

Real People. Real Solutions.

2024 End of Year Monitoring Report – Fifth Growing Season Worth County Mitigation Site

Mark Smeby Worth County, Iowa

January 3, 2025

Submitted by: Bolton & Menk, Inc. 401 1st St. SE, Suite 201 Cedar Rapids, IA 52401 P: (319) 362-3219

Department of the Army – Rock Island District Standard Mitigation Reporting Form

1. Site Identification			
COE Project Number: CEMVR-OD-P-2017-926	Date of Report		
Name and contact number for the Permittee or agent: Worth County Drainage District No 21 West Mark Smeby 641-324-2316 The party responsible for monitoring and the dates of Monitoring: Bolton & Menk, Inc. Ian Bootsmiller June 19 & 20, 2024 Mitigation Purpose:	01/03/2025 Check applicable box below:		
through the creation of stream credits by stream channel enhancement and riparian buffer creation.			
Mitigation Site Location Information (See Exhibit 1):	Report #1		
County: Worth	Report #2		
Section: <u>15</u> Township: <u>98N</u> Range: <u>21W</u>	Report #3		
HUC 8 Watershed: 07080203	Report #4		
USGS Quad:	Report #5		
Landmarks/Directions: The site is located northeast of the Jonquil Ave/370 th St intersection, west of the City of Manly and east of the City of Hanlontown, to the	Date of Mitigation Site Completion:		
east of 1-35 and north of IA 9.	Summer 2019		

2. Mitigation Site Description (e.g., Restoration Techniques, Control Structure, Plantings)

→ Stream bank grading took place for bank stabilization.

→ In-channel beaches, pools, and riffles were created for in-stream habitat.

→ A permanent riparian buffer was created through seeding. Seed mixes used are listed here.

Buffer Seed Mix: Andropogon gerardii (Big bluestem), Elymus virginicus (Virginia wild rye), Spartina pectinate (prairie cordgrass), Glyceria striata (fowl manna grass), Poa palustris (fowl bluegrass), Carex bebbii (Bebb's sedge), Carex molesta (troublesome sedge), Carex hystericina (bottlebrush sedge), Scirpus cyperinus (wool grass), Scirpus atrovirens (dark green bulrush), Panicum virgatum (switchgrass), Sorghastrum nutans (Indian grass), Verbena hastata (blue vervain), Thalictrum dasycarpum (purple meadow-rue), Asclepias incarnata (swamp milkweed), Silphium perfoliatum (cup plant), Brickellia eupatorioides (false boneset), Ludwigia alternifolia (seedbox), Helenium autumnale (sneezeweed), Mimulus glabratus (round-leaf monkey flower), Eutrochium maculatum (spotted trumpetweed), Solidago riddellii (Riddell's goldenrod), Hypericum ascyron (Great St John's wort), Symphyotrichum novae-angliae (New England aster), Vernonia fasciculata (prairie ironweed), Lobelia siphilitica (blue lobelia), Lobeila cardinalis (cardinal flower), Iris virginica (southern blue flag), Rudbeckia triloba (brown-eyed Susan), Anemone canadensis (Canada anemone), Physostegia virginiana (false dragonhead), Liatris pycnostachya (prairie blazing star).

Open Ditch Seed Mix: *Panicum virgatum* (switchgrass), *Andropogon gerardii* (Big bluestem), *Sorghastrum nutans* (Indian grass), *Schizachyrium scoparium* (little bluestem), *Elymus canadensis* (Canada wild rye).

3. Project Mitigated by the Mitigation Site.

Permit No.	Project Location (County)	Emergent (acres)	Forested (acres)	Scrub-Shrub (acres)	*Other (acres)	Stream Channel Length (feet)
2017-926						2,850

* Replace "Other' with actual type of impacts ("Open Water", "Upland", "Woodland", etc.)

		Mitigation									
	Emergent	Forested	Open-Water	*Other	Total	Stream Channel					
Type:	(acres)	(acres)	(acres)	(acres)	(acres)	Length (feet)					
Restoration:											
Creation:											
Enhancement:						1,852					
Preservation:											
Total:											

4. Mitigation Design Objectives/Performance Measures

* Replace "Other' with actual type of impacts ("Open Water", "Upland", "Woodland", etc.)

