



N.W.B.E.

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May 29, 2026

RE: Justin Bluse, DBA Bluse Excavating LLC
County Quarries and Nonmetallic Mining Approval
Part of the NW/4, and NE/4, of the SE/4, SECTION 06, T38N, R12W, Town of Beaver Brook,
Washburn County, Wisconsin

Dear Zoning Administrator:

Please find the enclosed application documents for Camp Ride – Nonmetallic Mine Site located at W7031 Green Valley Road, just south of the Spooner city limits, in the Town of Beaver Brook in Washburn County, Wisconsin. Documents have been developed in accordance with Chapter 28, Article II, Division 3 of the Washburn County Code of Ordinances and Wisconsin Administrative Code chapter NR 135.

Please contact me at (715) 634-4334 or via email at gcolbert@nwbeinc.com with any questions or comments.

Sincerely,

Gary T. Colbert, PE
Design Engineer
Attachment
Enclosure

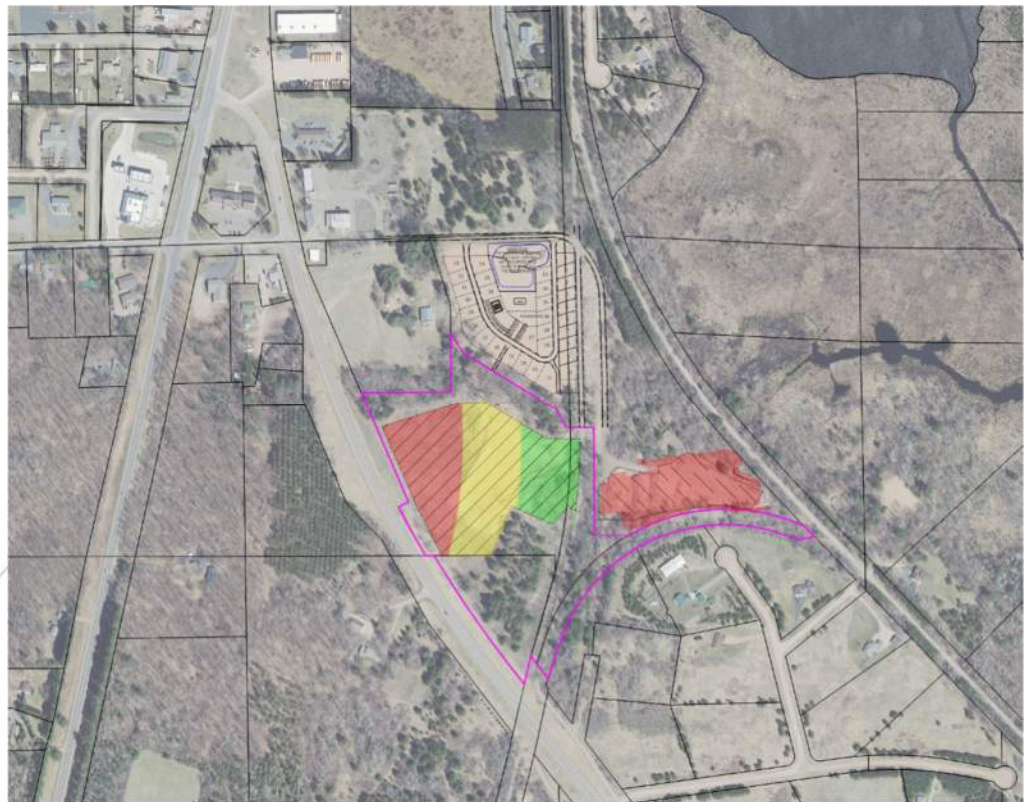
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6/1/2026

Camp Ride LLC

NONMETALLIC MINING RECLAMATION PLAN

W 7031 Green Valley Road, Spooner, Wisconsin



Prepared For:

Justin Bluse, DBA Camp Ride LLC (Owner)

Justin Bluse, DBA Bluse Enterprises, Inc. (Operator)

W 7871 Highway 70, Spooner, Wisconsin

Prepared By:

Northern Wisconsin-Based Engineers, Inc.

Hayward Wisconsin

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1. Overview and General Summary of Mining Operation

Justin Bluse, DBA Bluse Enterprises, Inc. (OPERATOR) proposes to develop a nonmetallic mine site on a 20.4-acre parcel of property owned by Justin Bluse, DBA **Camp Ride LLC** (OWNER). The proposed mine site is located just south of the Spooner city limits at W7031 Green Valley Road, being Part of the NW/4, and NE/4, of the SE/4, Section 06, T38N, R12W in the Town of Beaver Brook, Washburn County, Wisconsin. (*Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine-Sheet 2 Site Information Map*)

	Owner	Operator	Tax/Parcel ID
Nonmetallic Mine Site	Justin Bluse DBA, Camp Ride LLC W 7871 Highway 70 Spooner, WI 54801	Justin Bluse DBA, Bluse Enterprises, Inc. W 7871 Highway 70 Spooner, WI 54801	36595 65-008-2-38-12-06-5 05-004-008000
Stockpile Site	Justin Bluse DBA, Camp Ride LLC W 7871 Highway 70 Spooner, WI 54801	Justin Bluse DBA, Bluse Enterprises, Inc. W 7871 Highway 70 Spooner, WI 54801	3704 65-008-2-38-12-06-5 05-001-002000

Plans are to mine and remove approximately 304,000 cubic yards of raw sand and gravel from a 7.9-acre portion of the parcel over an estimated 20 to 50-year timeframe. Sand and gravel material is derived from pitted glacial outwash and other ice contact deposits. Topsoil and waste material will be stockpiled on a 2.8-acre portion of the parcel located west of the mine site. Site development will be completed in three phases as follows;

- Phase 1 of site development will be to construct a series of berms and basins, and culvert work for storm water management prior initiating any mining of material. (*Exhibit 1.1_Plan-Camp Ride LLC – Nonmetallic Mine-Sheet 2 Site Information Map & Sheet 3 Phase 1 Grading*)
- Phase 2 of site development will be to stockpile topsoil and unusable material and excavate and haul raw materials from the mine site. A calculated 304,000 cubic yards of mined raw sand and gravel is available for excavation at the mine site. There will be no washing or crushing of raw materials, and no asphaltic pavement, or concrete pavement plant activities. Production of screened topsoil is anticipated on an intermittent basis. Raw materials will be used to maintain local, county, and state roads as well as for private projects. The Town of Beaver Brook has granted pit operations can take place 12 months out of the year, seven days per week, 7:00 AM – 7:00 PM. The entire mine site will internally be drained except for the access road. A natural depression will be utilized to prevent any impacted stormwater from discharging off the mine site and manmade berms and basins will be constructed to prevent any impacted storm water from discharging off the stockpile site. In the event substantial rainfall and ponded storm water impedes work, the mining area may be internally dewatered, transferring water to a dormant area inside the active pit. The access road will shed water to adjacent vegetated swales or sheet flows across vegetated lands. (*Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 2 Site Information Map & Sheet 4 Phase 2 Mine Excavation*)
- Phase 3 of site development will be to reclaim the mine and stockpile site in accordance with Washburn County Code of Ordinances and Wisconsin Department of Natural Resources chapter NR 135. Site reclamation will be completed in three sub-phases as mining excavation is completed from east to west across the mine. Reclamation is anticipated to be completed once for every 250 lf of completed mine excavation. A calculated 48,000 cubic yards of topsoil and other unusable stockpiled material from the mine excavation is required to reclaim the site to a maximum slope of 3 horizontal to

1 vertical (*Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 2 Site Information Map & Sheet 5 Phase 3 Mine Reclamation*)

Equipment required to complete phased site development includes, but is not limited to: loaders, excavators, dozers, on and off-road haul vehicles, topsoil screeners, hydro seeders, and mulchers.

2. Site Information

2.1 General Location and Property Boundaries

The project is located at W 7031 Green Valley Road, just south of the Spooner city limits, in the Town of Beaver Brook in Washburn County, Wisconsin.

The project is bounded on the north by a private parcel, and campground owned and developed by Justin Bluse, DBA Camp Ride LLC. It is bounded on the east and southeast by an abandoned railroad grade and Wild Rivers State Trail corridor, and on the west and southwest by USH 253. The campground and proposed mine site are currently on the same parcel of land. However, the campground / mine site parcel will be subdivided prior to mining operations. The remaining mine site parcel will be combined with adjacent 3.50-acre and 2.34-acre parcels and a portion of an 16.76-acre parcel owned by Camp ride LLC to form one contiguous parcel of ±20.4 acres. The ±20.4-acre parcel will be rezoned Agriculture (AG) to meet the requirements that allow conditional use for operation of a nonmetallic mine. (*Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 2 Site Information Map*)

2.2 Geologic Composition and Depth of Mineral Deposit

The Natural Resources Conservation (NRCS) Soil Survey identifies and quantifies the main soil type as Haugen-Rosholt Complex (90.5%), described as very stony, typically sandy loam from 0 to 15-inch depth, and gravelly sandy loam from 15 to 79-inch depth. According to the NRCS Soil Survey, minor amounts of other soils within the mined boundary are Scott Lake sandy loam, Amery sandy loam, Grettum loamy sand, and Cress sandy loam. The soils are moderately well to somewhat excessively well drained. (*Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 2 Site Information Map; Exhibit 2.1_NRCS Soils Report*)

Site geology is characterized by pitted outwash and other ice contact deposits. The soil is mainly sand and gravel with locally poor sorting and stratification. (*Exhibit 2.2_Glacial Deposits of Wisconsin*)

Well construction report UD463 of a private well located southwest of the site shows sand and gravel from surface to 20-foot depth, gravel and clay from 20-foot depth to 45-foot depth, and sand and gravel from 45-foot depth to 60-foot depth. (*Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 2 Site Information Map; Exhibit 2.3_Groundwater Well Report*)

2.3 Distribution, Thickness and Type of Topsoil

Fourteen soil test pits were excavated and evaluated for storm water infiltration in the original combined campground and mine site parcel. Ten of the test pits, Numbers 1-10, were within the campground area. Two test pits, Number 11 and 12, are located in a proposed infiltration basin site at the west end of the stockpile area. Test Pit Numbers 13 and 14 are located within the natural depression at the south end of the mine site property. Topsoil texture in the test pits was reported as sandy loam or loamy sand. Topsoil depth in the test pits ranged from 8 to 16 inches. (*Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 2 Site Information Map; Exhibit 2.4_Soil Test Pit Results*)

2.4 Information on Groundwater

Depth to ground water was recorded at 14 feet in an 84-foot deep well located on the campground site north of the property. Data from the campground well and four nearby private wells are given in the following table.

Well Location	Well Report Number	Date Drilled	Ground Elevation (Feet)	Reported Depth to Groundwater (Feet)	Approximate Groundwater Elevation (Feet)
Campground N of Site		May 2026	1080.6	14	1066.6
Private Well SW of Site	UD463	5/22/2007	~1125	15	1110
Private Well SE of Site	VF292	6/18/2012	~1113	35	1078
Private Well NW of Site	AAX542	5/22/2023	~1090	24	1066
Private Well E of Site	RQ035	7/25/2003	~1094	28	1066

(Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 2 Site Information Map; Exhibit 2.5_Ground Water Well Construction Reports)

A mean groundwater table elevation of 1070' was interpolated from State of Wisconsin Mean Elevation of Water Table Map, 1968 Edition. *(Exhibit 2.6_Groundwater Mean Elevation Map)*

2.5 Location of Surface Waters

Randall Lake is located approximately 1850 feet (0.35 mi.) northeast of proposed mining excavation, and approximately 1700 feet (0.32 mi.) northeast of proposed stockpile site. Randal Creek flows from Randall Lake into the Yellow River Flowage. An intermittent drainageway, flowing northeasterly through the property along the east side of the mine site, flows into a branch of Randall Creek which joins Randall Creek 1150 feet further downstream. Coordination with Wisconsin Department of Natural Resources determined navigable water of Randall Creek branch begins east of the Wild Rivers State Trail. The intermittent drainageway has been determined to be non-navigable. *(Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 2 Site Information Map; Exhibit 2.7_Navigable Waters Determination, Exhibit 2.8_NonNavigable Waters Determination)*

2.6 Existing Drainage Patterns and Topography

The parcel's high point of 1140 feet is located along the west boundary of the proposed area to be mined. Runoff drains in all directions from this local high point, with a minor amount draining west toward US Highway 253. Runoff draining toward the north, northeast, east, and south collects in the intermittent drainageway flowing into a branch of Randall Creek. Runoff draining to the southwest drains into a natural depression that overflows into the intermittent drainageway via a culvert pipe beneath an abandoned railroad corridor.

The existing topography is nearly level to gently rolling with wooded patches and grassy treeless areas. *(Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 2 Site Information Map)*

2.7 Location of Man-Made Features

The owner has developed a campground on 7.37-acres north of the proposed mine site. The 33-site campground has access driveways and a well that serves a concrete shelter with restrooms and showers. The

campground will also feature a pavilion and playground. The owner obtained a DNR Construction Site Permit for the campground development, which initially included a south campground at the proposed mine site. The north campsite parcel will be separated from the mine site parcel.

An approximate 2.6-acre portion of the proposed mine site was cleared and stumped, topsoil was removed and stockpiled, and raw sand and gravel material was excavated and hauled for use as fill for campground site development.

Access to the mine site will be a haul road that was constructed under the DNR Construction Site Permit for the campground. It extends south from Green Valley Road along the east side of the campground and enters at the northeast corner of the mine site.

A culvert exists beneath an abandoned railroad grade along the east side of the proposed mine site. It serves to convey on-site and off-site highway runoff through a natural depression at the south end of the mine site, discharging into an intermittent drainage-way. *(Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 2 Site Information Map)*

2.8 Previously Mined Areas

The site has not been previously mined, other than by the current owner for fill for campground site development as described in Part 2.7. *(Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 2 Site Information Map)*

2.9 Biological Information

The site is in the Forest Transition ecological landscape in northwest Wisconsin. Vegetative cover includes northern mesic forest, upland shrub thicket, and surrogate grassland. An assured wetland determination study was conducted for all properties owned by Camp Ride LLC. Three small wetlands were delineated within the property boundaries. However, the wetlands are outside the limits of proposed mining and stockpiling operations. Two of the wetlands are alder thickets, and one is shrub car and hardwood swamp. *(Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 2 Site Information Map; Exhibit 2.9_Camp Ride Wetland Delineation Report)*

An Endangered Resources (ER) Preliminary Assessment was completed on 8/3/2023. A search was conducted of the Natural Heritage Inventory (NHI) Portal within a one-mile buffer for terrestrial and wetland species, and within a two-mile buffer for aquatic species, of the project area. The ER Preliminary Assessment noted that species of special concern are present (within the buffer), the species recorded are from natural communities or other natural features, and the species recorded are threatened or endangered plants which are not protected due to the project occurring on private land or due to another type of exemption. *(Exhibit 2.10_Endangered Resources Preliminary Assessment)*

Beaver Brook State Wildlife Area is located half a mile west of the project site. It is a 1,323-acre forested property owned by the Wisconsin Department of Natural Resources (DNR) and designated as Resource Development for wildlife and fish habitat. The management intent is to provide a diversity of native plant communities, but to favor the development and maintenance of communities that provide habitat which is preferred by game species, such as deer, bear, ruffed grouse, woodcock, squirrel, and snowshoe hare. Plant communities that are earlier in the ecological succession are maintained, such as grass and shrub openings, aspen and oak. *(Exhibit 02.11_Beaver Brook WA Feasibility Study)*

3. Areal Extent of Nonmetallic Mining Phases

3.1 Phase 1 – Initial Grading of Storm Water Runoff Control

Work is scheduled for Summer/Fall 2026. Prior to initiating any mining of material, Phase 1 of site development will be to construct a series of berms and basins, and culvert work for storm water management as follows:

- Trail Sta 54+48, install 1- 30" x 64' culvert pipe with apron endwalls to convey off-site and USH 253 drainage to intermittent drainageway.
- Trail Sta 54+70 LT, construct diversion berm to direct off-site and USH 253 drainage away from natural depression that will be used for Phase 2 mine site internal drainage, and through above-mentioned culvert. Apply riprap overflow, topsoil, temporary seed, seeding mixture #20, fertilizer type B, mulch, and erosion mat to berm within 7 days of final grading.
- Trail Sta 57+03, abandon existing trail culvert place in-place to allow for the capture of runoff from a 25-year rain event in natural depression that will be used for Phase 2 mine site internal drainage.
- Topsoil and Unusable Material Stockpile Area, construct storm water diversion berm and basin along the west boundary of the stockpile area to capture runoff from a 25-year rain event. Apply riprap overflow, topsoil, temporary seed, seeding mixture #20, fertilizer type B, mulch, and erosion mat to berm within 7 days of final grading.
- Topsoil and Unusable Material Stockpile Area, construct storm water basin along the east boundary of the stockpile area to capture runoff from a 25-year rain event. Apply riprap overflow, topsoil, temporary seed, seeding mixture #20, fertilizer type B, mulch, and erosion mat to berm within 7 days of final grading.

(Exhibit 03.1_HydroCAD Internally Drained Pond Sizing)

Install all perimeter erosion control devices prior to land disturbing activities. The exact location of the erosion control devices shall be determined by the OPERATOR in the field.

Perform the specified work in accordance with the state of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2025 Edition, as published by the department.

Phase 2 mining activities can begin once a vegetative cover of at least 70% is established for Phase 1 grading areas.

(Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 3 Phase 1 Grading and Sheets 10 & 11 Phase 1 Erosion Control)

3.2 Phase 2 – Mine Excavation

Mining of raw sand and gravel material will begin immediately after the establishment of 70% vegetative cover for Phase 1 grading activities. Mining is anticipated to be completed in three stages and within a 20–50-year time span. Total proposed area to be impacted by excavation and stockpiling, is approximately 11.1 acres. The mine is to be reclaimed along a north-south line, once per every 250 linear feet of completed excavation

measured from the existing abandoned railroad corridor centerline. Dry excavated raw materials will be immediately loaded into a dump truck and hauled off-site or stockpiled until sold. As excavation deepens, any saturated material will be stockpiled in the mine site. Excess water will drain off the stockpiles into the underlying permeable sand and gravel until dry, prior to being hauled. If substantial rainfall and ponded storm water impedes work, the mining area may be internally dewatered, transferring water to a dormant area inside the active pit. Runoff from the access road will sheet flow across vegetated lands or be directed to adjacent vegetated swales.

Stage 1 mining is to begin with topsoil removal and mine excavation at Trail Sta 57±75 Lt. To maintain internal drainage, topsoil will be removed and storm water drainage ditch will be excavated in conjunction with mine excavation as work progresses to the north. Removed topsoil will be stockpiled and immediately seeded with temporary seed and WisDOT seeding mixture #20. Raw sand and gravel material will be excavated with a backhoe and/or end loader. Once excavation has reached a north-south line approximately 250' from existing abandoned railroad corridor centerline, Stage 1 excavation will be reclaimed with topsoil and unusable material from Stage 2.

Stage 2 mining is to begin with topsoil and unusable material removal placed to reclaim Stage 1 excavation. To minimize unnecessary transfer of material, any additional topsoil or unusable material can be stockpiled within Stage 1, ensuring stockpiled material remains internally drained. Once excavation has reached a north-south line approximately 500' from existing abandoned railroad corridor centerline, Stage 2 excavation will be reclaimed with topsoil and unusable material from Stage 3.

Stage 3 mining is to begin with topsoil and unusable material removal placed to reclaim Stage 2 excavation. To minimize unnecessary transfer of material any additional topsoil or unusable material can be stockpiled within Stage 2, ensuring stockpiled material remains internally drained. Once excavation has reached final limits of excavation area, reclaim Stage 3 excavation with topsoil and unusable material stockpiles from Stage 3 and from stockpiled material from Phase 1.

(Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 3 Phase 2 Mine Excavation)

4. Phase 3 – Post Mining Land Use

The owner plans to use the reclaimed mine surface as pastureland. Large pine trees that exist on the south and north ends of the mine site, beyond the boundary of the excavated area, will be left in-place. The owner plans to use the reclaimed stockpile site as a multi-building storage facility. *(Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 5 Phase 3 Mine Reclamation)*

5. Reclamation Measures

5.1 Reclamation Final Grades and Slopes

All mine site grading will be completed and resulting surfaces scarified prior to topsoil redistribution. Grading will be completed in accordance with the Wisconsin Administrative Code NR 135 and in a manner that prevents ponding of water on the reclaimed surface. The topsoil (and/or subsoil) will be placed and finished to the lines, grades and slopes as specified in the reclamation plan. *(Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 5 Phase 3 Mine Reclamation)*

All stockpile site grading will be completed in accordance with the Wisconsin Administrative Code NR 135, in a manner that prevents ponding of water, and as shown for a multi-building storage facility in Wisconsin Department of Natural Resources Construction Site Storm Water permit [SW-GP-NO-2025-66-X11-12T08-24-15](#). The topsoil (and/or subsoil), gravel, storage buildings, berms, swales, infiltration basin, erosion control devices, and all other incidental construction will be placed and finished to the lines, grades and slopes as specified in the reclamation and permitted plan (*Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 5 Phase 3 Mine Reclamation*)

5.2 Topsoil

5.2.1 Topsoil Removal

After perimeter erosion and sediment control measures and clearing and grubbing are completed on the site, but prior to the initiation of mining activities, topsoil and surficial plant growth material will be removed. Topsoil and, when appropriate, unusable material will be removed to a depth ranging between 8 inches and 16 inches. Minor deviations may occur based on field conditions. Topsoil removal will be accomplished by excavators or bulldozers and haul trucks with the goal of recovering as much of the existing topsoil as possible. When feasible, soil will be removed in a manner that minimizes the surface area exposed to erosion at any one time.

5.2.2 Topsoil Storage and Protection

All topsoil and unusable material removed from the mining site will be transported to the stockpile site location and protected for subsequent use in reclamation. (*Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 4 Phase 2 Mine Excavation*)

Topsoil from Stage 1 mine excavation operation will be used to construct the scenic buffer. Any topsoil stockpile(s) will be immediately protected from erosion. In general, protection will be accomplished through revegetation using WisDOT temporary seed and seeding mixture #20. Mulch or other protective measures will be applied as necessary. Utilizing the appropriate seed mix will serve to maximize the seedbank of native or other desired species. This will in turn minimize competition with undesirable, aggressive weedy species.

Topsoil and unusable material removed from Stage 2 mine excavation will be used for reclamation of previously completed Stage 1. Additional topsoil and unusable material, if any, from Stage 2 will be stockpiled within Stage 1 excavation limits and protected as mentioned above and placed at a location that ensures the stockpile will remain internally drained to the mine site. Similarly, topsoil and unusable material removed from Stage 3 mine excavation will be used for reclamation of previously completed Stage 2.

Topsoil and unusable material removed from Stage 1 mine excavation and stored in the stockpile site will be used for reclamation of previously completed Stage 3 excavation.

The OPERATOR of the site shall ensure that there is an adequate amount of stored material in the stockpile site to complete the reclamation, maintenance, and repairs of the three mine excavation stages.

5.2.3 Topsoil Redistribution and Site Preparation

The OPERATOR will perform all necessary grading to achieve the final topography and drainage patterns as soon as practicable once mining has ceased in a phase or stage of the operation. This will be performed to prepare the site for final reclamation.

All grading will be completed and the resulting surfaces scarified prior to topsoil redistribution*. This will promote good adherence/bonding between the subsoil and the topsoil and improve infiltration and drainage. Grading will be accomplished such that ponding of water is prevented on the reclaimed surface. Topsoil or other unusable material will be placed and finished in accordance with Chapter 38 of the Washburn County Code of Ordinances and Wisconsin Administrative Code NR 135. Topsoil will be placed to the depth of 6-8-inches. (Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 5 Phase 3 Mine Reclamation)

*To promote good bonding between the topsoil and the underlying materials, enhance drainage and ensure a suitable substrate for plant growth and the development of plant root systems, The OPERATOR shall take suitable measures to prepare the underlying subsoil prior to topsoil placement. This may include disking, chisel plowing, ripping and/or scarification.

All topsoil will be redistributed onto a prepared site. Topsoil redistribution will be performed only during dry conditions using appropriate equipment and in a manner that minimizes compaction. Any clods and/or lumps present after topsoil redistribution will be broken down using harrows, discs or other appropriate equipment to provide uniform textured soil. In addition, the surface will be dressed to present a uniform particle size to improve seed germination through good soil contact with the seed. In the case where an area not addressed in the plan is disturbed, the topsoil will be replaced to a minimum depth of 6 inches.

5.3 Structures

The final removal of mining, drainage and sediment control structures will be accomplished once the vegetative cover is robust enough to provide equivalent protection.

Posting mining site land use is proposed pasture with no proposed structures. Only the haul road will remain to provide access to the stockpile site. Post stockpile site land use is a proposed multi-building storage facility with gravel drives. Storage facility and access road is currently permitted under Wisconsin Department of Natural Resources Construction Site Storm Water permit [SW-GP-NO-2025-66-X11-12T08-24-15](#). (Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 5 Phase 3 Mine Reclamation)

5.4 Revegetation Plan

5.4.1 Seeding Mixtures and Rates of Application

The OPERATOR will use seed mixes to support each of specific proposed post mining land uses.

Post Mining Land Use	
Pasture	Mix 1- Pasture Mix
Comm. Storage Facility (Storm Water Treatment Basins)	Mix 2- WisDOT Seeding Mixture No. 70A
Commercial Storage Facility (Upland and Stockpiles)	Mix 3- WisDOT Seeding Mixture No. 20
Temporary Seed (Upland and Stockpiles)	Mix 4- WisDOT Seeding Temporary
Nurse Crop (Pasture and Storm Water Treatment Basins)	Mix 5- WisDOT Seeding Nurse Crop

MIX 1- PASTURE		
Common Name	Scientific Name	Pounds per Acre
Timothy	Phleum pratense	4
Tall Fescue Festuca arundinaceae	Festuca arundinaceae	5
Canada Wild Rye Elymus canadensis	Elymus canadensis	3

Agricultural Rye Secale cereale	Secale cereale	4.5
Alfalfa** Medicago sativa	Medicago sativa	10
Alsike clover** Trifolium hybridum	Trifolium hybridum	4.5
		31 Pound Total

TABLE 630-2 NATIVE SEED MIXTURES

	SPECIES	SPECIES BOTANICAL NAME	PURITY & GERMINATION minimum %	MIXTURE PROPORTIONS in percent			
				NO. 70	NO. 70A	NO. 75	NO. 80
FORBES	Canada Anemone	Anemone canadensis	PLS	2			
	Butterflyweed	Asclepias tuberosa	PLS		2		
	New England Aster	Aster novae-angliae	PLS	2	2		
	Partridge-pea	Chamaecrista (Cassia) fasciculata	PLS		2		
	Purple Prairie Clover	Dalea (Petalostemum) purpurea	PLS	2	2	4	
	Canada Tick-trefoil	Desmodium canadense	PLS	2			
	Flowering Spurge	Euphorbia corollata	PLS		2		
	Wild Geranium	Geranium maculatum	PLS	2			
	Western Sunflower	Helianthus occidentalis	PLS	3	2		
	Rough Blazingstar	Liatris aspera	PLS		2		
	Prairie Blazingstar	Liatris pycnostachya	PLS	2			
	Lupine	Lupinus perennis	PLS		3		
	Wild Bergamot	Monarda fistulosa	PLS	2			
	Horse Mint	Monarda punctata	PLS		2		
	Yellow Coneflower	Ratibida pinnata	PLS	2	2		
	Blackeyed Susan	Rudbeckia hirta	PLS			1	
	Showy Goldenrod	Solidago speciosa	PLS	2	2		
	Spiderwort	Tradescantia ohiensis	PLS	2	2		
	Golden Alexanders	Zizia aurea	PLS	2			
GRASSES	Big Bluestem	Andropogon gerardi	PLS	15	15	10	
	Sideoats Grama	Bouteloua curtipendula	PLS	15	20	20	25
	Canada Wildrye	Elymus Canadensis	PLS	15	15	35	23
	Slender Wheatgrass	Elymus trachycaulus	PLS				20
	Junegrass	Koeleria macrantha	PLS		5		
	Annual Ryegrass	Lolium multiflorum	[1]			10	10
	Switchgrass	Panicum virgatum	PLS				10
	Salt Grass	Puccinella distans	[1]				2
	Little Bluestem	Schizachyrium (Andropogon) scoparium	PLS	15	20	10	10
	Indiangrass	Sorghastrum nutans	PLS	15		10	
ALTERNATE FORBES	Sky Blue Aster	Aster azureus	PLS	[2]	[2]		
	White Wild Indigo	Baptisia leucantha	PLS	[2]	[2]		
	Pale Purple Coneflower	Echinacea pallida	PLS	[2]	[2]		
	White Prairie Clover	Petalostemum candidum	PLS	[2]	[2]		
	Stiff Goldenrod	Solidago rigida	PLS	[2]	[2]		
	Hoary Vervain	Verbena stricta	PLS	[2]	[2]		

[1] Provide the minimum purity and germination specified in table 630-1.

[2] The contractor may, if the engineer approves, substitute an alternate forb for a required forb that is not available using the same percentage as specified for the required forb. Use a different alternate forb for each unavailable required forb. Provide documentation showing that a required forb is not available before using an alternate.

TABLE 630-1 HIGHWAY SEED MIXTURES

SPECIES	PURITY minimum %	GERMINATIO N minimum %	MIXTURE PROPORTIONS (in percent)				
			NO.10	NO.20	NO.30	NO.40	NO.60
Kentucky Bluegrass	98	85	40	6	10	35	
Red Fescue	97	85	25	15	30	30	
Hard Fescue	97	85		24	25	20	
Tall Fescue	98	85		40			
Salt Grass	98	85			15		
Redtop	92	85	5				
Timothy	98	90					12
Canada Wild Rye		PLS					10
Perennial Ryegrass	97	90	20	15			
Improved Fine Perennial Ryegrass	96	85			20	15	
Annual Ryegrass	97	90					30
Alsike Clover	97	90					4
Red Clover	98	90					4
White Clover	95	90	10				
Japanese Millet	97	85					20
Annual Oats ^[1]	98	90					20

^[1] Substitute winter wheat for annual oats in fall plantings started after September 1.

Under the Seeding Temporary, use a temporary seed as follows:

SPECIES	% MINIMUM PURITY	% MINIMUM GERMINATION
Annual Oats	98	90
Agricultural Rye	97	85
Winter Wheat	95	90

Use oats in spring and summer plantings. Use winter wheat or rye for fall plantings started after September 1.

If seeding bare soil with either mixture 70, 70A, 75, or 80, include the seeding nurse crop as follows:

SPECIES	% MINIMUM PURITY	% MINIMUM GERMINATION
Annual Oats	98	90
Annual Ryegrass	97	90
Winter Wheat	95	90

When a nurse crop is required for spring seeding before June 15, or if Washburn County Land and Water Conservation Department allows seeding between June 15 and October 15, use annual oats. For fall seeding after October 15, use winter wheat, or annual ryegrass.

Use the following sowing rate for seeds in pounds per 1000 square feet:

- No. 10 at 3 pounds
- No. 20 at 5 pounds
- No. 30 at 5 pounds
- No. 40 at 5 pounds
- No. 60 at an equivalent seeding rate of 1.5 pounds^[1]
- No. 70 or 70A at 0.4 pounds
- No. 75 at an equivalent seeding rate of 0.7 pounds^[1]
- No. 80 at an equivalent seeding rate of 0.8 pounds^[1]
- Temporary seeding at 3 pounds
- Nurse crop seeding at 0.8 pounds

5.4.2 General Seeding Preparation

The OPERATOR will apply seed to soils that are properly prepared as specified above at any time during the growing season when soil conditions are suitable except between July 1 and August 15, unless permitted by the Washburn County Land and Water Conservation Department. Seeding activities will not be carried out immediately following rain, when the ground is too dry or during windy periods.

Seeds that require inoculation (legumes are indicated by an * in the sample seed table) will be inoculated prior to seeding. In the performance of seed inoculation, care will be taken to follow the instructions that are provided by the supplier.

All plant materials will be handled with care during all phases of revegetation (transport, storage, preparation and seeding) or other plant installation activities. Plant materials that show evidence of injury, mold, rot or excessive drying will not be used. Acceptance of plant materials shall be subject to approval of the Washburn County Land and Water Conservation Department.

The area will be seeded following the final grading and completion of all site preparation activities. All necessary physical seedbed preparation measures (such as scarification, tilling or harrowing) and chemical measures such as amendments (fertilizer, lime or other) will be done prior to seeding.

5.4.3 General Seeding Methods

Method A. Sow the selected seed mixture using equipment adapted to the purpose, or by scattering it uniformly over the areas to be seeded. Lightly rake or drag to cover the seed with approximately 1/4 inch of soil. After seeding, lightly roll or compact the areas using suitable equipment, preferably the cultipacker type, when the engineer judges the seedbed too loose, or if the seedbed contains clods that might reduce seed germination. Do not roll slopes steeper than 1:3. (2) If scattering seed by hand, perform this work with satisfactory hand seeders and only when the air is calm enough to prevent seeds from blowing away

Method B. Optionally on steep slopes, sow or spread the seed upon the prepared bed using a stream or spray of water under pressure and operated from a machine designed for that purpose will be allowed. Place the selected seed mixture and water into a tank, provided within the machine, in sufficient quantities that when spraying the seed on a given area it is uniformly spread at the required application rate. During this process, keep the tank contents stirred or agitated to provide uniform distribution. Spread the tank contents within one hour after adding the seed to the tank. The engineer will reject seed that remains mixed with the water for longer than one hour. The engineer will not require dragging or rolling.

Method C. For spring seeding of seed mixtures 70 and 70A into existing ground cover, mow existing vegetation to 4 inches or less in height 2 to 4 weeks before seeding. Ten to 14 days after mowing, spray with vegetation control herbicide*. For fall seeding of seed mixtures 70 and 70A into existing ground cover, mow existing vegetation to 4 inches or less in height 4 to 6 weeks before seeding. Ten to 14 days after mowing, spray with vegetation control herbicide conforming*. Retreat with vegetation control herbicide 10 to 14 days after initial application if live vegetation persists. Seed with a rangeland type drill with one or more seed boxes that can be calibrated independently to deliver different sized seeds uniformly at the required rate and equipped with a rear-mounted press wheel for each seed drop tube. If seeding into existing vegetation or thatch, use a rangeland type drill equipped with a no-till attachment that can cut through the vegetation or thatch in front of the V disc and seed drop tube. If the configuration of the area to be seeded allows, apply seed at 1/2 the specified seed rate and apply the second 1/2 in a perpendicular direction.

*Vegetation control herbicide, if specified, consists of a post-emergence herbicide that, if applied to leaves and stems of vegetation, is absorbed and translocated to all parts of the plant including roots and underground stems and is by this means capable of killing the entire plant. Provide a water-soluble herbicide that deactivates on contact with soil, and leaves no harmful residue.

If rainfall is not sufficient, keep seeded areas thoroughly moist. Once the seed has germinated, do not let the top inch of soil dry out until the grass is well established. Maintain soil moisture for 30 days unless the engineer directs or allows otherwise. Apply water in a manner that precludes washing or erosion.

5.4.4 Soil Amendments

Soil amendments may include fertilizer or lime determined to be beneficial to the seedbed consisting of topsoil or substitute soil.

To allow adequate time between sampling the soil and the initiation of reclamation activities, the OPERATOR will perform soil sampling and submit sample to an accredited laboratory for analysis at least 60 days prior to initiating seeding activities. Based on the results of the analysis, amendments will be obtained as necessary and applied to the soil prior to seeding. The general recommendations below will be used in lieu of data when necessary for contemporaneous reclamation of small areas and for the purpose of calculation of the financial assurance. Results from test plots and/or experience gained during phased reclamation may also be considered when making amendment recommendations.

Conceptual fertilizer application rates for areas that will be reclaimed as pasture or upland:

WisDOT Type B fertilizer must conform to the following minimum requirements:

Nitrogen, not less than	16%
Phosphoric Acid, not less than	6%
Potash, not less than	24%

Apply fertilizer containing 50 percent total of nitrogen, phosphoric acid, and potash at 7 pounds per 1000 square feet. For Type B fertilizer that contains a different percentage of components, determine the new application rate by multiplying the specified rate by a dimensionless conversion factor determined as follows:

$$\text{Conversion Factor} = 50 / \text{New Percentage of Component}$$

{NOTE: In areas to be reclaimed to native prairie it is usually not necessary to apply fertilizer. Indeed, fertilizer often favors competitive weedy species. However, each site should be evaluated based on soil analysis.}

Lime will be applied as necessary based on soil pH tests. Apply agricultural limestone conform to Chapter 94.66 of the Wisconsin statutes and of the Wisconsin Administrative Code Chapter ATCP 41. Furnish limestone with a neutralizing index of not less than 40 or more than 109.

5.4.5 Mulching

Following seeding, mulch will be applied uniformly at a rate of between 1 and 1.5 tons per acre.

Mulching material consists of straw or hay in an air-dry condition, wood excelsior fiber, wood chips, or other suitable material of a similar nature that the Washburn County Land and Water Conservation Department

approves and is substantially free of noxious weed seeds and objectionable foreign matter. The mulch cover will be applied loosely enough to allow some sunlight to penetrate yet thick enough to provide shade and protection from desiccation and raindrop impact and erosion. After spreading on reseeded surfaces, mulch will be crimped into the soil by passing over the reclaimed surface with a dull, weighted disk or similar implement. On steep slopes straw or hay mulch will be securely pegged or stapled in place. In lieu of such anchorage, the mulch may be secured by means of heavy biodegradable twine fastened with pegs or staples to form a grid. Also, at the discretion of the project manager, erosion blanket, jute netting or a tackifier may be used in addition to or in lieu of the crimping process.

5.5 Revegetation Standards

The following table represents success criteria to evaluate the success of revegetation at the reclaimed mine and stockpile site.

Post-Mining Land-Use and Success Criteria Table				
Post-mining Land-Use	Seeding Mixture	Stage/Phase	Success Criteria	Years to Show Success
Pasture Land	Mix 1 & Mix 5	Phase 3 – Stage 1, 2, 3	70% Cover*	1
Commercial (Upland)	Mix 3 & Mix 4	Phase 3	70% Cover*	1
Commercial (Storm Water Treatment)	Mix 2 & Mix 5	Phase 3	70% Cover*	2
Stockpile Site	Mix 3 & Mix 4	Phase 1, 2, & 3	70% Cover*	1

* Based on consultation with Washburn County Land and Water Conservation Department.

Upon completion of reclamation activities, whether this includes contemporaneous final or interim reclamation, the Washburn County Land and Water Conservation Department will inspect the site to verify that reclamation was successful.

Percent cover will be used as a revegetation success standard because it is easy to measure and a useful predictor of site stability. Percent Cover is determined by estimating the percentage of an area that is covered, shaded or intercepted by vegetation. The standard for percent cover is 70 percent as measured by coverage of the canopy (vertical projection of plant parts) and will be recorded by species. Cover will be measured over the entire revegetated site at no less than 10 randomly placed square meter quadrats for the 7.9-acre mine area and 4 randomly placed square meter quadrats for each 2.8-acre stockpile area (2 Upland, 2 Storm Water Treatment Basins)

Success criteria will vary with the post-mining land use. In addition, both presence (a species list) and frequency (number of quadrats the species occurs in) will be included. Count may be physical and photo documentation. The measurement of cover should be timed to correspond with the period of peak vegetative growth, generally in August.

5.6 Erosion Control

The main element of the reclamation plan is to conduct mining operations in a manner that minimizes the acreage being mined at any one time and thus serves to minimize the total area exposed to erosion in accordance with NR 135.06 (2). Mining will be conducted in phases with progressive or contemporaneous reclamation immediately following the cessation of mining in each stage.

Erosion control measures will be established prior to any site development activities including soil removal and stockpiling. Erosion control measures will also be established prior to initiating reclamation such as contemporaneous reclamation, backfilling or grading.

Surface water protection measures will be installed and maintained to support reclamation activities for each phase of the mine and will be in place before and during contemporaneous reclamation. Erosion and sediment control measures include diversion systems, sedimentation ponds and other means for controlling runoff. (*Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 10 Phase 1 Erosion Control*). Mine and stockpile site reclamation erosion and sediment control and soil stabilization measures include seeding, mulching, erosion mat, ditch checks, culvert pipe checks and other best management practices (BMPs), necessary to achieve soil stabilization in accordance with NR 135.12. (*Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine -Sheet 3 Phase 3 Mine Reclamation and Sheets 12 & 13 Phase 3 Erosion Control*)

In accordance with NR216.48, inspections of the construction site and implemented erosion and sediment control BMPs must be performed weekly and within 24 hours after a rainfall event of 0.5 inches or greater.

5.7 Interim Reclamation

Sequential interim reclamation will be done to minimize the area impacted and to reduce fees. Conducting mine operations in this manner will minimize the acreage being mined at any one time along with contemporaneous final and interim reclamation and will minimize the total area exposed to erosion in accordance with NR 135.06. Once an area is stabilized, the OPERATOR will request that Washburn County Land and Water Conservation Department consider the increment temporarily reclaimed for the purposes of reduction of fees under NR 135.41.

5.8 Maintenance

During site reclamation, after the operator has stated that reclamation is complete but prior to release of financial assurance, the operator shall perform any maintenance necessary. This includes measures to prevent erosion, sedimentation or environmental pollution, comply with the standards, or to meet the goals specified in the reclamation plan.

6. Final Site Actions

The final removal of mining-related structures, drainage structures and sediment control structures will be accomplished once the vegetative cover is robust enough to provide equivalent protection. At such time and in accordance with the approved reclamation plan those structures will be removed and the soils in such areas will be reclaimed as described in the reclamation plan (NR 135.11-135.19). At this time the OPERATOR will request the Regulatory Authority to perform the necessary inspection and evaluation work to issue a certification of completion (COC) to certify the reclamation as complete and to release the financial assurance.

7. Financial Assurance

The cost to perform Phase 3 Reclamation of the entire mine site and stockpile area, including all items and tasks detailed in Section 5 of this document and in Exhibit 1.1_Plan-Camp Ride LLC-Nonmetallic Mine, is estimated to be \$508,800 in 2026 dollars. Separate estimates for the three planned stages of mine excavation and interim reclamation as described in Sections 3.2 and 5.7 are listed in the table below.

Stage	Estimated Cost in 2026 Dollars
1	\$71,100
2	\$97,200
3	\$340,500

The estimates were prepared by Gary Colbert PE of Northern Wisconsin-Based Engineers, Inc., utilizing estimating methods, software, and data routinely used by the Wisconsin Department of Transportation for estimating the costs of transportation construction projects let to bid in Wisconsin. (*Exhibit 07.1 Financial Assurance Estimate*).

A Guide to Developing Reclamation Plans for Nonmetallic Mining Sites in Wisconsin, produced by the Wisconsin Department of Natural Resources, is the source for the guidance given in the remainder of this section.

The following is a summary of the requirements of s. NR 135.40 regarding financial assurance, in the form of a plan of action. The list is only a summary, and the OPERATOR should refer to the official code for the requirements in their entirety. The OPERATOR should also contact the Washburn County regulatory authority (RA) for additional requirements.

1. The OPERATOR contacts the RA and discusses their plans for a post-mining land use. Eventually, both parties shall reach consensus.
2. The OPERATOR prepares the reclamation plan, accounting and tallying the costs as the plan is being drafted. In the reclamation plan, the OPERATOR should suggest an amount to put-up for financial assurance.
3. The reclamation plan is submitted to the regulatory authority.
4. If the plan is approved, the RA must provide written notification to the operator specifying the amount of financial assurance required per s. NR 135.40(1).
5. As a condition of the permit, financial assurance, which must be payable exclusively to the RA, is filed with the RA per s. NR 135.40(2).
6. A bond or an alternate option must be established to cover financial assurance per s. NR 135.40(4). (A short list with a brief description shall follow).
7. The amount of financial assurance is reviewed periodically by the RA to assure that it equals outstanding reclamation costs per s. NR 135.40(3).
8. The length of financial assurance is dictated by the period of time required to establish the post-mining land use specified in the approved mine reclamation plan. This may extend beyond the permit if required to accomplish reclamation per s. NR 135.40 (3).
9. Any interest from the financial assurance must be paid to the operator per s. NR 135.40(4).

