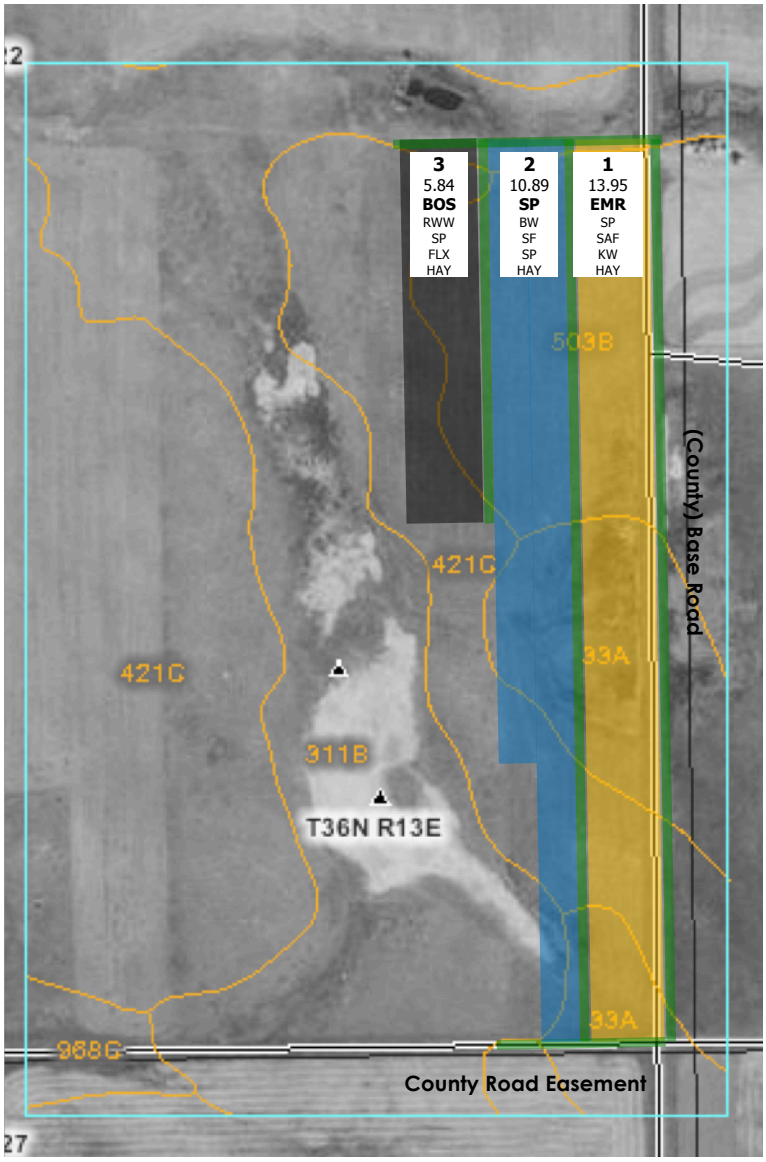
FSA Farm / Tract Numbers: 5528 –8251



CROP	STRIP(S)	ACRES	NOTES
Flax (FLX)	5	26.45	
Black Oil Sunflower (BOS)	10N, 10S	18.96	
Buckwheat (BW)	15N, 15S	22.72	RWW Cover Crop
Lentils (LTL)	6, 16, 21	54.31	
Spring Peas (SP)	11N, 11S	18.73	
Chickling Vetch (CV)	1	27.63	Green manure
White Spring Wheat(WSW)	2, 4, 7, 9N, 9S	108.13	
Emmer (EMR)	12N, 12S, 14N, 14S 17, 19, 20	73.27	20 RWW Cover Crop;12N, 12S, 17 Under-seeded with Sweet Clover
Sweet Clover (SC)	3, 8N, 8S, 13N, 13S, 18	82.78	Green Manure; Apply manure
	TOTAL CROP ACRES:		**61**
	CRP		45.58
	Border Strips (non-crop):		9.92
	TOTAL FIELD ACRES:		**488.48**