5. Actual Delineated Wetland Acreage - N/A

		Mitigation									
	Emergent	Forested	Scrub-Shrub	*Other	Total	Stream Channel					
Type:	(acres)	(acres)	(acres)	(acres)	(acres)	Length (feet)					
Restoration:											
Creation:											
Enhancement:											
Preservation:											
Observed Total:											
Designed Total:											
Difference :											

* Replace "Other' with actual type of impacts ("Open Water", "Upland", "Woodland", etc.)

6. Annual Progression Of Delineated Wetland - N/A

	Year 1		Year 2	Year 2 Year 3		Year 4		Year 5		
	[YEAR:]	[YEAR:]	[YEAR:]	[YEAR:]	[YEAR:]
Delineated Wetland (acres): Percent of Mitigation Completed :	(%	ç	%	c	%		%		%

7. Monitoring Data Summary

Site monitoring was conducted twice during 2024. A visit was made on June 19, 2024 to document stream erosion, native vegetation, and turtle habitat zones. An additional site visit was made on June 20, 2024 to document invasive species. Ground-level photographs of the site were taken during the first visit; the photographs depict stream hydrology and the development of the site's vegetation (see **Exhibit 3** for photo point locations).

Hydrology

The stream was observed to have water flowing through the channel.

Site 1 has 9 pins. Site 2 has 6 pins. Site 6 has 6 pins. The pins were placed with approximately 4" exposed in summer of 2019 and measured in fall of 2020, 2021, 2022, and the summer 2023 & 2024.

See Exhibit 5 for width of the bank following construction, pin length at time of placement, pin length at time of measurement, and percent change. Percent change was determined by taking the change found on a pin in the current year compared to the initial bank width. In 2024, less than 10% of bankfull width erosion occurred at each pin.

Vegetation

In the first three monitoring seasons (2020 & 2021 & 2022), native, seeded vegetation was not observed at the monitoring plots. Instead, invasives species such as reed canary grass (*Phalaris arundinacea*) and Canada thistle (*Cirsium arvense*) dominated these areas, especially along riparian buffer areas and in the stream channel. Top of bank areas were disced by the County in Fall 2022, and reseeded in Spring 2023 in an effort to control invasive species and promote native vegetation growth. Despite these efforts, vegetation was dominated by *Phalaris arundinacea* again in the fourth monitoring season (2023). Management efforts (discing, seeding, or spraying) were not conducted by the County in 2023.

A meander survey was conducted on June 20, 2024, at the site to assess the percent cover of invasive species on the property. One invasive species (*Phalaris arundinacea*) was identified during the meander survey. The total area affected by invasive species was 49,422 square feet (SF), representing 2.99% of the total bank area. See Exhibit 7 – Invasive Species Map.

A vegetation survey was completed on June 19, 2024, at the site to document seeded native vegetation growth at the site using the six plots as seen on Exhibit 2; the results of this survey can be seen on Exhibit 6. Actual percentage observed at each plot is shown, the total relative cover for all native non-invasives was calculated, and the 50/20 dominance rule was used to determine dominant plant species. Only species with greater than 2% cover were included in the dominance calculation, and only native non-invasives were included.

Based on the 2024 native vegetation surveys, bare ground was observed to cover 1.34% of the area. Hydrophytes accounted for 81.33% of the relative cover, while native species made up 50.96% of the relative cover, representing 14 different native species. Among these, eight species were found to be dominant.

Soils

Soils at the site include Nicollet clay loam, Webster clay loam, Clarion loam, Canisteo clay loam, and Talcot clay loam.

Nicollet clay loam (Non-hydric -10%) Webster clay loam (Hydric - 95%) Clarion loam (Non-hydric - 5%) Canisteo clay loam (Hydric - 100%) Talcot clay loam (Hydric - 100%)