A few options that may benefit smaller operators in satisfying the financial assurance requirements have been included within the administrative code. For instance, it is possible that, at the discretion of the RA, a combination of financial assurance methods, including a lien on the property on which the nonmetallic mining site occurs, may be selected. The RA may also accept a lesser initial amount of financial assurance provided the permittee initiates a process that continuously increases the amount until it is adequate to reflect the costs of reclamation.

The following is a brief description of financial assurance options.

1. Bond – collateral; also known as a performance or forfeiture bond; an instrument provided by a surety company; a 3-party agreement that serves as a guarantee that the provider will pay costs associated with fulfilling the permittee's obligations in the event of a default
2. Cash – collateral; a deposit with the RA to guarantee performance of obligations under a reclamation permit
3. Certificate of deposit – collateral; a deposit with the RA to guarantee performance of obligations under a reclamation permit
4. Irrevocable letter of credit – similar to a bond with the bank or financial institution taking the place of a surety; established solely for the purpose of guaranteeing performance of obligations under a reclamation permit
5. Irrevocable trust – trust created by the permittee solely for the purpose of guaranteeing performance of obligations under a reclamation permit
6. Escrow account – account with a bank or financial institution established by the permittee to satisfy the financial assurance requirements (i.e. to guarantee the performance of the reclamation activities described in a reclamation permit
7. Net worth test – method in which a permittee provides sufficient financial data to demonstrate compliance with minimum financial standards, which is accompanied with the opinion of an independent certified public accountant in order to establish proof of financial responsibility
8. Government securities – a deposit with the RA to guarantee performance of obligations under reclamation permit
9. Alternative methods for small operators – a blend of different options that could include a regular payment (based on production or gross sales) to an escrow account or other financial instrument designed to grow to the amount necessary to guarantee reclamation cost at the expected time of final reclamation. This probably would be set up along with a lien on the property that would serve as collateral to guarantee performance of reclamation obligations.

8. Certification of the Reclamation Plan

I hereby certify, as a duly authorized representative or agent, that **Bluse Enterprises, Inc. (OPERATOR)** will comply with the provisions of this reclamation plan as well as the statewide nonmetallic mining reclamation standards established in ss. NR 135.05 through NR 135.15, Wis. Adm. Code.

Signature of Applicant or Duly Authorized Agent

Date Signed

This section is required if the landowner or lessee of the property is different from the operator indicated above.

I/we, as the landowner(s) or lessee(s) of the property described herein, do hereby certify that I/we have reviewed the reclamation plan submitted by **Bluse Enterprises, Inc. (OPERATOR)**, concur with its provisions, and agree to permit its implementation.

Signature of Landowner(s) or Lessee(s)

Date Signed

LIST OF EXHIBITS

1.1_Plan-Camp Ride LLC – Nonmetallic Mine	Mine Grading, Excavation & Reclamation Plan
2.1_NRCS Soils Report	NRCS Custom Soil Resource Report
2.2_Glacial Deposits of Wisconsin	Map of Glacial Deposits, Sand and Gravel Resources of Wisc.
2.3_Groundwater Well Report	UD463 Groundwater Well Construction Report
2.4_Soil Test Pit Results	Soil Test Pit Reports for Storm Water Infiltration
2.5_Groundwater Well Reports	Ground Water Well Construction Reports
2.6_Groundwater Mean Elevation Map	Statewide Map of Mean Elevation of Water Table
2.7_Navigable Waters Determination	DNR Coord. – Navigable Waters Determination
2.8_NonNavigable Waters Determination	DNR Coord. – NonNavigable Waters Determination
2.9_Camp Ride Wetland Delineation Report	Wetland Delineation Report for Campground & Mine Site
2.10_Endangered Resources Preliminary Assessment	ERR for Campground & Mine Site
2.11_Beaver Brook WA Feasibility Study	Beaver Brook Wildlife Area Feasibility Study
3.1_HydroCAD Internal Drained Pond Sizing	Storm Water Runoff Modelling Results
7.1_Financial Assurance Estimate	Cost Est. of Mine Rec. for Financial Assurance

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NWBE PROJECT	OTHER PROJECT	
	PROJECT	CONTRACT
NWBE 2618		

BLUSE EXCAVATING, LLC TOWN OF BEAVERBROOK PLAN OF PROPOSED IMPROVEMENT

CAMP RIDE NONMETALLIC MINE SITE

W 7031 GREEN VALLEY RD

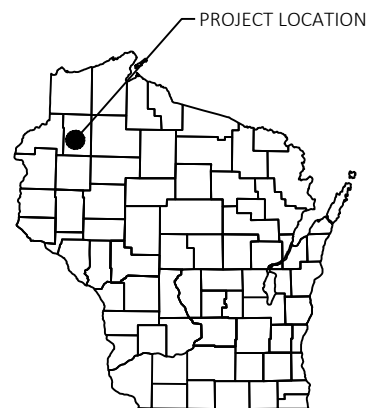
PT GOV LOT 4 EXC LOT 1 CSM #4239, DOC# 407797 WD, DOC# 412114 JGMT, SEC 06, T38N, R12W
WASHBURN COUNTY, WISCONSIN

NWBE PROJECT NUMBER
NWBE 2618

ORDER OF SHEETS

Section No.	Title
Section No. 1	1 Title
Section No. 2	2 Typical Sections and Details
Section No. 3	3 Estimate of Quantities
Section No. 3	3 Miscellaneous Quantities
Section No. 4	4 Right of Way Plat
Section No. 5	5 Plan and Profile
Section No. 6	6 Standard Detail Drawings
Section No. 7	7 Sign Plates
Section No. 8	8 Structure Plans
Section No. 9	9 Computer Earthwork Data
Section No. 9	9 Cross Sections

TOTAL SHEETS =



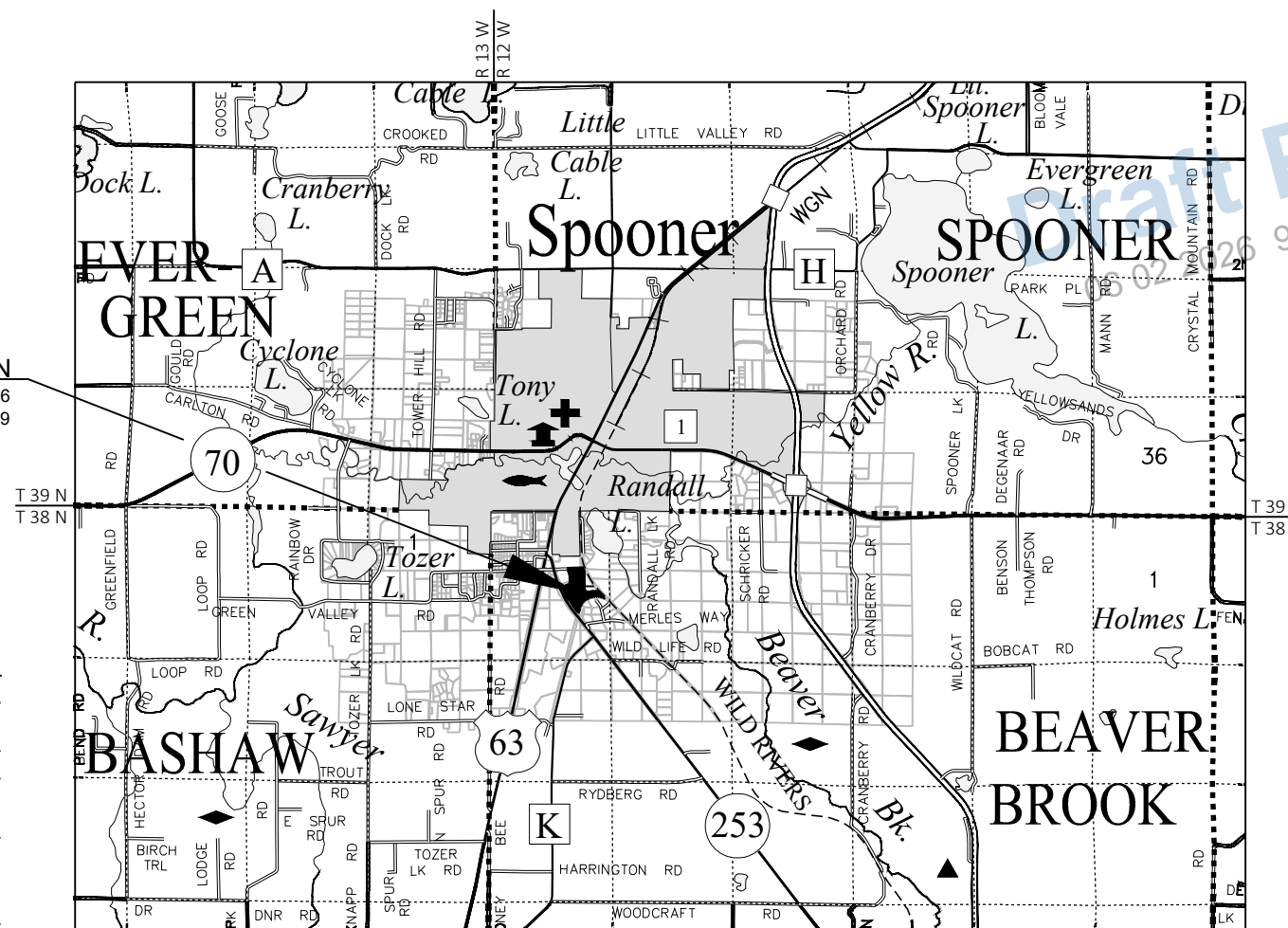
DESIGN DESIGNATION NWBE 2224

A.A.D.T.	=	N/A
A.A.D.T.	=	N/A
D.H.V.	=	N/A
D.D.	=	N/A
T.	=	N/A
DESIGN SPEED	=	N/A
ESALS	=	N/A

PROJECT LOCATION
Y = 560,976
X = 739,859

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
MARSH AREA	STORM SEWER
WOODED OR SHRUB AREA	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE



LAYOUT
SCALE 0 1.5 MI
TOTAL NET LENGTH OF CENTERLINE = N/A

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), WASHBURN COUNTY, NAD83 (2012), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2011). GPS DERIVED ELEVATIONS ARE BASED ON GEOID

ORIGINAL PLANS PREPARED BY



DATE: _____

ACCEPTED FOR
JUSTIN H. BLUSE
DBA CAMP RIDE, LLC

JUSTIN H. BLUSE - OWNER (DATE) _____

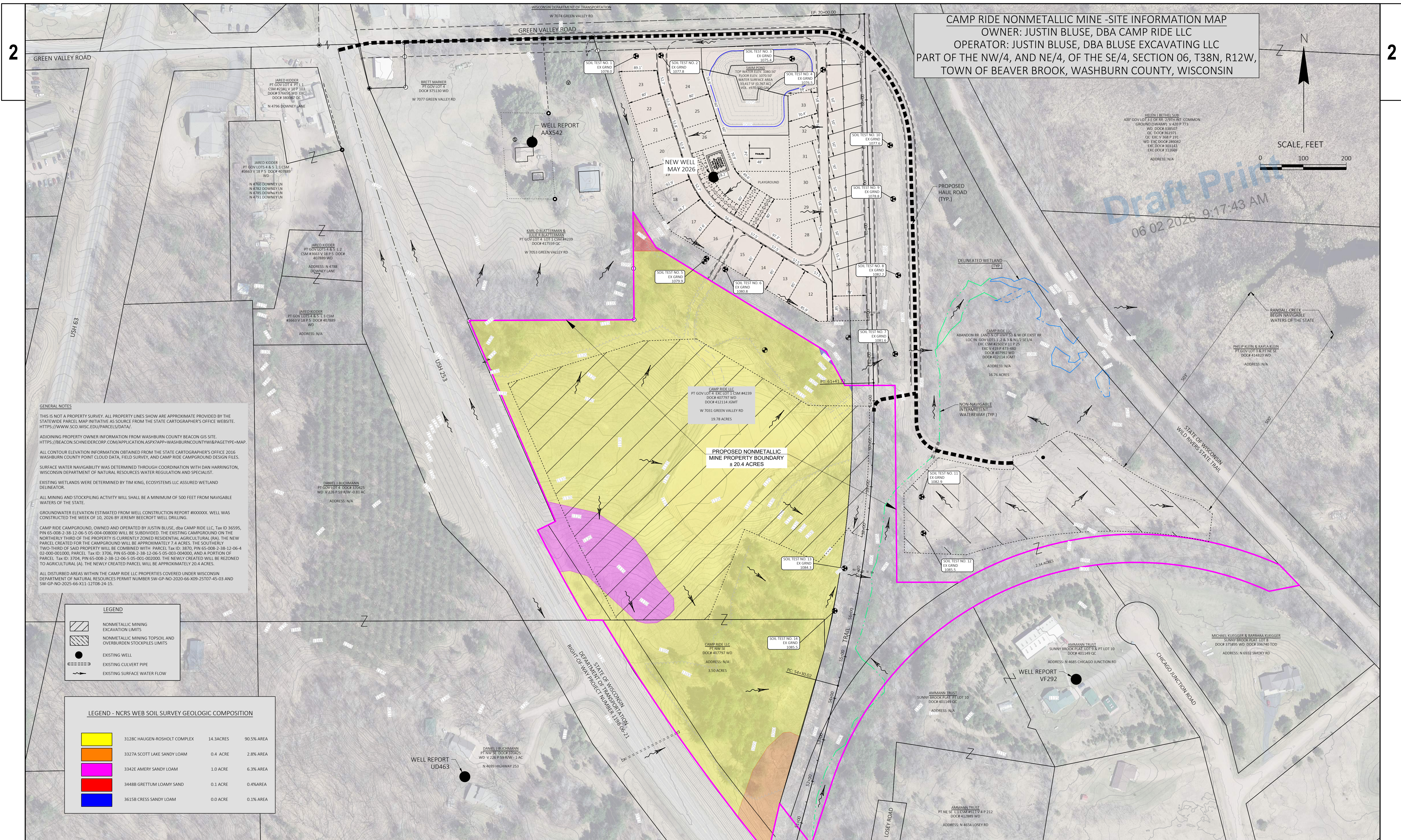
ACCEPTED FOR
JUSTIN H. BLUSE
DBA BLUSE EXCAVATING, LLC

JUSTIN H. BLUSE - OPERATOR (DATE) _____

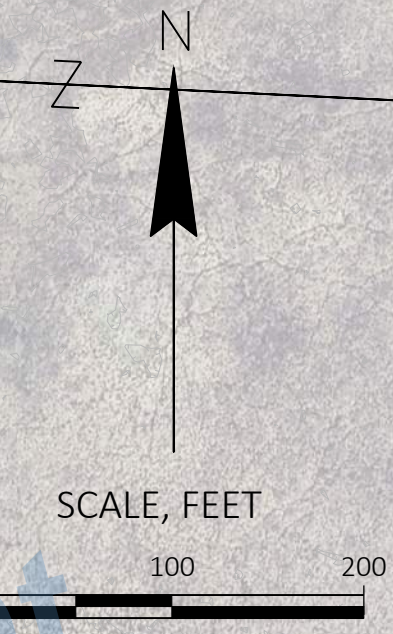
PREPARED BY
Surveyor NWBE - B. ZEMBO
Designer NWBE - G. COLBERT, PE
Project Manager NWBE - H. HARRINGTON, PE

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CAMP RIDE NONMETALLIC MINE - SITE INFORMATION MAP
 OWNER: JUSTIN BLUSE, DBA CAMP RIDE LLC
 OPERATOR: JUSTIN BLUSE, DBA BLUSE EXCAVATING LLC
 PART OF THE NW/4, AND NE/4, OF THE SE/4, SECTION 06, T38N, R12W,
 TOWN OF BEAVER BROOK, WASHBURN COUNTY, WISCONSIN



GENERAL NOTES

THIS IS NOT A PROPERTY SURVEY. ALL PROPERTY LINES SHOW ARE APPROXIMATE PROVIDED BY THE STATEWIDE PARCEL MAP INITIATIVE AS SOURCE FROM THE STATE CARTOGRAPHER'S OFFICE WEBSITE. [HTTPS://WWW.SCO.WISC.EDU/PARCELS/DATA/](https://www.sco.wisc.edu/parcels/data/)

ADJOINING PROPERTY OWNER INFORMATION FROM WASHBURN COUNTY BEACON GIS SITE. [HTTPS://BEACON.SCHNEIDERCORP.COM/APPLICATION.aspx?app=WASHBURNCOUNTY&PAGE=MAP](https://beacon.schneidercorp.com/application.aspx?app=WASHBURNCOUNTY&PAGE=MAP)

ALL CONTOUR ELEVATION INFORMATION OBTAINED FROM THE STATE CARTOGRAPHER'S OFFICE 2016 WASHBURN COUNTY POINT CLOUD DATA, FIELD SURVEY, AND CAMP RIDE CAMPGROUND DESIGN FILES.

SURFACE WATER NAVIGABILITY WAS DETERMINED THROUGH COORDINATION WITH DAN HARRINGTON, WISCONSIN DEPARTMENT OF NATURAL RESOURCES WATER REGULATION AND SPECIALIST.

EXISTING WETLANDS WERE DETERMINED BY TIM KING, ECOSYSTEMS LLC ASSURED WETLAND DELINEATOR.

ALL MINING AND STOCKPIPING ACTIVITY WILL SHALL BE A MINIMUM OF 500 FEET FROM NAVIGABLE WATERS OF THE STATE.

GROUNDWATER ELEVATION ESTIMATED FROM WELL CONSTRUCTION REPORT #XXXXXX. WELL WAS CONSTRUCTED THE WEEK OF 10, 2026 BY JEREMY BEECROFT WELL DRILLING.

CAMP RIDE CAMPGROUND, OWNED AND OPERATED BY JUSTIN BLUSE, dba CAMP RIDE LLC, Tax ID 36595, PIN 65-008-2-38-12-06-5 05-004-008000 WILL BE SUBDIVIDED. THE EXISTING CAMPGROUND ON THE NORTHERLY THIRD OF THE PROPERTY IS CURRENTLY ZONED RESIDENTIAL AGRICULTURAL (RA). THE NEW PARCEL CREATED FOR THE CAMPGROUND WILL BE APPROXIMATELY 7.4 ACRES. THE SOUTHERLY TWO-THIRD OF SAID PROPERTY WILL BE COMBINED WITH PARCEL Tax ID: 3870, PIN 65-008-2-38-12-06-4 02-000-001000, PARCEL Tax ID: 3706, PIN 65-008-2-38-12-06-5 05-003-004000, AND A PORTION OF PARCEL Tax ID: 3704, PIN 65-008-2-38-12-06-5 05-001-002000. THE NEWLY CREATED WILL BE REZONED TO AGRICULTURAL (A). THE NEWLY CREATED PARCEL WILL BE APPROXIMATELY 20.4 ACRES.

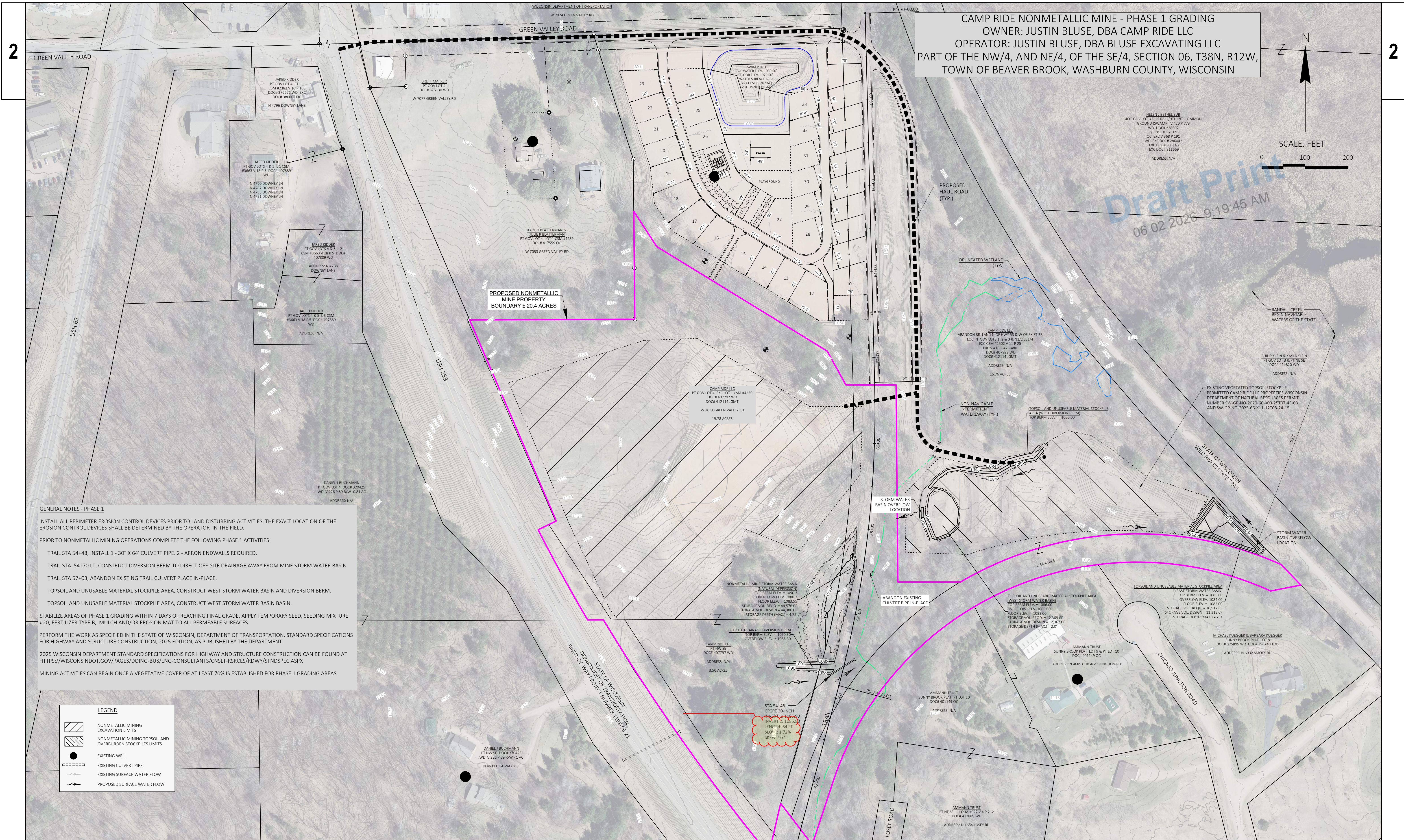
ALL DISTURBED AREAS WITHIN THE CAMP RIDE LLC PROPERTIES COVERED UNDER WISCONSIN DEPARTMENT OF NATURAL RESOURCES PERMIT NUMBER SW-GP-NO-2020-66-X09-25T07-45-03 AND SW-GP-NO-2025-66-X11-12T08-24-15.

LEGEND

- NONMETALLIC MINING EXCAVATION LIMITS
- NONMETALLIC MINING TOPSOIL AND OVERBURDEN STOCKPILES LIMITS
- EXISTING WELL
- EXISTING CULVERT PIPE
- EXISTING SURFACE WATER FLOW

LEGEND - NCRS WEB SOIL SURVEY GEOLOGIC COMPOSITION

	3128C HAUGEN-ROSHOLT COMPLEX	14.3ACRES	90.5% AREA
	3327A SCOTT LAKE SANDY LOAM	0.4 ACRE	2.8% AREA
	3342E AMERY SANDY LOAM	1.0 ACRE	6.3% AREA
	3448B GRETNUM LOAMY SAND	0.1 ACRE	0.4% AREA
	3615B CRESS SANDY LOAM	0.0 ACRE	0.1% AREA



CAMP RIDE NONMETALLIC MINE - PHASE 1 GRADING
 OWNER: JUSTIN BLUSE, DBA CAMP RIDE LLC
 OPERATOR: JUSTIN BLUSE, DBA BLUSE EXCAVATING LLC
 PART OF THE NW/4, AND NE/4, OF THE SE/4, SECTION 06, T38N, R12W,
 TOWN OF BEAVER BROOK, WASHBURN COUNTY, WISCONSIN

GENERAL NOTES - PHASE 1

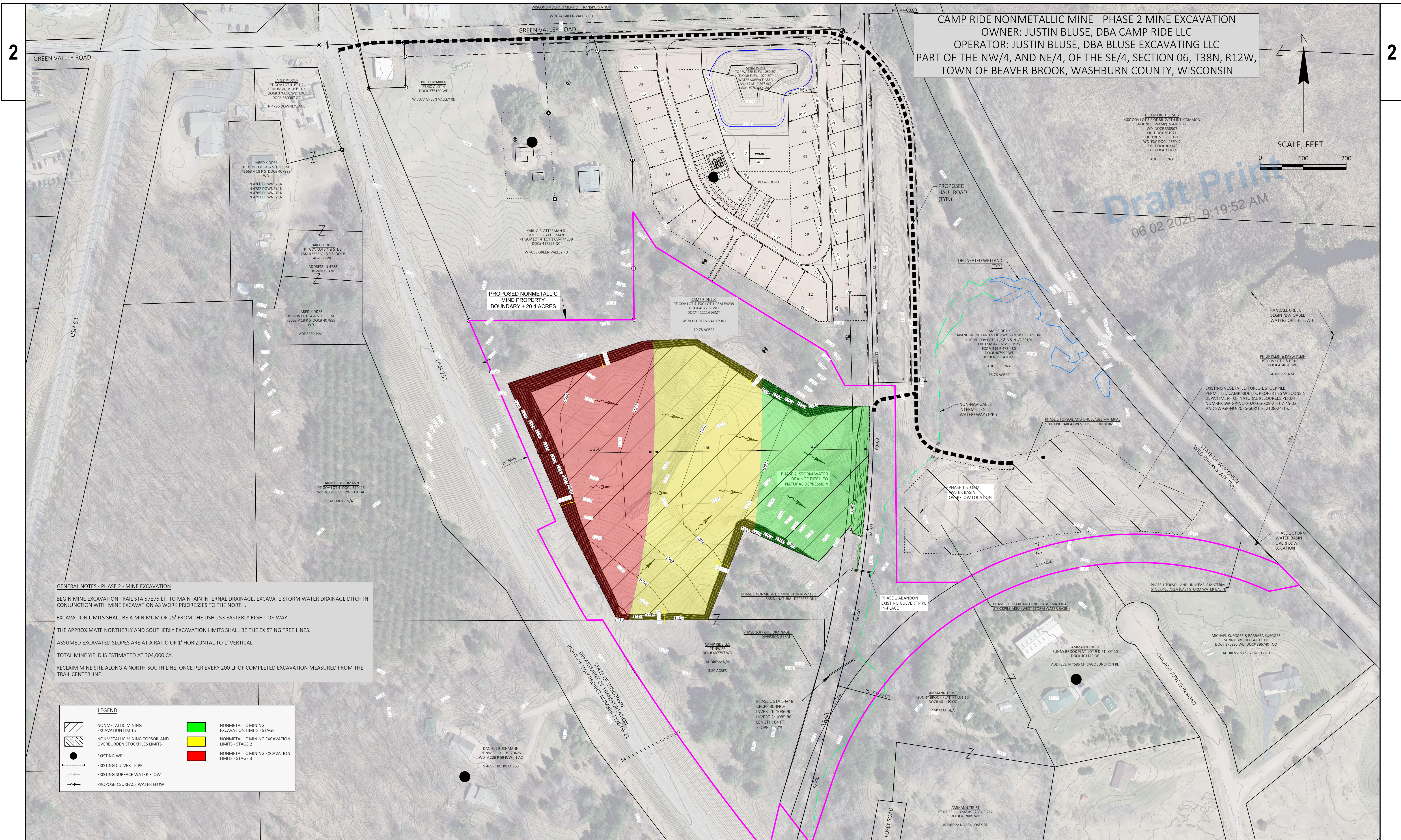
INSTALL ALL PERIMETER EROSION CONTROL DEVICES PRIOR TO LAND DISTURBING ACTIVITIES. THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED BY THE OPERATOR IN THE FIELD.

PRIOR TO NONMETALLIC MINING OPERATIONS COMPLETE THE FOLLOWING PHASE 1 ACTIVITIES:

- TRAIL STA 54+48, INSTALL 1 - 30" X 64' CULVERT PIPE. 2 - APRON ENDWALLS REQUIRED.
- TRAIL STA 54+70 LT, CONSTRUCT DIVERSION BERM TO DIRECT OFF-SITE DRAINAGE AWAY FROM MINE STORM WATER BASIN.
- TRAIL STA 57+03, ABANDON EXISTING TRAIL CULVERT PLACE IN-PLACE.
- TOPSOIL AND UNUSABLE MATERIAL STOCKPILE AREA, CONSTRUCT WEST STORM WATER BASIN AND DIVERSION BERM.
- TOPSOIL AND UNUSABLE MATERIAL STOCKPILE AREA, CONSTRUCT WEST STORM WATER BASIN.
- STABILIZE AREAS OF PHASE 1 GRADING WITHIN 7 DAYS OF REACHING FINAL GRADE. APPLY TEMPORARY SEED, SEEDING MIXTURE #20, FERTILIZER TYPE B, MULCH AND/OR EROSION MAT TO ALL PERMEABLE SURFACES.
- PERFORM THE WORK AS SPECIFIED IN THE STATE OF WISCONSIN, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, 2025 EDITION, AS PUBLISHED BY THE DEPARTMENT.
- 2025 WISCONSIN DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION CAN BE FOUND AT [HTTPS://WISCONSIN.GOV/PAGES/DOING-BUS/ENG-CONSULTANTS/CNSLT-RSRCES/RDWAY/STNDSPEC.ASPX](https://wisconsin.gov/PAGES/DOING-BUS/ENG-CONSULTANTS/CNSLT-RSRCES/RDWAY/STNDSPEC.ASPX)
- MINING ACTIVITIES CAN BEGIN ONCE A VEGETATIVE COVER OF AT LEAST 70% IS ESTABLISHED FOR PHASE 1 GRADING AREAS.

LEGEND

	NONMETALLIC MINING EXCAVATION LIMITS
	NONMETALLIC MINING TOPSOIL AND OVERBURDEN STOCKPILES LIMITS
	EXISTING WELL
	EXISTING CULVERT PIPE
	EXISTING SURFACE WATER FLOW
	PROPOSED SURFACE WATER FLOW



CAMP RIDE NONMETALLIC MINE - PHASE 2 MINE EXCAVATION
 OWNER: JUSTIN BLUSE, DBA CAMP RIDE LLC
 OPERATOR: JUSTIN BLUSE, DBA BLUSE EXCAVATING LLC
 PART OF THE NW/4, AND NE/4, OF THE SE/4, SECTION 06, T38N, R12W,
 TOWN OF BEAVER BROOK, WASHBURN COUNTY, WISCONSIN

GENERAL NOTES - PHASE 2 - MINE EXCAVATION

BEGIN MINE EXCAVATION TRAIL STA 57475 LT. TO MAINTAIN INTERNAL DRAINAGE, EXCAVATE STORM WATER DRAINAGE DITCH IN CONJUNCTION WITH MINE EXCAVATION AS WORK PRIORSESSES TO THE NORTH.

EXCAVATION LIMITS SHALL BE A MINIMUM OF 25' FROM THE USH 253 EASTERLY RIGHT-OF-WAY.

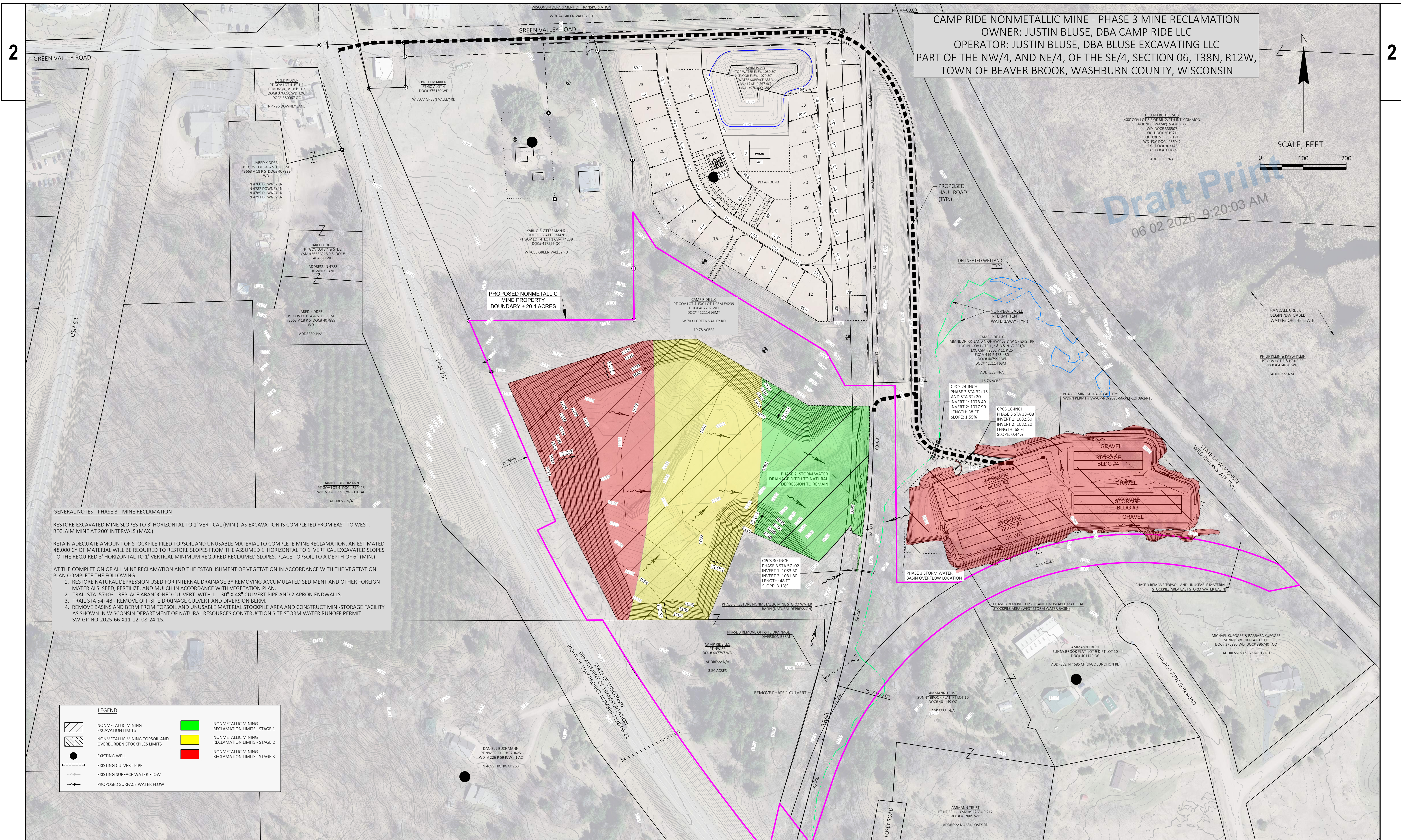
THE APPROXIMATE NORTHERLY AND SOUTHERLY EXCAVATION LIMITS SHALL BE THE EXISTING TREE LINES.

ASSUMED EXCAVATED SLOPES ARE AT A RATIO OF 1' HORIZONTAL TO 1' VERTICAL.

TOTAL MINE YIELD IS ESTIMATED AT 304,000 CY.

RECLAIM MINE SITE ALONG A NORTH-SOUTH LINE, ONCE PER EVERY 200 LF OF COMPLETED EXCAVATION MEASURED FROM THE TRAIL CENTERLINE.

LEGEND	
	NONMETALLIC MINING EXCAVATION LIMITS
	NONMETALLIC MINING TOPSOIL AND OVERBURDEN STOCKPILES LIMITS
	EXISTING WELL
	EXISTING CULVERT PIPE
	EXISTING SURFACE WATER FLOW
	PROPOSED SURFACE WATER FLOW
	NONMETALLIC MINING EXCAVATION LIMITS - STAGE 1
	NONMETALLIC MINING EXCAVATION LIMITS - STAGE 2
	NONMETALLIC MINING EXCAVATION LIMITS - STAGE 3



CAMP RIDE NONMETALLIC MINE - PHASE 3 MINE RECLAMATION
 OWNER: JUSTIN BLUSE, DBA CAMP RIDE LLC
 OPERATOR: JUSTIN BLUSE, DBA BLUSE EXCAVATING LLC
 PART OF THE NW/4, AND NE/4, OF THE SE/4, SECTION 06, T38N, R12W,
 TOWN OF BEAVER BROOK, WASHBURN COUNTY, WISCONSIN

GENERAL NOTES - PHASE 3 - MINE RECLAMATION

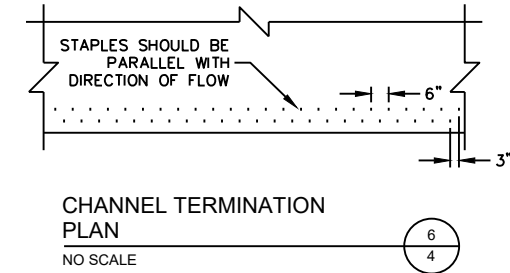
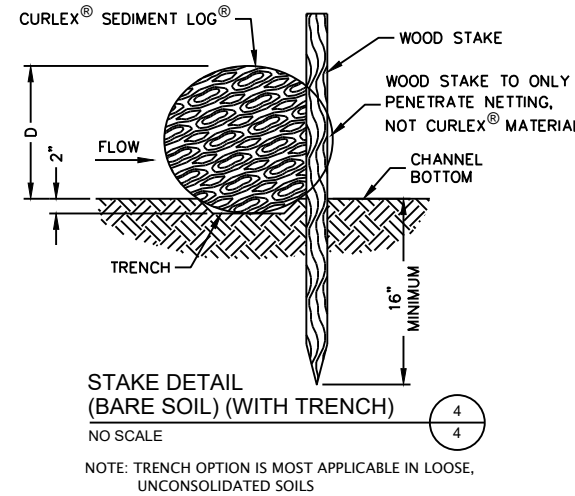
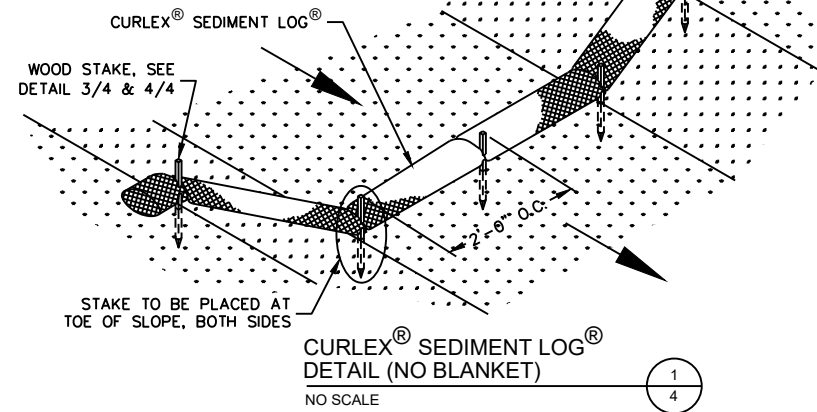
RESTORE EXCAVATED MINE SLOPES TO 3' HORIZONTAL TO 1' VERTICAL (MIN.). AS EXCAVATION IS COMPLETED FROM EAST TO WEST, RECLAIM MINE AT 200' INTERVALS (MAX.)

RETAIN ADEQUATE AMOUNT OF STOCKPILE PILED TOPSOIL AND UNUSABLE MATERIAL TO COMPLETE MINE RECLAMATION. AN ESTIMATED 48,000 CY OF MATERIAL WILL BE REQUIRED TO RESTORE SLOPES FROM THE ASSUMED 1' HORIZONTAL TO 1' VERTICAL EXCAVATED SLOPES TO THE REQUIRED 3' HORIZONTAL TO 1' VERTICAL MINIMUM REQUIRED RECLAIMED SLOPES. PLACE TOPSOIL TO A DEPTH OF 6" (MIN.)

AT THE COMPLETION OF ALL MINE RECLAMATION AND THE ESTABLISHMENT OF VEGETATION IN ACCORDANCE WITH THE VEGETATION PLAN COMPLETE THE FOLLOWING:

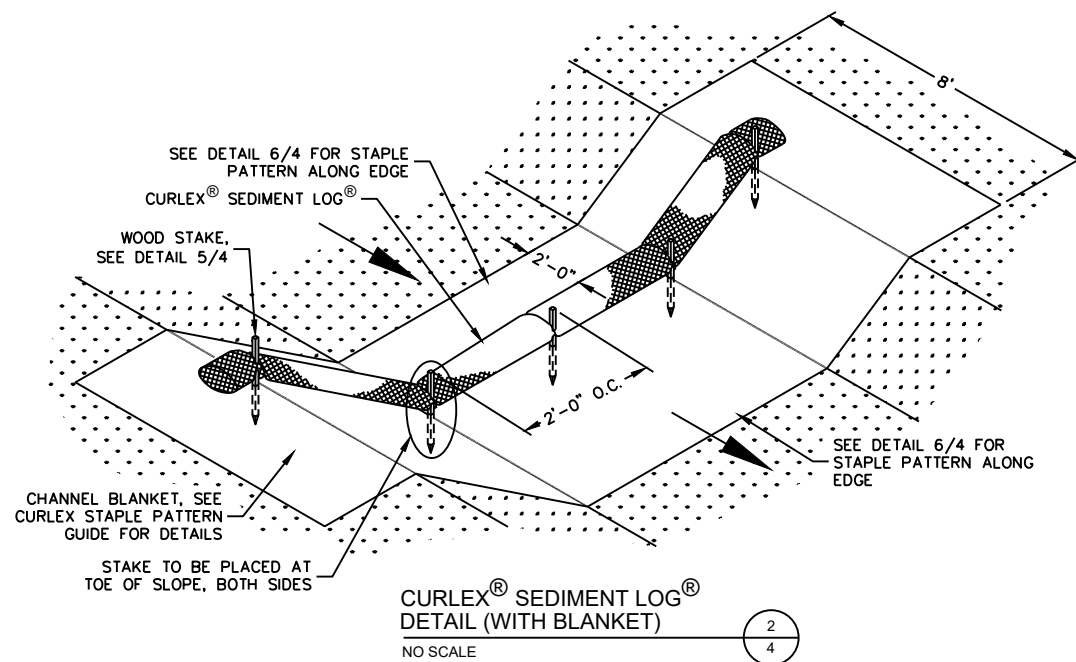
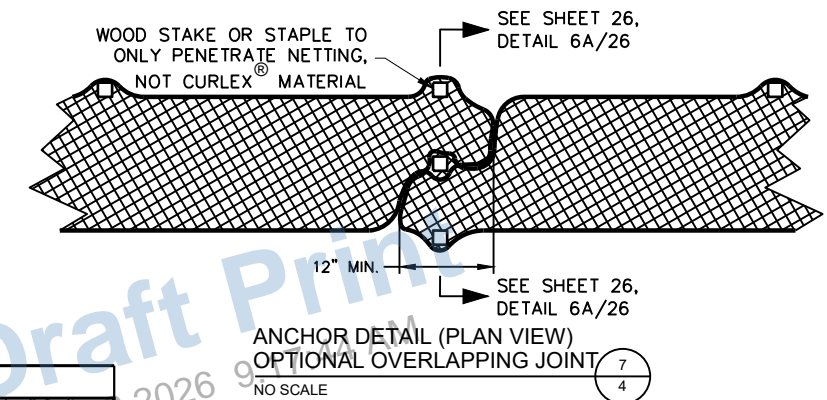
1. RESTORE NATURAL DEPRESSION USED FOR INTERNAL DRAINAGE BY REMOVING ACCUMULATED SEDIMENT AND OTHER FOREIGN MATERIALS. SEED, FERTILIZE, AND MULCH IN ACCORDANCE WITH VEGETATION PLAN.
2. TRAIL STA. 57+03 - REPLACE ABANDONED CULVERT WITH 1 - 30" X 48" CULVERT PIPE AND 2 APRON ENDWALLS.
3. TRAIL STA 54+48 - REMOVE OFF-SITE DRAINAGE CULVERT AND DIVERSION BERM.
4. REMOVE BASINS AND BERM FROM TOPSOIL AND UNUSABLE MATERIAL STOCKPILE AREA AND CONSTRUCT MINI-STORAGE FACILITY AS SHOWN IN WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION SITE STORM WATER RUNOFF PERMIT SW-GP-NO-2025-66-111-12T08-24-15.

