Drainage Water Management Plan – Minnesota

Site Location and General Information

Cooperator Name	[Farmer]
County and Township	[County & Township]
Latitude and Longitude	[Latitude & Longitude]
Farm Number	[Farm Number]
Tract Number	[Tract Number]
Crops in Rotation	[Crops in Rotation]
Contractor Name developing plan	Michael Lehmann, Air-Row Surveying, LLC
Date of Plan Development	[Plan Date]

Drainage Water Management Plan boundary

The total project drained area is the same as the boundary line shown in the soils map below.

Objectives

- □ Improve water quality by reducing nitrate loading to surface waters.
- □ Improve the soil environment for vegetative growth.
- □ Reduce the rate of soil organic matter oxidation.
- \Box Reduce wind and water erosion.
- □ Enable seasonal soil saturation and/or shallow flooding.
- □ Reduce drainage contribution to peak flows.



<u>Map Unit Symbol</u>	Soil Name
47	Colvin silty clay loam
698	Doran clay loam
948	McIntosh-Lindaas complex
1933	Bearden-Lindaas complex

Proposed Tile Map



Proposed Drainage System Installation

Component	Amount	Item
4 inch – (Black)	109,240 ft	Corrugated Plastic Tubing
5 inch – (Orange)	16,850 ft	Corrugated Plastic Tubing
6 inch – (Blue)	1,655 ft	Corrugated Plastic Tubing
8 inch – (Red)	1,910 ft	Corrugated Plastic Tubing
*10 inch – (Purple)	2,380 ft	Corrugated Plastic Tubing
*15 inch – (Pink)	1,650 ft	Corrugated Plastic Tubing
*18 inch – (Dark Green)	700 ft	Corrugated Plastic Tubing
Total	134,385 ft	Corrugated Plastic Tubing

*One size smaller dual wall pipe could be substituted if it helps installation. Control structures are being sized for corrugated pipe.

Topographic Map

.5 FOOT CONTOUR



Existing Tile

This site has random clay and concrete tile.

Wetland Map

The site has no wetlands for USDA Program purposes.



Water Control Structures

Label	1	2	3	4
Location of Control Structure	[Latitude/	[Latitude/	[Latitude/	[Latitude/
(Latitude, Longitude)	Longitude]	Longitude]	Longitude]	Longitude]
Ground Elevation at Control Structure	1076.1	1078.3	1081.0	1078.0
Area of impact	27.6	28.6	22.9	16.4
Flow Elevation of structure *Verify Outlet Depth	1071.0	1073.3	1076.0	1072.7
Location of Outlet (Lat/Long)	[Latitude/	[Latitude/	[Latitude/	[Latitude/
	Longitude]	Longitude]	Longitude]	Longitude]

Water Table Management Plan – For Control Structures

Winter Management – Control # 1	
Harvest Date	September 15
Starting Date for Fallow Season Water Control	September 15 or when harvest complete
Fallow Season Control Elevation1	1076.5
Spring Water Release Date	April 10
Planting Date or Range	May 1-15

Growing Season Management

Date	Control Elevation	
May 1 or as soon as planting is done	1076.5	
Summer	Remove stoplogs if large rain event occurs or add stoplogs if drought	
September 1 *Verify Outlet Depth	1071.0 or lower for dry soil for harvest; allow 2-3 weeks	
September 30 or when harvest done	1076.5	

Winter Management – Control # 2

Harvest Date	September 15
Starting Date for Fallow Season Water Control	September 15 or when harvest complete
Fallow Season Control Elevation1	1078.5
Spring Water Release Date	April 10
Planting Date or Range	May 1-15

Growing Season Management

Date	Control Elevation
May 1 or as soon as planting is done	1078.5
Summer	Remove stoplogs if large rain event occurs or add stoplogs if drought
September 1 *Verify Outlet Depth	1073.3 or lower for dry soil for harvest; allow 2-3 weeks
September 30 or when harvest done	1078.5

Winter Management – Control # 3

Harvest Date	September 15
Starting Date for Fallow Season Water Control	September 15 or when harvest complete
Fallow Season Control Elevation1	1080.5
Spring Water Release Date	April 10
Planting Date or Range	May 1-15

Growing Season Management

Date	Control Elevation
May 1 or as soon as planting is done	1080.5
Summer	Remove stoplogs if large rain event occurs or add stoplogs if drought
September 1 *Verify Outlet Depth	1076.0 or lower for dry soil for harvest; allow 2-3 weeks
September 30 or when harvest done	1080.5

Winter Management – Control # 4

Harvest Date	September 15
Starting Date for Fallow Season Water Control	September 15 or when harvest complete
Fallow Season Control Elevation1	1077.6
Spring Water Release Date	April 10
Planting Date or Range	May 1-15

Growing Season Management

Date	Control Elevation
May 1 or as soon as planting is done	1077.6
Summer	Remove stoplogs if large rain event occurs or add stoplogs if drought
September 1 *Verify Outlet Depth	1072.7 or lower for dry soil for harvest; allow 2-3 weeks
September 30 or when harvest done	1077.6

Footnotes for all zones:

1. During the fallow period, the control structure should be operated to allow the water table to rise to

the soil surface or to a designated maximum control elevation (6 inches below the soil surface at the control structure or to the lowest elevation in the drained field.)

2. For some guidelines for control of drainage and the management of the water table during the growing season, review MN NRCS practice standard 554 and brochure WQ-44.

Summary of control systems

System	Pipe Diameter	Impacted Area	Ground	Depth to Tile FL	Location, GPS (Lat, Long)
	at Structure Inlet		Elevation	*Verify Depth	
1	18" corrugated	27.6 acres	1076.1	5.1 ft	[Latitude/Longitude]
2	15" corrugated	28.6 acres	1078.3	5.0 ft	[Latitude/Longitude]
3	10" corrugated	22.9 acres	1081.0	5.0 ft	[Latitude/Longitude]
4	10" corrugated	16.4 acres	1078.0	5.4 ft	[Latitude/Longitude]





Signature Page This plan meets MN NRCS Conservation Practice Standard 554 Drainage Water Management.

Signature(s) of Contract Holder(s):	
Contract Holder Signature	Date
This plan meets MN NRCS Conservation Practice Sta	ndard 554 Drainage Water Management.
Signature of Preparer of Drainage Water Managem	ent Plan (DWMP):
Plan Preparer Signature	Date
The checklist is complete. Signature of NRCS:	

NRCS Signature

Date

Check List for District Conservationist

The DWM Plan includes the following components1:

□ Farm and field information is provided.

□ Objectives have been provided.

□ MN Practice Standard 554 has been provided to the landowner.

□ A soil map with field boundaries is included in the plan.

□ A tile map is provided in the plan.

□ A map of wetlands in the field (if applicable) is included in the plan.

□ Optional but highly recommended: Profile(s) of the main(s) for the tile system that have control structures on them, showing structure(s) with the water level at growing season elevation, high point and low point in the field drained by the drainage system, main tile grade.

□ A topographic map of the field (on 0.5' contours) is included.

□ An overlay map with field boundaries, drain location(s) and topographic contours, with a determination (location and area) of the impacted area(s) is provided.

A water table management plan is included, detailing when the stoplogs will be adjusted and by how much.

□ A summary sheet that lists the pipe diameter of each proposed control structure, control elevations, the area impacted by each structure, exact location of the structure using GPS, and the depth to tile is provided as part of this plan.

□ Each of the above components has been reviewed with the landowner and the landowner understands the plan.

The District Conservationist will check off each item on this list before authorization of payment.