8. Other 404 Permit Requirements Related to Mitigation

Requirement/Special Conditions	Status of Requirement or Permit Condition
Erosion Pins – Pins will document bank erosion. Less than	Less than 10% of bankfull width erosion occurred in
10% of bankfull width erosion will occur at each pin.	Year 4. This condition was met in Year 5 (2024).
Seeded Emergent Areas – 75% of seeded species can be	This condition was not mat in Vacr 5 (2024)
found growing successfully after two years.	 This condition was not met in Year 5 (2024).
Seeded Emergent Areas – 50% Establishment of vegetative	
ground cover on all disturbed areas after the first full growing	➔ This condition was not met in Year 5 (2024).
season, 75% establishment after the second growing season.	
Less than 20% cover by invasive species including: reed	
canary grass, common reed, autumn olive, buckthorn,	This condition was met in Year 5 (2024).
multiflora rosa, purple loosestrife.	
Diversity of at least 10 different native species.	➔ This condition was met in Year 5 (2024).
The project area will be inspected annually for signs of	➔ Erosion was not observed within the riparian buffer; this
excessive soil erosion.	condition was met in Year 5 (2024).
Total % of Permit Conditions Complete 67 %	The number of Permit Conditions that are fully satisfied
	(as a /0 01 the total).

9. Conclusions

- Vegetation management was not conducted in 2024. More aggressive vegetation control will be required in 2025. See Section 10 for a specific management timeline.
- Vegetated areas near the stream bank were dominated by non-native invasive species, primarily reed canary grass. In-channel areas were also dominated by reed canary grass.
- Bank erosion appears to be limited and has shown some reversal at specific pin locations in year 5. Six pins were not measured during the 2024 growing season due to the high water level in the stream.

10. Specific recommendations for remedial actions.

- In an effort to control reed canary grass, promote native species establishment, and mitigate stream bank erosion, the top of bank/riparian buffer areas at the site will be managed by Worth County Conservation by utilizing the following schedule:
 - Mid-summer (late June) Mow & Disc
 - Late-summer (mid-late July) Herbicide application
 - o Mid-fall (late September-early October) Reseeding
- To achieve the native vegetation performance standards, Bolton & Menk, Inc. suggests reseeding with a combination of the IA CP2,23, 25 Wet and the IA CP 25 seed mixes (Exhibit 8). A combination of these seed mixes will address 81% of the originally seeded species. See Exhibit 8 for the recommended seed mixes.

Notes:

13. Vegetative cover map indicating the dominant species in each area, an assessment of wetland hydrology according to the 1987 Corps of Engineers Wetland Delineation Manual, a map with drawn boundaries in relation to the boundaries approved in your original mitigation plan. Identify areas meeting the definition of wetland in the 1987 Corps of Engineers Wetland Delineation Manual, and any corrective actions taken or needed:

Exhibits Attached: Exhibit 1: Location Map Exhibit 2: Monitoring Plan and Pin Locations Exhibit 3: Site Photos Exhibit 4: As-Built Cross Sections Exhibit 5: Hydrology – Pin Measurements Exhibit 6: Vegetation Survey Data Sheet Exhibit 7: Invasive Species Map Exhibit 8: Seed Mixes

Nutrient Removal Wetland Project

City of Northwood, Worth County, IA

Exhibit 1: Location Map



December 2020



Exhibit 2 - Monitoring Plan



-19 	Exhibit 2 - Pin Locati	ons
BOLTON	Client	Page Of3
W & MENK	Project No. <u>A21. 09785</u>	Date 01/08/20 By Cole Engelhardt
Real People. Real Solutions.	Project North wood	
\bigcirc	Task Enosion Rebar	

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0	• 24" Long '/2 Rebar			
	× .45 × .45	× .5 × .38	× .4 × .5	

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BOLTON	Client		Page	0f <u>3</u>	
WW & MENK	Project No. A21.109.	785		_ By Cole En	ngelkardt
Real People. Real Solutions.	Project <u>North</u>	road			
-	Task <u>Erosion</u>	Repar			
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· · · ·	Exhibit 2 - Pin Locations				-
BOLTON	Client	Page _	3	Of	3
W & MENK	Project No. <u>A21. 109785</u> Date	01/08	8/20 B	1 Cole	Engelhort
Real People. Real Solutions.	Project Northwood				
\bigcirc	Task <u>Erosion Rebar</u>				