LEGEND	
	NONMETALLIC MINING EXCAVATION LIMITS
	NONMETALLIC MINING TOPSOIL AND OVERBURDEN STOCKPILES LIMITS
	EXISTING WELL
	EXISTING CULVERT PIPE
	EXISTING SURFACE WATER FLOW
	PROPOSED SURFACE WATER FLOW
	NONMETALLIC MINING RECLAMATION LIMITS - STAGE 1
	NONMETALLIC MINING RECLAMATION LIMITS - STAGE 2
	NONMETALLIC MINING RECLAMATION LIMITS - STAGE 3



$$\left[\frac{\text{DISTANCE BETWEEN CHANNEL BOTTOM AND TOP OF INSTALLED CURLEX SEDIMENT LOG (D)(ft)}}{\text{CHANNEL GRADIENT (\%)}} \right] \times 100 = \text{CURLEX SEDIMENT LOG SPACING (ft)}$$

RECOMMENDED PLACEMENT INTERVAL BETWEEN CURLEX[®] SEDIMENT LOG[®]



Curlex[®] Sediment Log[®] - Recommended Spacing in Channelized Flow Applications

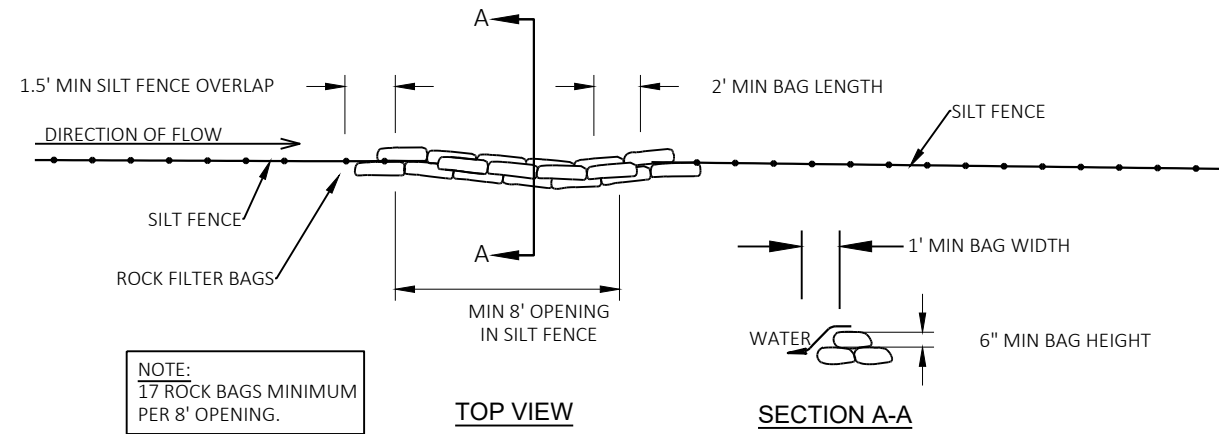
Channel Gradient (%)	Spacing Between Products (ft)			
	6 in Curlex [®] Sediment Log [®]	9 in Curlex [®] Sediment Log [®]	12 in Curlex [®] Sediment Log [®]	20 in Curlex [®] Sediment Log [®]
0.5	91.7	136.7	183.3	250.0
1	45.8	68.3	91.7	125.0
1.5	30.6	45.6	61.1	83.3
2	22.9	34.2	45.8	62.5
2.5	18.3	27.3	36.7	50.0
3	15.3	22.8	30.6	41.7
3.5	13.1	19.5	26.2	35.7
4	11.5	17.1	22.9	31.3
4.5	10.2	15.2	20.4	27.8
5	9.2	13.7	18.3	25.0
5.5	8.3	12.4	16.7	22.7
6	7.6	11.4	15.3	20.8
6.5	7.1	10.5	14.1	19.2
7	6.5	9.8	13.1	17.9
7.5	6.1	9.1	12.2	16.7
8	5.7	8.5	11.5	15.6
8.5	5.4	8.0	10.8	14.7
9	5.1	7.6	10.2	13.9
9.5	4.8	7.2	9.6	13.2
10	4.6	6.8	9.2	12.5
11	4.2	6.2	8.3	11.4
12	3.8	5.7	7.6	10.4
13	3.5	5.3	7.1	9.6
14	3.3	4.9	6.5	8.9
15	3.1	4.6	6.1	8.3
16	2.9	4.3	5.7	7.8
17	2.7	4.0	5.4	7.4
18	2.5	3.8	5.1	6.9
19	2.4	3.6	4.8	6.6
20	2.3	3.4	4.6	6.3
25	1.8	2.7	3.7	5.0
30	1.5	2.3	3.1	4.2
35	1.3	2.0	2.6	3.6
40	1.1	1.7	2.3	3.1
45	1.0	1.5	2.0	2.8
50	0.9	1.4	1.8	2.5

- NOTES:
- TRENCH OPTION IS MOST APPLICABLE IN LOOSE, UNCONSOLIDATED SOILS.
 - RECOMMENDED WOODEN STAKES ARE 1 1/8" X 1 1/8" X 30" FOR 6", 9", AND 12" CURLEX[®] SEDIMENT LOGS.
 - RECOMMENDED WOODEN STAKES ARE 1 1/8" X 1 1/8" X 48" FOR 20" CURLEX[®] SEDIMENT LOGS.
 - CURLEX[®] SEDIMENT LOG[®] SHALL BE OVERLAPPED IN CHANNELS REQUIRING MORE THAN ONE UNIT ACROSS THE CHANNEL WIDTH (SEE DETAIL 7/17).
 - OVERLAPS SHALL NOT BE LOCATED IN CRITICAL AREAS SUCH AS CHANNEL CENTER, SIDE SLOPE CHANNEL BOTTOM INTERFACE, ETC.

- Notes:
- Spacing of Curlex Sediment Logs is calculated by:

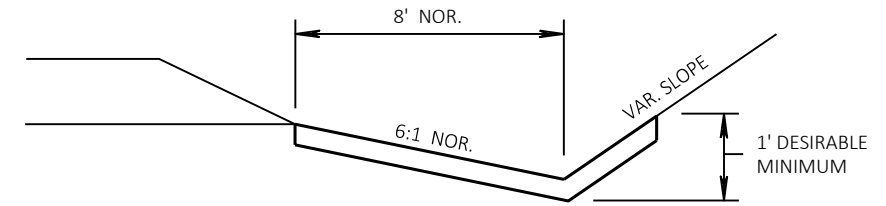
$$\left[\frac{\text{Distance between channel bottom and top of installed Curlex Sediment Log(ft)}}{\text{Channel gradient (\%)}} \right] \times 100 = \text{Curlex Sediment Log Spacing (ft)}$$
 - Minimum installed heights used for determining spacing values in table. Minimum installed heights of 6 in, 9 in, 12 in, and 20 in Curlex Sediment Logs are 5.5 in, 8.2 in, 11.0 in, and 15.0 in, respectively.

TEMPORARY DITCH CHECK - SEDIMENT LOG DETAIL



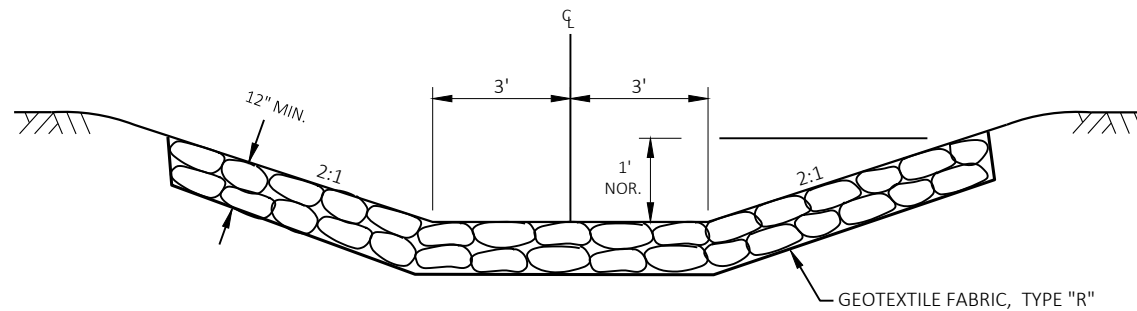
NOTE:
17 ROCK BAGS MINIMUM
PER 8' OPENING.

ROCK BAGS USED FOR SILT FENCE RELIEF

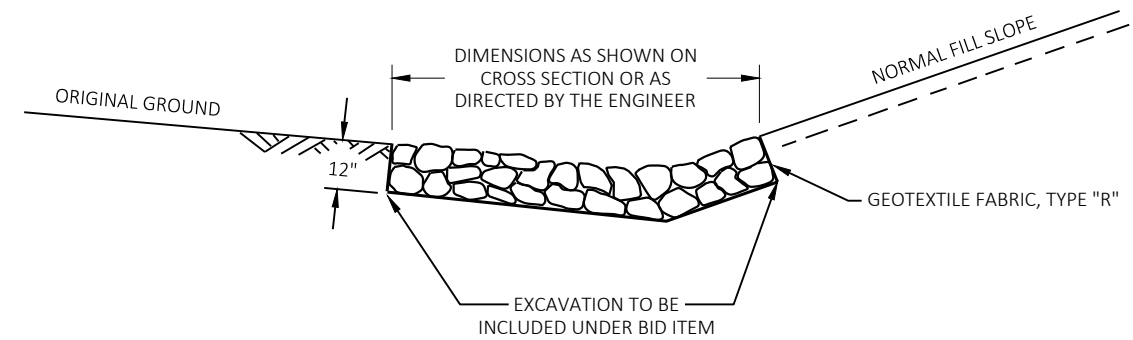


EROSION MAT DETAIL FOR DITCHES

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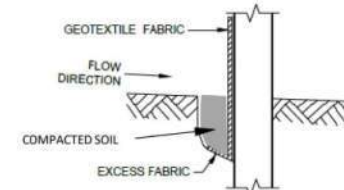
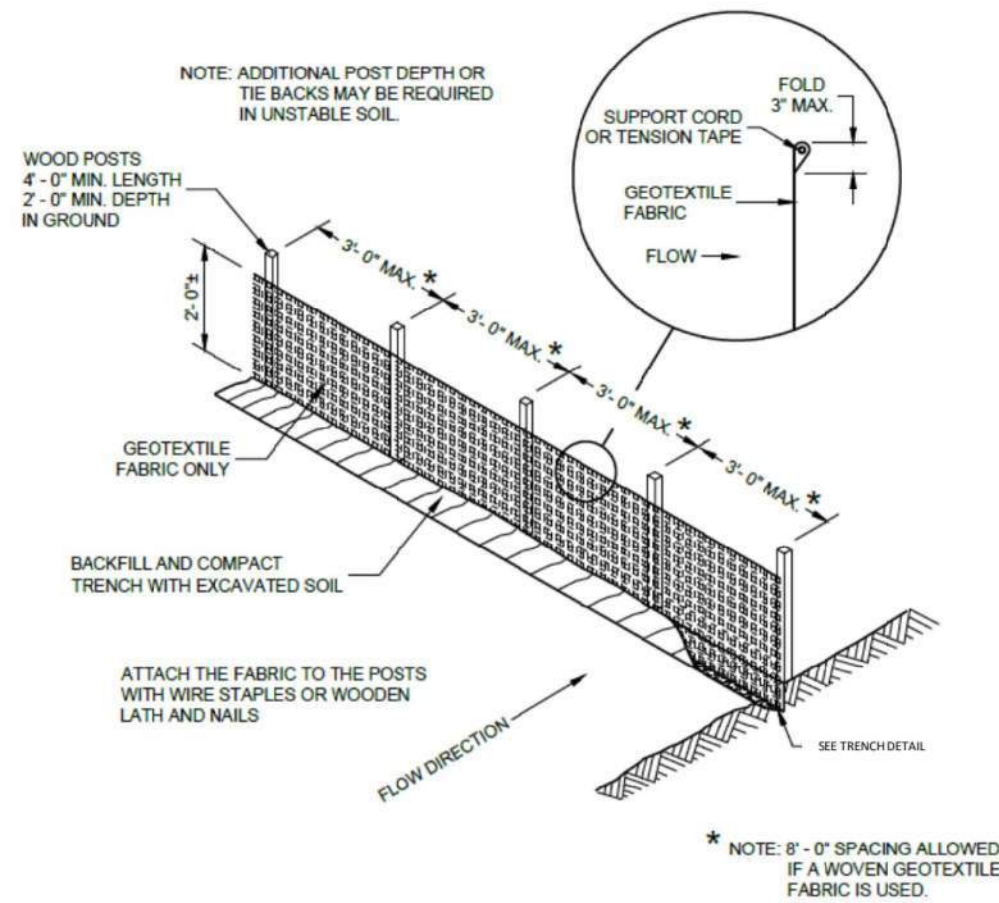
DETAIL FOR TYPICAL RIPRAP BERM AND BASIN OVERFLOW SECTION



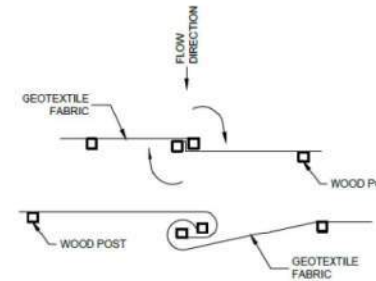
DETAIL FOR RIPRAP IN DITCHES

NOTE: INSTALL SILTFENCE IN ACCORDANCE WITH WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARD 1056 - PERIMETER SEDIMENT CONTROL AND SLOPE INTERRUPTION.

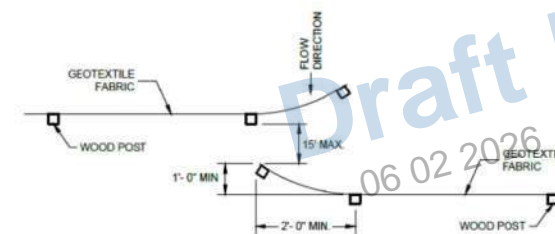
Silt Fence Installation



TRENCH DETAIL



TWIST METHOD

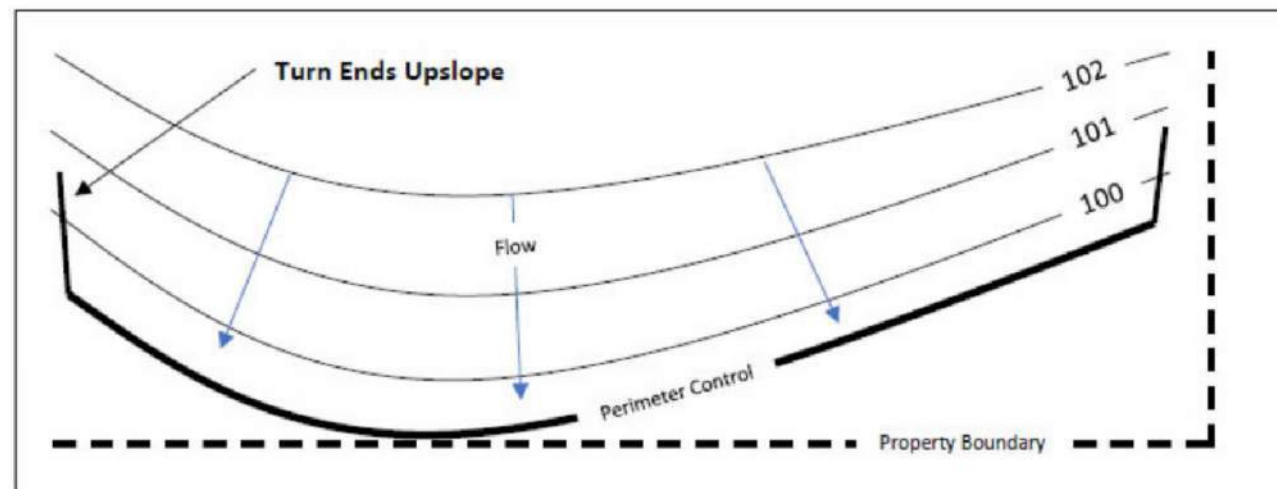


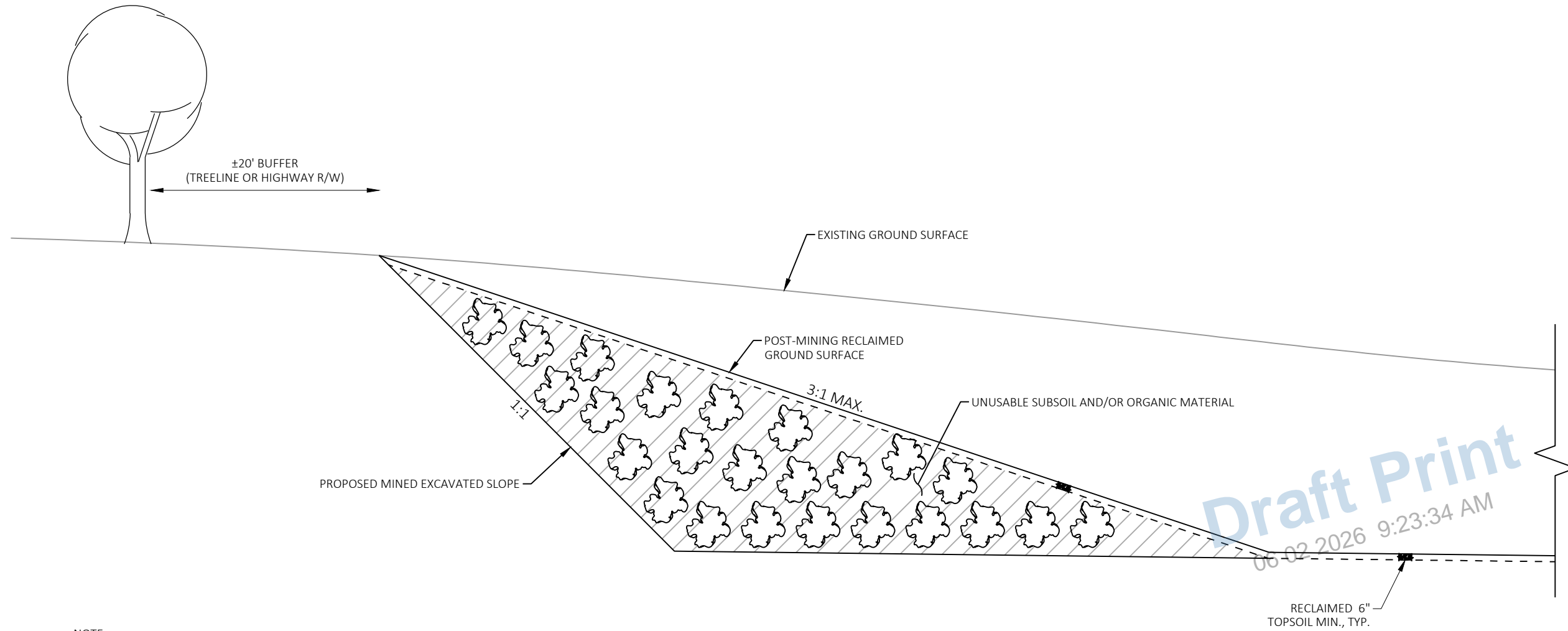
HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE

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Placement on Contour



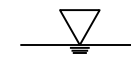


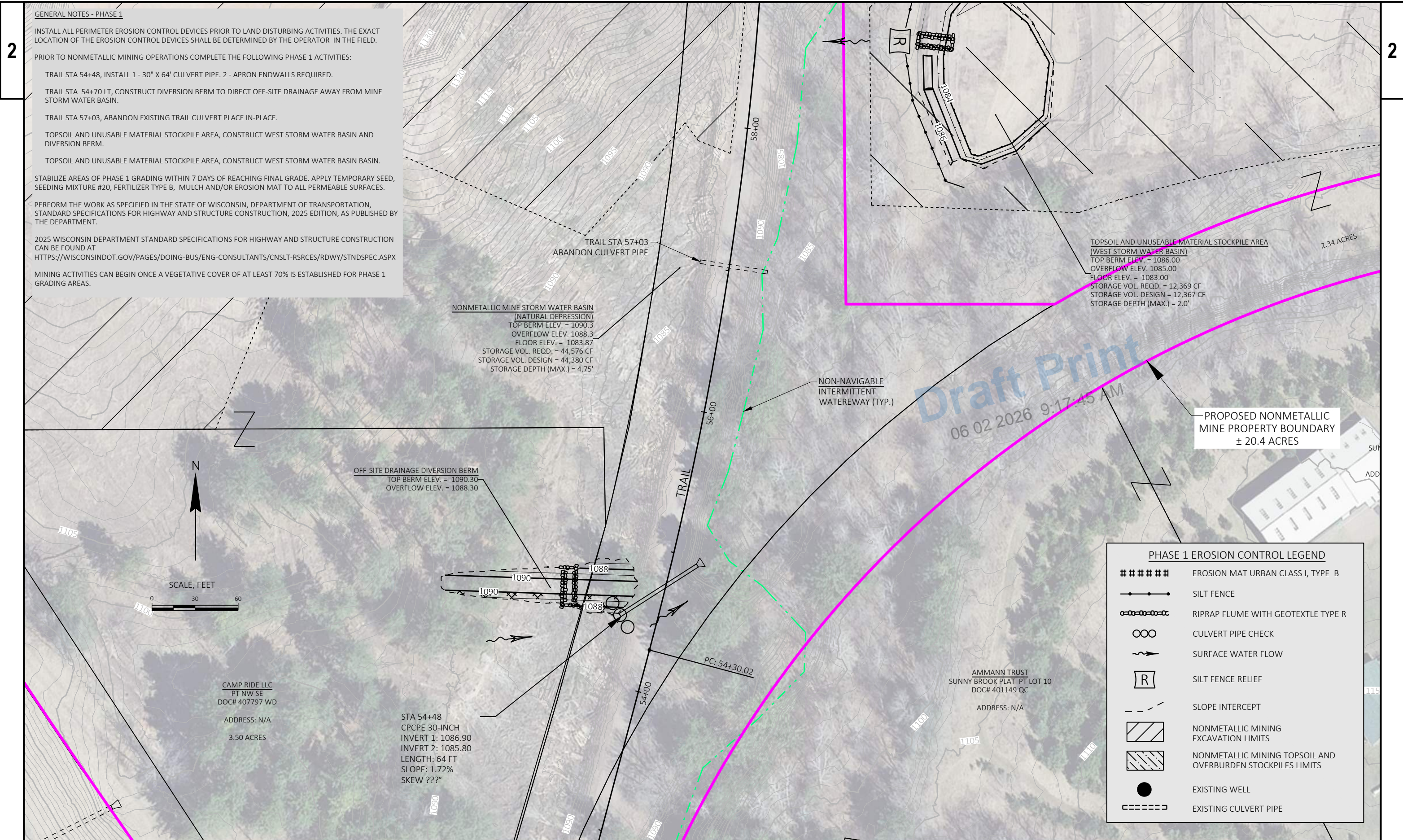
NOTE:

ORGANIC MATERIAL LIMITED TO TREE REMNANTS ONLY, SUCH AS STUMPS, TRUNKS, BRANCHES, LIMBS, AND LEAVES.

PROPOSED FINAL MINE FLOOR EXCAVATION ELEV. 1090' - 1094'. MINIMUM DEPTH TO GROUNDWATER = 23'.

 DISPOSED STUMPS, TRUNKS, BRANCHES, LIMBS, AND LEAVES

 APPROXIMATE GROUNDWATER ELEV. = 1067'



GENERAL NOTES - PHASE 1

INSTALL ALL PERIMETER EROSION CONTROL DEVICES PRIOR TO LAND DISTURBING ACTIVITIES. THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED BY THE OPERATOR IN THE FIELD.

PRIOR TO NONMETALLIC MINING OPERATIONS COMPLETE THE FOLLOWING PHASE 1 ACTIVITIES:

- TRAIL STA 54+48, INSTALL 1 - 30" X 64' CULVERT PIPE. 2 - APRON ENDWALLS REQUIRED.
- TRAIL STA 54+70 LT, CONSTRUCT DIVERSION BERM TO DIRECT OFF-SITE DRAINAGE AWAY FROM MINE STORM WATER BASIN.
- TRAIL STA 57+03, ABANDON EXISTING TRAIL CULVERT PLACE IN-PLACE.
- TOPSOIL AND UNUSABLE MATERIAL STOCKPILE AREA, CONSTRUCT WEST STORM WATER BASIN AND DIVERSION BERM.
- TOPSOIL AND UNUSABLE MATERIAL STOCKPILE AREA, CONSTRUCT WEST STORM WATER BASIN.

STABILIZE AREAS OF PHASE 1 GRADING WITHIN 7 DAYS OF REACHING FINAL GRADE. APPLY TEMPORARY SEED, SEEDING MIXTURE #20, FERTILIZER TYPE B, MULCH AND/OR EROSION MAT TO ALL PERMEABLE SURFACES.

PERFORM THE WORK AS SPECIFIED IN THE STATE OF WISCONSIN, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, 2025 EDITION, AS PUBLISHED BY THE DEPARTMENT.

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MINING ACTIVITIES CAN BEGIN ONCE A VEGETATIVE COVER OF AT LEAST 70% IS ESTABLISHED FOR PHASE 1 GRADING AREAS.

NONMETALLIC MINE STORM WATER BASIN
(NATURAL DEPRESSION)
TOP BERM ELEV. = 1090.3
OVERFLOW ELEV. 1088.3
FLOOR ELEV. = 1083.87
STORAGE VOL. REQD. = 44,576 CF
STORAGE VOL. DESIGN = 44,380 CF
STORAGE DEPTH (MAX.) = 4.75'

TOPSOIL AND UNUSEABLE MATERIAL STOCKPILE AREA
(WEST STORM WATER BASIN)
TOP BERM ELEV. = 1086.00
OVERFLOW ELEV. 1085.00
FLOOR ELEV. = 1083.00
STORAGE VOL. REQD. = 12,369 CF
STORAGE VOL. DESIGN = 12,367 CF
STORAGE DEPTH (MAX.) = 2.0'

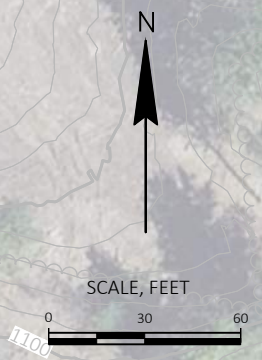
OFF-SITE DRAINAGE DIVERSION BERM
TOP BERM ELEV. = 1090.30
OVERFLOW ELEV. = 1088.30

STA 54+48
CPCPE 30-INCH
INVERT 1: 1086.90
INVERT 2: 1085.80
LENGTH: 64 FT
SLOPE: 1.72%
SKEW ???°

CAMP RIDE LLC
PT NW SE
DO# 407797 WD
ADDRESS: N/A
3.50 ACRES

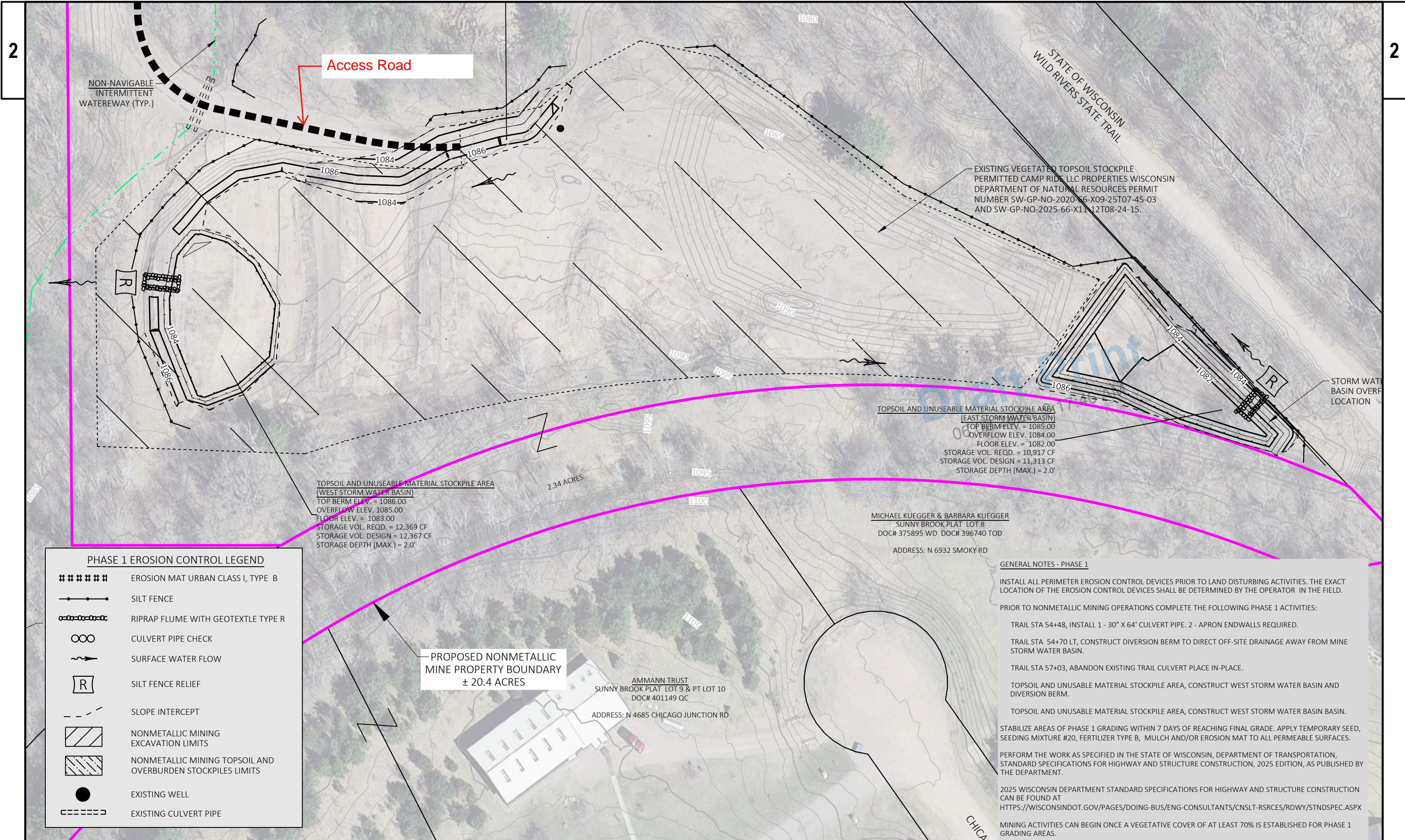
AMMANN TRUST
SUNNY BROOK PLAT PT LOT 10
DO# 401149 QC
ADDRESS: N/A

PROPOSED NONMETALLIC MINE PROPERTY BOUNDARY ± 20.4 ACRES



PHASE 1 EROSION CONTROL LEGEND

#####	EROSION MAT URBAN CLASS I, TYPE B
—●—●—●—	SILT FENCE
—○—○—○—	RIPRAP FLUME WITH GEOTEXTLE TYPE R
○ ○	CULVERT PIPE CHECK
~>	SURFACE WATER FLOW
[R]	SILT FENCE RELIEF
- - -	SLOPE INTERCEPT
[Diagonal Hatching]	NONMETALLIC MINING EXCAVATION LIMITS
[Diagonal X Hatching]	NONMETALLIC MINING TOPSOIL AND OVERBURDEN STOCKPILES LIMITS
●	EXISTING WELL
- - - - -	EXISTING CULVERT PIPE



Access Road

NON-NAVIGABLE
INTERMITTENT
WATERWAY (TYP.)

EXISTING VEGETATED TOPSOIL STOCKPILE
PERMITTED CAMP RIDE LLC PROPERTIES WISCONSIN
DEPARTMENT OF NATURAL RESOURCES PERMIT
NUMBER SW-GP-NO-2020-66-X09-25T07-45-03
AND SW-GP-NO-2025-66-X11-12T08-24-15.

TOPSOIL AND UNUSEABLE MATERIAL STOCKPILE AREA
(WEST STORM WATER BASIN)
TOP BERM ELEV. = 1086.00
OVERFLOW ELEV. 1085.00
FLOOR ELEV. = 1083.00
STORAGE VOL. REQD. = 12,369 CF
STORAGE VOL. DESIGN = 12,367 CF
STORAGE DEPTH (MAX.) = 2.0'

TOPSOIL AND UNUSEABLE MATERIAL STOCKPILE AREA
(EAST STORM WATER BASIN)
TOP BERM ELEV. = 1085.00
OVERFLOW ELEV. 1084.00
FLOOR ELEV. = 1082.00
STORAGE VOL. REQD. = 10,917 CF
STORAGE VOL. DESIGN = 11,313 CF
STORAGE DEPTH (MAX.) = 2.0'

PROPOSED NONMETALLIC
MINE PROPERTY BOUNDARY
± 20.4 ACRES

AMMANN TRUST
SUNNY BROOK PLAT LOT 9 & PT LOT 10
DOC# 401149 QC
ADDRESS: N 4685 CHICAGO JUNCTION RD

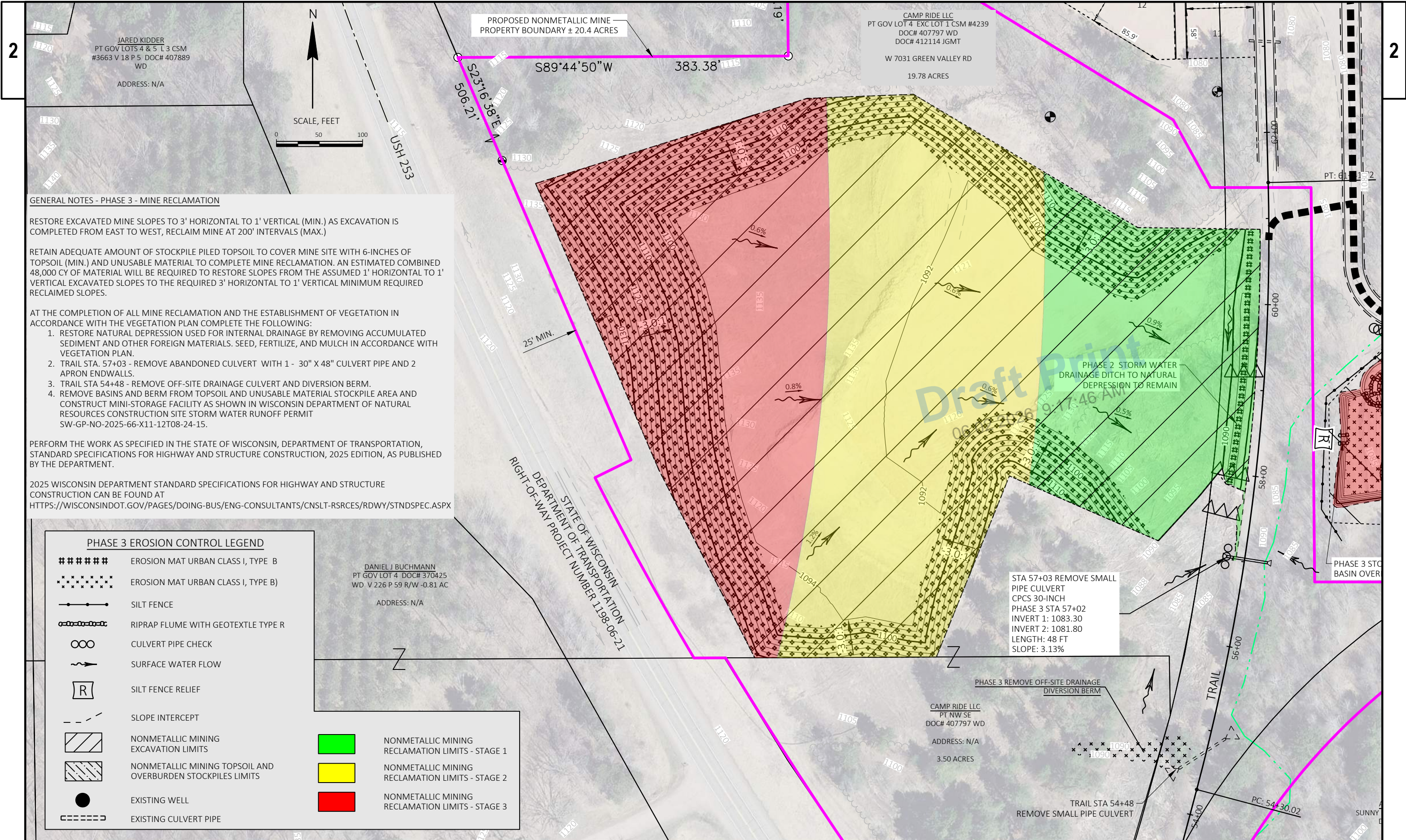
MICHAEL KUEGGER & BARBARA KUEGGER
SUNNY BROOK PLAT LOT 8
DOC# 375895 WD DOC# 396740 TOD
ADDRESS: N 6932 SMOKY RD

GENERAL NOTES - PHASE 1

- INSTALL ALL PERIMETER EROSION CONTROL DEVICES PRIOR TO LAND DISTURBING ACTIVITIES. THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED BY THE OPERATOR IN THE FIELD.
- PRIOR TO NONMETALLIC MINING OPERATIONS COMPLETE THE FOLLOWING PHASE 1 ACTIVITIES:
 - TRAIL STA 54+48, INSTALL 1 - 30" X 64' CULVERT PIPE. 2 - APRON ENDWALLS REQUIRED.
 - TRAIL STA 54+70 LT, CONSTRUCT DIVERSION BERM TO DIRECT OFF-SITE DRAINAGE AWAY FROM MINE STORM WATER BASIN.
 - TRAIL STA 57+03, ABANDON EXISTING TRAIL CULVERT PLACE IN-PLACE.
 - TOPSOIL AND UNUSABLE MATERIAL STOCKPILE AREA, CONSTRUCT WEST STORM WATER BASIN AND DIVERSION BERM.
 - TOPSOIL AND UNUSABLE MATERIAL STOCKPILE AREA, CONSTRUCT WEST STORM WATER BASIN BASIN.
- STABILIZE AREAS OF PHASE 1 GRADING WITHIN 7 DAYS OF REACHING FINAL GRADE. APPLY TEMPORARY SEED, SEEDING MIXTURE #20, FERTILIZER TYPE B, MULCH AND/OR EROSION MAT TO ALL PERMEABLE SURFACES.
- PERFORM THE WORK AS SPECIFIED IN THE STATE OF WISCONSIN, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, 2025 EDITION, AS PUBLISHED BY THE DEPARTMENT.
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- MINING ACTIVITIES CAN BEGIN ONCE A VEGETATIVE COVER OF AT LEAST 70% IS ESTABLISHED FOR PHASE 1 GRADING AREAS.

PHASE 1 EROSION CONTROL LEGEND

#####	EROSION MAT URBAN CLASS I, TYPE B
—●—●—●—●—	SILT FENCE
—○—○—○—○—	RIPRAP FLUME WITH GEOTEXTLE TYPE R
∞	CULVERT PIPE CHECK
~	SURFACE WATER FLOW
[R]	SILT FENCE RELIEF
- - - - -	SLOPE INTERCEPT
[Hatched Box]	NONMETALLIC MINING EXCAVATION LIMITS
[Diagonal Hatched Box]	NONMETALLIC MINING TOPSOIL AND OVERBURDEN STOCKPILES LIMITS
●	EXISTING WELL
- - - - -	EXISTING CULVERT PIPE



GENERAL NOTES - PHASE 3 - MINE RECLAMATION

RESTORE EXCAVATED MINE SLOPES TO 3' HORIZONTAL TO 1' VERTICAL (MIN.) AS EXCAVATION IS COMPLETED FROM EAST TO WEST, RECLAIM MINE AT 200' INTERVALS (MAX.)

RETAIN ADEQUATE AMOUNT OF STOCKPILE PILED TOPSOIL TO COVER MINE SITE WITH 6-INCHES OF TOPSOIL (MIN.) AND UNUSABLE MATERIAL TO COMPLETE MINE RECLAMATION. AN ESTIMATED COMBINED 48,000 CY OF MATERIAL WILL BE REQUIRED TO RESTORE SLOPES FROM THE ASSUMED 1' HORIZONTAL TO 1' VERTICAL EXCAVATED SLOPES TO THE REQUIRED 3' HORIZONTAL TO 1' VERTICAL MINIMUM REQUIRED RECLAIMED SLOPES.

AT THE COMPLETION OF ALL MINE RECLAMATION AND THE ESTABLISHMENT OF VEGETATION IN ACCORDANCE WITH THE VEGETATION PLAN COMPLETE THE FOLLOWING:

1. RESTORE NATURAL DEPRESSION USED FOR INTERNAL DRAINAGE BY REMOVING ACCUMULATED SEDIMENT AND OTHER FOREIGN MATERIALS. SEED, FERTILIZE, AND MULCH IN ACCORDANCE WITH VEGETATION PLAN.
2. TRAIL STA. 57+03 - REMOVE ABANDONED CULVERT WITH 1 - 30" X 48" CULVERT PIPE AND 2 APRON ENDWALLS.
3. TRAIL STA 54+48 - REMOVE OFF-SITE DRAINAGE CULVERT AND DIVERSION BERM.
4. REMOVE BASINS AND BERM FROM TOPSOIL AND UNUSABLE MATERIAL STOCKPILE AREA AND CONSTRUCT MINI-STORAGE FACILITY AS SHOWN IN WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION SITE STORM WATER RUNOFF PERMIT SW-GP-NO-2025-66-X11-12T08-24-15.

PERFORM THE WORK AS SPECIFIED IN THE STATE OF WISCONSIN, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, 2025 EDITION, AS PUBLISHED BY THE DEPARTMENT.