Field IV: 38.74 acres

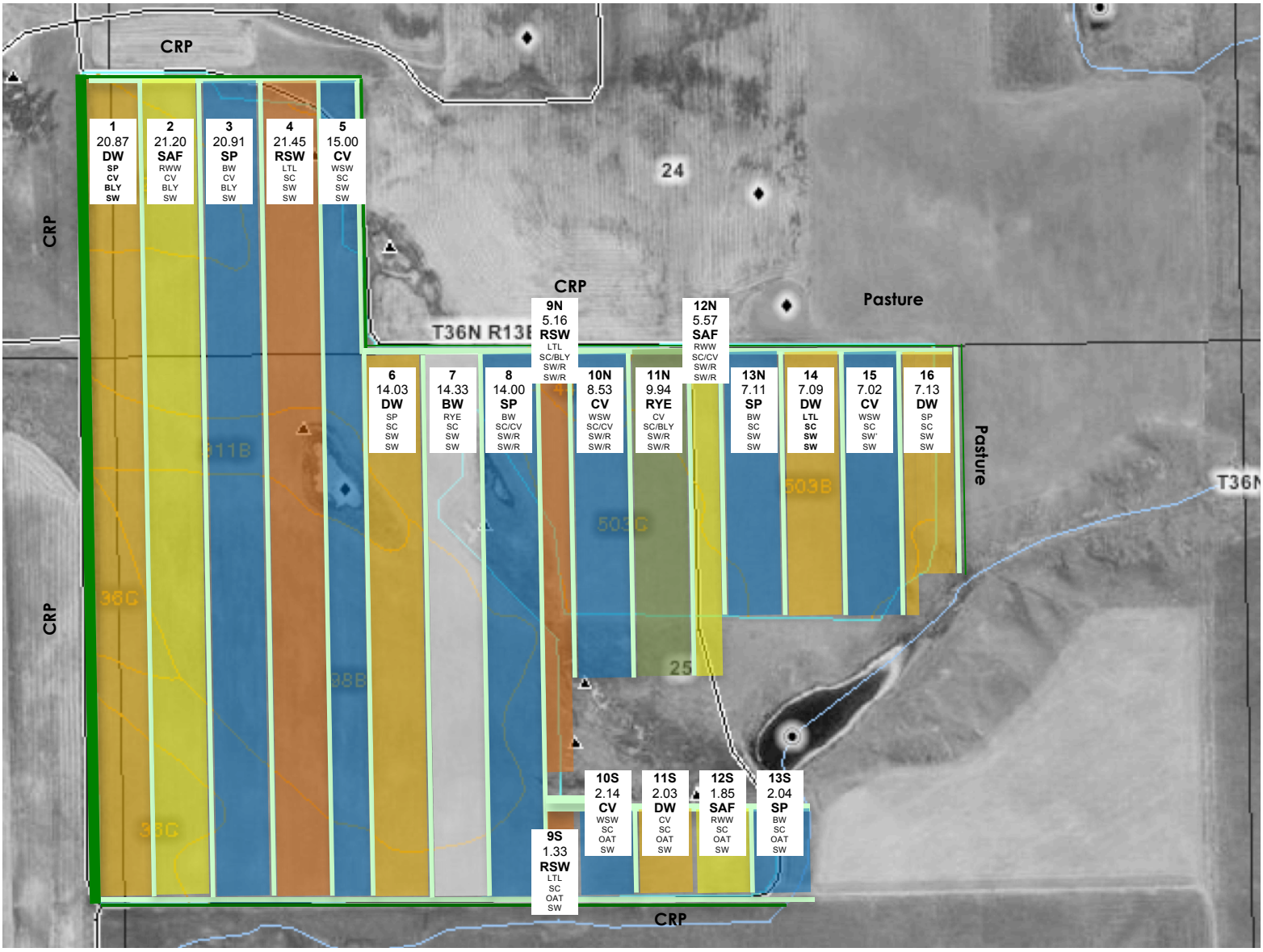
FSA Farm / Tract Numbers: 5528 –8251



CROP	STRIP	ACRES	NOTES
Emmer (EMR)	1	13.95	Under-seeded with Sweet Clover ~3 acres to be seeded to saline-tolerant sod mix
Spring Peas (SP)	2	10.89	~2 acres to be seeded to saline-tolerant sod mix
Black Oil Sunflower (BOS)	3	5.84	
		TOTAL CROP ACRES:	**5**
		Border Strips (non-crop):	8.06
		TOTAL FIELD ACRES:	**38.74**