Site 1 - Looking NW



Site 1 - Looking NW



Site 2 – Looking West



Site 2 – Looking East



Site 3 – Looking South/South-east



Site 4 – Looking Southwest





Site 6 – Looking Northwest





Site B – Looking South



Site C - Looking Northwest



Site D – Looking Northeast

Exhibit 4 - As-Built Cross Sections

	- i				· · · ·		· · · · ·				, 	
	1225		ST/	A 36+30.79		1225	1225		STA 38+73.41		1225	1225
	1220		_			1220	1220				1220	1220
	1215	·	REBAR MONITOR 1033			1215	1215			LOW WATER DEPTH	1215	1215
			REBAR MONITOR 1034	BASE 2CSN	LOW WATER DEPTH				2CSM			
	1210		EXIS DESIG	ST EL = 1216.0 N EL = 1216.04		1210	1210		EXIST EL = 1216.6 DESIGN EL = 1210	5.31	1210	1210
	40	30 20	10	q :	ip 20	30 40	40	30 20	10 C 1	0 20 3	D 40	40
	1220		ST	A 27+46.05		1220	1225		STA 36+90.94		1225	1225
					REBAR MONITOR 1000		11110					
	1215	-				1215	1220				1220	1220
	1215					1215	1220				1220	1220
				BASE F	DW WATER DEPTH							
	1210					1210	1215			ASE FLOW WATER DEPTH	1215	1215
			EXIS	T EL = 1213.1					EXIST EL = 1215.8			
	1205		DI	ESIGN EL = 121	.11	1205	1210		DESIGN EL = 121	5.15	1210	1210
	40	30 20	10	e :	D 20	30 40	40	30 20	10 q 1	0 20 3	D 40	40
	1220		ST	A 27+38.70	EBAR MONITOR 1004	1220	1225		STA 36+73.24		1225	1225
					REBAR MONITOR .003							
	1215			$\square \square$		1215	1220				1220	1220
			No.									
	1210				ASE FLOW WATER DEPTH ZCSM	1210	1215	B			1215	1215
										ASE FLOW WATER DEPTH CSM		
	1205		EXIS	T EL = 1213.1 SIGN FL = 121	.09	1205	1210		EXIST EL = 1215.7 DESIGN EL = 121	5.10	1210	1210
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	1220		51/	A 27+26.29	EBAR MONITOR 1005	1220	1225		STA 36+49.27		1225	1225
					REBAR MONITOR 1005			REBAR MO	ONITOR 1031			
	1215					1215	1220	BEBAR MONIT			1220	1220
					ASE FLOW WATER DIPTH							
	1210				2CSM	1210	1215			ASE FLOW WATER DIPTH	1215	1215
			5///	T EL 1212.1						ISM .		
	1205		DI	ESIGN EL = 1213.1 ESIGN EL = 121	.04	1205	1210		DESIGN EL = 1216.6	5.07	1210	1210
	40	30 20	10	¢ :	up 20	30 40	40	30 20	10 C 1	p 2p 3	p 4p	40
											1519 BALTIMORE DRIVE, P.O. BO AMES, IOWA 50010	
Operation	nk Inc 2020 All Dist: 2									MENK	Phone: (515)-233-6100 Email: Ames@bolton-menk.c	om
BUILON & Mei	100705) CAD COD Works of #1 (D)		(D. 144 - 1) 400705 D	1 10/00/0000 1 00 01							www.boiton-menk.com	





EXHIBIT 5: HYDROLOGY - PIN MEASUREMENTS

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Site 1			Measured Length (Feet)									
Pin Number	Initial Bank Width	2019 (Placed)	2020	% Change	2021	% Change	2022	% Change	2023	% Change	2024	% Change
1020	14.98	0.45	0.83	2.53671562	0.6	1.00133511	0.6	1.00133511	0.69	1.60213618	0.73	1.869159
1021	11.65	0.3	0.75	3.86266094	0.45	1.28755365	0.37	0.60085837	0.53	1.97424893	0.48	1.545064
1022	8.48	0.45	0.83	4.48113208	0.79	4.00943396	0.78	3.89150943	0.11	-4.00943396	UW	UW
1023	9.96	0.4	0.52	1.20481928	0.52	1.20481928	0.54	1.40562249	0.43	0.30120482	0.38	-0.251
1024	14.56	0.2	0.65	3.09065934	0.65	3.09065934	0.6	2.74725275	0.52	2.1978022	0.5	2.06044
1025	21.35	0.45	0.5	0.23419204	0.43	-0.09367681	0.46	0.04683841	0.44	-0.04683841	UW	UW
1026	12.85	0.4	0.5	0.77821012	0.4	0	0.45	0.38910506	0.42	0.15564202	0.45	0.389105
1027	9.9	0.3	0.58	2.82828283	0.51	2.12121212	0.48	1.81818182	0.55	2.52525253	0.56	2.626263
1028	6.58	0.25	0.33	1.21580547	0.38	1.97568389	0.4	2.27963526	0.17	-1.21580547	UW	UW