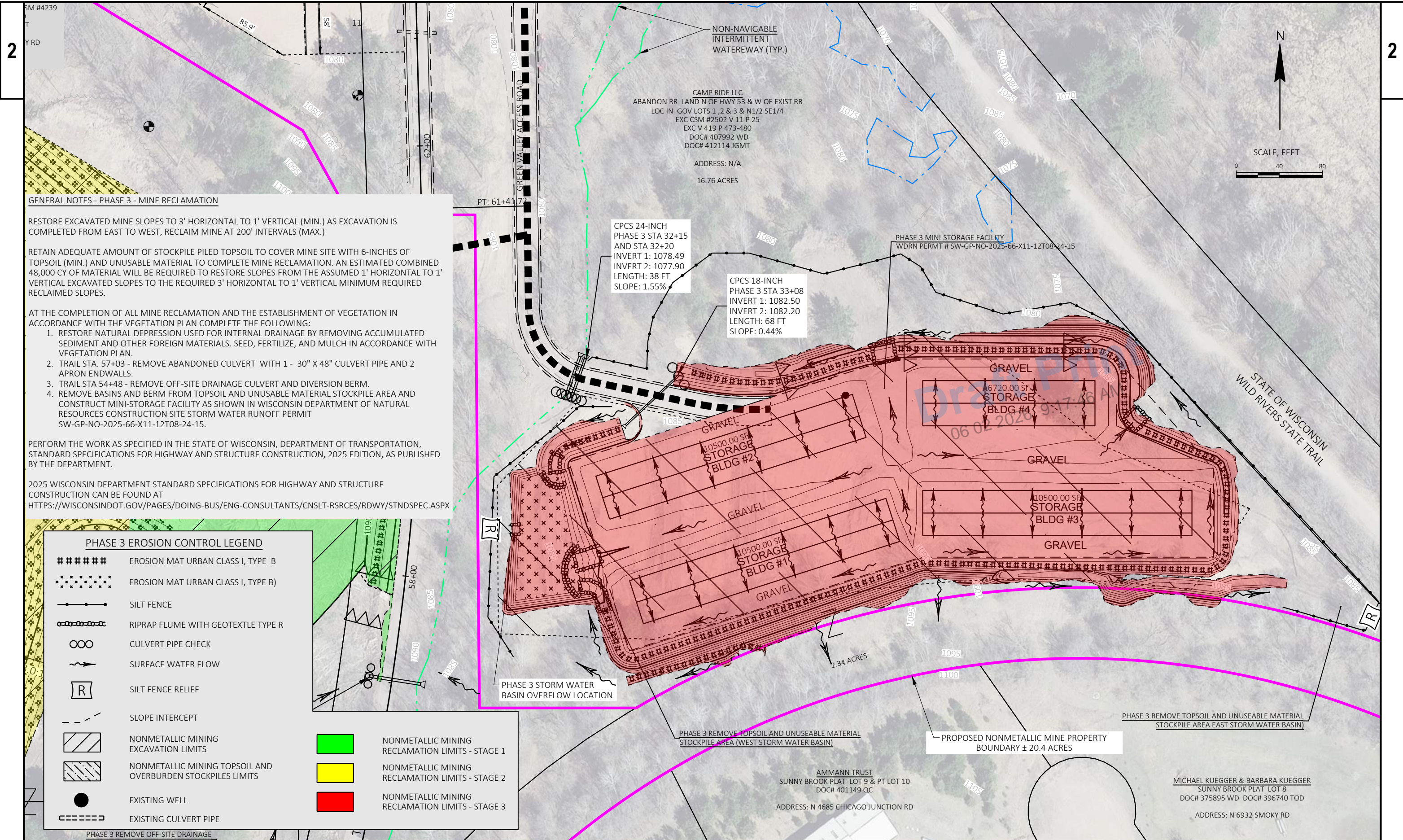
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PHASE 3 EROSION CONTROL LEGEND

- ##### EROSION MAT URBAN CLASS I, TYPE B
- ***** EROSION MAT URBAN CLASS I, TYPE B)
- SILT FENCE
- RIPRAP FLUME WITH GEOTEXTLE TYPE R
- CULVERT PIPE CHECK
- SURFACE WATER FLOW
- [R] SILT FENCE RELIEF
- - - SLOPE INTERCEPT
- [Hatched Box] NONMETALLIC MINING EXCAVATION LIMITS
- [Dotted Box] NONMETALLIC MINING TOPSOIL AND OVERBURDEN STOCKPILES LIMITS
- EXISTING WELL
- - - - - EXISTING CULVERT PIPE

- [Green Box] NONMETALLIC MINING RECLAMATION LIMITS - STAGE 1
- [Yellow Box] NONMETALLIC MINING RECLAMATION LIMITS - STAGE 2
- [Red Box] NONMETALLIC MINING RECLAMATION LIMITS - STAGE 3

DANIEL J BUCHMANN
PT GOV LOT 4 DOC# 370425
WD V 226 P 59 R/W -0.81 AC
ADDRESS: N/A



GENERAL NOTES - PHASE 3 - MINE RECLAMATION

RESTORE EXCAVATED MINE SLOPES TO 3' HORIZONTAL TO 1' VERTICAL (MIN.) AS EXCAVATION IS COMPLETED FROM EAST TO WEST, RECLAIM MINE AT 200' INTERVALS (MAX.)

RETAIN ADEQUATE AMOUNT OF STOCKPILE PILED TOPSOIL TO COVER MINE SITE WITH 6-INCHES OF TOPSOIL (MIN.) AND UNUSABLE MATERIAL TO COMPLETE MINE RECLAMATION. AN ESTIMATED COMBINED 48,000 CY OF MATERIAL WILL BE REQUIRED TO RESTORE SLOPES FROM THE ASSUMED 1' HORIZONTAL TO 1' VERTICAL EXCAVATED SLOPES TO THE REQUIRED 3' HORIZONTAL TO 1' VERTICAL MINIMUM REQUIRED RECLAIMED SLOPES.

AT THE COMPLETION OF ALL MINE RECLAMATION AND THE ESTABLISHMENT OF VEGETATION IN ACCORDANCE WITH THE VEGETATION PLAN COMPLETE THE FOLLOWING:

1. RESTORE NATURAL DEPRESSION USED FOR INTERNAL DRAINAGE BY REMOVING ACCUMULATED SEDIMENT AND OTHER FOREIGN MATERIALS. SEED, FERTILIZE, AND MULCH IN ACCORDANCE WITH VEGETATION PLAN.
2. TRAIL STA. 57+03 - REMOVE ABANDONED CULVERT WITH 1 - 30" X 48" CULVERT PIPE AND 2 APRON ENDWALLS.
3. TRAIL STA 54+48 - REMOVE OFF-SITE DRAINAGE CULVERT AND DIVERSION BERM.
4. REMOVE BASINS AND BERM FROM TOPSOIL AND UNUSABLE MATERIAL STOCKPILE AREA AND CONSTRUCT MINI-STORAGE FACILITY AS SHOWN IN WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION SITE STORM WATER RUNOFF PERMIT SW-GP-NO-2025-66-X11-12T08-24-15.

PERFORM THE WORK AS SPECIFIED IN THE STATE OF WISCONSIN, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, 2025 EDITION, AS PUBLISHED BY THE DEPARTMENT.

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PHASE 3 EROSION CONTROL LEGEND

#####	EROSION MAT URBAN CLASS I, TYPE B	[Green Box]	NONMETALLIC MINING RECLAMATION LIMITS - STAGE 1
*****	EROSION MAT URBAN CLASS I, TYPE B)	[Yellow Box]	NONMETALLIC MINING RECLAMATION LIMITS - STAGE 2
—●—●—●—	SILT FENCE	[Red Box]	NONMETALLIC MINING RECLAMATION LIMITS - STAGE 3
—○—○—○—	RIPRAP FLUME WITH GEOTEXTLE TYPE R		
∞	CULVERT PIPE CHECK		
~	SURFACE WATER FLOW		
[R]	SILT FENCE RELIEF		
- - -	SLOPE INTERCEPT		
[Diagonal Lines]	NONMETALLIC MINING EXCAVATION LIMITS		
[Cross-hatch]	NONMETALLIC MINING TOPSOIL AND OVERBURDEN STOCKPILES LIMITS		
●	EXISTING WELL		
- - - - -	EXISTING CULVERT PIPE		

3

ABANDONING AND REMOVING CULVERT PIPES - PHASE 1

STATION	LOCATION	203.1000	204.0270
		REMOVING SMALL PIPE CULVERTS EACH	ABANDONING CULVERT PIPES EACH
57+03	TRAIL	-	1
PHASE 1 TOTALS		-	1

**PIPE INVERT AT END OF PIPE FOR INFORMATION ONLY. FIELD VERIFY.

RIPRAP ITEMS - PHASE 1

STATION	LOCATION		606.0100	645.0130
			RIPRAP LIGHT CY	GEOTEXTILE TYPE R SY
54+60	TRAIL	LT	10	39
STOCKPILE SITE	WEST BASIN OVERFLOW		10	36
STOCKPILE SITE	EAST BASIN OVERFLOW		8	30
PHASE 1 TOTALS			28	105

CULVERT PIPE SUMMARY - PHASE 1

STATION	LOCATION	520.1030	520.3430	STEEL THICKNESS (INCHES)	INLET** ELEVATION	OUTLET** ELEVATION	SLOPE** %
		APRON ENDWALLS FOR CULVERT PIPE 30-INCH EACH	CULVERT PIPE CLASS III-A NON-METAL 30-INCH LF				
54+48	TRAIL	2	64	0.079	1086.90	1085.80	1.72
PHASE 1 TOTALS		2	64				

**PIPE INVERT AT END OF PIPE FOR INFORMATION ONLY. FIELD VERIFY.

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SILT FENCE - PHASE 1

LOCATION	STATION	628.1504	628.152
		SILT FENCE LF	SILT FENCE MAINTENANCE LF
STOCKPILE SITE	WEST	300	300
STOCKPILE SITE	NORTH	200	200
STOCKPILE SITE	EAST	550	550
UNDISTRIBUTED		105	105
PHASE 1 TOTALS		855	855

EROSION MAT - PHASE 1

STATION	LOCATION		628.2004	628.2008	COMMENTS
			EROSION MAT CLASS I TYPE B SY	EROSION MAT URBAN CLASS I TYPE B SY	
54+50	TRAIL	LT	88	-	SLOPES
PHASE 1 TOTALS			88	-	

CULVERT PIPE CHECKS AND ROCK BAGS - PHASE 1

STATION	LOCATION	CULVERT DIAMETER ** INCH	628.7555 CULVERT PIPE CHECKS EACH	628.7570 ROCK BAGS EACH	COMMENTS
54+48	TRAIL	30	5	-	1 CULVERT PIPE CHECK EQUALS 1 ROCK BAG
STOCKPILE SITE	WEST	-	-	17	
STOCKPILE SITE	EAST	-	-	17	
PHASE 1 TOTALS			5	34	

** FOR INFORMATION ONLY.

LANDSCAPING ITEMS - PHASE 1

STATION	STATION	LOCATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE #20 LB	630.0171 SEEDING MIXTURE #70A LB	630.0200 SEEDING TEMPORARY LB
54+50	54+90	TRAIL LT	370	282	0.3	17	-	10
STOCKPILE SITE		UPLAND	-	-	3.5	250	-	150
UNDISTRIBUTED			40	30	0.4	30	-	20
PHASE 1 TOTALS			410	312	4.2	297	-	180

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3

ABANDONING AND REMOVING CULVERT PIPES - PHASE 3

STAGE 3	STATION	LOCATION	203.0100	204.0270
			REMOVING SMALL PIPE CULVERTS EACH	ABANDONING CULVERT PIPES EACH
	54+48	TRAIL	1	-
	57+03	TRAIL	1	-
	32+13	STORAGE ACCESS	1	-
	32+19	STORAGE ACCESS	1	-
STAGE 3 TOTALS			4	-
PHASE 3 TOTALS			4	-

SELECT CRUSHED MATERIAL - PHASE 3

STAGE 3	STOCKPILE SITE	LOCATION	312.0115	COMMENT
			SELECT CRUSHED MATERIAL CY	
		STORM WATER INFILTRAION BASIN	30	NORTH ROCK FILTER CHECK DAM
		STORM WATER INFILTRAION BASIN	54	SOUTH ROCK FILTER CHECK DAM
STAGE 3 TOTAL			84	
PHASE 3 TOTAL			84	

EARTHWORK - PHASE 3

STAGE	LOCATION	**	205.0100	**	COMMENTS
		TOTAL EXCAVATED MATERAIL CY	EXCAVATION COMMON CY	SALEABLE EXCAVATED RAW SAND AND GRAVEL MATERIAL CY	
STAGE 1	MINE SITE STAGE 1 RECLAMATION	57900	7200	50700	RESTORE CUT SLOPES FROM 1:1 TO 3:1 (MAX.)
STAGE 1 TOTALS		57900	7200	50700	
STAGE 2	MINE SITE STAGE 2 RECLAMATION	137700	9700	128000	RESTORE CUT SLOPES FROM 1:1 TO 3:1 (MAX.)
STAGE 2 TOTALS		137700	9700	128000	
STAGE 3	MINE SITE STAGE 3 RECLAMATION	158400	35000	123400	RESTORE CUT SLOPES FROM 1:1 TO 3:1 (MAX.)
STAGE 3 TOTALS		158400	35000	123400	
PHASE 3 TOTAL		354,000	51,900	302,100	

** FOR INFORMATION ONLY

CULVERT PIPE SUMMARY - PHASE 3

STAGE 3	STATION	LOCATION	520.1030	520.3430	521.1018	521.1024	521.3118	521.3124	STEEL THICKNESS (INCHES)	INLET** ELEVATION	OUTLET** ELEVATION	SLOPE** %
			APRON ENDWALLS FOR CULVERT PIPE 30-INCH EACH	CULVERT PIPE CLASS III-A NON-METAL 30-INCH LF	APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH EACH	APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH EACH	CULVERT PIPE CORRUGATED STEEL 18-INCH LF	CULVERT PIPE CORRUGATED STEEL 24-INCH LF				
	57+03	TRAIL	2	48	-	-	-	-	-	1083.30	1081.80	3.13
	32+13	STORAGE ACCESS	-	-	-	2	-	38	0.064	1078.49	1077.90	1.55
	32+19	STORAGE ACCESS	-	-	-	2	-	38	0.064	1078.49	1077.90	1.55
	32+90	STORAGE ACCESS	-	-	2	-	68	-	0.064	1082.50	1082.20	0.44
STAGE 3 TOTALS			2	48	2	4	68	76				
PHASE 3 TOTALS			2	48	2	4	68	76				

**PIPE INVERT AT END OF PIPE FOR INFORMATION ONLY. FIELD VERIFY.

RIPRAP ITEMS - PHASE 3

		606.0100 RIPRAP LIGHT	645.0130 GEOTEXTILE TYPE R
STATION	LOCATION	CY	SY
STAGE 3	STORAGE SITE WEST STORM WATER BASIN	10	36
	STORAGE SITE NORTH DITCH TO STORM WATER BASIN	8	30
	STORAGE SITE SOUTH DITCH TO STORM WATER BASIN	14	51
	STORAGE SITE WEST GRAVEL SWALE	13	48
	STORAGE SITE NORTH GRAVEL SWALE	15	54
	STORAGE SITE EAST GAVEL SWALE	10	35
STAGE 3 TOTALS		70	254
PHASE 3 TOTALS		70	254

SILT FENCE - PHASE 3

		628.1504 SILT FENCE	628.152 SILT FENCE MAINTENANCE
LOCATION	STATION	LF	LF
STAGE 3	STOCKPILE SITE WEST	300	300
	STOCKPILE SITE NORTH	950	950
	STOCKPILE SITE EAST	100	100
	UNDISTRIBUTED	135	135
STAGE 3 TOTALS		1185	1185
PHASE 3 TOTALS		1185	1185

LANDSCAPING ITEMS - PHASE 3

				625.0100 TOPSOIL	627.0200 MULCHING	629.0210 FERTILIZER TYPE B	630.0120 SEEDING MIXTURE #20	630.0171 SEEDING MIXTURE #70A	630.0200 SEEDING TEMPORARY	630.0400 SEEDING NURSE CROP	SPV.0060.01 SEEDING PASTURE MIXTURE
STATION	-	STATION	LOCATION	SY	SY	CWT	LB	LB	LB	LB	LB
STAGE 1			MINE SITE	9,600	7,010	6.1	-	-	-	70	70
			UNDISTRIBUTED	960	700	0.6	-	-	-	10	10
STAGE 1 TOTALS				10,560	7,710	6.7	-	-	-	80	80
STAGE 2			MINE SITE	16,340	11,950	10.3	-	-	-	120	110
			UNDISTRIBUTED	1,630	1,200	1.0	-	-	-	10	10
STAGE 2 TOTALS				17,970	13,150	11.3	-	-	-	130	120
STAGE 3	54+50	-	54+90	370	-	0.3	17	-	10	-	-
	MINE SITE		STAGE 3	14,300	5,920	9.1	-	-	-	110	100
	STOCKPILE SITE		UPLAND	16,890	15,410	10.7	760	-	460	-	-
	STOCKPILE SITE		STORM WATER BASIN	590	-	0.4	-	3	-	5	-
	UNDISTRIBUTED			3,220	2,130	2.0	80	-	50	10	-
STAGE 3 TOTALS				35,370	23,460	22.5	857	3	520	125	100
PHASE 3 TOTALS				63,900	44,320	40.5	857	3	520	335	300

DITCH CHECKS - PHASE 3

				NO. TEMP. DITCH CHECKS REQ'D @ 10 LF **	628.7504 TEMPORARY DITCH CHECKS	
STATION	-	STATION	LOCATION		LF	
STAGE 1	57+50	-	59+25	TRAIL LT	3	30
STAGE 1 TOTAL					30	
STAGE 3			STOCKPILE SITE	NORTH DITCH	3	30
STAGE 3 TOTAL					30	
PHASE 3 TOTAL					60	

**FOR INFORMATION ONLY.

EROSION MAT - PHASE 3

	STATION	-	STATION	LOCATION	LT	628.2004	628.2008	COMMENTS
						EROSION MAT CLASS I TYPE B SY	EROSION MAT URBAN CLASS I TYPE B SY	
STAGE 1	57+84	-	60+85	TRAIL	LT	248	-	DITCH
	MINE SITE					2,588	-	SLOPE
	UNDISTRIBUTED					284	-	
STAGE 1 TOTALS						3,119	-	
STAGE 2	MINE SITE					4,388	-	SLOPE
	UNDISTRIBUTED					439	-	
STAGE 2 TOTALS						4,827	-	
STAGE 3	54+50	-		TRAIL	LT	-	365	SLOPE
	MINE SITE					8,375	-	SLOPE
	STOCKPILE SITE			STORM WATER BASIN		-	590	SLOPE
	STOCKPILE SITE			ALL CONVEYANCE SWALES		1,478	-	DITCH
	UNDISTRIBUTED					985	95	
STAGE 3 TOTALS						10,839	1,050	
				PHASE 3 TOTALS		18,785	1,050	

MOBILIZATION EROSION CONTROL

	LOCATION	628.1905	629.1910
		MOBILIZATION EROSION CONTROL EACH	MOBILIZATION EMERGENCY EROSION CONTROL EACH
STAGE 1	MINE SITE	2	1
STAGE 1 TOTALS		2	1
STAGE 2	MINE SITE	2	1
STAGE 2 TOTALS		2	1
STAGE 3	MINE SITE / STOCKPILE SITE	2	1
STAGE 3 TOTALS		2	1
	PHASE 3 TOTALS	6	3

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CULVERT PIPE CHECKS AND ROCK BAGS - PHASE 3

	STATION	LOCATION	CULVERT DIAMETER ** INCH	628.7555	628.7570	COMMENTS
				CULVERT PIPE CHECKS EACH	ROCK BAGS EACH	
STAGE 3	57+03	TRAIL	30	5	-	1 CULVERT PIPE CHECK EQUALS 1 ROCK BAG
	32+13	STORAGE ACCESS	24	3		1 CULVERT PIPE CHECK EQUALS 1 ROCK BAG
	32+19	STORAGE ACCESS	24	3		1 CULVERT PIPE CHECK EQUALS 1 ROCK BAG
	32+90	STORAGE ACCESS	18	2		1 CULVERT PIPE CHECK EQUALS 1 ROCK BAG
	STOCKPILE SITE	WEST	-	-	17	
	STOCKPILE SITE	EAST	-	-	17	
STAGE 3 TOTALS				13	34	
				PHASE 3 TOTALS	13	34

** FOR INFORMATION ONLY.

CHANNEL EROSION CONTROL MATRIX (Concentrated Flow Application)

TYPE OF EROSION CONTROL DEVICE	PERMISSIBLE SHEAR LB/S.F.	DITCH GRADE															REMARKS
		< 2%			2% - 4%			4% - 6%			6% - 9%*			9% - 12%*			
		Max. Length (ft.)			Max. Length (ft.)			Max. Length (ft.)			Max. Length (ft.)			Max. Length (ft.)			
		300	600	1200	300	600	1200	300	600	1200	300	600	1200	300	600	1200	
Seed with properly anchored mulch	0.6	█	█	█													Anchor mulch per specifications.
Sod ditch checks with seed and mulch	N/A	█	█	█	█	C											Install one ditch check for every 1 foot of drop. Sod stakes required.
Temporary ditch checks (hay bales or approved manufactured alternatives listed in the WisDOT PAL)	N/A	█	█	█	█	█	█										Install one ditch check for every 2 feet of drop. Maximum 200' spacing. Not recommended for slopes less than 1%.
Sod ditch liner	1.0	█	█	█													Upstream end must be buried. Additional sod stakes required.
Double netted light duty (WisDOT Class I Type B) erosion mat	1.5	█	█	█	█	█	█										Only mat type products allowed.
Sod reinforced with a double netted jute (WisDOT Class II Type A) erosion mat	1.5	█	█	█	█	█	█										Upstream end must be buried. Additional sod stakes required. Two bid items needed.
Stone or rock ditch checks, or Rock-Filled Filter Bags	N/A	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	Use No. 2 coarse aggregate, railroad ballast, or breaker run. Install one ditch check for every 2 feet of drop. Use in conjunction with a channel lining.
Medium duty coconut erosion mat (WisDOT Class II Type B or C)	2.0	█	█	█	█	█	█	█	⊗	█	█	█	█	█	█	█	
Heavy duty synthetic (WisDOT Class III Type A) erosion mat or turf reinforcement mat (WisDOT Class III Type B)	2.0	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	Germination may be a problem with Class III Type A mats. An ECRM is required for initial erosion protection for Class III Type B mats.
Heavy duty synthetic turf reinforcement (WisDOT Class III Type C) mat	3.5	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	An ECRM is required for initial erosion protection. Contact manufacturer if higher shears are needed.
Riprap ditch checks	N/A	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	Place top of downstream ditch check level with bottom of upstream ditch check. Use in conjunction with a channel lining.
Heavy duty synthetic turf reinforcement (Class III Type D) mat	5	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	An ECRM is required for initial erosion protection. Contact manufacturer if higher shears are needed.
Light riprap	4	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	Outfalling, overtopping and scour need to be addressed. Use 2' minimum ditch depth.
Medium riprap	5	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	
Heavy riprap	8	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	

Riprap measures apply to all ditch types. Use of these measure requires engineering judgement and design.

**CHANNEL EROSION CONTROL MATRIX (cont.)
(Concentrated Flow Application)**




TYPE OF EROSION CONTROL DEVICE	PERMISSIBLE SHEAR LB/CF.	DITCH GRADE															REMARKS	
		< 2%			2% - 4%			4% - 6%			6% - 9%*			9% - 12%*				
		Max. Length (ft.)			Max. Length (ft.)			Max. Length (ft.)			Max. Length (ft.)			Max. Length (ft.)				
		300	600	1200	300	600	1200	300	600	1200	300	600	1200	300	600	1200		
Grouted rip rap	N/A	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	Address outfalling, overtopping and scour. Line with Grotex fabric Type "HR", (see Chap. 10, Const. Detail and special provision). Use 2' minimum ditch depth.
Articulated Concrete Block Type A	5	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	ACBs apply to all ditch types. Use of these measures requires engineering judgement and design.	
Articulated Concrete Block Type B	10	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Articulated Concrete Block Type C	15	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Articulated Concrete Block Type D	20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Articulated Concrete Block Type E	30	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Standard Ditch Section		<p>Erosion control for ditches not conforming to the typical at right, that complies with FDM procedures 11-15-1 Figures 6 & 7, should be designed according to FDM Chapter 13.</p>																
KEY		<p>Effective range of device for Sandy or Clayey Soil: </p> <p>Device applicable, may not be cost effective: </p> <p>"C" effective for clayey soil only</p> <p>Not applicable. Use in conjunction with other BMPs: </p> <p>ECRM - Erosion control revegetation mat. All Class I and II mats are ECRMs. TRM - Turf reinforcement mat. FDM - WisDOT Facilities Development Manual BMP - Best Management Practice PAL - See Note 6</p> <p>* For ditch grades over 9% special design considerations may be required. ** Soils that are not sandy should be treated as clay soils.</p>																
NOTES		<p>1) Ditch flow rates used to develop bar chart are based on a 60 ft. right of way from pavement centerline and a 2-Yr. rainfall event for temporary liners or a 25-Yr. rainfall event for permanent (Class III mat or riprap) liners. If the drainage area extends outside the 60 foot right of way or unusual flows are expected, use the shear stress column values to determine the suitability of a liner. See FDM procedures in Chapter 10 and in Section 13-30-10.</p> <p>2) Erosion mats shall extend upslope 1.0 ft. min. vertically from the ditch bottom or 6" higher than the design flow depth. There shall be no joints within 18' of the low point.</p> <p>3) Cost shall be a consideration in the selection of these devices.</p> <p>4) Add sediment traps at the bottom of channel slopes.</p> <p>5) Refer to FDM Chapter 10 for any channels exceeding the limits shown.</p> <p>6) Approved materials for erosion products are referenced from the Wisconsin Department of Transportation Erosion Control Product Acceptability Lists (PAL), found at https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnstl-rsrcs/tools/pal/default.aspx</p> <p>7) On long or steep channels that require a higher class mat, use the appropriate lower class mat for the first 300 ft to 600 ft of the channel.</p> <p>8) Effective erosion control involves minimizing the amount of time soil is exposed and the selection of a combination of practices, and not reliance on just one practice.</p>																

SLOPE EROSION CONTROL MATRIX

TYPE OF EROSION CONTROL	SLOPE																		REMARKS	
	6:1 or flatter (7)			4:1			3:1			2.5:1			2:1			1:1				
	SLOPE LENGTH			SLOPE LENGTH			SLOPE LENGTH			SLOPE LENGTH			SLOPE LENGTH			SLOPE LENGTH				
	0 - 30'	30 - 60'	50 - 120'	0 - 30'	30 - 60'	50 - 120'	0 - 30'	30 - 60'	50 - 120'	0 - 30'	30 - 60'	50 - 120'	0 - 30'	30 - 60'	50 - 120'	0 - 30'	30 - 60'	50 - 120'		
Seed with properly anchored mulch	[Solid black bar]																			
Single netted light duty (WisDOT Class I Type A) erosion mat	[Dashed black bar]																			
Light duty single netted 100% biodegradable (WisDOT Urban Type A) erosion mat	[Solid black bar]																		Use only 100% biodegradable anchors for urban mats.	
Light duty double netted 100% biodegradable (WisDOT Urban Type B) erosion mat	[Dashed black bar]																		Use only 100% biodegradable anchors for urban mats.	
Bonded Mulch (WisDOT Type A Soil Stabilizer)	[Dashed black bar]																		May be applied over Class III Type B, C, or D mats in place of erosion control revegetation mats.	
Polymer (WisDOT Type B Soil Stabilizer)	Used in conjunction with other BMPs effective up to a 2:1 slope. Not effective in sand. When used alone effective up to a 3:1 slope. Stand alone use appropriate for earthen stock piles, temporary, and late season applications																			
Double netted light duty (WisDOT Class I Type B) erosion mat	[Dashed black bar]																		⊗	
Sod	[Dashed black bar]																		⊗	
Medium duty coconut erosion mat (WisDOT Class II Type B or C)	[Dashed black bar]																			
Sod reinforced with a double netted jute (WisDOT Class II Type A) erosion mat	[Dashed black bar]																		⊗	Sod stakes required. Two bid items needed.
Heavy duty synthetic erosion control revegetation mat (WisDOT Class III Type A)	[Dashed black bar]																			Germination may be a problem with Class III Type A mats
Riprap	[Dashed black bar]																			Angle of repose must be considered, see FDM Chapter 13.
Heavy duty synthetic turf reinforcement (WisDOT Class III Type B or C) mat	[Dashed black bar]																			A soil stabilizer or ECRM will be required for initial erosion protection.
Heavy duty synthetic turf reinforcement (WisDOT Class III Type D) mat	[Dashed black bar]																			A soil stabilizer or ECRM will be required for initial erosion protection.
Slope paving or grouted riprap	[Dashed black bar]																			Consider clear zone requirements. Only use in limited circumstances such as overflow areas near bridges.

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SLOPE EROSION CONTROL MATRIX (cont.)

Benches	Consider benches when cuts exceed 20', bench at approximately 15' vertical intervals to collect and drain water. Treat benches as channels (ditches). Adjust elevations to provide drainage. Consider flumes at transitions.
Intercepting embankments	Used to intercept runoff from abutting lands. Flumes may be necessary to direct runoff.
Silt fence	Used at toe of slopes to intercept and detain small amounts of sediment.
Temporary ditch checks or Erosion bales	Used at toe of slopes to intercept and detain small amounts of sediment.
Slope drains/flumes	May be necessary on slopes (see channel matrix for design guidance).
Sediment traps	Used to trap sediment laden runoff. Could be used at the inlet or outlet end of slope drain.
<p>KEY:</p> <p>Not applicable. Use in conjunction with other BMPs: </p> <p>Effective range of device for Sandy or Clayey Soil: </p> <p>Device applicable, may not be cost effective: </p> <p>* Soils that are not sandy should be treated as clay soils.</p> <p>ECRM - Erosion control revegetation mat. All Class I and II mats are ECRMs.</p> <p>TRM - Turf reinforcement mat.</p> <p>FDM - WisDOT Facilities Development Manual</p> <p>PAL - See Note 5</p> <p>NOTES</p> <ol style="list-style-type: none"> 1) Cost shall be a consideration in the selection of these devices. 2) Designers should review FDM Chapter 10 prior to selection of erosion mats. 3) Install intercepting ditches to limit slope lengths to 15' vertical intervals. (See FDM Chapter 10) 4) Refer to FDM Chapter 10 for any slopes exceeding the limits shown. 5) Approved materials for erosion products are referenced from the Wisconsin Department of Transportation Erosion Control Product Acceptability Lists (PAL) found at the https://wisconsindot.gov/Pages/doing-business/eng-consultants/cnstl-rsrcs/tools/pal/default.aspx 6) On steeper slopes that require a higher class mat, use the appropriate lower class mat or seed and mulch for the first 30 ft to 60 ft of the slope. 7) Unless project conditions require otherwise, seed and mulch all slopes that are flatter than a 5% grade, regardless of length. If practicable, bench the slopes. 8) Effective erosion control involves minimizing the amount of time soil is exposed and the selection of a combination of practices, and not reliance on just one practice. 	



State of Wisconsin
Department of Transportation

EROSION CONTROL AND STORMWATER PRODUCT ACCEPTIBILITY LIST (PAL)

Last update: May 14, 2024

NOTICE REGARDING ANNUAL REVIEW CYCLE AND DEADLINE: Annual submittal review cycle for this list runs from 4/1 to 3/31. Review of submittals received after 3/31 will default to the next cycle. For products currently on the list: Send an annual certification letter by 3/31 stating the product is substantially equal to the tested product, the manufacturer and product names are correct as noted on the list below, and the manufacturing location is the same as the tested material. Certifications not received by 3/31 may be removed from the list.

EROSION MAT CLASS I TYPE A - Bid Item 628.2001

MANUFACTURER	PRODUCT	MIN. ANCHOR FREQUENCY (#/SY)
American Excelsior	Curlex I CL	1.1
American Excelsior	AEC Premier Straw Single Net	1.7
American Excelsior	Curlex I	1.7
Ero-Guard	EG-1s	1.7
Erosion Control Blanket	S 31	1.7
Erosion Tech	ETRS-1	1.7
Kansas Erosion Products	KEP-S1	1.2
Western Green	S75	1.7
American Excelsior	Curlex I QuickMow	1.7
Ero-Guard	EG-1s RD	1.7
Erosion Control Blanket	S 31BD or S31UVD	1.7
Erosion Tech	ETRS-1-RD	1.7
Kansas Erosion Products	S1RD	1.2
Western Green	DS75	1.7

Shaded lines are degradable net options. See additional notes (*) below.

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EROSION MAT CLASS I TYPE B - Bid Item 628.2003

MANUFACTURER	PRODUCT	MIN. ANCHOR FREQUENCY (#/SY)
American Excelsior	Curlex II	3.8
American Excelsior	Curlex II CL	3.8
American Excelsior	AEC Premier Straw Double Net	3.4
American Excelsior	AEC Premier Straw/Coconut	3.4
Enviroscape	S2000BD	3.8
Ero-Guard	EG-2S	3.8
Erosion Control Blanket	S32	3.8
Erosion Tech	ETRS-2	3.8
Kansas Erosion Products	KEP-S2	3.8
US Erosion Control	US-2S	3.8
Western Green	S150	3.8
Enviroscape	S2000BD	3.8
Erosion Control Blanket	S32BD or S32UVD	3.8
Erosion Tech	ETSC-7030-BD	3.8
Erosion Tech	ETRS-2-RD	3.8
Western Green	DS150	3.8

Shaded lines are degradable net options. See additional notes (*) below.

***Note:** Photo / Rapid / Bio Degradable Mats - Only utilize these mats when vegetation will be established within 1.5 months. Photodegradable and Rapid Degradable Mats - additives have been added to the netting & thread to expedite degradation. Degradable mats may be synthetic or organic and are designed to degrade more rapidly.



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EROSION CONTROL AND STORMWATER PRODUCT ACCEPTIBILITY LIST (PAL)

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EROSION MAT URBAN CLASS I TYPE A - Bid Item 628.2006

MANUFACTURER	PRODUCT **	MIN. ANCHOR FREQUENCY (#/SY)
American Excelsior	AEC Premier Straw Single Net FibreNet	1.9
American Excelsior	Curlex I FibreNet	1.1
American Excelsior	Curlex II FibreNet	1.1
Enviroscape	S1000BD	1.7
Ero-Guard	EG-1S NN	2.5
Erosion Control Blanket	S 31BD	1.7
Erosion Tech	ETRS-1 BN	1.7
Western Green	S75BN	1.7

EROSION MAT URBAN CLASS I TYPE B - Bid Item 628.2008

MANUFACTURER	PRODUCT **	MIN. ANCHOR FREQUENCY (#/SY)
American Excelsior	AEC Premier Straw Double Net FibreNet	2.5
American Excelsior	Curlex NetFree	1.9
Ero-Guard	EG-2S NN	2.5
Erosion Control Blanket	S32BD	1.7
Erosion Tech	ETRS-2 BN	1.7
Kansas Erosion Products	S2 Natural	1.2
Western Green	S75BN	1.7
Western Green	S150BN	1.7

****Note:** Urban Mats must be 100% organic. Mat thickness may be less than classification and primary acceptance criteria noted in the PAL guide.

EROSION MAT CLASS II TYPE A - Bid Item 628.2021

CLASS II TYPE A - Jute fiber only

Jute shall conform to the Wisconsin Department of Transportation Standard Specifications for Highway and Bridge Construction section 628.2.2. This netting is used for reinforcing sod. No approval is required for this Class and Type.

EROSION MAT CLASS II TYPE B - Bid Item 628.2023

MANUFACTURER	PRODUCT	MIN. ANCHOR FREQUENCY (#/SY)
American Excelsior	AEC Premier Coconut	2.2
American Excelsior	AEC Premier Coconut FibreNet	2.2
Enviroscape	C4000	3.8
Erosion Control Blanket	C32 or C32BD	3.8
Kansas Erosion Products	C100	3.8
Western Green	C125	3.8
Western Green	C125BN	3.8

EROSION MAT CLASS II TYPE C - Bid Item 628.2027

MANUFACTURER	PRODUCT	MIN. ANCHOR FREQUENCY (#/SY)
Belton Industries	GeoCoir 700	3.0
Hanes Geo Components	Coirmat 780	3.8
Kansas Erosion Products	C100 Natural	3.8



State of Wisconsin
Department of Transportation

EROSION CONTROL AND STORMWATER PRODUCT ACCEPTABILITY LIST (PAL)

Last update: May 14, 2024

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EROSION MAT CLASS III TYPE A - Bid Item 628.2031

MANUFACTURER	PRODUCT	MIN. ANCHOR FREQUENCY (#/SY)
American Excelsior	Curlex III FibreNet	1.9
Erosion Control Blanket	P-42	3.1

EROSION MAT CLASS III TYPE B - Bid Item 628.2033

No products are on the approved products list for Class III B-D mats. Project leaders should contact regional SWECs or products engineer for projects with one of these mats. Products will be approved on the project level based on certification of compliance when necessary.

EROSION MAT CLASS III TYPE C - Bid Item 628.2037

EROSION MAT CLASS III TYPE D - Bid Item 628.2039

ANCHORING DEVICES FOR CLASS I, URBAN EROSION MAT - Incidental To Bid Items 628.2006,8

MANUFACTURER	PRODUCT
American Excelsior	E-Staple
CFM Corp.	CF Bio Staple
Eco-Turf	Bio-Plus
Green Stake	Green Stake
North American Green	Bio-Stake
ODC Inc.	Enviro-Stake

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Temporary Ditch Checks (Item 628.7504)

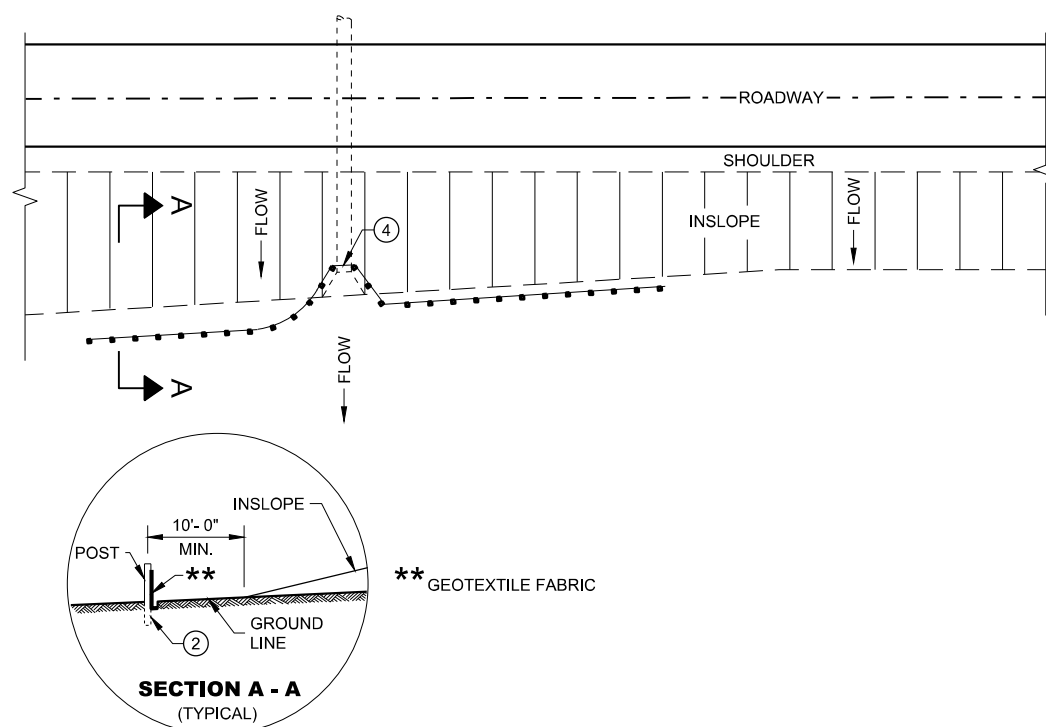
(Updated 04/02/2024)

American Excelsior Company
AEC Premier Straw Wattle - 12"
AEC Premier Straw Wattle - 20"
Curlex Bloc
Curlex Bloc HD
Curlex Bloc
Curlex Bloc HD
Curlex Sediment Log - 12"
Curlex Sediment Log - 20"
Curlex Sediment Log - 12"
Curlex Sediment Log - 20"
Curlex SFW Wattles - 12"
Curlex SFW Wattles - 20"
Curlex SFW Wattles - 12"
Curlex SFW Wattles - 20"
ECBVerdyol
12-Inch Stenlog
Erosion Tech
Nature Log - Straw 12" (WTL12)
Nature Log - Straw 20" (WTL20)
Nature Log - Excelsior 12" (WTL12)
Nature Log - Excelsior 20" (WTL20)
Nature Log - Straw Natural 12" (WTL12)
Nature Log - Excelsior Natural 12" (WTL12)
Filtrexx Sustainable Technologies
Check Dams - 12" Basic Plus
Check Dams - 18" Basic Plus
Check Dams - 24" Basic Plus
Check Dams - 32" Basic Plus
Check Dams - 12" Durable
Check Dams - 18" Durable
Check Dams - 24" Durable
Check Dams - 32" Durable
Check Dams - 12" Durable Plus
Check Dams - 18" Durable Plus
Check Dams - 24" Durable Plus
Check Dams - 12" Extreme
Check Dams - 12" Natural Plus
Check Dams - SiltSoxx RH 12"
Check Dams - SiltSoxx RH 18"
Check Dams - SiltSoxx RH 12" Natural

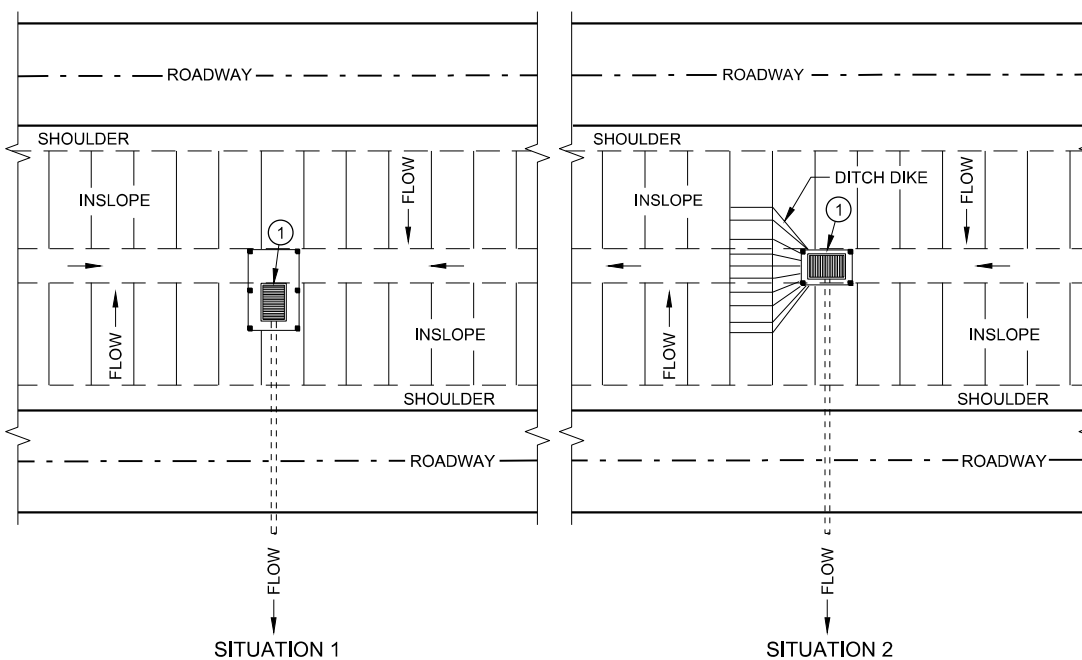
North American Green
SediMax WS-12 (12")
Silt Sock
SS-12
SS-18
SS-12-Natural
Western Excelsior
Excel Straw Log - 12"
Excel Straw Log - 18"
Excel Straw Log - 20"
Aspen Excelsior Log - 12"
ASpen Excelsior Log - 18"
Aspen Excelsior Log - 20"

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PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

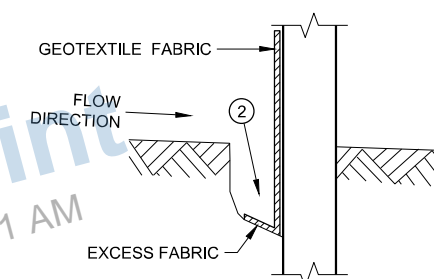


PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

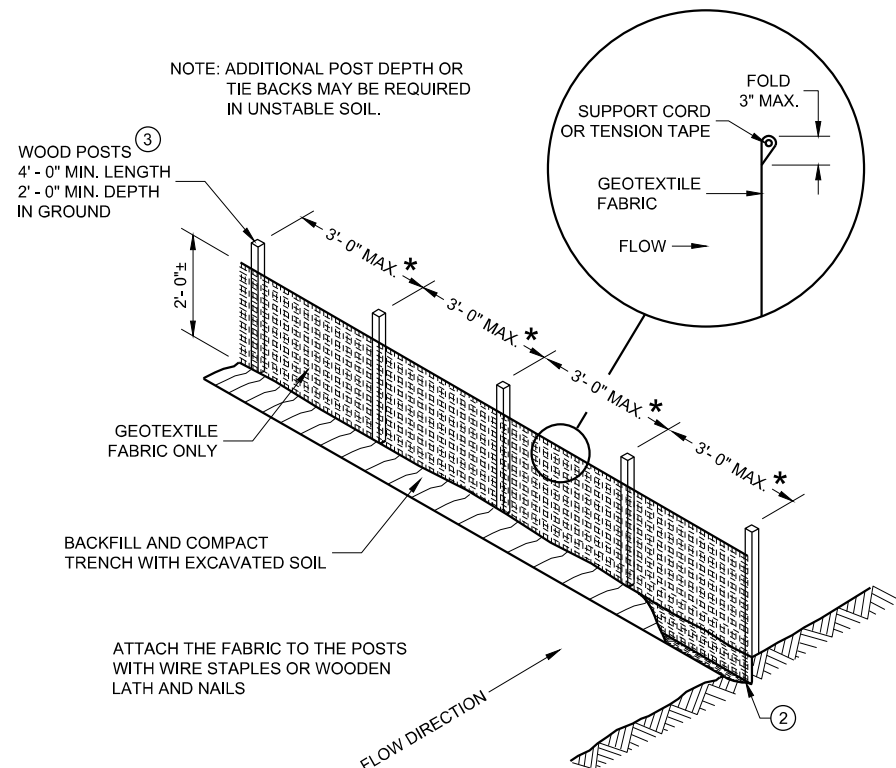
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