Field V: 238.37 acres

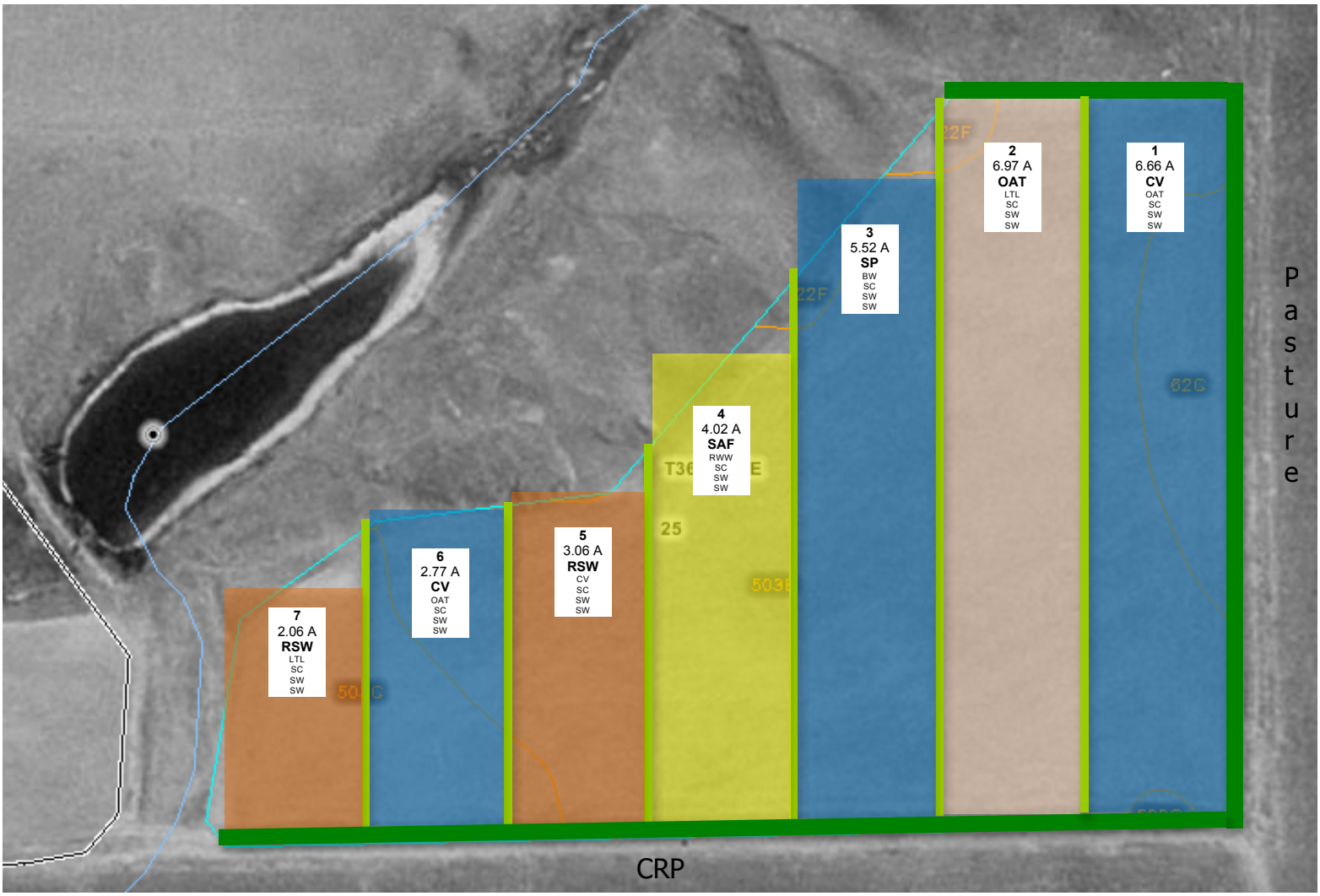
FSA Farm / Tract Numbers: 5528 –799



CROP	STRIP(S)	ACRES	NOTES
Spring Peas (SP)	3, 8, 13N, 13S	44.06	
Chickling Vetch	5, 10N, 10S, 15	32.69	Green manure
Durum (DW)	1, 6, 14, 16	51.15	
Red Spring Wheat (RSW)	4, 9N, 9S	27.94	
Rye (RYE)	11N	9.94	No-tilled into (bladed) CV
Buckwheat (BW)	7	14.33	
Safflower (SAF)	2, 12N, 12S	28.62	
	TOTAL CROP ACRES:		**0**
	Border Strips (non-crop):		29.64
	TOTAL FIELD ACRES:		**29.64**

Field VII: 37.54 acres

FSA Farm / Tract Numbers: 5528–799



CROP	STRIP(S)	ACRES	NOTES
Oats (OAT)	2	6.97	
Red Spring Wheat (RSW)	5, 7	5.12	
Spring Peas (SP)	3	5.52	
Chickling Vetch (CV)	1, 6	9.43	Green manure
Safflower (SAF)	4	4.02	
		TOTAL CROP ACRES:	**0**
		Border Strips (non-crop):	6.48
		TOTAL FIELD ACRES:	**6.48**

Planned Crop Rotation: **SG - GF - FG - BL - SL**

Year	Crop Type	Acronym	Examples	Comments	Nutrient Use (User, Provider, Scavenger)	Water Use (Heavy, Light)	Weed Competition (Good, Limited)	Roots (Deep, Shallow)
1	Spring Grain	SG	Spring Wheat, Khorasan Wheat, Barley, Oats, Emmer, Durum, Millet	Interseeded with clover; May substitute fall grain.	U	H	G	S