Site 2			Measured Length (Feet)									
Pin Number	Initial Bank Width	2019 (Placed)	2020	% Change	2021	% Change	2022	% Change	2023	% Change	2024	% Change
1029	9.77	0.28	0.52	2.45649949	0.5	2.2517912	0.45	1.74002047	NF	NF	NF	NF
1030	13.31	0.38	0.52	1.05184072	0.48	0.7513148	0.5	0.90157776	0.45	0.52592036	0.4	0.150263
1031	12.42	0.45	0.5	0.40257649	0.43	-0.1610306	0.48	0.24154589	0.61	1.28824477	0.6	1.207729
1032	9.46	0.4	0.5	1.05708245	0.46	0.63424947	0.44	0.42283298	0.54	1.47991543	0.56	1.691332
1033	15.23	0.5	0.54	0.26263953	0.44	-0.39395929	0.5	0	0.41	-0.59093894	0.46	-0.26264
1034	7.81	0.4	0.58	2.30473752	0.61	2.68886044	0.63	2.94494238	0.7	3.84122919	0.69	3.713188

Site 6			Measured Length (Feet)									
Pin Number	Initial Bank Width	2019 (Placed)	2020	% Change	2021	% Change	2022	% Change	2023	% Change	2024	% Change
1001	17.33	0.45	0.56	0.63473745	0.57	0.69244085	0.6	0.86555107	0.54	0.51933064	0.5	0.288517
1002	13.9	0.45	0.54	0.64748201	0.52	0.50359712	0.54	0.64748201	0.50	0.35971223	UW	UW
1003	17.52	0.5	0.71	1.19863014	0.7	1.14155251	0.74	1.36986301	0.42	-0.456621	0.7	1.141553
1004	14.69	0.38	0.69	2.1102791	0.62	1.63376447	0.6	1.49761743	0.52	0.95302927	UW	UW
1005	17.9	0.4	0.63	1.2849162	0.65	1.39664804	0.57	0.94972067	0.66	1.45251397	0.59	1.061453
1006	14.5	0.5	0.79	2	0.43	-0.48275862	0.45	-0.3448276	(-0.083)	-4.02068966	UW	UW

NF = *Not Found, Assumed Buried*

UW = Underwater

3.095

2.71

1.79

7.595



EXHIBIT: 6 VEGETATION SURVEY DATA SHEET

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Project/Site: Worth County Mitigation Bank		Sample Date:	aple Date: <u>1/3/2025</u>			Section, Township, Range:				<u>15/98N/21W</u>		
Applicant/Owner: Worth County Drainage District No. 21 West		Investigators:	Ian Bootsmille	<u>r</u>	Bank Number:							
City/Township):	County:	Worth			State:					<u>IA</u>	
	Common Name	Species		1	2	PL 3	ОТ 4	5	6	Relative Cover	Dominant (50/20 Rule)	Indicator Status
	Bare Ground	Bare Groun	ed .			10				1.67		
	Open Water	Open Wate	er							0.00		
	Boxelder Maple	Acer negun	lo		15		20			4.34	Y	FAC
	Canada Goldenrod	Solidage canad	lensis	5						0.76		FACU
	Canada Thistle*	Cirsium arvei	ise*					5		0.62		FACU
	Tall Buttercup	Ranunculus a	cris						7	0.92	Y	FAC
	Common Milkweed	Asclepias syr	aca						15	1.97	Y	FACU
Γ	Dark Green Bullrush	Scirpus atrovi	rens		5					0.57		OBL
	Giant Goldenrod	Solidago giga	ntea	20	40	30	65	40	30	30.00	Y	FACW
	Green Ash	Fraxinus pennsy	lvanica		15	7		25		5.97	Y	FACW
EAM	Grey Headed Coneflower	Ratibida pinn	ata			5				0.83		UPL
STRI	Prickly Lettuce*	Lactuca serri	pla*		2		2			0.49		FACU
	Reed Canary Grass*	Phalaris arundi	nacea*	75	20	45	40	50	3	32.96		FACW
Γ	Riverbank Grape	Vitis ripart	а		2					0.23		FACW
	Sawtooth Sunflower	Helianthus gross	erratus		7					0.80	Y	FACW
	Tartarian Honeysuckle*	Lonicera tatai	ica*		10			15		2.99		FACU
	Smooth Brome*	Bromus inerr	iis*	10					65	10.05		FACU
Γ	Smooth Oxye, False Sunflower	Heliopsis helian	hoides						3	0.39		FACU
	Swamp Milkweed	Asclepias inca	rnata			3				0.50		OBL
	Tall Scouring Rush	Wquisetum hye	male		10				2	1.40	Y	FACW
	Meadow Horsetail	Equistum prat	ense		20					2.28	Y	FACW
	Yellow Sweet Clover*	Melilotus offici	ıalis*						2	0.26		FACU
		Total Cover	ige	110	146	100	127	135	127			
DATA ANAL	DATA ANALYSIS:No. of Natives:14No. of Dominants:8				Relative Cover of Hydrophytes:			81.	81.33% Absolute C Gro		ver of Bare ınd:	1.34%
[Only species with >2% cover included in dominance calculation] [Only native noninvasives included in dominance]					Rela	ntive Cov Invasives	er of	47.	37%	Relative Nativ	Cover of ves:	50.96%