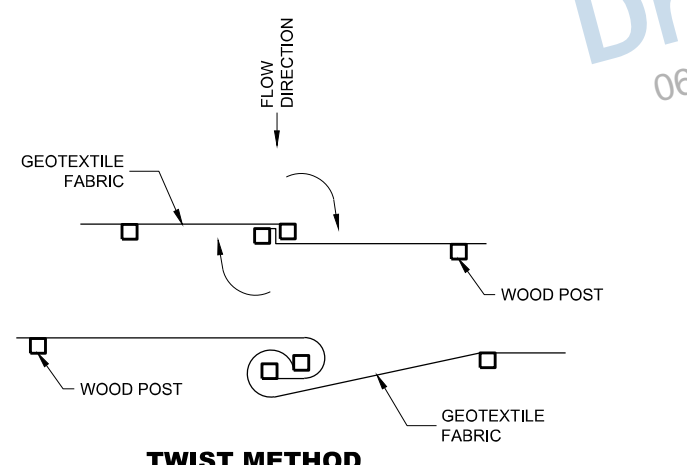
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE AND 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/2" X 1 1/2" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS: A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



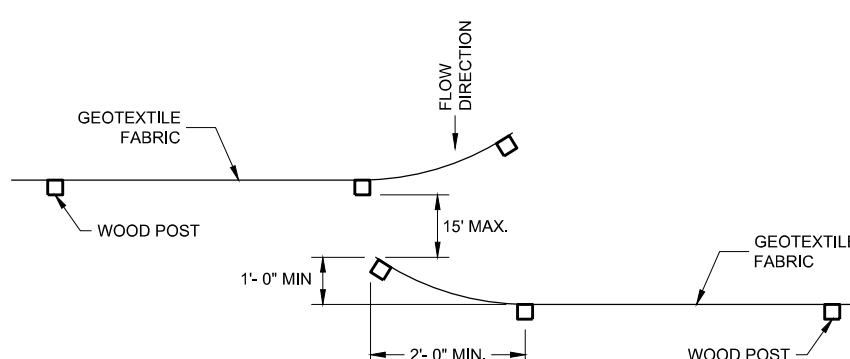
TRENCH DETAIL



SILT FENCE

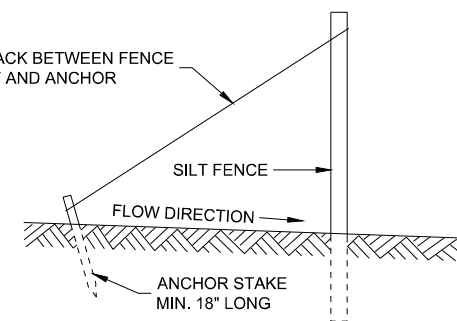


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

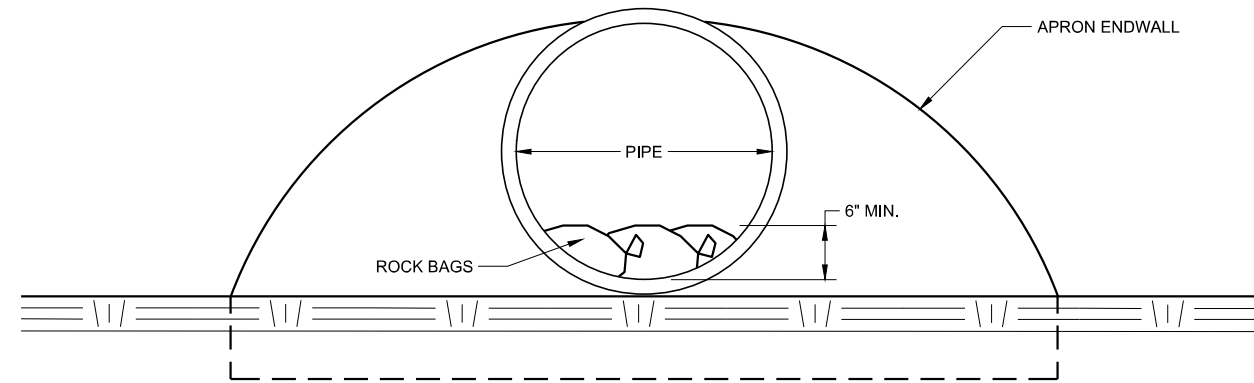
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/29/05
DATE

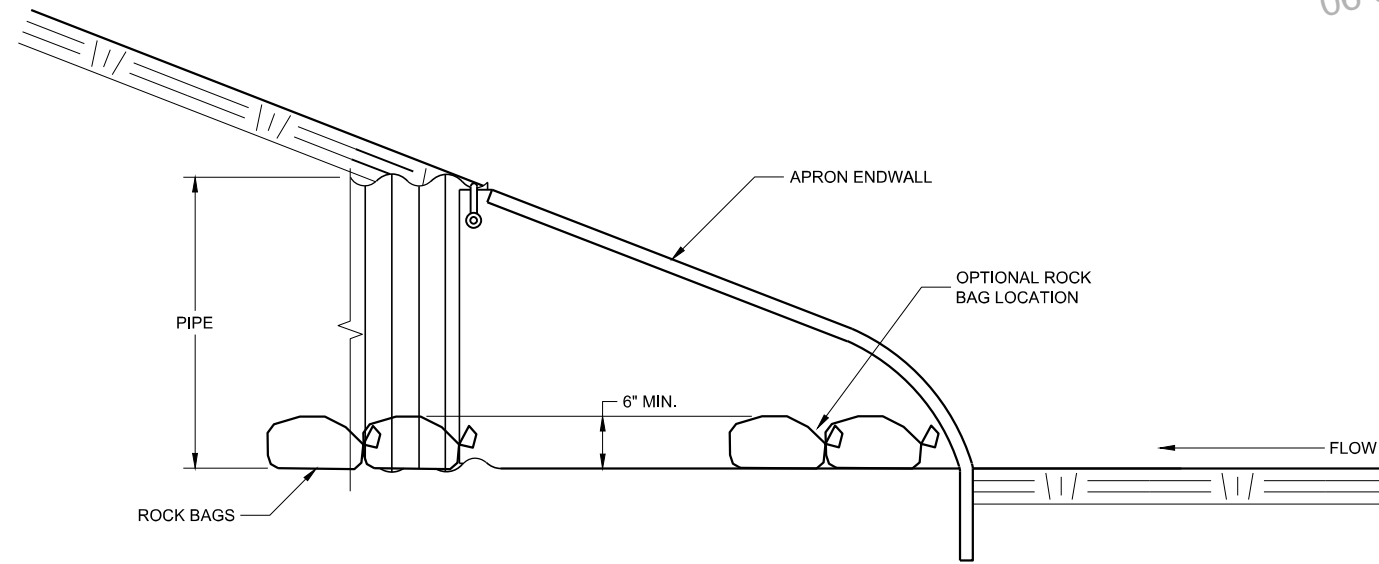
/s/ Beth Canastra
CHIEF ROADWAY DEVELOPMENT
ENGINEER

FHWA



END VIEW

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SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED	/s/ Daniel Schave
May 2019	20
DATE	EROSION CONTROL ENGINEER

FHWA

6

6

SDD 08E15 - 01

SDD 08E15 - 01

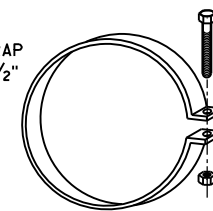
METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ (1)	L ₂ (1)	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

* EXCEPT CENTER PANEL SEE GENERAL NOTES

REINFORCED CONCRETE APRON ENDWALLS										
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE		
	T	A	B	C	D	E	G			
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1		
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1		
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1		
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1		
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1		
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1		
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1		
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1		
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1		
48	5	24	72	26	98	84	5	3 to 1		
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 1/2 to 1		
60	6	30-35	60	39	99	96	5	2 to 1		
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1		
72	7	24-36	78	21	99	108	6	2 to 1		
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1		
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1		
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1		

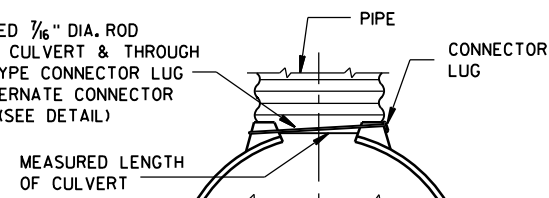
* MINIMUM
** MAXIMUM

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



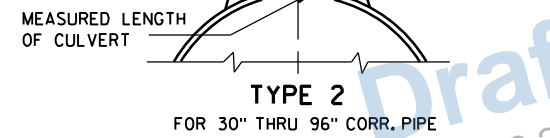
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP

THREADED 7/16" DIA. ROD AROUND CULVERT & THROUGH TANK TYPE CONNECTOR LUG OR ALTERNATE CONNECTOR STRAP (SEE DETAIL)

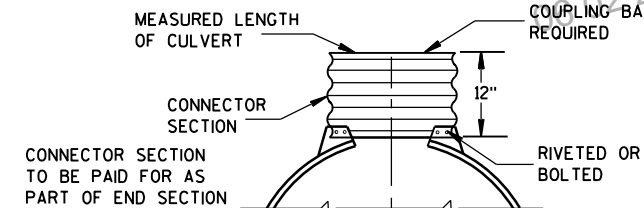


TYPE 1
FOR 12" THRU 24" CORR. PIPE

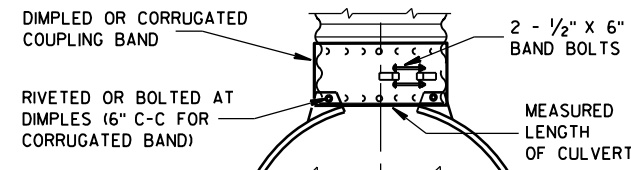
THREADED 7/16" DIA. ROD OVER TOP OF APRON, SIDE LUGS TO BE RIVETED TO APRON



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

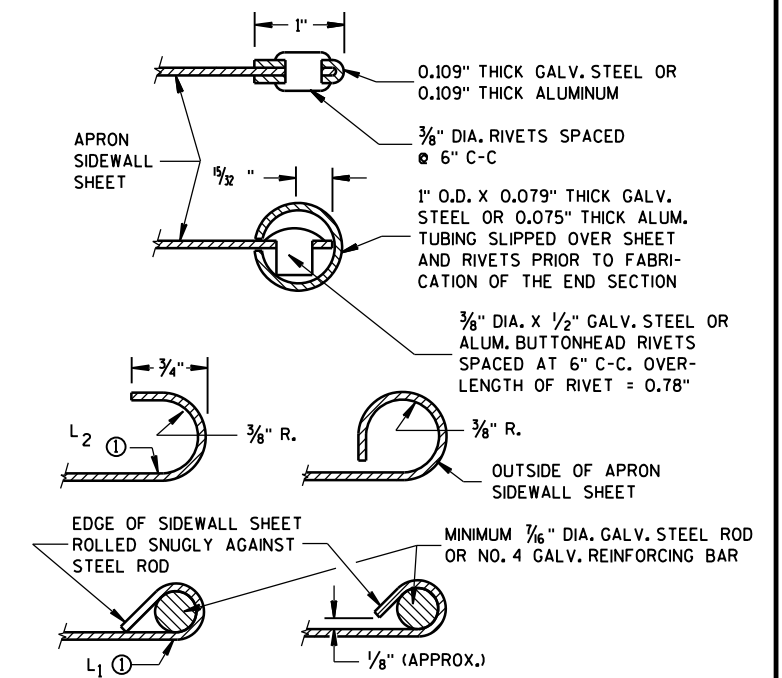
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

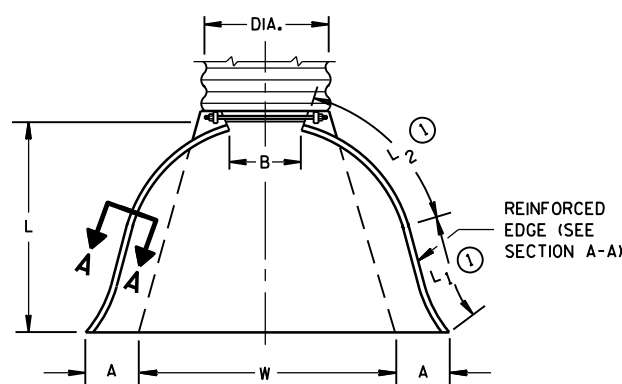
CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VICE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

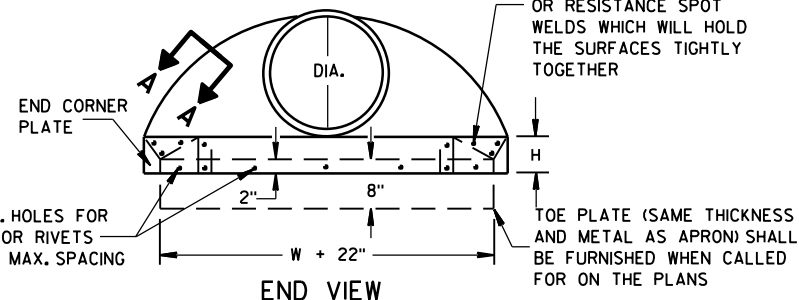
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.



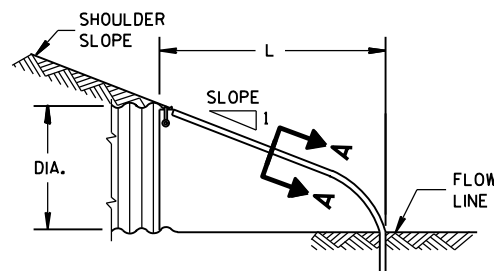
PLAN VIEW

REINFORCED EDGE (SEE SECTION A-A)
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER

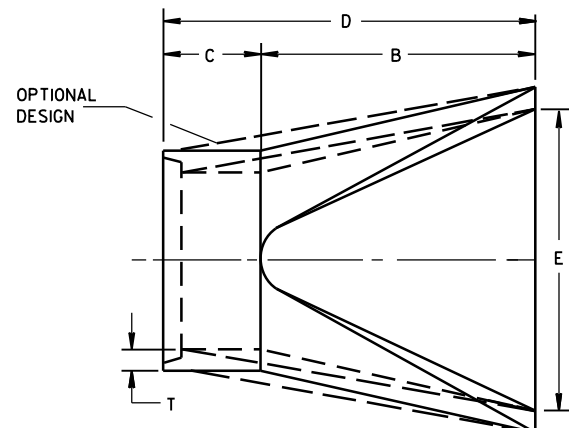


END VIEW

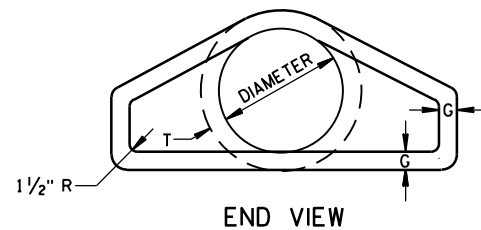
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



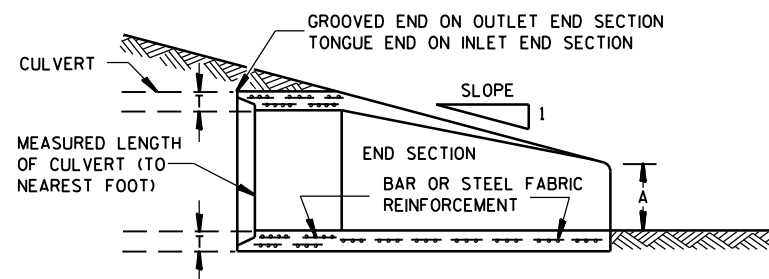
SIDE ELEVATION
METAL ENDWALLS



PLAN



END VIEW



LONGITUDINAL SECTION
CONCRETE ENDWALLS

APRON ENDWALLS FOR CULVERT PIPE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8-30-94 DATE	/S/ Rory L. Rhinesmith 20 CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Washburn County, Wisconsin

Camp Ride Nonmetallic Mine, Spooner, WI

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Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

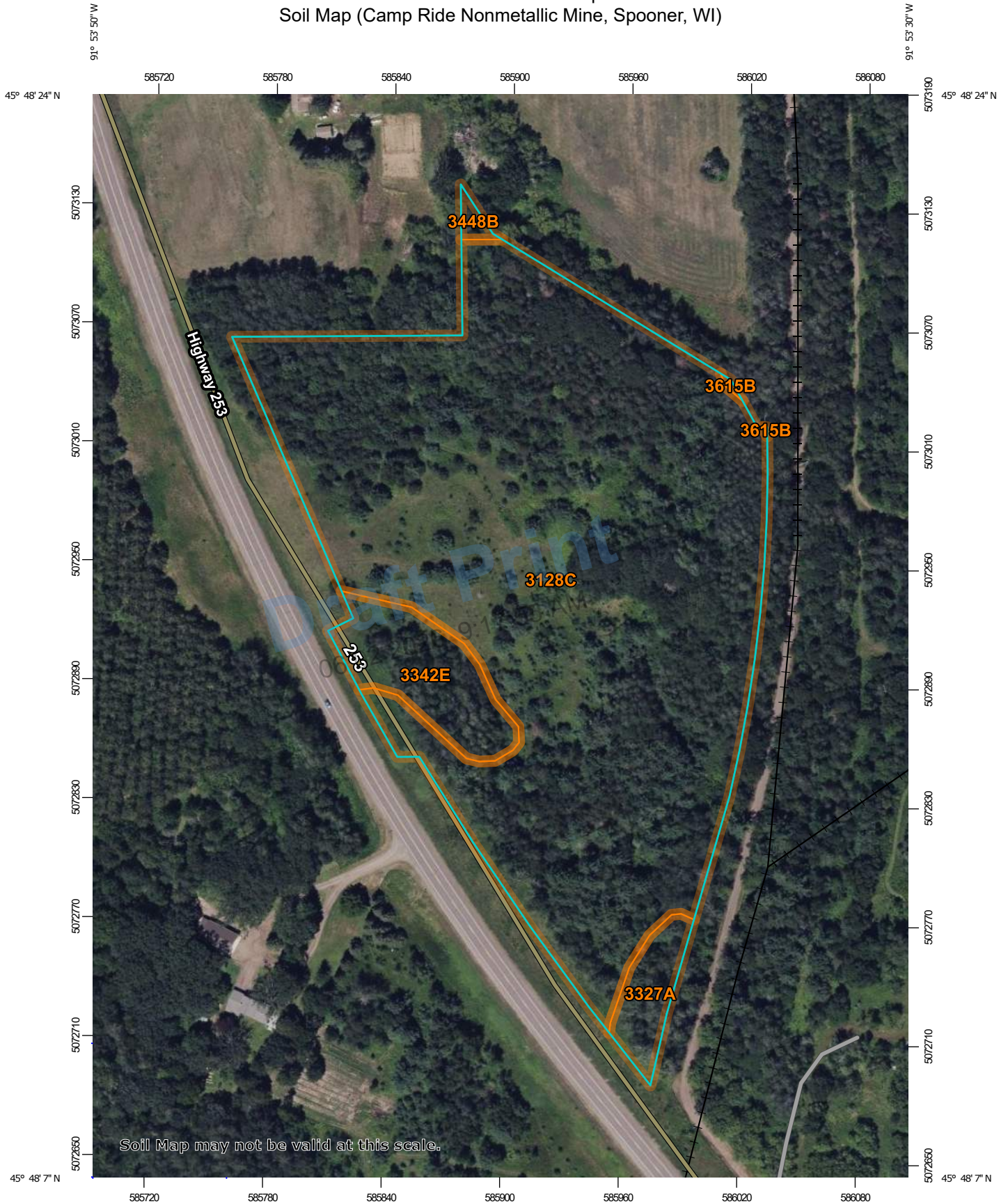
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Soil Map

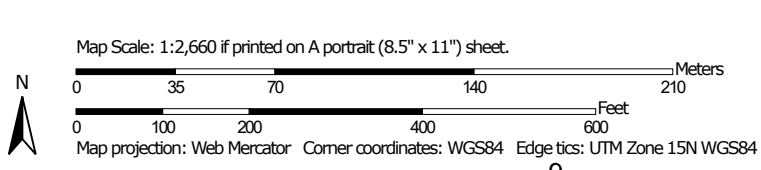
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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Custom Soil Resource Report Soil Map (Camp Ride Nonmetallic Mine, Spooner, WI)




Soil Map may not be valid at this scale.



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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot


 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop


 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washburn County, Wisconsin
Survey Area Data: Version 25, Sep 10, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 30, 2022—Sep 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Map Unit Legend (Camp Ride Nonmetallic Mine, Spooner, WI)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3128C	Haugen-Rosholt complex, 6 to 12 percent slopes, very stony	14.3	90.5%
3327A	Scott Lake sandy loam, 0 to 3 percent slopes	0.4	2.8%
3342E	Amery sandy loam, 12 to 30 percent slopes, very stony	1.0	6.3%
3448B	Grettum loamy sand, 0 to 6 percent slopes	0.1	0.4%
3615B	Cress sandy loam, 0 to 6 percent slopes	0.0	0.1%
Totals for Area of Interest		15.8	100.0%

Map Unit Descriptions (Camp Ride Nonmetallic Mine, Spooner, WI)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor

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components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Washburn County, Wisconsin**3128C—Haugen-Rosholt complex, 6 to 12 percent slopes, very stony****Map Unit Setting**

National map unit symbol: 2zcwd

Landscape: Till plains

Elevation: 770 to 1,490 feet

Mean annual precipitation: 27 to 36 inches

Mean annual air temperature: 37 to 46 degrees F

Frost-free period: 80 to 150 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Haugen, very stony, and similar soils: 55 percent

Rosholt, very stony, and similar soils: 30 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Haugen, Very Stony**Setting**

Landscape: Till plains

Landform: Disintegration moraines

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy till and/or loamy mudflow deposits

Typical profile

A - 0 to 4 inches: sandy loam

Bw1 - 4 to 15 inches: sandy loam

Bw2 - 15 to 23 inches: gravelly sandy loam

E/B - 23 to 35 inches: gravelly sandy loam

B/E - 35 to 49 inches: gravelly sandy loam

Bt - 49 to 77 inches: gravelly sandy loam

Cd - 77 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 6 to 12 percent

Surface area covered with cobbles, stones or boulders: 1.5 percent

Depth to restrictive feature: 39 to 79 inches to densic material

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low
(0.01 to 0.06 in/hr)

Depth to water table: About 24 to 35 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

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Ecological site: F090AY016WI - Loamy Upland
Forage suitability group: Mod AWC, adequately drained (G090AY005WI)
Other vegetative classification: Acer rubrum - Abies balsamea / Cornus canadensis , Red Maple - Balsam Fir / Bunchberry (ArAbCo), Mod AWC, adequately drained (G090AY005WI)
Hydric soil rating: No

Description of Rosholt, Very Stony**Setting**

Landscape: Till plains
Landform: Disintegration moraines
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits over stratified sandy and gravelly outwash

Typical profile

A - 0 to 3 inches: sandy loam
E - 3 to 8 inches: sandy loam
B/E - 8 to 20 inches: sandy loam
Bt1 - 20 to 28 inches: sandy loam
2Bt2 - 28 to 34 inches: gravelly loamy sand
2C - 34 to 79 inches: stratified sand to very gravelly coarse sand

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F090AY016WI - Loamy Upland
Forage suitability group: Mod AWC, adequately drained (G090AY005WI)
Other vegetative classification: Acer saccharum / Vaccinium angustifolium - Desmodium glutinosum , Sugar Maple / Low Sweet Blueberry - Pointed-leaved Tick Trefoil (AVDe), Acer saccharum - Tsuga canadensis / Maianthemum canadense , Sugar Maple - Eastern Hemlock / Qild Lily-of-the-valley (ATM), Mod AWC, adequately drained (G090AY005WI)
Hydric soil rating: No

Minor Components**Amery, very stony**

Percent of map unit: 5 percent
Landscape: Till plains
Landform: Disintegration moraines

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Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F090AY016WI - Loamy Upland

Other vegetative classification: Acer saccharum / Vaccinium angustifolium -

Desmodium glutinosum , Sugar Maple / Low Sweet Blueberry - Pointed-leaved

Tick Trefoil (AVDe), Acer saccharum / Athyrium filix-femina , Sugar Maple /

Lady Fern (AAt), Mod AWC, adequately drained with limitations

(G090BY006WI)

Hydric soil rating: No

Freeon, very stony

Percent of map unit: 4 percent

Landscape: Till plains

Landform: Disintegration moraines

Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F090AY016WI - Loamy Upland

Other vegetative classification: Acer saccharum / Athyrium filix-femina , Sugar

Maple / Lady Fern (AAt), Acer saccharum / Caulophyllum thalictroides -

Circaea quadrisulcata , Sugar Maple / Blue Cohosh - Enchanter's Nightshade

(ACaCi), Acer saccharum / Hydrophyllum virginianum , Sugar Maple / Virginia

Waterleaf (AH), Mod AWC, adequately drained (G090AY005WI)

Hydric soil rating: No

Aftad

Percent of map unit: 2 percent

Landscape: Till plains

Landform: Collapsed ice-walled lakebeds on disintegration moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F090AY016WI - Loamy Upland

Other vegetative classification: Acer saccharum / Athyrium filix-femina , Sugar

Maple / Lady Fern (AAt), Mod AWC, adequately drained (G090AY005WI)

Hydric soil rating: No

Mahtomedi

Percent of map unit: 2 percent

Landscape: Till plains

Landform: Disintegration moraines

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F090AY013WI - Sandy Upland

Other vegetative classification: Pinus strobus - Quercus spp. / Gaultheria

procumbens - Ceanothus americanus , Eastern White Pine - Oak spp. /

Wintergreen - New Jersey Tea (PQGc), Pinus strobus - Acer rubrum /

Vaccinium angustifolium - Amphicarpa bracteata , Eastern White Pine - Red

Maple / Low Sweet Blueberry - Hog-peanut (PARVAm), Low AWC, adequately

drained with limitations (G090AY003WI)

Hydric soil rating: No

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Capitola, very stony*Percent of map unit:* 2 percent*Landscape:* Till plains*Landform:* Drainageways on disintegration moraines, Depressions on disintegration moraines*Landform position (three-dimensional):* Dip*Down-slope shape:* Concave, linear*Across-slope shape:* Concave*Ecological site:* F090AY006WI - Wet Loamy Lowland*Other vegetative classification:* Fraxinus nigra-Acer rubrum/Impatiens capensis, Black Ash-Red Maple/Spotted Touch-me-not (3FnAr1), Mod AWC, high water table (G090AY004WI)*Hydric soil rating:* Yes**3327A—Scott Lake sandy loam, 0 to 3 percent slopes****Map Unit Setting***National map unit symbol:* 2tnzl*Landscape:* Outwash plains*Elevation:* 790 to 1,460 feet*Mean annual precipitation:* 27 to 36 inches*Mean annual air temperature:* 37 to 46 degrees F*Frost-free period:* 80 to 150 days*Farmland classification:* All areas are prime farmland**Map Unit Composition***Scott lake and similar soils:* 93 percent*Minor components:* 7 percent*Estimates are based on observations, descriptions, and transects of the mapunit.***Description of Scott Lake****Setting***Landscape:* Outwash plains*Landform:* Terraces, Flats*Landform position (three-dimensional):* Tread, rise*Down-slope shape:* Linear*Across-slope shape:* Linear*Parent material:* Loamy glaciofluvial deposits over stratified sandy and gravelly outwash**Typical profile***Ap - 0 to 9 inches:* sandy loam*E - 9 to 12 inches:* sandy loam*E/B - 12 to 15 inches:* sandy loam*B/E - 15 to 21 inches:* sandy loam*Bt1 - 21 to 28 inches:* sandy loam*Bt2 - 28 to 31 inches:* sandy loam

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2C1 - 31 to 40 inches: gravelly loamy sand

2C2 - 40 to 79 inches: stratified sand to very gravelly coarse sand

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)

Depth to water table: About 24 to 35 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: B

Ecological site: F090AY016WI - Loamy Upland

Forage suitability group: Mod AWC, adequately drained (G090AY005WI)

Other vegetative classification: Acer saccharum - Tsuga canadensis / Maianthemum canadense, Sugar Maple - Eastern Hemlock / Qild Lily-of-the-valley (ATM), Mod AWC, adequately drained (G090AY005WI)

Hydric soil rating: No

Minor Components**Oesterle**

Percent of map unit: 5 percent

Landscape: Outwash plains

Landform: Terraces, Flats

Landform position (three-dimensional): Tread, talf

Down-slope shape: Linear, concave

Across-slope shape: Linear

Ecological site: F090BY011WI - Moist Loamy Lowland

Other vegetative classification: Tsuga canadensis / Maianthemum canadense - Coptis groenlandica, Eastern Hemlock / Wild Lily-of-the-valley - Goldthread (TMC), Mod AWC, high water table (G090AY004WI)

Hydric soil rating: No

Rosholt

Percent of map unit: 2 percent

Landscape: Outwash plains

Landform: Terraces, Flats

Landform position (three-dimensional): Tread, rise

Down-slope shape: Convex, linear

Across-slope shape: Convex, linear

Ecological site: F090BY016WI - Loamy Upland

Other vegetative classification: Acer saccharum / Vaccinium angustifolium - Desmodium glutinosum, Sugar Maple / Low Sweet Blueberry - Pointed-leaved Tick Trefoil (AVDe), Acer saccharum - Tsuga canadensis / Maianthemum canadense, Sugar Maple - Eastern Hemlock / Qild Lily-of-the-valley (ATM), Mod AWC, adequately drained (G090AY005WI)

Hydric soil rating: No

3342E—Amery sandy loam, 12 to 30 percent slopes, very stony**Map Unit Setting**

National map unit symbol: 2zwc8
Landscape: Till plains
Elevation: 750 to 1,480 feet
Mean annual precipitation: 27 to 36 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 80 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Amery, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Amery, Very Stony**Setting**

Landscape: Till plains
Landform: Disintegration moraines
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy loam till and/or loamy mudflow deposits

Typical profile

A - 0 to 4 inches: sandy loam
Bw - 4 to 22 inches: sandy loam
E/B - 22 to 34 inches: sandy loam
B/E - 34 to 41 inches: gravelly sandy loam
Bt1 - 41 to 57 inches: gravelly sandy loam
Bt2 - 57 to 71 inches: sandy loam
Cd - 71 to 79 inches: sandy loam

Properties and qualities

Slope: 12 to 30 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: 59 to 79 inches to densic material
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low
 (0.01 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Ecological site: F090AY016WI - Loamy Upland

Forage suitability group: Mod AWC, adequately drained with limitations
(G090BY006WI)

Other vegetative classification: Acer saccharum / Vaccinium angustifolium -
Desmodium glutinosum , Sugar Maple / Low Sweet Blueberry - Pointed-leaved
Tick Trefoil (AVDe), Acer saccharum / Athyrium filix-femina , Sugar Maple /
Lady Fern (AAt), Mod AWC, adequately drained with limitations
(G090BY006WI)

Hydric soil rating: No

Minor Components**Haugen, very stony**

Percent of map unit: 5 percent

Landscape: Till plains

Landform: Disintegration moraines

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F090AY016WI - Loamy Upland

Other vegetative classification: Acer rubrum - Abies balsamea / Cornus
canadensis , Red Maple - Balsam Fir / Bunchberry (ArAbCo), Mod AWC,
adequately drained (G090AY005WI)

Hydric soil rating: No

Cress

Percent of map unit: 5 percent

Landscape: Till plains

Landform: Disintegration moraines

Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F090AY019WI - Dry Sandy Upland

Other vegetative classification: Pinus strobus - Acer rubrum / Vaccinium
angustifolium - Amphicarpa bracteata , Eastern White Pine - Red Maple / Low
Sweet Blueberry - Hog-peanut (PArVAm), Acer saccharum / Vaccinium
angustifolium - Desmodium glutinosum , Sugar Maple / Low Sweet Blueberry -
Pointed-leaved Tick Trefoil (AVDe), Low AWC, adequately drained
(G090AY002WI)

Hydric soil rating: No

Aftad

Percent of map unit: 3 percent

Landscape: Till plains

Landform: Collapsed ice-walled lakebeds on disintegration moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F090AY016WI - Loamy Upland

Other vegetative classification: Acer saccharum / Athyrium filix-femina , Sugar
Maple / Lady Fern (AAt), Mod AWC, adequately drained (G090AY005WI)

Hydric soil rating: No

Custom Soil Resource Report

Capitola, very stony*Percent of map unit:* 2 percent*Landscape:* Till plains*Landform:* Drainageways on disintegration moraines, Depressions on disintegration moraines*Landform position (three-dimensional):* Dip*Down-slope shape:* Concave, linear*Across-slope shape:* Concave*Ecological site:* F090AY006WI - Wet Loamy Lowland*Other vegetative classification:* Fraxinus nigra-Acer rubrum/Impatiens capensis, Black Ash-Red Maple/Spotted Touch-me-not (3FnAr1), Mod AWC, high water table (G090AY004WI)*Hydric soil rating:* Yes**3448B—Grettum loamy sand, 0 to 6 percent slopes****Map Unit Setting***National map unit symbol:* s8z6*Landscape:* Lake plains, outwash plains*Elevation:* 750 to 1,600 feet*Mean annual precipitation:* 25 to 33 inches*Mean annual air temperature:* 36 to 45 degrees F*Frost-free period:* 90 to 135 days*Farmland classification:* Not prime farmland**Map Unit Composition***Grettum and similar soils:* 80 percent*Minor components:* 20 percent*Estimates are based on observations, descriptions, and transects of the mapunit.***Description of Grettum****Setting***Landscape:* Lake plains, outwash plains*Landform:* Lake plains, Outwash plains*Landform position (two-dimensional):* Shoulder, backslope*Landform position (three-dimensional):* Rise*Down-slope shape:* Convex*Across-slope shape:* Convex*Parent material:* Sandy outwash or sandy lacustrine deposits with lamellae**Typical profile***A - 0 to 3 inches:* loamy sand*Bw - 3 to 32 inches:* sand*Et - 32 to 75 inches:* sand*C - 75 to 80 inches:* sand**Properties and qualities***Slope:* 0 to 6 percent*Depth to restrictive feature:* More than 80 inches

Custom Soil Resource Report

Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 54 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F091XY011WI - Sandy Upland
Forage suitability group: Low AWC, adequately drained (G090AY002WI)
Other vegetative classification: Pinus strobus - Acer rubrum / Vaccinium angustifolium - Amphicarpa bracteata , Eastern White Pine - Red Maple / Low Sweet Blueberry - Hog-peanut (PArVAm), Low AWC, adequately drained (G090AY002WI)
Hydric soil rating: No

Minor Components**Graycalm**

Percent of map unit: 10 percent
Landscape: Lake plains
Landform: Lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F091XY011WI - Sandy Upland
Other vegetative classification: Pinus strobus - Acer rubrum / Vaccinium angustifolium - Amphicarpa bracteata , Eastern White Pine - Red Maple / Low Sweet Blueberry - Hog-peanut (PArVAm), Low AWC, adequately drained (G090AY002WI)
Hydric soil rating: No

Menahga

Percent of map unit: 5 percent
Landscape: Outwash plains
Landform: Outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F091XY015WI - Dry Upland
Other vegetative classification: Pinus strobus - Acer rubrum / Vaccinium angustifolium - Amphicarpa bracteata , Eastern White Pine - Red Maple / Low Sweet Blueberry - Hog-peanut (PArVAm), Low AWC, adequately drained (G090AY002WI)
Hydric soil rating: No

Cress

Percent of map unit: 3 percent
Landscape: Lake plains
Landform: Stream terraces, Lake plains
Landform position (three-dimensional): Riser, rise

Custom Soil Resource Report

Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F091XY004WI - Terrace
Other vegetative classification: Pinus strobus - Acer rubrum / Vaccinium angustifolium - Amphicarpa bracteata , Eastern White Pine - Red Maple / Low Sweet Blueberry - Hog-peanut (PARVAm), Acer saccharum / Vaccinium angustifolium - Desmodium glutinosum , Sugar Maple / Low Sweet Blueberry - Pointed-leaved Tick Trefoil (AVDe), Low AWC, adequately drained (G090AY002WI)
Hydric soil rating: No

Aftad

Percent of map unit: 1 percent
Landscape: Lake plains
Landform: Stream terraces, Lake plains
Landform position (three-dimensional): Riser, rise
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F091XY012WI - Loamy Upland
Other vegetative classification: Acer saccharum / Athyrium filix-femina , Sugar Maple / Lady Fern (AAt), Mod AWC, adequately drained (G090AY005WI)
Hydric soil rating: No

Karlsborg

Percent of map unit: 1 percent
Landscape: Lake plains, outwash plains
Landform: Lake plains, Outwash plains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F091XY013WI - Clayey Upland
Other vegetative classification: Pinus strobus - Acer rubrum / Vaccinium angustifolium - Amphicarpa bracteata , Eastern White Pine - Red Maple / Low Sweet Blueberry - Hog-peanut (PARVAm), Low AWC, adequately drained (G090AY002WI)
Hydric soil rating: No

3615B—Cress sandy loam, 0 to 6 percent slopes**Map Unit Setting**

National map unit symbol: h27r
Landscape: Outwash plains
Elevation: 800 to 1,950 feet
Mean annual precipitation: 25 to 33 inches
Mean annual air temperature: 36 to 45 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Not prime farmland

Custom Soil Resource Report

Map Unit Composition

Cress and similar soils: 75 percent

Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cress**Setting**

Landscape: Outwash plains

Landform: Outwash plains, Stream terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Riser, rise

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy alluvium underlain by stratified sandy and gravelly outwash

Typical profile

A - 0 to 3 inches: sandy loam

Bw1 - 3 to 15 inches: sandy loam

2Bw2 - 15 to 31 inches: loamy sand

2Bw3 - 31 to 36 inches: gravelly loamy sand

2C - 36 to 60 inches: stratified sand to very gravelly coarse sand

Properties and qualities

Slope: 0 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: B

Ecological site: F090AY019WI - Dry Sandy Upland

Forage suitability group: Low AWC, adequately drained (G090AY002WI)

Other vegetative classification: Pinus strobus - Acer rubrum / Vaccinium angustifolium - Amphicarpa bracteata , Eastern White Pine - Red Maple / Low Sweet Blueberry - Hog-peanut (PArVAm), Acer saccharum / Vaccinium angustifolium - Desmodium glutinosum , Sugar Maple / Low Sweet Blueberry - Pointed-leaved Tick Trefoil (AVDe), Low AWC, adequately drained (G090AY002WI)

Hydric soil rating: No

Minor Components**Chetek**

Percent of map unit: 10 percent

Landscape: Outwash plains

Landform: Stream terraces, Outwash plains

Custom Soil Resource Report

Landform position (three-dimensional): Tread, rise

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F091XY012WI - Loamy Upland

Other vegetative classification: Acer saccharum / Vaccinium angustifolium -

Desmodium glutinosum , Sugar Maple / Low Sweet Blueberry - Pointed-leaved

Tick Trefoil (AVDe), Low AWC, adequately drained with limitations

(G091XY003WI)

Hydric soil rating: No

Menahga

Percent of map unit: 6 percent

Landscape: Outwash plains

Landform: Outwash plains

Landform position (three-dimensional): Rise

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F091XY015WI - Dry Upland

Other vegetative classification: Pinus strobus - Acer rubrum / Vaccinium

angustifolium - Amphicarpa bracteata , Eastern White Pine - Red Maple / Low

Sweet Blueberry - Hog-peanut (PARVAm), Low AWC, adequately drained

(G090AY002WI)

Hydric soil rating: No

Mahtomedi

Percent of map unit: 4 percent

Landscape: Outwash plains

Landform: Outwash plains

Landform position (three-dimensional): Rise

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F091XY004WI - Terrace

Other vegetative classification: Pinus strobus - Quercus spp. / Gaultheria

procumbens - Ceanothus americanus , Eastern White Pine - Oak spp. /

Wintergreen - New Jersey Tea (PQGc), Pinus strobus - Acer rubrum /

Vaccinium angustifolium - Amphicarpa bracteata , Eastern White Pine - Red

Maple / Low Sweet Blueberry - Hog-peanut (PARVAm), Low AWC, adequately

drained (G090AY002WI)

Hydric soil rating: No

Slimlake

Percent of map unit: 3 percent

Landscape: Outwash plains

Landform: Outwash plains, Stream terraces

Landform position (three-dimensional): Riser, rise

Down-slope shape: Linear

Across-slope shape: Concave

Ecological site: F091XY011WI - Sandy Upland

Other vegetative classification: Acer saccharum / Vaccinium angustifolium -

Desmodium glutinosum , Sugar Maple / Low Sweet Blueberry - Pointed-leaved

Tick Trefoil (AVDe), Low AWC, adequately drained (G090AY002WI)

Hydric soil rating: No

Rosholt

Percent of map unit: 2 percent

Landscape: Outwash plains

Custom Soil Resource Report

Landform: Stream terraces, Outwash plains

Landform position (three-dimensional): Riser, rise

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F091XY012WI - Loamy Upland

Other vegetative classification: Acer saccharum / Vaccinium angustifolium -

Desmodium glutinosum , Sugar Maple / Low Sweet Blueberry - Pointed-leaved

Tick Trefoil (AVDe), Acer saccharum - Tsuga canadensis / Maianthemum

canadense , Sugar Maple - Eastern Hemlock / Qild Lily-of-the-valley (ATM),

Low AWC, adequately drained (G090AY002WI)

Hydric soil rating: No

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GLACIAL DEPOSITS OF WISCONSIN SAND AND GRAVEL RESOURCE POTENTIAL

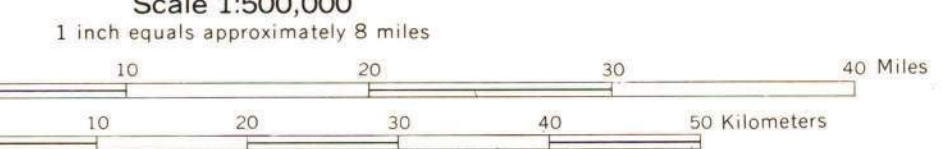
LAND RESOURCES ANALYSIS PROGRAM

WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY
UNIVERSITY OF WISCONSIN-EXTENSION

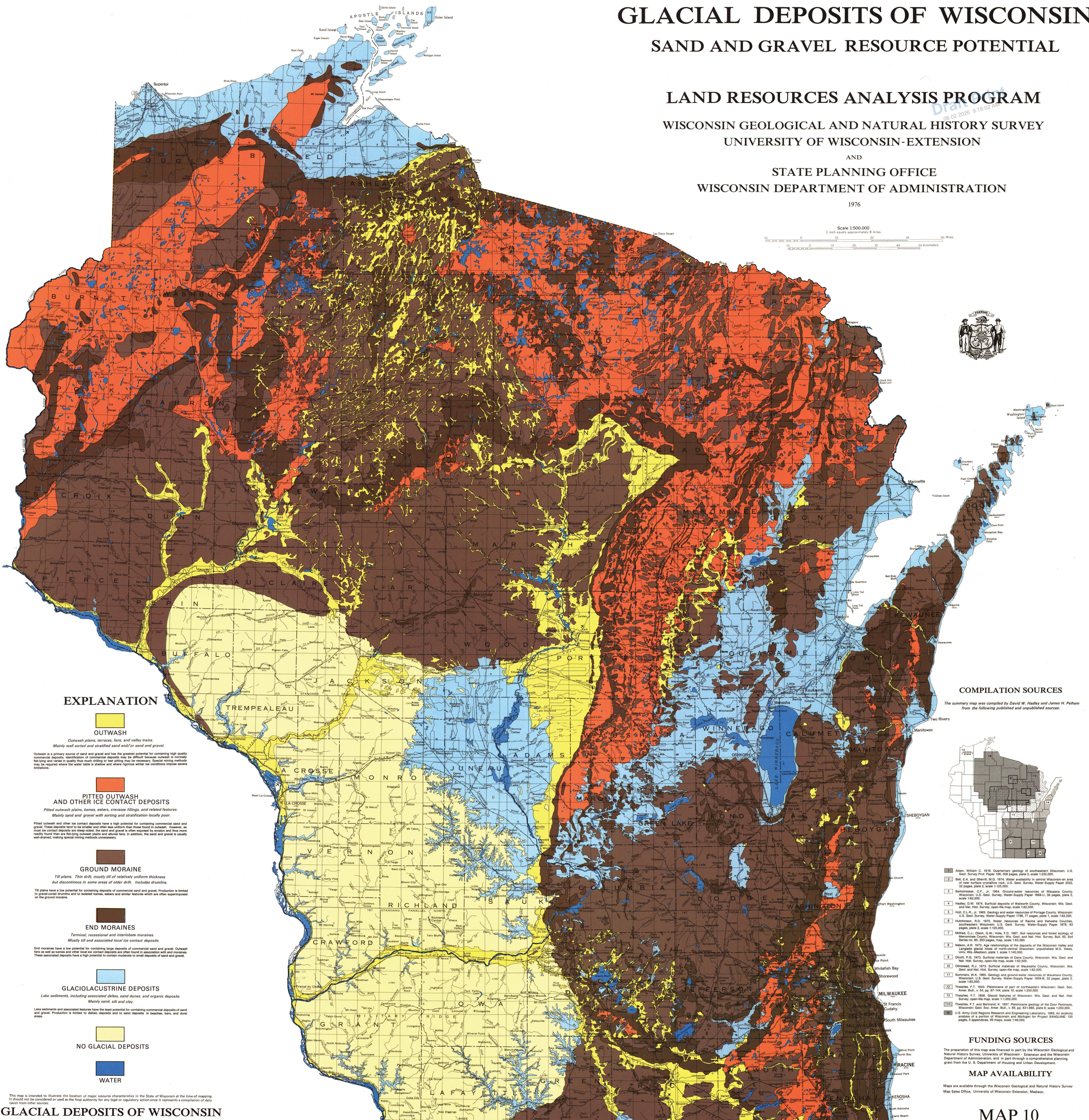
AND
STATE PLANNING OFFICE
WISCONSIN DEPARTMENT OF ADMINISTRATION

1976

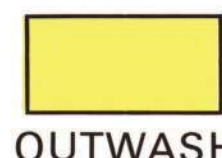
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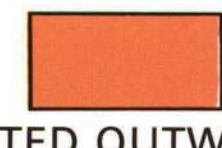


EXPLANATION



OUTWASH

Outwash plains, terraces, fans, and valley trains.
Mainly well sorted and stratified sand and/or sand and gravel.
Outwash is a primary source of sand and gravel and has the greatest potential for containing high quality commercial deposits. Identification of commercial deposits may be difficult because outwash is normally flat-lying and varies in quality thus much drilling or test pitting may be necessary. Special mining methods may be required where the water table is shallow and where rigorous winter ice conditions impose severe limitations.