2	Green Fallow	GF	Sweet Clover, Red Clover, Peas, Chickling Vetch, Lupine, Hairy Vetch, Oats, Rye, Buckwheat	Green manure, not harvested for seed; May substitute spring legume.	P / S	L	G	D / S
3	Fall Grain	FG	Winter Wheat, Spelt, Rye, Triticale	Selection depends on markets, weed population, moisture and fertility; May re-seed to spring grain if winter-killed	U	H	G	S
4	Broadleaf	BL	Flax, Safflower, Camelina, Canola, Buckwheat, Sunflower	Selection depends on markets, weed population, moisture and fertility; May substitute green fallow.	S	L / H	L / G	S / D
5	Spring Legume	SL	Peas, Lentils, Chickling Vetch, Lupine	May harvest for seed or use as green manure, depending on crop condition and moisture; May substitute biennial legume, if interseeded in previous year.	P	L	L	S

The purposes of our crop rotation are to improve the soil resources of our land. Specifically, our rotation is designed to manage soil moisture, which is the primary limiting factor in our ecosystem; manage weed, pest and disease threats, through diversity; provide nitrogen, through biological fixation; manage phosphorous, by enhancing the availability of soil-mineral P; prevent soil erosion by covering the soil with living plants or residue and by increasing soil organic matter and tilth; and increase soil organic matter, by the addition of diverse plant residues.