*non-native/ invasive species









Program:

IA - CPA - 4 REV. September 2022 (File Code 180-12-12)

Seeding Plan

Name Prepared by IA 30-10 CP2, 23, 25 Wet Mix

		Date	2/10/2023
		Tract No.	
		Field No.	
Acres:	1.00	Contract No.	
-		Moisture Regime	

Seeding Mix Summary

Grasses	Scientific Name	Common Name	Seeds/Ft ²	PLS Lbs/Acre	PLS Lbs Total	
1	Andropogon gerardii	Big Bluestem	6.612	1.800	1.80	
2	Carex hystericina	Porcupine Sedae	0.496	0.045	0.045	
3	Carex scoparia	Broom Sedge	0.926	0.030	0.030	
4	Carex vulpinoidea	Fox Sedge	2 755	0.075	0.075	
5	Elymus virginicus	Virginia Wildrye	1 311	0.850	0.85	
6	Glyceria striata	Fowl Mannagrass	1 175	0.020	0.020	
7	Poa palustris	Fowl Bluegrass	7 163	0.150	0.15	
8	Scirpus atrovirens	Dark Green Bulrush	3 379	0.020	0.020	
9	Scirpus cyperinus	Woolgrass	6 244	0.010	0.010	
Ŭ	Comput Cypennice	SUBTOTAL GRASSES	30.061	3.000	3.000	
				PLS	PLS Lbs	
Forbs/Legumes	Scientific Name	Common Name	Seeds/Ft ²	Lbs/Acre	Total	
1	Anemone canadensis	Canada Anemone	0.015	0.005	0.0050	
2	Asclepias incarnata	Swamp Milkweed	0.018	0.010	0.010	
3	Helenium autumnale	Sneezeweed	1.671	0.035	0.035	
4	Hypericum ascyron	Great St. John's Wort	2.094	0.030	0.030	
5	Liatris pvcnostachva	Prairie Blazing Star	0.020	0.005	0.0050	
6	Lobelia siphilitica	Great Blue Lobelia	1.837	0.010	0.010	
7	Mimulus ringens	Square-stemmed Monkevflower	3.379	0.004	0.0040	
8	Physostegia virginiana	Obedient Plant	0.081	0.010	0.010	
9	Pycnanthemum virginianum	Virginia Mountain Mint	0.485	0.006	0.0060	
10	Silphium perfoliatum	Cup Plant	0.005	0.010	0.010	
11	Symphyotrichum novae- analiae	New England Aster	0.121	0.005	0.0050	
12	Thalictrum dasycarpum	Purple Meadow-rue	0.020	0.005	0.0050	
13	Verbena hastata	Blue Vervain	0.342	0.010	0.010	
14	Vernonia fasciculata	Ironweed	0.044	0.005	0.0050	
		SUBTOTAL FORBS	10.131	0.150	0.150	
Woody	Scientific Name	Common Name	Seeds/Ft ²	PLS Lbs/Acre	PLS Lbs Total	
-		SUBTOTAL VINES/WOODY	0.000	0.000	0.000	
		τοται	40 192	3 150	3 150	
		IUIAL	40.104	0.100	0.100	