PITTED OUTWASH AND OTHER ICE CONTACT DEPOSITS

Pitted outwash plains, kames, eskers, crevasse fillings, and related features.
Mainly sand and gravel with sorting and stratification locally poor.
Pitted outwash and other ice contact deposits have a high potential for containing commercial sand and gravel. These deposits tend to be smaller and often less uniform than those found in outwash. However, as most ice contact deposits are steep-sided, the sand and gravel is often exposed to erosion and thus more readily found than are flat-lying outwash plains and alluvial fans. In addition, the sand and gravel is usually well-sorted, making special mining methods unnecessary.



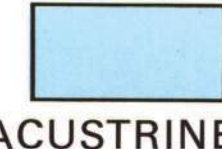
GROUND MORAINE

Till plains. Thin drift, mostly till of relatively uniform thickness but discontinuous in some areas of older drift. Includes drumlins.
Till plains have a low potential for containing deposits of commercial sand and gravel. Production is limited to gravel-covered drumlins and to isolated kames, eskers and similar features which are often superimposed on the ground moraine.



END MORAINES

Terminal, recessional and interlobate moraines.
Mostly till and associated local ice contact deposits.
End moraines have a low potential for containing large deposits of commercial sand and gravel. Outwash fans as well as kames and other local ice contact deposits are often found in association with end moraines. These associated deposits have a high potential to contain moderate to small deposits of sand and gravel.



GLACIOLACUSTRINE DEPOSITS

Lake sediments, including associated deltas, sand dunes, and organic deposits.
Mainly sand, silt and clay.
Lake sediments and associated features have the least potential for containing commercial deposits of sand and gravel. Production is limited to deltaic deposits and to sand deposits in beaches, bars, and dune areas.



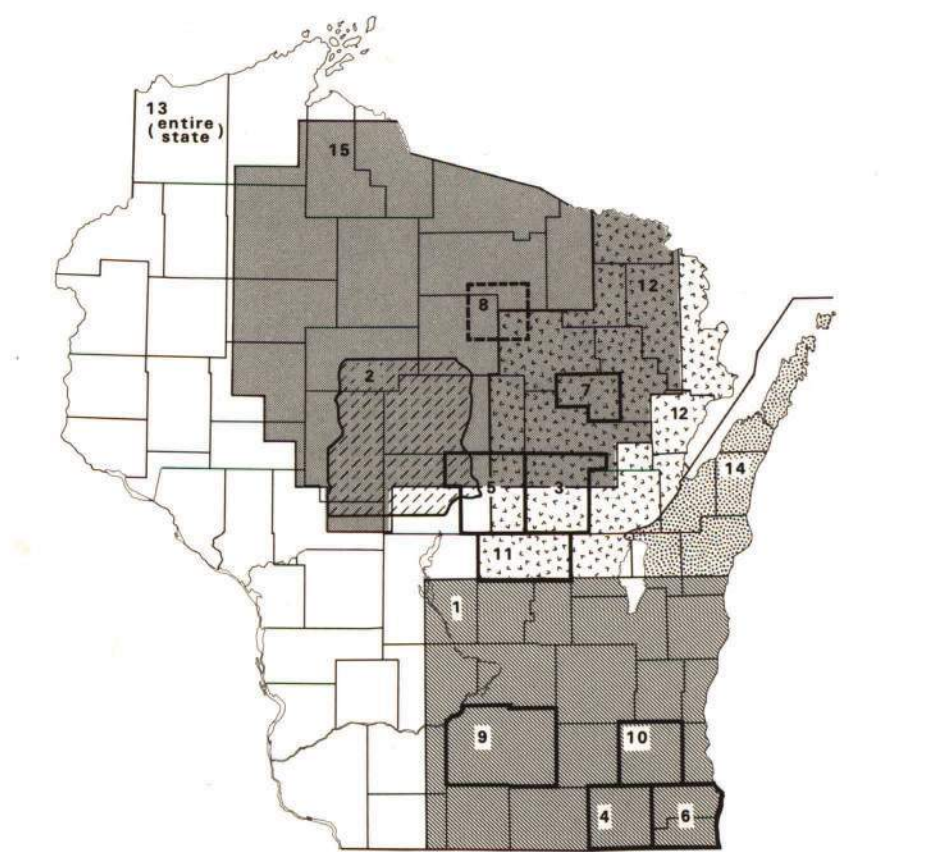
NO GLACIAL DEPOSITS



WATER

COMPILATION SOURCES

The summary map was compiled by David W. Hadley and James H. Patham from the following published and unpublished sources:



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FUNDING SOURCES

The preparation of this map was financed in part by the Wisconsin Geological and Natural History Survey, University of Wisconsin—Extension and the Wisconsin Department of Administration, and in part through a comprehensive planning grant from the U. S. Department of Housing and Urban Development.

MAP AVAILABILITY

Maps are available through the Wisconsin Geological and Natural History Survey Map Sales Office, University of Wisconsin-Extension, Madison.

Well Construction Report <i>WISCONSIN UNIQUE WELL NUMBER</i>				UD463		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A						
Property Owner SOHOLT, MARIE				Phone # (715)635-2280		1. Well Location				Fire # (if avail.)						
Mailing Address W7049 GREEN VALLEY R				City SPOONER		State WI		Zip Code 54801		Town of BEAVER BROOK						
County Washburn		Co. Permit #	Notification # 26078231		Completed 05-22-2007		Subdivision Name			Lot #	Block #					
Well Constructor (Business Name) ROGER E BEECROFT				Lic. # 182	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD)			Method Code						
Address ROGERS WELL DRILLING SHELL LAKE WI 54871-9801				Well Plan Approval #		Approval Date (mm-dd-yyyy)	°N	°W	NW	SE	Section 6	Township 38 N	Range 12 W			
Hicap Permanent Well #		Common Well #		Specific Capacity 4		2. Well Type Replacement										
Reason for replaced or reconstructed well ?						of previous unique well # constructed in										
3. Well serves 1 # of Private, potable				Hicap Well ? No		Hicap Property ? No		Construction Type Drilled								
Heat Exchange ___ # of drillholes				Hicap Potable ?												
4. Potential Contamination Sources - ON REVERSE SIDE																
5. Drillhole Dimensions and Construction Method						8. Geology										
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole			Lower Open Bedrock			Geology Codes		Type, Caving/Noncaving, Color, Hardness, etc...		From (ft.)	To (ft.)		
8.75	Surface	60	<u>Yes</u> Rotary - Mud Circulation			<u>No</u>			-	-	Y	-	SAND & GRAVEL		Surface	20
			Rotary - Air						-	-	Z	-	GRAVEL & CLAY		20	45
			Rotary - Air & Foam						-	-	Y	-	SAND & GRAVEL		45	60
			Drill-Through Casing Hammer													
			Reverse Rotary													
			Cable-tool Bit ___ in. dia...													
			Dual Rotary													
			Temp. Outer Casing ___ in. dia													
			Removed? ___ depth ft. (If NO explain on back side)													
6. Casing, Liner, Screen						9. Static Water Level				11. Well Is						
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)	To (ft.)	15 ft. below ground surface				18 in. above grade						
5	PVC SDR 17 EAGLE SOLVENT WELD FORMATION STABILIZER			Surface	56	10. Pump Test				Developed ?	Yes					
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)	Pumping level 20 ft. below surface				Disinfected ?	Yes					
5	PS SS 12			56	60	Pumping at 20 GP M for 1 Hrs.				Capped ?	Yes					
7. Grout or Other Sealing Material						12. Notified Owner of need to fill & seal ?										
Method						Filled & Sealed Well(s) as needed? Yes										
Kind of Sealing Material			From (ft.)	To (ft.)	# Sacks Cement	13. Constructor / Supervisory Driller			Lic #	Date Signed						
E-Z SEAL			Surface			RB				05-24-2007						
						Drill Rig Operator			Lic or Reg #	Date Signed						
						JB				05-22-2007						

4a. Potential Contamination Sources

Is the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		20	Septic or Holding, or POWTS Tank		50
			POWTS dispersal component (soil absorption unit or mound)		80

Comment:

Created On: 06-12-2007

Updated On: 06-12-2007

Review Status:

Draft Print
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Attachment 2:

1002-CPS-23
 Division of Industry Services
 P. O. Box 2658
 Madison, Wisconsin 53701
 Scott Walker, Governor
 Laura Gutierrez, Secretary

SOIL AND SITE EVALUATION – STORM

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Attach a complete site plan on paper not less than 8 1/2 x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent of slope, scale or dimensions, north arrow, and BM referenced to nearest road

Please print all information

Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)]

Property Owner K & B CONSTRUCTION LLC		Property Location PART OF Govt. Lot 4, 1/4 1/4 S 06 T 38 N R 12 E (or W)	
Property Owner' Mail Address P.O. Box 596		Lot # -	Block # -
City SPOONER, WI	State WI	Zip Code	Phone Number
Drainage area _____ <input type="checkbox"/> sq. ft. <input type="checkbox"/> acres		Hydraulic Application Test Method <input checked="" type="checkbox"/> Morphological Evaluation <input type="checkbox"/> Double Ring Infiltrometer <input type="checkbox"/> Other: (specify) _____	
Test site suitable for (check all that apply): <input type="checkbox"/> Site not suitable; <input type="checkbox"/> Bioretention; <input type="checkbox"/> Subsurface Dispersal System; <input type="checkbox"/> Reuse; <input type="checkbox"/> Irrigation; <input type="checkbox"/> Other _____		Soil Moisture Date of soil borings: 02-15-23 USDA-NRCS WETS Value: <input type="checkbox"/> Dry = 1; <input type="checkbox"/> Normal = 2; <input type="checkbox"/> Wet = 3.	

1 #OBS. Pit Boring Ground surface elevation _____ ft. Elevation of limiting factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
	0-12	10YR 2/2	-	sl	zfsbk	mvfr	cs	0	-	
	12-39	10YR 4/4	-	grly ls	0sg	ml	cs	35%	-	
	39-43	7.5YR 4/4	-	grly ls	0sg	ml	cs	30%	-	
	43-72	7.5YR 4/4	-	s	0sg	ml	gw	2%	-	
	72-88	7.5YR 5/6	-	s	0sg	ml	cn	2%	-	
	88-109	7.5YR 4/4	-	s	0sg	ml	cs	0%	-	
	109-130	7.5YR 4/6	-	s	0sg	ml	cs	0%	-	
Comments: 130-141 7.5YR 7/2 m3p 7.5YR 5/6 & 7.5YR 4/2 s 0sg ml - - - WATER @ 141"										

2 #OBS. Pit Boring Ground surface elevation _____ ft. Elevation of limiting factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-12	10YR 2/2	-	sl	zfsbk	mvfr	cs	0	-	
2	12-36	7.5YR 3/4	-	grly ls	0sg	ml	gs	35%	-	
3	36-118	7.5YR 4/4	-	s	0sg	ml	-	10%	-	
HORIZON 3 is STRATIFIED SANDY OUTWASH w/ LAMELLA OF FS										
Comments: WATER @ 118"										
Name (Please Print) MARY JO HUPPERT		Signature <i>Mary Jo Huppert</i>				Credential Number 224832				
Address 25720 FIREFLY LANE, WEBSTER, WI 54893		Date Evaluation Conducted 02-15, 2023				Telephone Number 715-426-1775				

SBD-10793 (R01/17)

WDNR
September 2017

3 #OBS. Pit Boring Ground surface elevation. _____ ft. Elevation of limiting factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-12	10YR 2/2	-	ls	lf sbk	mvfr	cs	-	-	
2	12-33	7.5YR 3/3	-	ls	0sg	ml	gw	5%	-	
3	33-46	7.5YR 3/4	-	s	0sg	ml	as	-	-	
4	46-84	7.5YR 3/3	-	s	0sg	dl	gs	-	-	
5	84-116	7.5YR 7/2	M3P 7.5YR 9/8	grly ls	0sg	ml	-	35%	-	
		116 - SANDSTONE								
		HORIZON 4 HAS A LAYER OF FS W/ REDOX								

Comments:

4 #OBS. Pit Boring Ground surface elevation. _____ ft. Elevation of limiting factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-10	10YR 2/2	-	ls	0sg	ml	gs	0%	-	
2	10-31	7.5YR 3/3	-	ls	0sg	ml	gw	20%	-	
3	31-44	7.5YR 3/4	-	s	0sg	ml	aw	30%	-	
4	44-58	7.5YR 4/4	-	s	0sg	ml	as	0%	-	
5	58-66	7.5YR 4/3	fif 7.5YR 4/6	fs	0m	mvfr	as	0%	-	
6	66-76	7.5YR 4/4	-	s	0sg	ml	cs	0%	-	
7	76-85	7.5YR 4/4	-	sicl	0m	mfr	as	0%	-	
		8-Comments: 85-116 7.5YR 4/6 fzf 7.5YR 6/2 fs om mvfr ai 0% -								
		116 - WATER OBSERVED ON TOP OF FRACTURED SANDSTONE.								

5 #OBS. Pit Boring Ground surface elevation. _____ ft. Elevation of limiting factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-8	10YR 2/2	-	sl	zf sbk	mvfr	cs	-	-	
2	8-30	7.5YR 3/4	-	grly ls	0sg	ml	gw	35%	-	
3	30-120	7.5YR 4/4	-	s	0sg	ml	-	10%	-	
		HORIZON 3 IS STRATIFIED LAYERS OF OUTWASH								
		WATER OBSERVED @ 120"								

Comments:

6 #OBS. Pit Boring Ground surface elevation. _____ ft. Elevation of limiting factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
1	0-10	7.5YR 2.5/3	-	ls	0sg	ml	cs	-	-	
2	10-22	7.5YR 3/2	-	ls	0sg	ml	cw	-	-	
3	22-65	7.5YR 3/4	-	ls	0sg	ml	cw	-	-	
4	65-72	7.5YR 4/4	-	grly ls	0sg	ml	cw	35%	-	
5	72-90	7.5YR 4/6	-	grly s	0sg	ml	cs	35%	-	
6	90-118		M3P 7.5YR 6/8	s	0sg	ml	-	25%	-	
		WATER @ 118"								

Comments: HORIZONS 5 & 6 HAVE SOME LAYERS OF COS.

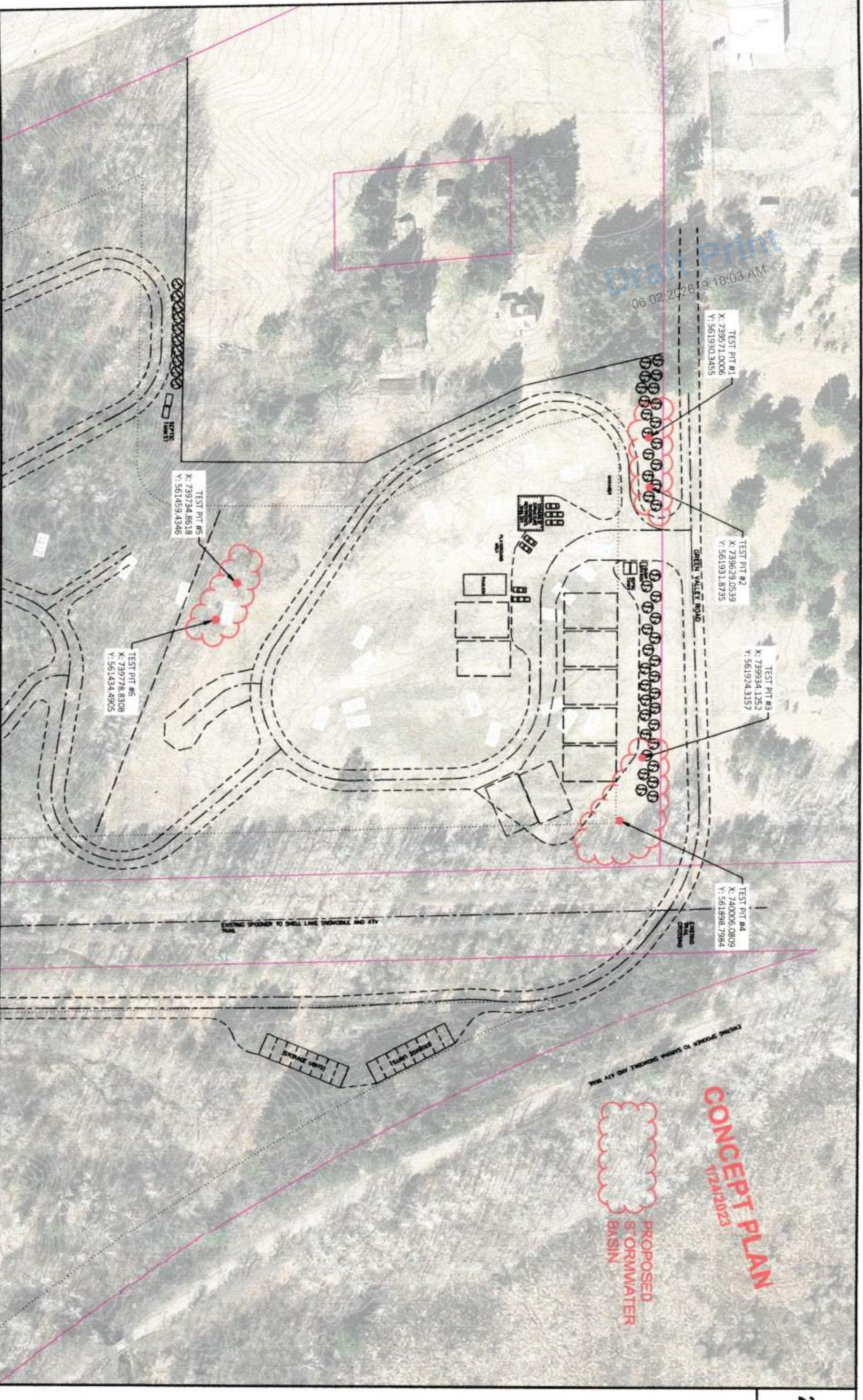
SBD-10793 (R 7/17)

Overall Site Comments:

WDNR
September 2017

CAMPGROUND
TOWN OF BEAVER BROOK

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PROJECT NO: NWBE 2224
 HWY: GREEN VALLEY ROAD
 COUNTY: WASHBURN
 PROJECT OVERVIEW
 SHEET E

FILE NAME: W:\NWBE_PROJECTS\DESIGN\2224_BUSE-BLAVR\BLOC\CRG-OW\PL\CD-22\WHE\TR\PLAN\2224_00_2224.DWG
 LAYOUT NAME: 01-pe
 PLOT DATE: 2/4/2023 2:18 PM
 PLOT BY: SHAUN TORRES
 PLOT NAME:
 PLOT SCALE: 1 IN. = 100 FT.
 W:\S01\CAD\DS SHEET E2

Real Estate Washburn County Property Listing

Today's Date: 2/19/2023

Property Status: Current

Created On: 3/16/2007 10:35:00 AM





 **Description** Updated: 4/29/2020

Tax ID:	3697
PIN:	65-008-2-38-12-06-5 05-004-001000
Legacy PIN:	65 008 2 38 12 06 1 3 0010
Map ID:	BB 135
Municipality:	(008) Town of Beaverbrook
STR:	S06 T38N R12W
Description:	PT GOV LOT 4 DOC# 390121 WD
Recorded Acres:	29.490
Calculated Acres:	0.000
Lottery Claims:	0
First Dollar:	No
Zoning:	(AG) Agricultural
ESN:	

 **Tax Districts** Updated: 3/16/2007

1	State
65	County
008	Town of Beaver Brook
655474	Spooner School
001700	Tech College


 **Recorded Documents** Updated: 1/2/2019

 Warranty Deed	
Date Recorded: 4/21/2020	390121
 Personal Rep Deed	
Date Recorded: 2/6/2019	384583
 Quit Claim Deed	
Date Recorded: 12/31/2018	384215
 Land Contract	
Date Recorded: 4/30/2008	330842

 **Ownership** Updated: 4/29/2020

K & B CONSTRUCTION LLC SPOONER WI

Billing Address:	Mailing Address:
K & B CONSTRUCTION LLC	K & B CONSTRUCTION LLC
PO BOX 596	PO BOX 596
SPOONER WI 54801-0596	SPOONER WI 54801-0596

 **Site Address** * indicates Private Road
 W 7049 GREEN VALLEY RD Spooner 54801

 **Property Assessment** Updated: 6/10/2022

2023 Assessment Detail

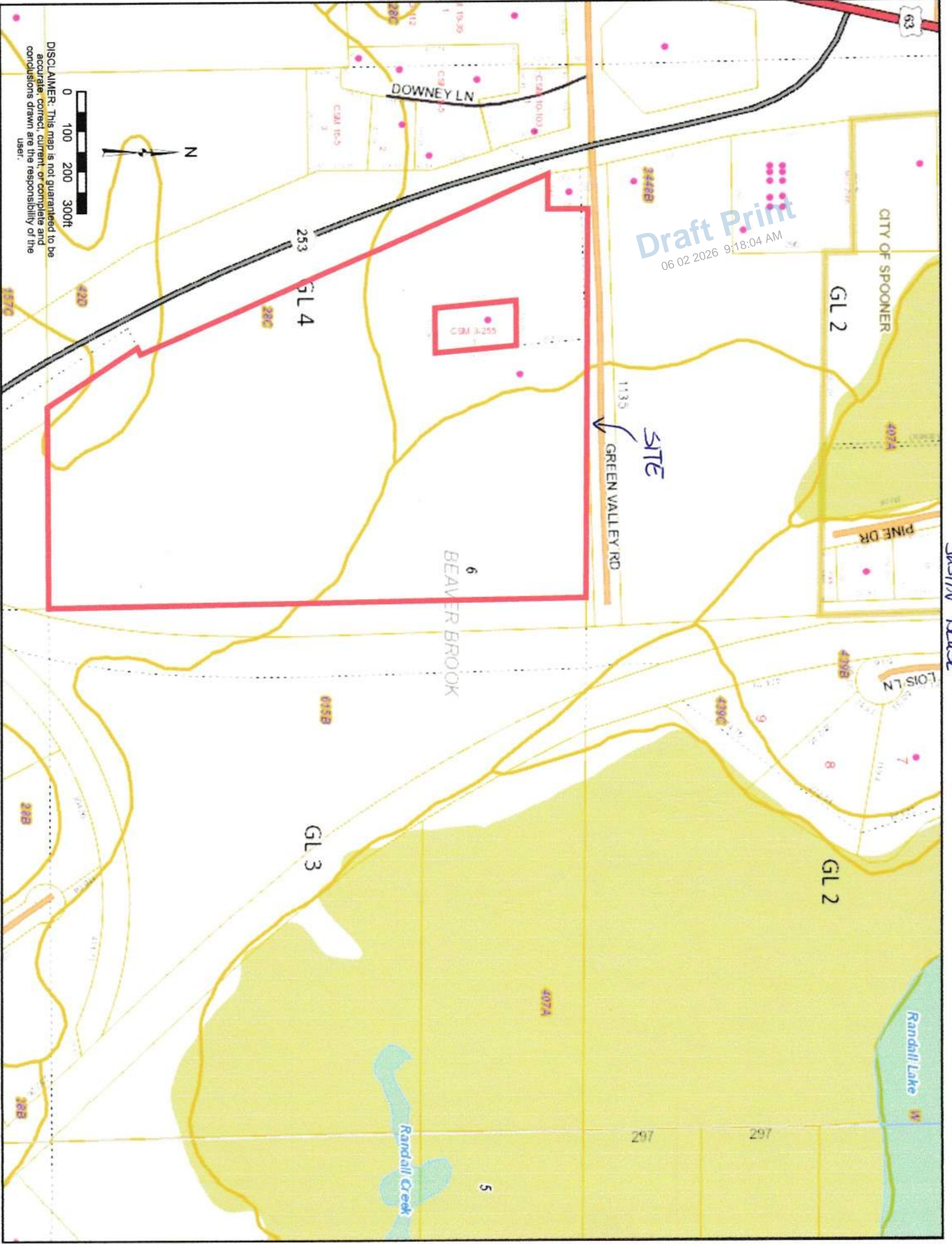
Code	Acres	Land	Imp.
G1-Residential	2.000	14,300	0
G4-Agricultural	26.890	3,500	0
G5-Undeveloped	0.600	100	0

2-Year Comparison

	2022	2023	Change
Land:	17,900	17,900	0.0%
Improved:	0	0	0.0%
Total:	17,900	17,900	0.0%

 **Property History**

N/A



DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.

JUSTIN BLUSE

Wisconsin Department of Safety and Professional Services
Division of Industry Services
4822 Madison Yards Way
PO Box 7302
Madison, WI 53707



Phone: 608-266-2112
Web: <http://dsps.wi.gov>
Email: dsps@wisconsin.gov

Program: Plumbing
Web: <https://dsps.wi.gov/Pages/Programs/Plumbing>

Soil and Site Evaluation – Stormwater Infiltration

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)]

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Attach a complete site plan on paper not less than 8 ½ x 11 inches in size. Plan must include, but is not limited to: vertical and horizontal reference point (BM); direction and percent of slope; scale or dimensions; north arrow; and BM referenced to nearest road. PLEASE PRINT ALL INFORMATION		COUNTY WASHBURN
PROPERTY OWNER JUSTIN BLUES		PARCEL ID TAX ID: 3704
PROPERTY OWNER'S MAILING ADDRESS		PROPERTY LOCATION PART OF Govt. Lot 4 , ___ ¼, ___ ¼, S ___, T ___ N, R ___ W Lot #, Block #, Subd. Name or CSM #: _____ Municipality: BEAVERBROOK <input type="checkbox"/> City <input type="checkbox"/> Village <input checked="" type="checkbox"/> Town Nearest Road: GREEN VALLEY ROAD
CITY, STATE, ZIP CODE SPOONER, WI 54801	PHONE	HYDRAULIC APPLICATION TEST METHOD <input checked="" type="checkbox"/> Morphological Evaluation <input type="checkbox"/> Double Ring Infiltrometer <input type="checkbox"/> Other: (specify) _____
Drainage area _____ <input type="checkbox"/> sq. ft. <input type="checkbox"/> acres Test site suitable for (check all that apply): <input type="checkbox"/> Site not suitable <input type="checkbox"/> Bioretention <input type="checkbox"/> Reuse <input type="checkbox"/> Subsurface Dispersal System <input type="checkbox"/> Irrigation <input type="checkbox"/> Other _____		SOIL MOISTURE Date of soil borings: 08-25-2025 USDA-NRCS WETS VALUE: <input type="checkbox"/> Dry = 1 <input type="checkbox"/> Normal = 2 <input type="checkbox"/> Wet = 3

7 #OBS. Pit Boring Ground Surface Elevation _____ ft. Elevation of Limiting Factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
1	0-9	7.5YR2.5/2	—	ls	0sq	ds	cw	0		
2	9-24	7.5YR3/4	—	ls	0sq	dl	cw	10-15%		
3	24-120	7.5YR4/4	—	s	0sq	ml	—	5%		

Comments:
*Horizon 3 has some layers of sl - outwash
 some disturbance in Horizon 1*

8 #OBS. Pit Boring Ground Surface Elevation _____ ft. Elevation of Limiting Factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
1	0-16	7.5YR2.5/2	—	ls	lf sbk	ds	cw	0		
2	16-48	7.5YR4/4	—	grly s	0sg	dl	cs	30%		
3	48-72	7.5YR4/6	fzf 7.5YR3/4	s	0sg	ml	cw	5%		
4	72-84	7.5YR4/4	fzf 7.5YR3/4	ls	0sg	ml	—	2%		
	84-	water								
Horizon 1 disturbed										
Comments:										

9 #OBS. Pit Boring Ground Surface Elevation _____ ft. Elevation of Limiting Factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
1	0-9	7.5YR2.5/2	—	sl	lf.msbk	ds	cw	0		
2	9-120	5YR3/4	fzf 2.5YR3/4	sl	lmsbk	mfr	—	25-30		
Comments: some wc spots in Horizon 2 of sl (massive) w/ layers of grlys - outwash										

10 #OBS. Pit Boring Ground Surface Elevation _____ ft. Elevation of Limiting Factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
1	0-9	7.5YR4/4	—	ls	lf sbk	ds	ai	0		
2	9-32	7.5YR4/4	—	grlys	0sg	dl	cw	5%		
3	32-95	7.5YR4/4	—	s	0sg	ml	cs	5%		
4	95-110	7.5YR4/6	mzd 7.5YR3/4	s	0sg	ml	ci	5%		
5	110-180	5YR3/4	mzd 2.5YR3/4	sl	lm-csbk	mfr	—	—		
	180-	water								
Comments: Horizon 4 has clumps of 5YR3/4 sl										

Wisconsin Department of Safety and Professional Services
 Division of Industry Services
 4822 Madison Yards Way
 PO Box 7302
 Madison, WI 53707



Phone: 608-266-2112
 Web: <http://dsps.wi.gov>
 Email: dsps@wisconsin.gov

Program: Plumbing
 Web: <https://dsps.wi.gov/Pages/Programs/Plumbing>

Soil and Site Evaluation – Stormwater Infiltration

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)]

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Attach a complete site plan on paper not less than 8 ½ x 11 inches in size. Plan must include, but is not limited to: vertical and horizontal reference point (BM); direction and percent of slope; scale or dimensions; north arrow; and BM referenced to nearest road. PLEASE PRINT ALL INFORMATION		COUNTY WASHBURN
PROPERTY OWNER JUSTIN BLUES		PARCEL ID TAX ID: 3704
PROPERTY OWNER'S MAILING ADDRESS CITY, STATE, ZIP CODE SPOONER, WI 54801		PROPERTY LOCATION Govt. Lot ____, ____, ____, S ____, T ____, R W Lot #, Block #, Subd. Name or CSM #: _____ Municipality: BEAVERBROOK <input type="checkbox"/> City <input type="checkbox"/> Village <input checked="" type="checkbox"/> Town Nearest Road: GREEN VALLEY ROAD
Drainage area _____ <input type="checkbox"/> sq. ft. <input type="checkbox"/> acres Test site suitable for (check all that apply): <input type="checkbox"/> Site not suitable <input type="checkbox"/> Bioretention <input type="checkbox"/> Reuse <input type="checkbox"/> Subsurface Dispersal System <input type="checkbox"/> Irrigation <input type="checkbox"/> Other _____		HYDRAULIC APPLICATION TEST METHOD <input checked="" type="checkbox"/> Morphological Evaluation <input type="checkbox"/> Double Ring Infiltrometer <input type="checkbox"/> Other: (specify) _____
PHONE _____		SOIL MOISTURE Date of soil borings: _____ USDA-NRCS WETS VALUE: <input type="checkbox"/> Dry = 1 <input type="checkbox"/> Normal = 2 <input type="checkbox"/> Wet = 3

#OBS.	Pit	Boring	Ground Surface Elevation	ft.	Elevation of Limiting Factor	ft.				
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
1	0-12	7.5YR4/4	—	fill/s	Osg	dl	gw	0		
2	12-24	7.5YR2.5/2	—	sl	H-msbrk	ds	gw	0		
3	24-32	7.5YR4/4	—	s	Osg	dl	aw	2		
4	32-138	7.5YR4/4	fzf 7.5YR3/4	s	Osg	dl	as	5		
	138-	water								

Comments:
stratified layers

Camp Ride Nightly & Seasonal Campground

12 #OBS. Pit Boring Ground Surface Elevation _____ ft. Elevation of Limiting Factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
1	0-12	7.5YR 4/4	—	fill/ls	Osg	dl	cw	0		
2	12-21	7.5YR 3/4	—	ls	Osg	dl	qs	0		
3	21-84	7.5YR 4/4	—	s	Osg	dl	gs	5		
4	84-120	7.5YR 4/6	mzd 5YR 4/6	s	Osg	ml	—	5		
	120-	water								
Comments:										

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13 #OBS. Pit Boring Ground Surface Elevation _____ ft. Elevation of Limiting Factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
1	0-12	7.5YR 2.5/2	—	ls	H-msbk	ds	cs	0		
2	12-86	7.5YR 4/4	mzf 7.5YR 3/4	s	Osg	ml	gw	10%		
3	86-120	7.5YR 4/4	mzd 5YR 3/4	qly s	Osg	ml	—	20-25%		
Comments:										

14 #OBS. Pit Boring Ground Surface Elevation _____ ft. Elevation of Limiting Factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
1	0-36	7.5YR 3/3	—	qly cos	Osg	dl	gw	20%		
2	36-90	7.5YR 4/6	m/f 7.5YR 3/4	sd	Osg	ml	gw	5%		
3	90-120	7.5YR 4/4	mzd 5YR 3/4	s	Osg	ml	—	20%		
Comments:										

Camp Ride Nightly & Seasonal Campground

#OBS.	<input type="checkbox"/> Pit	<input type="checkbox"/> Boring	Ground Surface Elevation		Elevation of Limiting Factor					
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.

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Comments:

#OBS.	<input type="checkbox"/> Pit	<input type="checkbox"/> Boring	Ground Surface Elevation		Elevation of Limiting Factor					
Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.

Comments:

Overall Site Comments:

<u>MARY JO HUPPERT</u> Name (Please Print)	<u>Mary Jo Huppert</u> Signature	<u>224832</u> Credential Number
<u>25720 FIREFLY LN., WEBSTER, WI 54893</u> Address	<u>09-08-2025</u> Date Evaluation Conducted	<u>715-426-1775</u> Phone Number

Well Construction Report WISCONSIN UNIQUE WELL NUMBER				AAX542		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A
Property Owner BLATTERMAN, KARL				Phone #		1. Well Location				Fire # (if avail.)
Mailing Address PO BOX 596						Town of BEAVER BROOK				7053
City SPOONER				State WI	Zip Code 54801	Street Address or Road Name and Number 7053 GREEN VALLEY ROAD SPOONER WI.				
County Washburn	Co. Permit #	Notification # 9147920602	Completed 05-22-2023	Subdivision Name			Lot #	Block #		
Well Constructor (Business Name) JEREMY BEECROFT WELL DRILLING			Lic. # 6457	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD)			Method Code	
Address W7414 MILLER RD SPOONER WI 54801			Well Plan Approval #		SW	NE	Section 6	Township 38 N	Range 12 W	
			Approval Date (mm-dd-yyyy)		or Govt Lot #					
Hicap Permanent Well #		Common Well #	Specific Capacity 0			2. Well Type Replacement				
						of previous unique well # _____ constructed in _____				
						Reason for replaced or reconstructed well ? SLOW WELL				
3. Well serves 1 # of HOME			Hicap Well ?		No		Construction Type Drilled			
Private, potable			Hicap Property ?		No					
Heat Exchange ___ # of drillholes			Hicap Potable ?		No					
4. Potential Contamination Sources - ON REVERSE SIDE										
5. Drillhole Dimensions and Construction Method						8. Geology				
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole	Lower Open Bedrock	Geology Codes	Type, Caving/Noncaving, Color, Hardness, etc...			From (ft.)	To (ft.)
8.75	Surface	78	<u>Yes</u> Rotary - Mud Circulation	<u>No</u>	S	S-SAND			Surface	25
			<u>No</u> Rotary - Air	<u>No</u>	X	X-SAND & CLAY			25	60
			<u>No</u> Rotary - Air & Foam	<u>No</u>	S	S-SAND			60	78
			<u>No</u> Drill-Through Casing Hammer							
			<u>No</u> Reverse Rotary							
			<u>No</u> Cable-tool Bit ___ in. dia...	<u>No</u>						
			<u>No</u> Dual Rotary	<u>No</u>						
			<u>No</u> Temp. Outer Casing ___ in. dia							
			<u>No</u> Removed? ___ depth ft. (If NO explain on back side)							
6. Casing, Liner, Screen					9. Static Water Level			11. Well Is		
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)	To (ft.)	24 ft. below ground surface			18 in. above grade	
5	SDR17 PVC CASING WELDED ASTM F480			Surface	73	10. Pump Test			Developed ? Yes	
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)	Pumping level 55 ft. below surface			Disinfected ? Yes	
5	15 SLOT SS SCREEN			73	78	Pumping at 25 GP M for 1 Hrs.			Capped ? Yes	
7. Grout or Other Sealing Material					Pumping Method ? Airlift					
Method TREMIE PIPE - PUMPED										
Kind of Sealing Material		From (ft.)	To (ft.)	# Sacks Cement	12. Notified Owner of need to fill & seal ? Yes					
EZ SEAL		Surface	68	7 S	Filled & Sealed Well(s) as needed? Yes					
					13. Constructor / Supervisory Driller		Lic #	Date Signed		
					JB		6457	05-22-2023		
					Drill Rig Operator		Lic or Reg #	Date Signed		
					JF		8979	05-22-2023		

4a. Potential Contamination Sources

Is the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
POWTS holding component (also known as holding tank)		30	POWTS dispersal component (soil absorption unit or mound)		110

Comment: 2/16/24 NON ISSUED - MISSING LANDFILL VARIANCE. FOLLOW UP REQUIREMENT: APPLY FOR AFTER-THE-FACT LANDFILL VARIANCE

Created On: 05-22-2023

Updated On: 02-16-2024

Review Status: APPROVED

Draft Print
06 02 2026 9:18:07 AM

Well Construction Report WISCONSIN UNIQUE WELL NUMBER				VF292		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A	
Property Owner AMMANN, DUANE				Phone #		1. Well Location				Fire # (if avail.)	
Mailing Address N4685 CHICAGO JCT RD						Town of BEAVER BROOK				N4685	
City SPOONER				State WI	Zip Code 54801	Street Address or Road Name and Number					
County Washburn				Co. Permit #	Notification #	Subdivision Name		Lot #	Block #		
Completed 06-18-2012						OLD CHICAGO RD					
Well Constructor (Business Name) D M B DRILLING CO INC				Lic. # 6749	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD) 45.8036 °N -91.8908 °W		Method Code GCD013		
Address PO BOX 518 SHELL LAKE WI 54871				Well Plan Approval #		NE	SE	Section 6	Township 38 N	Range 12 W	
				Approval Date (mm-dd-yyyy)		or Govt Lot #					
Hicap Permanent Well #		Common Well #		Specific Capacity		2. Well Type New Well					
						of previous unique well #				constructed in	
						Reason for replaced or reconstructed well ?					
3. Well serves 3 # of GEOTHERMAL WELLS				Hicap Well ? No							
Loop(heat pump drillhole)				Hicap Property ? No							
Heat Exchange ___ # of drillholes				Hicap Potable ?						Construction Type Drilled	
4. Potential Contamination Sources - ON REVERSE SIDE											
5. Drillhole Dimensions and Construction Method											
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole			Lower Open Bedrock		8. Geology			
6	Surface	150	Yes Rotary - Mud Circulation			No		Geology Codes			
			Rotary - Air					Type, Caving/Noncaving, Color, Hardness, etc...			
			Rotary - Air & Foam					- - Y - SAND & GRAVEL		From (ft.) To (ft.)	
			Drill-Through Casing Hammer							Surface 150	
			Reverse Rotary								
			Cable-tool Bit ___in. dia...								
			Dual Rotary								
			Temp. Outer Casing ___in. dia								
			Removed? ___depth ft. (If NO explain on back side)								
6. Casing, Liner, Screen											
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)	To (ft.)	9. Static Water Level				11. Well Is	
0.75	OIL CREEK SDR 11 160 PSI FACTORY UBEND			Surface	150	35 ft. below ground surface				___ in. ___ Grade	
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)	10. Pump Test				Developed ?	
						Pumping level ___ ft. below surface				Disinfected ?	
						Pumping at ___ GP for ___ Hrs.				Capped ?	
						Pumping Method ?					
7. Grout or Other Sealing Material											
Method TREMIE PRESSURE-PER HOLE											
Kind of Sealing Material		From (ft.)	To (ft.)	# Sacks Cement		12. Notified Owner of need to fill & seal ?					
EZ-SEAL		Surface	150			Filled & Sealed Well(s) as needed?					
13. Constructor / Supervisory Driller											
DMB				Lic #		Date Signed					
Drill Rig Operator				Lic or Reg #		Date Signed					

4a. Potential Contamination Sources

Is the well located in floodplain ?