IA - CPA - 4 REV. September 2022 (File Code 180-12-12)

Seeding Plan

Name	23F CP25 Wet 30-10			Date	8/23/2023
Prepared by				Tract No.	
				Field No.	
Program:		Acres:	1.00	Contract No.	
			Ν	loisture Regime	
	Sooding Mix Summary				

Seeding Mix Summary

Grasses	Scientific Name	Common Name	Seeds/Ft ²	PLS Lbs/Acre	PLS Lbs Total	
1	Andropogon gerardii	Big bluestem	2.500	0.681	0.68	
2	Elvmus virginicus	Virginia Wildrve	2.000	1.296	1.30	
3	Carex vulpinoidea	Fox Sedge	8.000	0.218	0.22	
4	Glvceria striata	Fowl Mannagrass	0.500	0.009	0.0085	
5	Poa palustris	Fowl Bluegrass	8.000	0.168	0.17	
6	Carex Iurida	Lurid Sedge	0.500	0.113	0.11	
7	Carex molesta	Troublesome Sedge	0.500	0.054	0.054	
8	Carex hvstericina	Porcupine Sedge	0.500	0.045	0.045	
9	Scirpus cyperinus	Woolgrass	4.000	0.006	0.0064	
10	Scirpus atrovirens	Dark Green Bulrush	2.000	0.012	0.012	
11	Panicum virgatum	Switchgrass	0.500	0.097	0.097	
12	Sorghastrum nutans	Indiangrass	0 500	0.113	0.11	
13	Carex annectens	Yellow Fox Sedge	0.500	0.015	0.015	
		SUBTOTAL GRASSES	30.000	2.828	2.828	
				PLS	PLS Lbs	
Forbs/Legumes	Scientific Name	Common Name	Seeds/Ft ²	Lbs/Acre	Total	
1	Verbena hastata	Blue Vervain	2.000	0.059	0.059	
2	Rudbeckia subtomentosa	Sweet Coneflower	0.250	0.016	0.016	
3	Asclepias incarnata	Swamp Milkweed	0.050	0.028	0.028	
4	Silphium perfoliatum	Cup Plant	0.010	0.019	0.019	
5	Physostegia virginiana	Obedient Plant	0.010	0.001	0.0012	
6	Helenium autumnale	Sneezeweed	1.000	0.021	0.021	
7	Ludwigia alternifolia	Seedbox	1.000	0.002	0.0021	
8	Mimulus ringens	Square-stemmed Monkeyflower	1.280	0.002	0.0015	
9	Eutrochium maculatum	Spotted Joe Pye Weed	0.050	0.001	0.0014	
10	l vthrum alatum	Winged Loosestrife	1 000	0.001	0.00091	
11	Hypericum ascyron	Great St. John's Wort	1 500	0.021	0.021	
12	Symphyotrichum novae-	New England Aster	0.250	0.010	0.010	
40		Ironwood	0 200	0.024	0.024	
13		Creat Plue Labelia	0.300	0.034	0.004	
14			0.150	0.001	0.00082	
10	Dudhaakia trilaha		0.150	0.001	0.0010	
10		Blowil-eyeu Susali	0.800	0.004	0.004	
1/		SUBTOTAL FORBS	10.000	0.030	0.030	
Voodv	Scientific Name	Common Name	Seeds/Ft ²	PLS Lbs/Acre	PLS LDS Total	
		SUBTOTAL VINES/WOODY	0.000	0.000	0.000	
		TOTAL	40.000	3.160	3.160	
	Estimated Cost/Acre			Estimated	I otal Cost	\$0.00

		Total Needed	
	Soil Test Information	lbs	
Lime (ECCE) (Actual Lime)			
Nitrogen			
Phosphate (P205)			
Potash (K20)			
Seeding Dates	:		-
Additional Seeding Criteria	:		
Seeding was completed by (Date)	according to the above require	ements.	
(Producer's Signature)		(Date)	-
Field Office	_ Certified by _		
		(NRCS Representa	ative)
When souding is complete	d roturn cooding plan to the Na	itural Posourcos Concorvati	on Sonvicos
For CR	cost-share, return receipts to F	arm Service Agency.	

For all other cost-share projects, attach seed tags and receipts for seed, fertilizer, lime, etc.