Type	Qualifier	Distance
Building Overhang		100

Comment: 3 GEOTHERMAL WELLS X 6 SACKS CEMENT PER HOLE - 18 SACKS TOTAL

Created On: 07-24-2012

Updated On: 06-26-2020

Review Status:

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06 02 2026 9:18:08 AM

Well Construction Report WISCONSIN UNIQUE WELL NUMBER				RQ035		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A
Property Owner ANDERSON, CHRIS				Phone #		1. Well Location				Fire # (if avail.)
Mailing Address W6681 SMOKY DR						Town of BEAVER BROOK				
City SPOONER				State WI	Zip Code 54801	Street Address or Road Name and Number				
County Washburn	Co. Permit #	Notification #	Completed 07-25-2003	Subdivision Name			Lot #	Block #		
Well Constructor (Business Name) BUTTERFIELD, TIM DRILLING INC			Lic. # 6900	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD)			Method Code	
Address PO BOX 530 SOMERSET WI 54024-0530			Well Plan Approval #		SE	NE	Section 6	Township 38 N	Range 12 W	
			Approval Date (mm-dd-yyyy)		or Govt Lot #					
Hicap Permanent Well #		Common Well #	Specific Capacity 2.5		2. Well Type New Well			of previous unique well # constructed in		
Hicap Well ? No		Hicap Property ? No		Reason for replaced or reconstructed well ?						
Heat Exchange ___ # of drillholes		Hicap Potable ?		Construction Type Drilled						
4. Potential Contamination Sources - ON REVERSE SIDE										
5. Drillhole Dimensions and Construction Method						8. Geology				
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole	Lower Open Bedrock	Geology Codes	Type, Caving/Noncaving, Color, Hardness, etc...		From (ft.)	To (ft.)	
4	Surface	62	Rotary - Mud Circulation		- - S -	SAND		Surface	25	
			<u>Yes</u> Rotary - Air	<u>No</u>	T - Y -	LT BRN SAND & GRAVEL		25	62	
			Rotary - Air & Foam							
			Drill-Through Casing Hammer							
			Reverse Rotary							
			Cable-tool Bit ___ in. dia...							
			Dual Rotary							
			Temp. Outer Casing ___ in. dia							
			Removed? ___ depth ft. (If NO explain on back side)							
6. Casing, Liner, Screen				9. Static Water Level			11. Well Is			
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly		From (ft.)	To (ft.)	28 ft. below ground surface			14 in. above grade		
4	NEW P&E BLACK WELDED 10.79#/FT ASTMA53B SAWHILL		Surface	58	10. Pump Test			Developed ? Yes		
Dia. (in.)	Screen type, material & slot size		From (ft.)	To (ft.)	Pumping level 32 ft. below surface			Disinfected ? Yes		
2	12 SLOT STAINLESS STEEL		58	62	Pumping at 10 GP M for 1 Hrs.			Capped ? Yes		
7. Grout or Other Sealing Material				Pumping Method ?						
Method MOUNDED				12. Notified Owner of need to fill & seal ?						
Kind of Sealing Material		From (ft.)	To (ft.)	# Sacks Cement	Filled & Sealed Well(s) as needed?			No		
BENTONITE		Surface	20	2 S	NEW CONST					
				13. Constructor / Supervisory Driller			Lic #	Date Signed		
				TIB				08-08-2003		
				Drill Rig Operator			Lic or Reg #	Date Signed		
				TIB				08-08-2003		

4a. Potential Contamination Sources

Is the well located in floodplain ? No

Type	Qualifier	Distance
Building Overhang		25

Comment:

Created On: 10-08-2003

Updated On: 04-05-2004

Review Status:

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06 02 2026 9:18:08 AM

Well Construction Report WISCONSIN UNIQUE WELL NUMBER				UD463		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A	
Property Owner SOHOLT, MARIE				Phone # (715)635-2280		1. Well Location				Fire # (if avail.)	
Mailing Address W7049 GREEN VALLEY R						Town of BEAVER BROOK					
City SPOONER				State WI	Zip Code 54801	Street Address or Road Name and Number					
County Washburn	Co. Permit #	Notification # 26078231	Completed 05-22-2007	Subdivision Name			Lot #	Block #			
Well Constructor (Business Name) ROGER E BEECROFT			Lic. # 182	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD)			Method Code		
Address ROGERS WELL DRILLING SHELL LAKE WI 54871-9801			Well Plan Approval #		NW	SE	Section 6	Township 38 N	Range 12 W		
			Approval Date (mm-dd-yyyy)		or Govt Lot #						
Hicap Permanent Well #		Common Well #	Specific Capacity 4			2. Well Type Replacement					
						of previous unique well # constructed in					
						Reason for replaced or reconstructed well ?					
3. Well serves 1 # of Private, potable			Hicap Well ? No		Construction Type Drilled						
Heat Exchange ___ # of drillholes			Hicap Property ? No								
			Hicap Potable ?								
4. Potential Contamination Sources - ON REVERSE SIDE											
5. Drillhole Dimensions and Construction Method						8. Geology					
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole	Lower Open Bedrock	Geology Codes	Type, Caving/Noncaving, Color, Hardness, etc...			From (ft.)	To (ft.)	
8.75	Surface	60	<u>Yes</u> Rotary - Mud Circulation	<u>No</u>	- - Y -	SAND & GRAVEL			Surface	20	
			Rotary - Air		- - Z -	GRAVEL & CLAY			20	45	
			Rotary - Air & Foam		- - Y -	SAND & GRAVEL			45	60	
			Drill-Through Casing Hammer								
			Reverse Rotary								
			Cable-tool Bit ___ in. dia...								
			Dual Rotary								
			Temp. Outer Casing ___ in. dia								
			Removed? ___ depth ft. (If NO explain on back side)								
6. Casing, Liner, Screen				9. Static Water Level			11. Well Is				
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)	To (ft.)	15 ft. below ground surface			18 in. above grade		
5	PVC SDR 17 EAGLE SOLVENT WELD FORMATION STABILIZER			Surface	56	10. Pump Test			Developed ? Yes		
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)	Pumping level 20 ft. below surface			Disinfected ? Yes		
5	PS SS 12			56	60	Pumping at 20 GP M for 1 Hrs.			Capped ? Yes		
7. Grout or Other Sealing Material							12. Notified Owner of need to fill & seal ?				
Method							Filled & Sealed Well(s) as needed? Yes				
Kind of Sealing Material		From (ft.)	To (ft.)	# Sacks Cement		13. Constructor / Supervisory Driller			Lic #	Date Signed	
E-Z SEAL		Surface				RB				05-24-2007	
							Drill Rig Operator			Lic or Reg #	Date Signed
							JB				05-22-2007

4a. Potential Contamination Sources

Is the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		20	Septic or Holding, or POWTS Tank		50
			POWTS dispersal component (soil absorption unit or mound)		80

Comment:

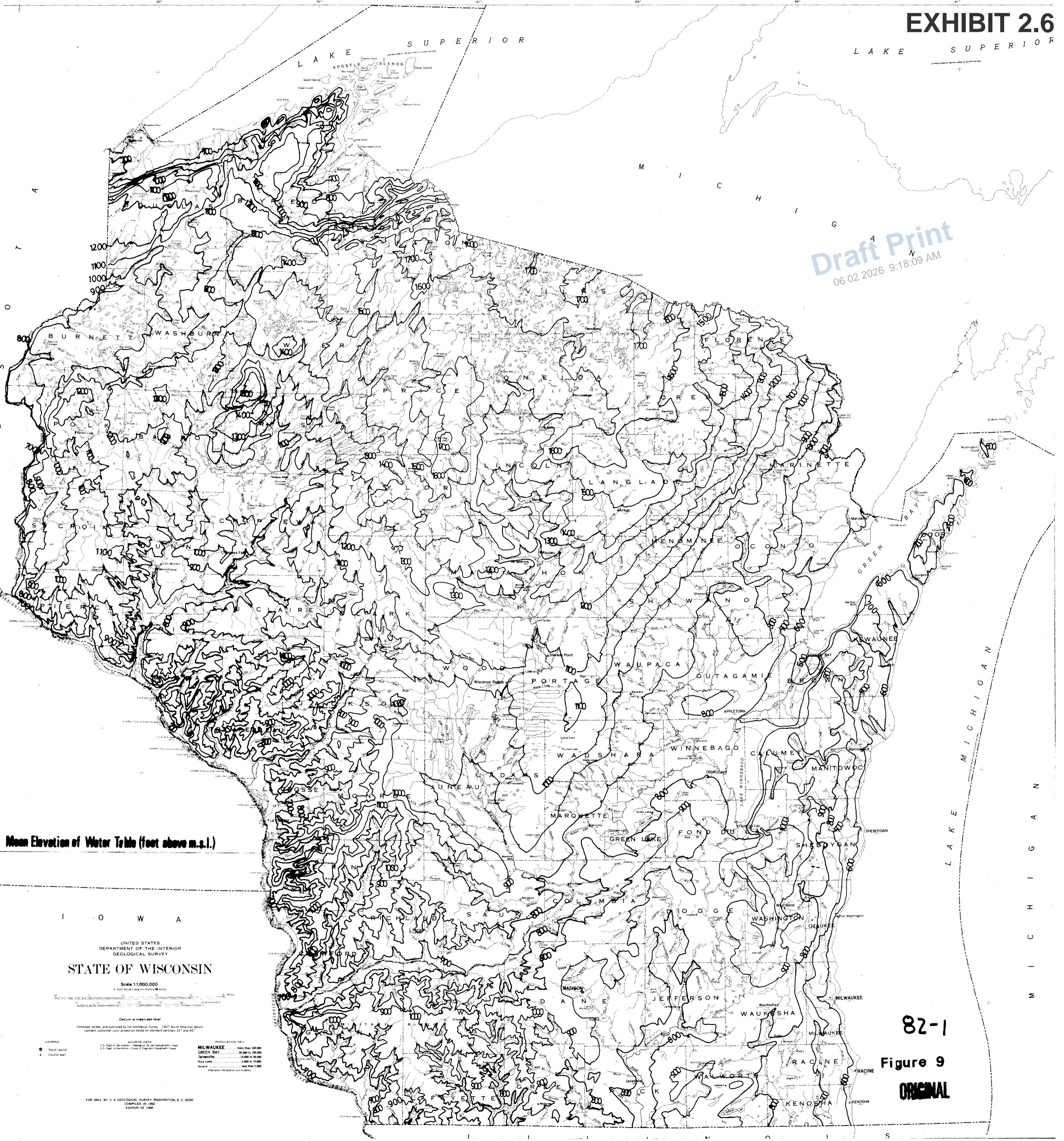
Created On: 06-12-2007

Updated On: 06-12-2007

Review Status:

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06 02 2026 9:18:09 AM

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06 02 2026 9:18:09 AM



Mean Elevation of Water Table (feet above m.s.l.)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
STATE OF WISCONSIN
Scale 1:1,000,000
1 inch equals approximately 80 miles

LEGEND

State capital
County seat

SOURCE DATA
U.S. Dept. of the Interior—Geological Survey hydrographic maps
U.S. Dept. of the Army—Corps of Engineers topographic maps

POPULATION KEY
MILWAUKEE more than 100,000
GREEN BAY 50,000 to 100,000
JANESVILLE 25,000 to 50,000
Other cities 5,000 to 25,000
Other places less than 5,000
Population indicated on city or town

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EDITION OF 1966

82-1

Figure 9

ORIGINAL

From: King, Ruth M - DNR <Ruth.King@wisconsin.gov>
Sent: Monday, 27 April, 2026 3:01 PM
To: Gary Colbert
Subject: Navigability
Attachments: [Screenshot 2026-04-27 144710.png](#); [Screenshot 2026-04-27 145930.png](#)

Hi Gary;

Dan said that the stream wouldn't be navigable until that wide spot that you can see on the air photo so I just made a few measurements – is this similar to what you were doing?

Ruth M King

Nonpoint Source Coordinator/Storm Water Specialist – Bureau of Watershed Management
Wisconsin Department of Natural Resources
810 W. Maple St. Spooner, WI 54801
Cell Phone: 715-416-0266
ruth.king@wisconsin.gov



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Layers Map Search Advanced Search

Hydro Layers
Transportation Layers
 USA Major Highways
 Roads
 Railroads
Surveyor Layers
Zoning/Land Mgmt Layers
 FIRM Panels
 LOMA Locations
 Flood Hazard Zones
 Soils
 DNR Wetlands
 DNR Wetlands Undelineated
 Zoning Districts
 Extraterritorial Subdivision Area
 Shoreland Zoning (300 ft)
 Shoreland Zoning (1000 ft)
District Layers
Public Land Layers
Emergency Service Layers
Trail Layers
 ATV and Snow Trails
 Horse Trail
 Totogatic Ski Trail
 Nordic Ski Trail
Elevation Layers
 Contours 10ft
 Contour 2ft
 Slopes Greater than 20%
Imagery
 Aerial Imagery 2024
 Aerial Imagery 2020
 Aerial Imagery 2016
 Aerial Imagery 2009
 Aerial Imagery 2004
 Aerial Imagery 1996
 Aerial Imagery 1980

Identify Zoom in Select Clear Selection(s) Draw & Measure Print Download More Toolbar Options

Draw & Measure

GL 4

GL 3

Distance: 500.87 ft

Distance: 494.39 ft

Distance: 494.39 ft

Distance: 500.87 ft

HWY 253

CHICAGO JUNCTION RD

SMOKY RD

50 m
200 ft



Filter layers by title ...

- > Priority Navigable Waterways
- > Fisheries Management
- > Fish Consumption Advice
- > Grant Locations
- > Output & Determinations^
- > Wetland Inventory
- > Wetland Indicators & Soils^
- > Wild Rice Waters
- > Surface Water
- > Administrative, Political & Cadastral
- ∨ Base Maps
 - > Ecoregions & Vegetation
 - > Cities, Roads & Boundaries
 - > Public Lands
 - > Topographic Maps
 - > USGS Quad Indexes

Measure Tools
 Tips
 Units
 Line
 Polygon
 Circle
 Rectangle
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Data
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From: King, Ruth M - DNR <Ruth.King@wisconsin.gov>
Sent: Tuesday, 2 December, 2025 8:43 AM
To: Todd Gibbon; Gary Colbert
Cc: Harrington, Dan - DNR
Subject: RE: Camp Ride_FIN102302_Washburn County

Hi Todd!

I couldn't remember either so I asked Dan this morning, and Dan told me it's non-navigable.

Ruth M King

Nonpoint Source Coordinator/Storm Water Specialist – Bureau of Watershed Management
Wisconsin Department of Natural Resources
810 W. Maple St. Spooner, WI 54801
Cell Phone: 715-416-0266
ruth.king@wisconsin.gov



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From: Todd Gibbon <LongIslandEngineeringLLC@outlook.com>
Sent: Monday, December 1, 2025 3:35 PM
To: Gary Colbert <gcolbert@nwbeinc.com>; King, Ruth M - DNR <Ruth.King@wisconsin.gov>
Subject: Fw: Camp Ride_FIN102302_Washburn County

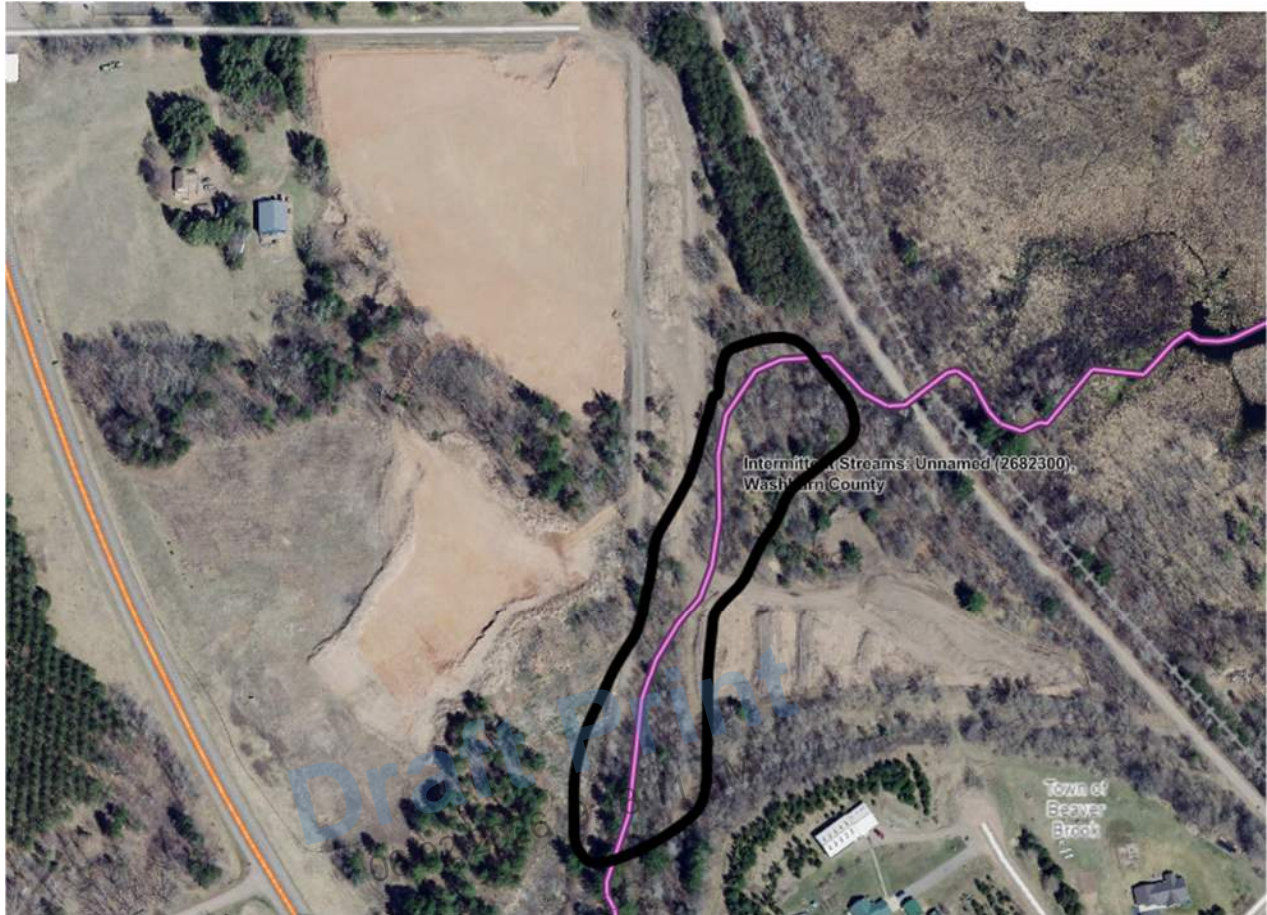
**CAUTION: This email originated from outside the organization.
Do not click links or open attachments unless you recognize the sender and know the content is safe.**

Good afternoon Ruth!

I was wondering if you could help Gary and I out with his rather poor and my rather short memories?

We got some comments back from Teagan for the Camp Ride project (see email below).

Item #4. In regard to the intermittent stream. In our collectively poor and short memory we thought that maybe yourself or someone else at the Department had looked at this and deemed it to be non navigable. Do you have any memory of this stream and its navigability? We did a quick email search, but didn't find any coorespondencing confirming the streams navigable or non-nav status.



Thanks much Ruth!

Happy Holidays!

TG

Todd Gibbon, PE, CFM
Long Island Engineering LLC
201 Maple Ridge
Ashland, WI 54806
715-209-4747 (cell)
longislandengineeringllc@outlook.com

From: Wagner, Teagan M - DNR <teagan.wagner@wisconsin.gov>
Sent: Monday, December 1, 2025 1:41 PM
To: Todd Gibbon <longislandengineeringllc@outlook.com>
Cc: bluseinc@hotmail.com <bluseinc@hotmail.com>
Subject: Camp Ride_FIN102302_Washburn County

Hello,

I received the storm water construction site application for Camp Ride for review. DNR storm water permit coverage is withheld as of today. Please see below for items that need to be addressed to help determine whether applicable administrative rules and permit conditions are met.

1. It appears groundwater was encountered in pit 12 only 3.5 ft below the bottom of 8P. The site evaluation technical standard requires that limiting layers within 5 feet below the native soil interface of an infiltration device be considered in the design infiltration rate. Limiting layers include the seasonal high groundwater table. Table 2 assumes separation from the native soil interface to a limiting layer such that mounding of water will not reach the native soil interface. [Microsoft Word - Site Evaluation For Stormwater Infiltration 1002 .doc](#)
2. The drainage paths in 5S are unclear. Please add the topo labels to the plans so drainage path assumptions can be confirmed.
3. The outlet in 5P appears on some plans sheets and appears to be dotted on other plan sheets. Please clarify if this is existing or proposed.
4. Please clarify if the culverts and proposed ditch checks in the intermittent waterway have been discussed with the waterways program.

*****DNR has a tool available for clarifying post-construction storm water management requirements. Please see in the red box on the following page: [Construction site storm water permit forms](#) | [Wisconsin DNR](#)*

Let me know if you have any questions. Please send updates and responses as a **reply** to this email and include **written responses** to any identified deficiencies. The department may take up to 14 working days to review submitted materials.

The review for permit issuance will be on hold until the above items are addressed. Note that you do not have authorization to begin land disturbing construction activities until you have received appropriate permit coverage.

Thank you,

Teagan Wagner, PE

Water Resources Engineer – Bureau of Watershed Management

Wisconsin Department of Natural Resources

Phone: [\(715\) 563-5267](tel:(715)563-5267)

Teagan.Wagner@Wisconsin.gov



dnr.wi.gov

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WETLAND DELINEATION REPORT

Camp Ride Campground Site

Town of Beaver Brook, Washburn County, WI

June 26, 2024

Prepared for:

NWBE, Inc.

Heather Harrington

PO Box 328

Hayward, WI 54843

Prepared by:

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06 02 2026 9:18:12 AM



P.O. Box 481

Rice Lake, WI 54868

Phone: (715) 205-4624

Tim@ecosystemscorp.com

A handwritten signature in black ink that reads "Tim K" with a stylized flourish.

Timothy D. King, PWS

Owner & Principal

WDNR Assured Wetland Delineator

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TABLES

Table 1. Summary of Wetlands Identified within the Site

APPENDICES

- Appendix A – Figures
- Appendix B – Wetland Determination Data Forms
- Appendix C – Site Photographs
- Appendix D – Antecedent Precipitation Analysis
- Appendix E – NRCS Soil Survey Data
- Appendix F – Other Supporting Documents

INTRODUCTION

Ecosystems, LLC (Ecosystems) performed a wetland determination and delineation of the Camp Ride Campground site located near Spooner, Wisconsin (hereinafter referred to as the “study area” or “site”) for NWBE, Inc. More specifically, the proposed campground site consists of several adjoining parcels of land totaling approximately 40 acres in Section 6, Township 38 North, Range 12 West, in the Town of Beaver Brook, Washburn County, Wisconsin (Appendix A, Figures 1 & 2).

The purpose of the wetland determination and delineation was to identify the type and extent of wetlands within the site. Wetland delineation fieldwork was conducted by Tim King of Ecosystems on May 9 and 20, 2024. The lead field delineator and report author of this wetland delineation is Assured through the Wisconsin Department of Natural Resources (WDNR) - Wetland Delineation Professional Assurance Program. As an Assured Delineator, Mr. King received advanced written concurrence from the WDNR for all wetland delineations that he conducts in the growing season of 2024. The findings contained in this report are based on the information available to ecosystems at the time of the offsite review, onsite investigation, and report preparation. Three small wetlands and a waterway were identified and delineated within the site.

The wetlands and waterway identified may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the Wisconsin Department of Natural Resources (WDNR), and local regulations under county or town jurisdiction. The determination that a wetland or waterway is subject to regulatory jurisdiction is made independently by the agencies. This report will be submitted to the WDNR in accordance with the Assurance program requirements, and if necessary, the USACE and/or local officials to determine jurisdictional authority.

METHODS

WETLANDS

Wetland determinations are based on the technical guidelines and methods described in the Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 (1987), Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (USACE January 2012, Version 2.0), and subsequent guidance documents (WDNR, USACE & NRCS).

Wetland determinations involved the use of offsite methods including review of available resources such as U.S. Geological Survey (USGS) topographic map, Natural Resources Conservation Service (NRCS) soil survey data, WDNR Wisconsin Wetland Inventory (WWI) and Surface Water Data Viewer (SWDV) mapping, U.S. Fish & Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping, recent aerial photography, county GIS LiDAR and contour mapping, client data and other sources to help identify wetlands and other aquatic resources. Antecedent precipitation conditions were also reviewed to determine if current climatic conditions were dry, normal, or wet using an antecedent precipitation tool developed by the USACE or WETS analysis developed by NRCS.

Wetlands were identified and delineated onsite using routine determination methods, diagnostic indicators of the three parameters (vegetation, soil, and hydrology), and technical guidelines contained in the USACE 1987 Manual and Regional Supplement. According to procedures described in the 1987 Manual and Regional Supplement, areas under normal circumstances that have positive indicators from each parameter are considered wetlands. When normal circumstances are not present, determinations may be based on fewer parameters depending on the situation encountered, extent of physical alterations to parameters, and information available at the time of the delineation. In general, wetland determinations on sites that represent normal circumstances are based on current conditions and areas that do not exhibit normal circumstances are usually based on conditions that would exist in the absence of the manipulation or disturbance. If needed, procedures were applied to address Difficult Wetland Situations as defined in the technical guidelines.

Wetlands and their boundaries and sample points were identified, flagged, located with a Global Positioning System (GPS) capable of sub-meter accuracy, and mapped using Geographical Information System (GIS) software. Fieldwork was conducted during the growing season and no conditions limited the performance of the wetland delineation.

WATERWAYS

The presence of other aquatic or water resources was identified using available sources and onsite observations. This included identifying the general location and connection between wetlands and other water resources based on observations made incidental to the wetland data collection and/or existing mapping. Brief descriptions of waterways observed or mapped are included in the results.

RESULTS

SITE DESCRIPTION

The site is in the Forest Transition ecological landscape in northwest Wisconsin. The Forest Transition ecological landscape was entirely glaciated, glacial till is the major type of material deposited throughout, and common landforms are till plains or moraines. The land type association is Late St. Croix Moraines and its characteristic landform pattern is rolling collapsed moraine with outwash terraces and ice-walled lake plains. Topography of the site is nearly level to undulating and rolling. Soils are mapped by NRCS as moderately well to somewhat excessively drained sandy loams. General land use and cover includes areas recently cleared and graded for proposed campground facilities, northern mesic forest, upland shrub thicket, surrogate grassland, small wetland areas and an unnamed intermittent stream. The site is adjacent to STH 253 to the west, Green Valley Road to the north, Wild Rivers State Trail to the east, and private land to the south. The site is in the Shell Lake-Yellow River watershed of the Mississippi River Basin and in the St. Croix WDNR water management unit.

A wetland is mapped within the site by WDNR as a wetland point symbol (i.e., wetland smaller than 5 acres) on the WWI (Appendix A, Figure 2 & Appendix F). Soils mapped within the site by NRCS soil survey include predominantly Cress Sandy loam (615B), 0 to 6% slopes and Haugen-Rosholt complex (28C), 6 to 12% slopes. The Cress series is described by NRCS as somewhat excessively drained soils formed in loamy alluvium and in the underlying stratified sandy glacial outwash on outwash plains and moraines. The Haugen series is described as moderately well drained soils formed in sandy loam till or mudflow sediments on end and disintegration moraines. The Rosholt series consists of well drained soils formed in loamy alluvial deposits and are underlain by stratified sandy outwash on outwash plains, stream terraces, eskers, and kames. Other soils mapped by NRCS to a minor extent within the site include Amery sandy loam (42D), 12 to 30% slopes, Scott Lake sandy loam (27A), 0 to 3% slopes, Graycalm-Menahga complex (439C), and Grettum loamy sand (3448B), 0 to 6% slopes (see Appendix A, Figure 2 & Appendix E). NRCS soil survey data is contained in Appendix E. One wetland identified coincides with the WDNR WWI and SWDV mapping.

Average precipitation was obtained from the USDA Field Office Climate Data WETS Station Spooner Ag Research Station. Precipitation data was used for the analysis of antecedent precipitation conditions (i.e., WETS analysis). Based on the WETS analysis, climatic conditions were normal during the 3-month period prior to the delineation fieldwork (Appendix D).

WETLANDS

Three small wetlands totaling approximately 0.22 acre were identified and delineated within the 40-acre site. Wetlands and their boundaries and sample points are shown on Figure 2 (Appendix A). Wetland determination data forms were completed at 10 sample points along transects through the wetlands and adjacent uplands, along the unnamed intermittent stream, and within other depressional landforms (Appendix B). Photographs of the wetlands and uplands are in Appendix C. Wetlands identified and delineated are summarized in Table 1 and described in the following sections.

Table 1. Summary of Wetlands Identified within the Site

WETLAND ID	WETLAND TYPE	WDNR WWI (NWI) MAPPED	WETLAND ACREAGE WITHIN SITE	ADJACENT SURFACE WATERS
W1	Alder Thicket	Wetland Point Symbol (PEM1C)	0.14 acre	Unnamed Stream
W2	Alder Thicket	NA	0.05 acre	NA
W3	Shrub Carr & Hardwood Swamp	NA	0.03 acre	NA
Total			0.22 acre	

Wetland 1 (W1)

Wetland 1 is an alder thicket adjacent to an unnamed intermittent stream tributary to Beaver Brook. The wetland is mapped by WDNR as a wetland point symbol on the WWI. The wetland extends beyond the site limits to the east along the stream corridor. Vegetation, hydrology, and soil characteristics of the wetland are summarized below.

Vegetation

Dominant plant species identified in the wetland include speckled alder (*Alnus incana*), American elm (*Ulmus americana*), common buckthorn (*Rhamnus cathartica*), black cherry (*Prunus serotina*), and fringed sedge (*Carex crinita*). Other common species identified in the wetland are listed on a data form in Appendix B. The hydrophytic vegetation criterion was met using the dominance test (Indicator 2).

Hydrology

The presence of A1-surface water, A2-high water table, and A3-saturation were observed as primary indicators of wetland hydrology. Secondary indicators of wetland hydrology consist of B10-drainage patterns, D2-geomorphic position, and D5-FAC-neutral test. The wetland hydrology criterion was met.

Soils

Soils in the wetland are mapped by NRCS as Cress sandy loam (615B) as previously described. Field indicators of hydric soil identified consist of S1-sandy mucky mineral and S7-dark surface. The hydric soil criterion was met.

Wetland 2 (W2)

Wetland 2 is an alder thicket in a small, closed depression adjacent to Wetland 1. The wetland is not mapped by WDNR on the WWI. Vegetation, hydrology, and soil characteristics of the wetland are summarized below.

Vegetation

Dominant plant species identified in the wetland include speckled alder (*Alnus incana*), quaking aspen (*Populus tremuloides*), and fringed sedge (*Carex crinita*). Other common species identified in the wetland are listed on a data form in Appendix B. The hydrophytic vegetation criterion was met using the dominance test (Indicator 2).

Hydrology

The presence of A2-high water table and A3-saturation were observed as primary indicators of wetland hydrology. Secondary indicators of wetland hydrology consist of D2-geomorphic position and D5-FAC-neutral test. The wetland hydrology criterion was met.

Soils

Soils in the wetland are mapped by NRCS as Cress sandy loam (615B) as previously described. Field indicators of hydric soil identified consist of F1-loamy mucky mineral. The hydric soil criterion was met.

Wetland 3 (W3)

Wetland 3 is a shrub carr and hardwood swamp in a small, closed depression adjacent to Wetland 2. The wetland is not mapped by WDNR on the WWI. Vegetation, hydrology, and soil characteristics of the wetland are summarized below.

Vegetation

Dominant plant species identified in the wetland include quaking aspen (*Populus tremuloides*), paper birch (*Betula papyrifera*), nannyberry (*Viburnum lentago*), fringed sedge (*Carex crinita*), and woolgrass (*Scirpus cyperinus*). Other common species identified in the wetland are listed on a data form in Appendix B. The hydrophytic vegetation criterion was met using the dominance test (Indicator 2).

Hydrology

The presence of A2-high water table and A3-saturation were observed as primary indicators of wetland hydrology. Secondary indicators of wetland hydrology consist of D2-geomorphic position and D5-FAC-neutral test. The wetland hydrology criterion was met.

Soils

Soils in the wetland are mapped by NRCS as Cress sandy loam (615B) as previously described. Field indicators of hydric soil identified consist of S1-sandy mucky mineral and S7-dark surface. The hydric soil criterion was met.

Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, soils and/or topography consisting of the following: 1) Transition from alder thicket, shrub carr, and hardwood swamp wetland dominated by hydrophytic vegetation to upland shrub thicket and northern mesic forest; 2) Transition from the presence of primary and secondary wetland hydrology indicators in wetlands to lack of wetland hydrology indicators in adjacent uplands; 3) Transition from hydric to non-hydric soils; and/or 4) Topography and landform. Transition from wetland to upland characteristics generally correlated with a somewhat well-defined topographic break. Wetlands and their boundaries are shown on Figure 2 in Appendix A. Other supporting documents including WDNR WWI & SWDV mapping, USFWS NWI mapping, County LiDAR and 2 ft. contour mapping, and floodplain mapping are in Appendix A and F.

UPLANDS

Uplands within the site consist of northern mesic forest, shrub thicket, and surrogate grassland. Various upland areas were recently and partly cleared and graded for proposed campground facilities. Common

plant species, soil profile description, hydrology and other characteristics of the uplands are listed on data forms in Appendix B. Photographs of the uplands are in Appendix C.

WATERWAYS

Wetland 1 is adjacent to an unnamed intermittent stream (WBIC 2682300) tributary to Beaver Brook (Figures 1 & 2 in Appendix A and Appendix F). The intermittent stream extends from the southwest corner of the site and runs northeast along an existing trail to a bridge under the Wild Rivers State Trail at the east-central border of the site. The stream was field located with GPS and it coincides closely to the WDNR 24K Hydrography mapping. Photographs of the intermittent stream are in Appendix C. The site is mapped by FEMA as an Area of Minimal Flood Hazard Zone X on the FIRMette in Appendix F.

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CONCLUSION

Ecosystems, LLC performed a wetland determination and delineation of the Camp Ride Campground site located near Spooner, Wisconsin for NWBE, Inc. More specifically, the proposed campground site consists of several adjoining parcels of land totaling approximately 40 acres in Section 6, Township 38 North, Range 12 West, in the Town of Beaver Brook, Washburn County, Wisconsin.

The purpose of the wetland determination and delineation was to identify the type and extent of wetlands within the site. Three wetlands were identified and delineated within the site in accordance with state and federal technical guidelines. Wetlands were flagged, located with GPS, and mapped using GIS. The wetlands are composed of alder thicket, shrub carr, and hardwood swamp totaling approximately 0.22 acre of the 40-acre site. Wetland W1 extends beyond the study area limits to the east and is adjacent to an unnamed intermittent stream tributary to Beaver Brook. Uplands consist of northern mesic forest, shrub thicket, and surrogate grassland, portions of which were recently and partly cleared and graded for proposed campground facilities.

The information provided by Ecosystems regarding wetlands and their boundaries is a scientific-based analysis of wetland and upland conditions present on the site at the time of the fieldwork. The delineation was performed by a highly experienced and qualified senior professional wetland scientist and Assured delineator using standard practices and best professional judgment. The physical characteristics of a site can change over time, depending on the season, climate and recent precipitation patterns, vegetation patterns, drainage, land alterations and management activities, activities on adjacent parcels, and other human disturbances or natural events. Any of these factors can change the nature and extent of wetlands on a site. The ultimate decision on wetland boundaries rests with the USACE and the WDNR or a local unit of government. As a result, wetland determinations and boundary delineations may be subject to review by a regulatory agency.

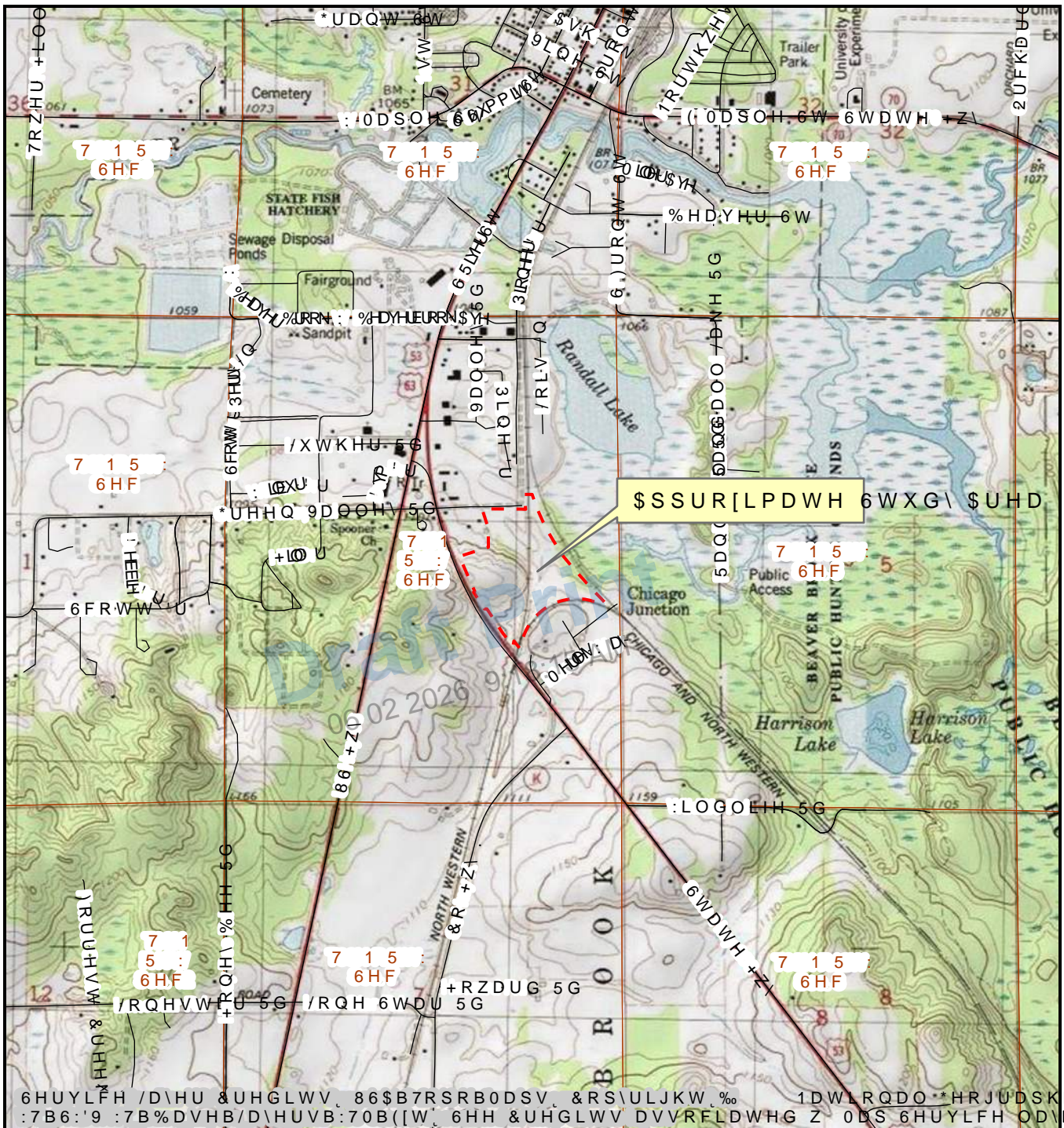
This report is limited to the identification of wetlands within the study area that may be regulated by local, state and/or federal agencies. However, there are other regulated environmental features on or near the site including, but not limited to, a waterway. In general, federal, state, and/or local units of government and regional planning organizations may have regulatory authority to control or restrict land uses and development activities within or near those features. Wetland determinations and delineations may be subject to review and jurisdictional determination by a regulatory agency. The determination that a wetland or waterway is subject to regulatory jurisdiction is made independently by the agencies. This report will be submitted to the WDNR in accordance with the Assurance program requirements, and if necessary, the USACE and/or local officials to determine jurisdictional authority.

The client, landowner and/or developer is responsible for obtaining authorization from regulatory agencies, if required, before proceeding with development activities on the property. If the client, landowner or developer proceeds to develop the property without obtaining prior authorization, permits or approvals required from the regulatory agencies and/or based upon conflicting information or opinions from other parties, it will be done at their sole risk and Ecosystems, LLC will not be responsible or liable for any resulting claims, damages, losses and related expenses.

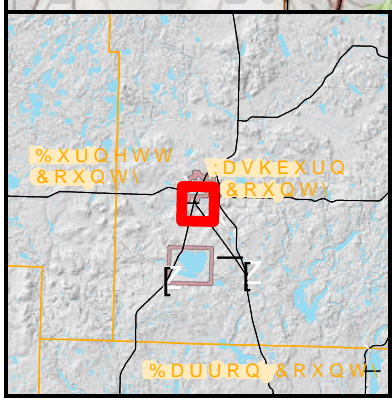
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APPENDIX A
FIGURES



6HUylFH /dIHU &UHGLWV, 86\$B7RSRB0DSV, &RSULJKW, % 1DWLRQDO *HRJUDSKLF 6RFLH
 :7B6:'9 :7B%DVHB/D/HUVB:70B(IW' 6HH &UHGLWV DVVRELDWHG Z ODS 6HUylFH OD/HUV



- - - \$SSUR[LPDWH 6WXG\ \$UHD
- 5RDGZD\
- 6HFWRQ

&DPS 5LGH &DPSJURXQG
 7RZQ RI %HDYHU %URRN
 :DVKEXUQ &RXQW\ :LVFRC

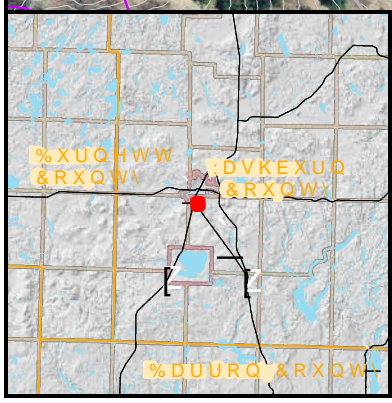
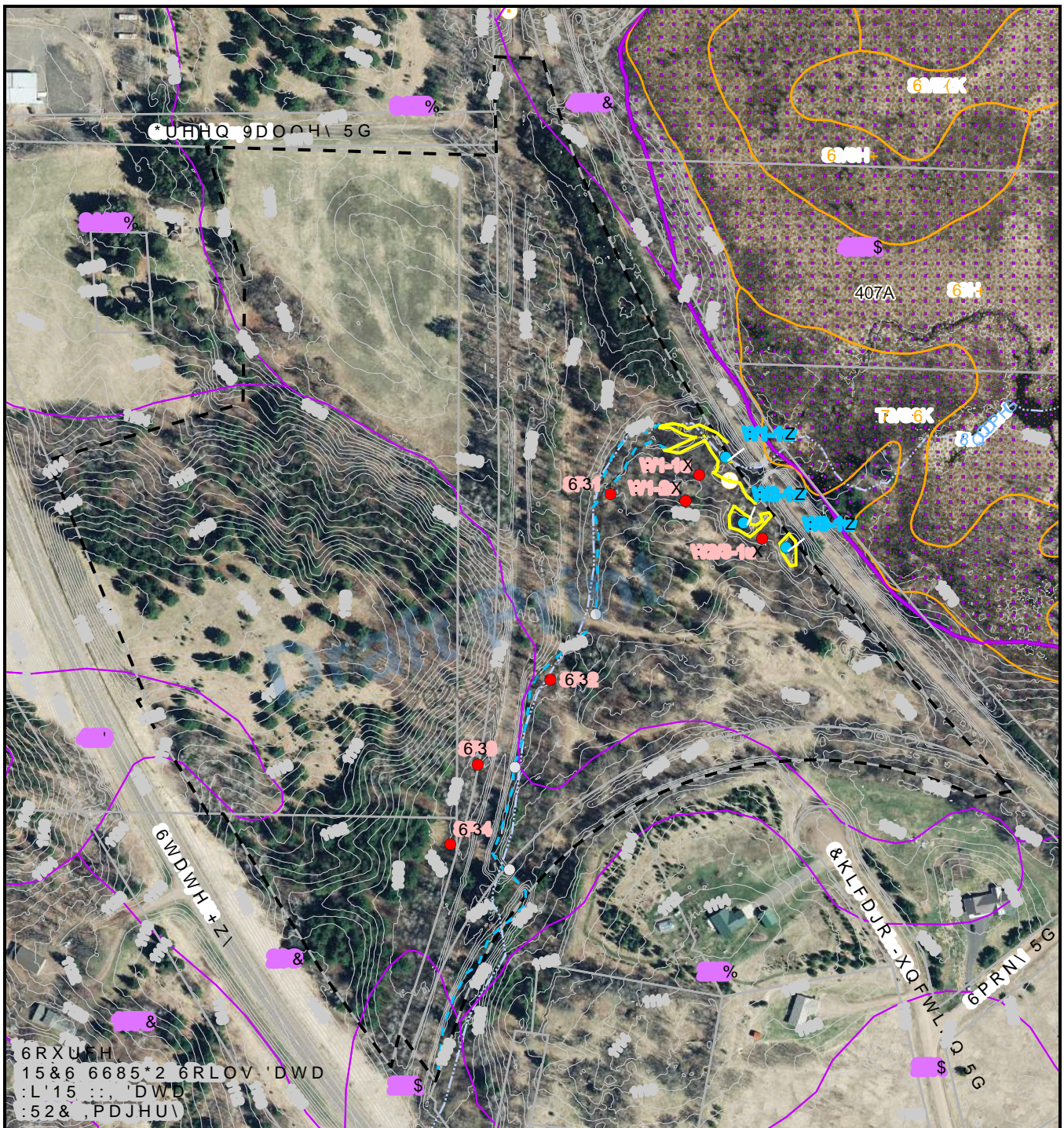
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0LOHV





—	SSUR[LPDWH 6WXG\ '\$5HD +\ GURJUD\ SK)
●	8SODQG 6DPSOH 3RLQW, QWHUPLWWHQW & DPS 5LGH & DPS JURXQG
●	:HWODQG 6DPSOH 3RLQW, QWHUPLWWHQW 7RZQ RI %HDYHU %URRN
●	& XOYHUW
□	2SHQ :DWHU :DVKEXUQ & RXQW\ :LVFRG
□	:HWODQG %RXQGDU 0D[LPXP ([WHQW
□	:HWODQG , QGLFDWURV
□)LHOG , GHQWLILHG :DWHU\ZD\
□	:HWODQG WRR VPDQ WR GH\HOLQHDWH
□	:HWODQG 0DSSLQJ 3DUFHO 'DWD
□	:HWODQG 0DSSLQJ
□	15&6 6RLO 6XUYH\ 0DSSLQJ
□	&RQRXU IRRW
□)HHW

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APPENDIX B WETLAND DETERMINATION DATA FORMS

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Camp Ride Campground City/County: Washburn Sampling Date: 5-9-2024
 Applicant/Owner: NWBE Inc./Camp Ride LLC State: WI Sampling Point: W1-1u
 Investigator(s): Tim King, Caleb King Section, Township, Range: S6, T38N, R12W
 Landform (hillside, terrace, etc.): Foot slope Local relief (concave, convex, none): Concave/convex Slope %: 1-3
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: 615B NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Northern mesic forest and upland shrub thicket.	

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HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) _____ <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>12</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W1-1u

<u>Tree Stratum</u> (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Betula papyrifera</u>	40	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>71.4%</u> (A/B)																
2. <u>Quercus macrocarpa</u>	15	Yes	FACU																	
3. <u>Populus tremuloides</u>	10	No	FAC																	
4. <u>Pinus resinosa</u>	5	No	FACU																	
5. _____																				
6. _____																				
7. _____																				
	70	=Total Cover																		
Sapling/Shrub Stratum	(Plot size: <u>15'</u>)			Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">Total % Cover of:</th> <th style="width: 50%; text-align: center;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td style="text-align: center;">x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>2</u></td> <td style="text-align: center;">x 2 = <u>4</u></td> </tr> <tr> <td>FAC species <u>87</u></td> <td style="text-align: center;">x 3 = <u>261</u></td> </tr> <tr> <td>FACU species <u>75</u></td> <td style="text-align: center;">x 4 = <u>300</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td style="text-align: center;">x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>164</u> (A)</td> <td style="text-align: center;"><u>565</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.45</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>2</u>	x 2 = <u>4</u>	FAC species <u>87</u>	x 3 = <u>261</u>	FACU species <u>75</u>	x 4 = <u>300</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>164</u> (A)	<u>565</u> (B)	Prevalence Index = B/A = <u>3.45</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>2</u>	x 2 = <u>4</u>																			
FAC species <u>87</u>	x 3 = <u>261</u>																			
FACU species <u>75</u>	x 4 = <u>300</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>164</u> (A)	<u>565</u> (B)																			
Prevalence Index = B/A = <u>3.45</u>																				
1. <u>Rhamnus cathartica</u>	40	Yes	FAC																	
2. <u>Viburnum lentago</u>	30	Yes	FAC																	
3. <u>Zanthoxylum americanum</u>	10	No	FACU																	
4. <u>Lonicera tatarica</u>	5	No	FACU																	
5. _____																				
6. _____																				
7. _____																				
	85	=Total Cover																		
Herb Stratum	(Plot size: <u>5'</u>)			Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Rhamnus cathartica</u>	5	Yes	FAC																	
2. <u>Rubus pubescens</u>		Yes	FACW																	
3. <u>Viburnum lentago</u>	2	Yes	FAC																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
	9	=Total Cover																		
Woody Vine Stratum	(Plot size: _____)			Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
			=Total Cover																	
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point W1-1u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 2/1	100					Loamy/Clayey	Sandy loam
8-12	10YR 2/2	100					Loamy/Clayey	Sandy loam
12-24	5YR 3/3	100					Sandy	Loamy sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Mesic Spodic (A17)
(MLRA 144A, 145, 149B)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- High Chroma Sands (S11) **(LRR K, L)**
- Loamy Mucky Mineral (F1) **(LRR K, L)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR K, L)**
- Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- Polyvalue Below Surface (S8) **(LRR K, L)**
- Thin Dark Surface (S9) **(LRR K, L)**
- Iron-Manganese Masses (F12) **(LRR K, L, R)**
- Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- Red Parent Material (F21) **(outside MLRA 145)**
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Camp Ride Campground City/County: Washburn Sampling Date: 5-9-2024

Applicant/Owner: NWBE Inc./Camp Ride LLC State: WI Sampling Point: W1-1w

Investigator(s): Tim King, Caleb King Section, Township, Range: S6, T38N, R12W

Landform (hillside, terrace, etc.): Toe slope-lower stream terrace Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: 615B NWI classification: Wetland point symbol

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: <u>W1</u>
Remarks: (Explain alternative procedures here or in a separate report.) Alder thicket adjacent to unnamed intermittent stream.	

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HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Aquatic Fauna (B13)	
<input type="checkbox"/> Marl Deposits (B15)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>6</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>2</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Surface water present in stream channel 6"-12".

VEGETATION – Use scientific names of plants.

Sampling Point: W1-1w

<u>Tree Stratum</u> (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																																		
1. <u><i>Ulmus americana</i></u>	10	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)																																																	
2. <u><i>Prunus serotina</i></u>	5	Yes	FACU																																																		
3. <u><i>Acer rubrum</i></u>	2	No	FAC																																																		
4. _____																																																					
5. _____																																																					
6. _____																																																					
7. _____																																																					
	17	=Total Cover		Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;">Total % Cover of:</th> <th style="width:10%;"></th> <th style="width:10%;">Multiply by:</th> <th style="width:10%;"></th> <th style="width:10%;"></th> <th style="width:10%;"></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td style="text-align:center">30</td> <td>x 1 =</td> <td style="text-align:center">30</td> <td></td> <td></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center">60</td> <td>x 2 =</td> <td style="text-align:center">120</td> <td></td> <td></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center">32</td> <td>x 3 =</td> <td style="text-align:center">96</td> <td></td> <td></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center">20</td> <td>x 4 =</td> <td style="text-align:center">80</td> <td></td> <td></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center">0</td> <td>x 5 =</td> <td style="text-align:center">0</td> <td></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center">142</td> <td>(A)</td> <td style="text-align:center">326</td> <td>(B)</td> <td></td> </tr> <tr> <td colspan="2" style="text-align:right">Prevalence Index = B/A =</td> <td></td> <td style="text-align:center">2.30</td> <td></td> <td></td> </tr> </tbody> </table>		Total % Cover of:		Multiply by:				OBL species	30	x 1 =	30			FACW species	60	x 2 =	120			FAC species	32	x 3 =	96			FACU species	20	x 4 =	80			UPL species	0	x 5 =	0			Column Totals:	142	(A)	326	(B)		Prevalence Index = B/A =			2.30		
Total % Cover of:		Multiply by:																																																			
OBL species	30	x 1 =	30																																																		
FACW species	60	x 2 =	120																																																		
FAC species	32	x 3 =	96																																																		
FACU species	20	x 4 =	80																																																		
UPL species	0	x 5 =	0																																																		
Column Totals:	142	(A)	326	(B)																																																	
Prevalence Index = B/A =			2.30																																																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u>)																																																					
1. <u><i>Alnus incana</i></u>	40	Yes	FACW	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																																																	
2. <u><i>Rhamnus cathartica</i></u>	20	Yes	FAC																																																		
3. <u><i>Lonicera tatarica</i></u>	5	No	FACU																																																		
4. <u><i>Zanthoxylum americanum</i></u>	5	No	FACU																																																		
5. _____																																																					
6. _____																																																					
7. _____																																																					
	70	=Total Cover		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																																	
<u>Herb Stratum</u> (Plot size: <u>5'</u>)																																																					
1. <u><i>Carex crinita</i></u>	30	Yes	OBL			Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																																															
2. <u><i>Dryopteris intermedia</i></u>	10	No	FAC																																																		
3. <u><i>Maianthemum canadense</i></u>	5	No	FACU																																																		
4. <u><i>Thalictrum dasycarpum</i></u>	5	No	FACW																																																		
5. <u><i>Rubus pubescens</i></u>	5	No	FACW																																																		
6. _____																																																					
7. _____																																																					
8. _____																																																					
9. _____																																																					
10. _____																																																					
11. _____																																																					
12. _____																																																					
	55	=Total Cover		Hydrophytic Vegetation Present? Yes <u>X</u> No _____																																																	
<u>Woody Vine Stratum</u> (Plot size: _____)																																																					
1. _____																																																					
2. _____																																																					
3. _____																																																					
4. _____																																																					
		=Total Cover																																																			

Remarks: (Include photo numbers here or on a separate sheet.)

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Camp Ride Campground City/County: Washburn Sampling Date: 5-9-2024
 Applicant/Owner: NWBE, Inc./Camp Ride LLC State: WI Sampling Point: W1-2u
 Investigator(s): Tim King, Caleb King Section, Township, Range: S6, T38N, R12W
 Landform (hillside, terrace, etc.): Side slope Local relief (concave, convex, none): Convex Slope %: 2-6
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: 615B NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Northern mesic forest	

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HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) _____ _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (minimum of two required) _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>16</u> (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W1-2u

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Betula papyrifera</u>	30	Yes	FACU		
2. <u>Populus tremuloides</u>	15	Yes	FAC	Total Number of Dominant Species Across All Strata: <u>6</u> (B)	
3. <u>Pinus resinosa</u>	10	No	FACU	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)	
4. <u>Quercus rubra</u>	10	No	FACU	Prevalence Index worksheet:	
5. <u>Pinus banksiana</u>	5	No	FACU		
6. <u>Quercus macrocarpa</u>	5	No	FACU	OBL species <u>0</u> x 1 = <u>0</u>	
7. _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>	
<u>75</u> =Total Cover				FAC species <u>57</u> x 3 = <u>171</u>	
Sapling/Shrub Stratum (Plot size: <u>15'</u>)					
1. <u>Rhamnus cathartica</u>	25	Yes	FAC	FACU species <u>95</u> x 4 = <u>380</u>	
2. <u>Corylus americana</u>	15	Yes	FACU	UPL species <u>70</u> x 5 = <u>350</u>	
3. <u>Zanthoxylum americanum</u>	15	Yes	FACU	Column Totals: <u>222</u> (A) <u>901</u> (B)	
4. <u>Populus tremuloides</u>	10	No	FAC	Prevalence Index = B/A = <u>4.06</u>	
5. <u>Lonicera tatarica</u>	5	No	FACU	Hydrophytic Vegetation Indicators:	
6. <u>Viburnum lentago</u>	2	No	FAC		
7. _____	_____	_____	_____	_____ 2 - Dominance Test is >50%	
<u>72</u> =Total Cover				_____ 3 - Prevalence Index is ≤3.0 ¹	
Herb Stratum (Plot size: <u>5'</u>)					
1. <u>Carex pensylvanica</u>	70	Yes	UPL	_____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
2. <u>Rhamnus cathartica</u>	_____	No	FAC	_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
3. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
4. _____	_____	_____	_____		
5. _____	_____	_____	_____	Definitions of Vegetation Strata:	
6. _____	_____	_____	_____		
7. _____	_____	_____	_____	Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
8. _____	_____	_____	_____	Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.	
9. _____	_____	_____	_____	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
10. _____	_____	_____	_____	Woody vines – All woody vines greater than 3.28 ft in height.	
11. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	
12. _____	_____	_____	_____		
<u>75</u> =Total Cover					
Woody Vine Stratum (Plot size: <u> </u>)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
<u> </u> =Total Cover					

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point W1-2u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 2/1	100					Loamy/Clayey	Sandy loam
8-16	10YR 2/2	100					Sandy	Loamy sand
16-24	5YR 3/3	100					Sandy	Loamy sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Mesic Spodic (A17)
(MLRA 144A, 145, 149B)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- High Chroma Sands (S11) **(LRR K, L)**
- Loamy Mucky Mineral (F1) **(LRR K, L)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) **(LRR K, L)**
- Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- Polyvalue Below Surface (S8) **(LRR K, L)**
- Thin Dark Surface (S9) **(LRR K, L)**
- Iron-Manganese Masses (F12) **(LRR K, L, R)**
- Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- Red Parent Material (F21) **(outside MLRA 145)**
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Camp Ride Campground City/County: Washburn Sampling Date: 5-9-2024
 Applicant/Owner: NWBE, Inc./Camp Ride LLC State: WI Sampling Point: W2/3-1u
 Investigator(s): Tim King, Caleb King Section, Township, Range: S6, T38N, R12W
 Landform (hillside, terrace, etc.): Side slope Local relief (concave, convex, none): Convex Slope %: 2-4
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: 615B NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Northern mesic forest	

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HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) _____ <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W2/3-1u

<u>Tree Stratum</u> (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Betula papyrifera</u>	30	Yes	FACU	
2. <u>Populus tremuloides</u>	25	Yes	FAC	
3. <u>Prunus serotina</u>	10	No	FACU	
4. <u>Quercus macrocarpa</u>	5	No	FACU	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>70</u> =Total Cover				Prevalence Index worksheet:
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u>)				
1. <u>Zanthoxylum americanum</u>	50	Yes	FACU	Hydrophytic Vegetation Indicators:
2. <u>Lonicera tatarica</u>	25	Yes	FACU	
3. <u>Rhamnus cathartica</u>	10	No	FAC	
4. <u>Viburnum lentago</u>	5	No	FAC	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>90</u> =Total Cover				_____ 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain)
<u>Herb Stratum</u> (Plot size: <u>5'</u>)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Carex pensylvanica</u>	60	Yes	UPL	Definitions of Vegetation Strata:
2. <u>Maianthemum canadense</u>	15	No	FACU	
3. <u>Rhamnus cathartica</u>	5	No	FAC	
4. <u>Solidago gigantea</u>	5	No	FACW	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>85</u> =Total Cover				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
<u>Woody Vine Stratum</u> (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ =Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Camp Ride Campground City/County: Washburn Sampling Date: 5-9-2024
 Applicant/Owner: NWBE, Inc./Camp Ride LLC. State: WI Sampling Point: W2-1w
 Investigator(s): Tim King, Caleb King Section, Township, Range: S6, T38N, R12W
 Landform (hillside, terrace, etc.): Toe slope-closed depression Local relief (concave, convex, none): Concave Slope %: 0-2
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: 615B NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: <u>W2</u>
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Remarks: (Explain alternative procedures here or in a separate report.)
 Alder thicket



HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) _____ <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>4</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W2-1w

	Absolute % Cover	Dominant Species?	Indicator Status																	
Tree Stratum (Plot size: <u>30'</u>)																				
1. <u>Populus tremuloides</u>	5	Yes	FAC	<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>3</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>65</u></td> <td>x 1 = <u>65</u></td> </tr> <tr> <td>FACW species <u>77</u></td> <td>x 2 = <u>154</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>162</u> (A)</td> <td><u>294</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.81</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>65</u>	x 1 = <u>65</u>	FACW species <u>77</u>	x 2 = <u>154</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>162</u> (A)	<u>294</u> (B)	Prevalence Index = B/A = <u>1.81</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>65</u>	x 1 = <u>65</u>																			
FACW species <u>77</u>	x 2 = <u>154</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>15</u>	x 4 = <u>60</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>162</u> (A)	<u>294</u> (B)																			
Prevalence Index = B/A = <u>1.81</u>																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
5 =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																				
1. <u>Alnus incana</u>	75	Yes	FACW	<p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> 2 - Dominance Test is >50%</p> <p><input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0¹</p> <p><input type="checkbox"/> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Definitions of Vegetation Strata:</p> <p>Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p>Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.</p> <p>Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vines – All woody vines greater than 3.28 ft in height.</p> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>																
2. <u>Zanthoxylum americanum</u>	5	No	FACU																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
80 =Total Cover																				
Herb Stratum (Plot size: <u>5'</u>)																				
1. <u>Carex crinita</u>	45	Yes	OBL	<p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>																
2. <u>Scirpus cyperinus</u>	10	No	OBL																	
3. <u>Glyceria striata</u>	10	No	OBL																	
4. <u>Maianthemum canadense</u>	10	No	FACU																	
5. <u>Rubus pubescens</u>	2	No	FACW																	
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
77 =Total Cover																				
Woody Vine Stratum (Plot size: _____)																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
_____ =Total Cover																				

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point W2-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 2/1	100					Mucky Loam/Clay	Mucky sandy loam
4-28	5YR 2.5/2	100					Sandy	Loamy sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Mesic Spodic (A17)</p> <p style="padding-left: 20px;">(MLRA 144A, 145, 149B)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p>	<p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> High Chroma Sands (S11) (LRR K, L)</p> <p><input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Marl (F10) (LRR K, L)</p> <p><input type="checkbox"/> Red Parent Material (F21) (MLRA 145)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)</p> <p><input type="checkbox"/> Red Parent Material (F21) (outside MLRA 145)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (F22)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> <p style="text-align: right;">³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>
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<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Camp Ride Campground City/County: Washburn Sampling Date: 5-9-2024
 Applicant/Owner: NWBE, Inc./Camp Ride LLC. State: WI Sampling Point: W3-1w
 Investigator(s): Tim King, Caleb King Section, Township, Range: S6, T38N, R12W
 Landform (hillside, terrace, etc.): Toe slope-closed depression Local relief (concave, convex, none): Concave Slope %: 0-2
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: 615B NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: <u>W3</u>
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Remarks: (Explain alternative procedures here or in a separate report.)
 Shrub carr / hardwood swamp.



HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Aquatic Fauna (B13)	
<input type="checkbox"/> Marl Deposits (B15)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>4</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W3-1w

<u>Tree Stratum</u> (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																																	
1. <u>Populus tremuloides</u>	20	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)																																																
2. <u>Betula papyrifera</u>	10	Yes	FACU																																																	
3. <u>Ulmus americana</u>	5	No	FACW																																																	
4. _____																																																				
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6. _____																																																				
7. _____																																																				
	35	=Total Cover																																																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u>)																																																				
1. <u>Viburnum lentago</u>	50	Yes	FAC	Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Total % Cover of:</th> <th style="width: 10%;"></th> <th style="width: 10%;">Multiply by:</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td style="text-align: center;">80</td> <td>x 1 =</td> <td style="text-align: center;">80</td> <td></td> <td></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">5</td> <td>x 2 =</td> <td style="text-align: center;">10</td> <td></td> <td></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">80</td> <td>x 3 =</td> <td style="text-align: center;">240</td> <td></td> <td></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">22</td> <td>x 4 =</td> <td style="text-align: center;">88</td> <td></td> <td></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td>x 5 =</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">187</td> <td>(A)</td> <td style="text-align: center;">418</td> <td>(B)</td> <td></td> </tr> <tr> <td colspan="2" style="text-align: right;">Prevalence Index = B/A =</td> <td></td> <td style="text-align: center;">2.24</td> <td></td> <td></td> </tr> </tbody> </table>	Total % Cover of:		Multiply by:				OBL species	80	x 1 =	80			FACW species	5	x 2 =	10			FAC species	80	x 3 =	240			FACU species	22	x 4 =	88			UPL species	0	x 5 =	0			Column Totals:	187	(A)	418	(B)		Prevalence Index = B/A =			2.24		
Total % Cover of:		Multiply by:																																																		
OBL species	80	x 1 =	80																																																	
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2. <u>Zanthoxylum americanum</u>	10	No	FACU																																																	
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4. _____																																																				
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6. _____																																																				
7. _____																																																				
	65	=Total Cover																																																		
<u>Herb Stratum</u> (Plot size: <u>5'</u>)																																																				
1. <u>Carex crinita</u>	50	Yes	OBL	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																																
2. <u>Scirpus cyperinus</u>	20	Yes	OBL																																																	
3. <u>Juncus effusus</u>	10	No	OBL																																																	
4. <u>Viburnum lentago</u>	5	No	FAC																																																	
5. <u>Fragaria virginiana</u>	2	No	FACU																																																	
6. _____																																																				
7. _____																																																				
8. _____																																																				
9. _____																																																				
10. _____																																																				
11. _____																																																				
12. _____																																																				
	87	=Total Cover																																																		
<u>Woody Vine Stratum</u> (Plot size: _____)																																																				
1. _____				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																																																
2. _____																																																				
3. _____																																																				
4. _____																																																				
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																																

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point W3-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 2/1	100					Mucky Sand	Mucky loamy sand
8-14	7.5YR 3/2	100					Sandy	Loamy sand
14-24	5YR 3/3	100					Sandy	Loamy sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Mesic Spodic (A17)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- High Chroma Sands (S11) (**LRR K, L**)
- Loamy Mucky Mineral (F1) (**LRR K, L**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (**LRR K, L**)
- Red Parent Material (F21) (**MLRA 145**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- Polyvalue Below Surface (S8) (**LRR K, L**)
- Thin Dark Surface (S9) (**LRR K, L**)
- Iron-Manganese Masses (F12) (**LRR K, L, R**)
- Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- Red Parent Material (F21) (**outside MLRA 145**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: Camp Ride Campground City/County: Washburn Sampling Date: 5-20-24
 Applicant/Owner: NWBE Inc./Camp Ride LLC. State: WI Sampling Point: SP-1
 Investigator(s): Tim King Section, Township, Range: S6, T38N, R12W
 Landform (hillside, terrace, etc.): Toe slope - lower terrace Local relief (concave, convex, none): Concave Slope %: 0-2
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: 615B NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Upland shrub thicket/northern mesic forest - riparian community, on nearly level to gently sloping area adjacent to intermittent stream.	

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HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Aquatic Fauna (B13)	
<input type="checkbox"/> Marl Deposits (B15)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: SP-1

<u>Tree Stratum</u> (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus macrocarpa</u>	15	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>62.5%</u> (A/B)																
2. <u>Acer negundo</u>	5	Yes	FAC																	
3. <u>Quercus rubra</u>	5	Yes	FACU																	
4. <u>Ulmus americana</u>	2	No	FACW																	
5. <u>Prunus serotina</u>	2	No	FACU																	
6. <u>Pinus resinosa</u>	1	No	FACU																	
7. _____	_____	_____	_____																	
30 =Total Cover				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>72</u></td> <td>x 2 = <u>144</u></td> </tr> <tr> <td>FAC species <u>75</u></td> <td>x 3 = <u>225</u></td> </tr> <tr> <td>FACU species <u>48</u></td> <td>x 4 = <u>192</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>200</u> (A)</td> <td><u>586</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.93</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>72</u>	x 2 = <u>144</u>	FAC species <u>75</u>	x 3 = <u>225</u>	FACU species <u>48</u>	x 4 = <u>192</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>200</u> (A)	<u>586</u> (B)	Prevalence Index = B/A = <u>2.93</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>72</u>	x 2 = <u>144</u>																			
FAC species <u>75</u>	x 3 = <u>225</u>																			
FACU species <u>48</u>	x 4 = <u>192</u>																			
UPL species <u>5</u>	x 5 = <u>25</u>																			
Column Totals: <u>200</u> (A)	<u>586</u> (B)																			
Prevalence Index = B/A = <u>2.93</u>																				
_____ =Total Cover																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u>)																				
1. <u>Rhamnus cathartica</u>	20	Yes	FAC																	
2. <u>Zanthoxylum americanum</u>	20	Yes	FACU																	
3. <u>Rubus idaeus</u>	15	Yes	FAC																	
4. <u>Populus tremuloides</u>	10	No	FAC																	
5. <u>Cornus racemosa</u>	5	No	FAC																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
70 =Total Cover																				
<u>Herb Stratum</u> (Plot size: <u>5'</u>)																				
1. <u>Phalaris arundinacea</u>	50	Yes	FACW																	
2. <u>Thalictrum dasycarpum</u>	20	Yes	FACW																	
3. <u>Rubus idaeus</u>	10	No	FAC																	
4. <u>Poa pratensis</u>	5	No	FACU																	
5. <u>Barbarea vulgaris</u>	5	No	FAC																	
6. <u>Pastinaca sativa</u>	5	No	UPL																	
7. <u>Toxicodendron rydbergii</u>	3	No	FAC																	
8. <u>Urtica dioica</u>	2	No	FAC																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
100 =Total Cover																				
<u>Woody Vine Stratum</u> (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet.)

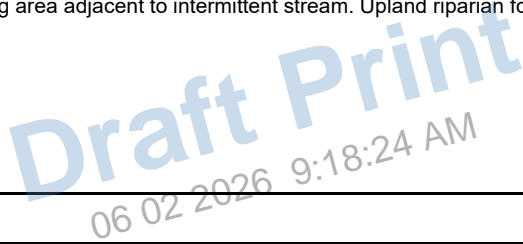
U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Camp Ride Campground City/County: Washburn Sampling Date: 5-20-2024
 Applicant/Owner: NWBE, Inc./Camp Ride LLC. State: WI Sampling Point: SP-2
 Investigator(s): Tim King Section, Township, Range: S6, T38N, R12W
 Landform (hillside, terrace, etc.): Foot slope Local relief (concave, convex, none): Concave/convex Slope %: 1-4
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: 615B NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Northern mesic forest on gently sloping area adjacent to intermittent stream. Upland riparian forest comm.	



HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) _____ _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (minimum of two required) _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: SP-2

<u>Tree Stratum</u> (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Fraxinus pennsylvanica</u>	20	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>10</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>70.0%</u> (A/B)																
2. <u>Acer negundo</u>	15	Yes	FAC																	
3. <u>Quercus rubra</u>	10	No	FACU																	
4. <u>Acer rubrum</u>	10	No	FAC																	
5. <u>Prunus serotina</u>	5	No	FACU																	
6. <u>Populus tremuloides</u>	5	No	FAC																	
7. _____	_____	_____	_____																	
	65	=Total Cover		Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>95</u></td> <td>x 3 = <u>285</u></td> </tr> <tr> <td>FACU species <u>76</u></td> <td>x 4 = <u>304</u></td> </tr> <tr> <td>UPL species <u>2</u></td> <td>x 5 = <u>10</u></td> </tr> <tr> <td>Column Totals: <u>223</u> (A)</td> <td><u>699</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.13</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>95</u>	x 3 = <u>285</u>	FACU species <u>76</u>	x 4 = <u>304</u>	UPL species <u>2</u>	x 5 = <u>10</u>	Column Totals: <u>223</u> (A)	<u>699</u> (B)	Prevalence Index = B/A = <u>3.13</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>50</u>	x 2 = <u>100</u>																			
FAC species <u>95</u>	x 3 = <u>285</u>																			
FACU species <u>76</u>	x 4 = <u>304</u>																			
UPL species <u>2</u>	x 5 = <u>10</u>																			
Column Totals: <u>223</u> (A)	<u>699</u> (B)																			
Prevalence Index = B/A = <u>3.13</u>																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Zanthoxylum americanum</u>	25	Yes	FACU																	
2. <u>Rhamnus cathartica</u>	20	Yes	FAC																	
3. <u>Populus tremuloides</u>	15	Yes	FAC																	
4. <u>Prunus serotina</u>	5	No	FACU																	
5. <u>Rubus idaeus</u>	5	No	FAC																	
6. <u>Corylus americana</u>	2	No	FACU																	
7. <u>Quercus alba</u>	2	No	FACU																	
	74	=Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5'</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
1. <u>Toxicodendron rydbergii</u>	20	Yes	FAC																	
2. <u>Solidago gigantea</u>	20	Yes	FACW																	
3. <u>Prunus serotina</u>	10	Yes	FACU																	
4. <u>Parthenocissus quinquefolia</u>	10	Yes	FACU																	
5. <u>Thalictrum dasycarpum</u>	10	Yes	FACW																	
6. <u>Rhamnus cathartica</u>	5	No	FAC																	
7. <u>Circaea canadensis</u>	5	No	FACU																	
8. <u>Geranium maculatum</u>	2	No	FACU																	
9. <u>Carex pensylvanica</u>	2	No	UPL																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	84	=Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	_____	=Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point SP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 2/2	100					Loamy/Clayey	Sandy loam
8-16	5YR 3/4	100					Sandy	Loamy sand
16-20	5YR 3/3	100					Sandy	Loamy sand
20-24	5YR 3/4	100					Sandy	Loamy sand and gravel

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Mesic Spodic (A17)</p> <p style="padding-left: 20px;">(MLRA 144A, 145, 149B)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p>	<p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> High Chroma Sands (S11) (LRR K, L)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Marl (F10) (LRR K, L)</p> <p><input type="checkbox"/> Red Parent Material (F21) (MLRA 145)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)</p> <p><input type="checkbox"/> Red Parent Material (F21) (outside MLRA 145)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (F22)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes _____ No <u>X</u></p>
--	---

Remarks:
Sandy soils and sand and gravel substrate.

<p>U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R</p>	<p><i>OMB Control #: 0710-0024, Exp: 11/30/2024</i> Requirement Control Symbol EXEMPT: <i>(Authority: AR 335-15, paragraph 5-2a)</i></p>
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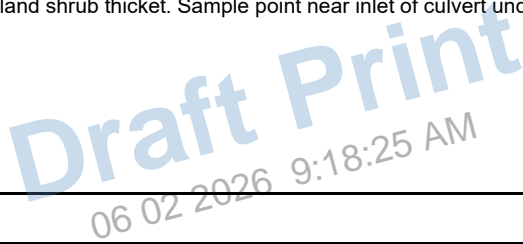
Project/Site: Camp Ride Campground City/County: Washburn Sampling Date: 5-20-2024
 Applicant/Owner: NWBE, Inc./Camp Ride LLC State: WI Sampling Point: SP-3
 Investigator(s): Tim King Section, Township, Range: S6, T38N, R12W
 Landform (hillside, terrace, etc.): Toe slope - depression Local relief (concave, convex, none): Concave Slope %: 0-2
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: 28C NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
---	---

Remarks: (Explain alternative procedures here or in a separate report.)
 Recently cleared and partly graded upland shrub thicket. Sample point near inlet of culvert under adjacent trail.



HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) _____ <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: SP-3

<u>Tree Stratum</u> (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species <u>0</u></td><td>x 1 = <u>0</u></td></tr> <tr><td>FACW species <u>3</u></td><td>x 2 = <u>6</u></td></tr> <tr><td>FAC species <u>16</u></td><td>x 3 = <u>48</u></td></tr> <tr><td>FACU species <u>7</u></td><td>x 4 = <u>28</u></td></tr> <tr><td>UPL species <u>0</u></td><td>x 5 = <u>0</u></td></tr> <tr><td>Column Totals: <u>26</u></td><td>(A) <u>82</u> (B)</td></tr> <tr><td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.15</u></td></tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>3</u>	x 2 = <u>6</u>	FAC species <u>16</u>	x 3 = <u>48</u>	FACU species <u>7</u>	x 4 = <u>28</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>26</u>	(A) <u>82</u> (B)	Prevalence Index = B/A = <u>3.15</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>3</u>	x 2 = <u>6</u>																			
FAC species <u>16</u>	x 3 = <u>48</u>																			
FACU species <u>7</u>	x 4 = <u>28</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>26</u>	(A) <u>82</u> (B)																			
Prevalence Index = B/A = <u>3.15</u>																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u>)																				
1. <u>Rhamnus cathartica</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Zanthoxylum americanum</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover																				
<u>Herb Stratum</u> (Plot size: <u>5'</u>)																				
1. <u>Rhamnus cathartica</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Geranium maculatum</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Maianthemum racemosum</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Thalictrum dasycarpum</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Maianthemum canadense</u>	<u>1</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Osmunda claytoniana</u>	<u>1</u>	<u>No</u>	<u>FAC</u>																	
7. <u>Onoclea sensibilis</u>	<u>1</u>	<u>No</u>	<u>FACW</u>																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ =Total Cover																				
<u>Woody Vine Stratum</u> (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet.)
 Area was recently cleared and partly graded. Community was mainly upland shrub thicket (buckthorn and prickly ash) with sapling/small trees including quaking aspen and paper birch based on observation of woody debris and adjacent undisturbed area.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Camp Ride Campground City/County: Washburn Sampling Date: 5-20-2024
 Applicant/Owner: NWBE Inc./Camp Ride LLC. State: WI Sampling Point: SP-4
 Investigator(s): Tim King Section, Township, Range: S6, T38N, R12W
 Landform (hillside, terrace, etc.): Foot slope Local relief (concave, convex, none): Concave/convex Slope %: 1-4
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: 28C NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Partly cleared upland shrub thicket.	

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HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Aquatic Fauna (B13)	
<input type="checkbox"/> Marl Deposits (B15)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point SP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	7.5YR 2.5/1	100					Loamy/Clayey	Silt loam
12-20	7.5YR 2.5/1	100					Loamy/Clayey	Sandy loam
20-24	7.5YR 2.5/2	100					Loamy/Clayey	Sandy loam
24-28	5YR 3/3	100					Loamy/Clayey	Sandy loam

Camp Ride Campground Site
Town of Beaver Brook, Washburn Co., WI
Wetland Delineation Report

Ecosystems, llc
Project No: 24003
June 26, 2024

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APPENDIX C
SITE PHOTOGRAPHS

Site Photographs



1. Wetland 1 – Alder Thicket / Unnamed Stream (W1-1w) view SE



2. Upland Shrub Thicket / Northern Mesic Forest (W1-1u) view W



3. Wetland 2 – Alder Thicket (W2-1w) view SE



4. Northern Mesic Forest (W2/3-1u) view W



5. Wetland 3 – Shrub Carr / Hardwood Swamp (W3-1w) view SE



6. Unnamed Intermittent Stream (Typical) view S

Site Photographs



7. Upland Shrub Thicket / N. Mesic Forest (SP-1) view S



8. Northern Mesic Forest (SP-2) view S



9. Recently Cleared Upland Shrub Thicket (SP-3) view S



10. Partly Cleared Upland Shrub Thicket (SP-4) view S



11. Recently Cleared Upland Shrub Thicket (SP-3) view W



12. Upland Shrub Thicket / N. Mesic Forest (SP-4) view W

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APPENDIX D

ANTECEDENT PRECIPITATION ANALYSIS

**NRCS method - Rainfall Documentation Worksheet Hydrology Tools for Wetland Determination
NRCS Engineering Field Handbook Chapter 19**

Date	5/1/2024	Landowner/Project	Camp Ride Campground
Weather Station	Spooer Ag Research Sta	State	WI
County	Washburn	Growing Season	2024
Photo/obs Date	5/9 & 5/20/24	Soil Name	

shaded cells are locked or calculated	Long-term rainfall statistics (from WETS table or State Climatology Office)								
	Month	30% chance <	30% chance >	Precip	Condition Dry, Wet, Normal	Condition Value	Month Weight Value	Product of Previous 2 Columns	
	1st Prior Month*	April	1.71	3.34	2.35	N	2	3	6
	2nd Prior Month*	March	1.04	1.68	2.31	W	3	2	6
3rd Prior Month*	February	0.44	0.97	0.41	D	1	1	1	
						Sum			13

*compared to photo/observation date

Note: If sum is	
6 - 9	prior period has been drier than normal
10 - 14	prior period has been normal
15 - 18	prior period has been wetter than normal

Condition value:
Dry =1
Normal =2
Wet =3

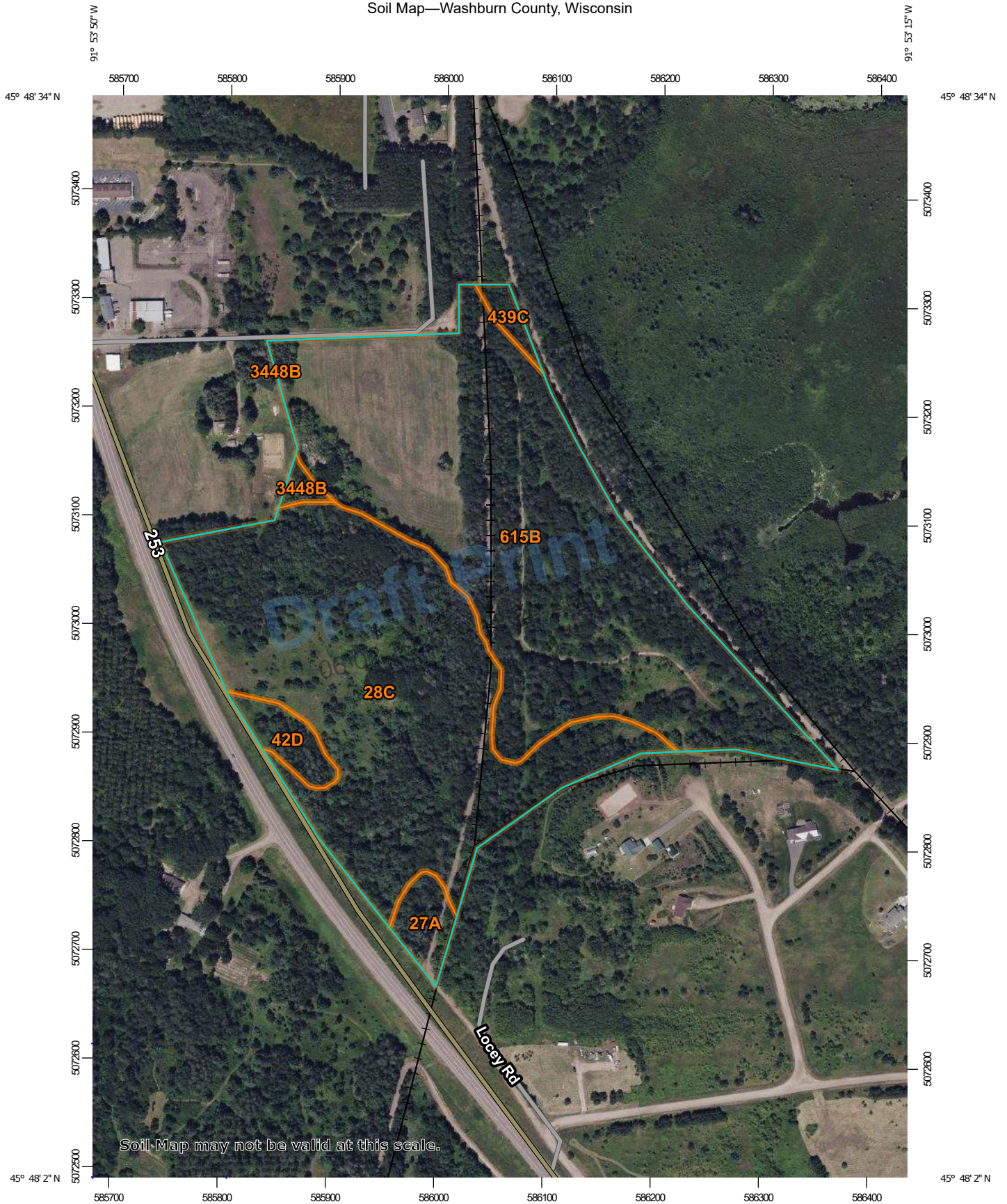
Conclusions: prior period has been normal

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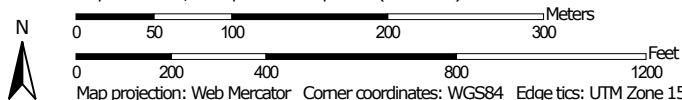
APPENDIX E

NRCS SOIL SURVEY DATA

Soil Map—Washburn County, Wisconsin



Map Scale: 1:4,850 if printed on A portrait (8.5" x 11") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84




MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washburn County, Wisconsin
Survey Area Data: Version 23, Sep 8, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 30, 2022—Sep 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
27A	Scott Lake sandy loam, 0 to 3 percent slopes	0.9	2.1%
28C	Haugen-Rosholt complex, 6 to 12 percent slopes, very stony	19.2	43.4%
42D	Amery sandy loam, 12 to 30 percent slopes, very stony	1.0	2.2%
439C	Graycalm-Menahga complex, 6 to 12 percent slopes	0.4	0.9%
615B	Cress sandy loam, 0 to 6 percent slopes	22.4	50.8%
3448B	Grettum loamy sand, 0 to 6 percent slopes	0.3	0.6%
Totals for Area of Interest		44.2	100.0%

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Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, provide information on the composition of map units and properties of their components.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

Washburn County, Wisconsin

Map Unit: 27A—Scott Lake sandy loam, 0 to 3 percent slopes

Component: Scott Lake (93%)

The Scott Lake component makes up 93 percent of the map unit. Slopes are 0 to 3 percent. This component is on flats on outwash plains. The parent material consists of loamy glaciofluvial deposits over stratified sandy and gravelly outwash. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during April. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Component: Oesterle (5%)

Generated brief soil descriptions are created for major soil components. The Oesterle soil is a minor component.

Component: Rosholt (2%)

Generated brief soil descriptions are created for major soil components. The Rosholt soil is a minor component.

Map Unit: 28C—Haugen-Rosholt complex, 6 to 12 percent slopes, very stony**Component:** Haugen, very stony (55%)

The Haugen, very stony component makes up 55 percent of the map unit. Slopes are 6 to 12 percent. This component is on disintegration moraines on till plains. The parent material consists of loamy till and/or loamy mudflow deposits. Depth to a root restrictive layer, densic material, is 39 to 79 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during March, April. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Rosholt, very stony (30%)

The Rosholt, very stony component makes up 30 percent of the map unit. Slopes are 6 to 12 percent. This component is on disintegration moraines on till plains. The parent material consists of loamy glaciofluvial deposits over stratified sandy and gravelly outwash. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Amery, very stony (5%)

Generated brief soil descriptions are created for major soil components. The Amery, very stony soil is a minor component.

Component: Freeon, very stony (4%)

Generated brief soil descriptions are created for major soil components. The Freeon, very stony soil is a minor component.

Component: Capitola, very stony (2%)

Generated brief soil descriptions are created for major soil components. The Capitola, very stony soil is a minor component.

Component: Aftad (2%)

Generated brief soil descriptions are created for major soil components. The Aftad soil is a minor component.

Component: Mahtomedi (2%)

Generated brief soil descriptions are created for major soil components. The Mahtomedi soil is a minor component.

Map Unit: 42D—Amery sandy loam, 12 to 30 percent slopes, very stony

Component: Amery, very stony (85%)

The Amery, very stony component makes up 85 percent of the map unit. Slopes are 12 to 30 percent. This component is on disintegration moraines on till plains. The parent material consists of sandy loam till and/or loamy mudflow deposits. Depth to a root restrictive layer, densic material, is 59 to 79 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Cress (5%)

Generated brief soil descriptions are created for major soil components. The Cress soil is a minor component.

Component: Haugen, very stony (5%)

Generated brief soil descriptions are created for major soil components. The Haugen, very stony soil is a minor component.

Component: Aftad (3%)

Generated brief soil descriptions are created for major soil components. The Aftad soil is a minor component.

Component: Capitola, very stony (2%)

Generated brief soil descriptions are created for major soil components. The Capitola, very stony soil is a minor component.

Map Unit: 439C—Graycalm-Menahga complex, 6 to 12 percent slopes

Component: Graycalm (55%)

The Graycalm component makes up 55 percent of the map unit. Slopes are 6 to 12 percent. This component is on outwash plains on outwash plains. The parent material consists of sandy outwash. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Menahga (35%)

The Menahga component makes up 35 percent of the map unit. Slopes are 6 to 12 percent. This component is on outwash plains on outwash plains. The parent material consists of sandy outwash. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Below this thin organic horizon the organic matter content is about 1 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Mahtomedi (5%)

Generated brief soil descriptions are created for major soil components. The Mahtomedi soil is a minor component.

Component: Grettum (3%)

Generated brief soil descriptions are created for major soil components. The Grettum soil is a minor component.

Component: Cress (2%)

Generated brief soil descriptions are created for major soil components. The Cress soil is a minor component.

Map Unit: 615B—Cress sandy loam, 0 to 6 percent slopes**Component:** Cress (75%)

The Cress component makes up 75 percent of the map unit. Slopes are 0 to 6 percent. This component is on outwash plains on outwash plains. The parent material consists of loamy alluvium underlain by stratified sandy and gravelly outwash. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria.

Component: Chetek (12%)

Generated brief soil descriptions are created for major soil components. The Chetek soil is a minor component.

Component: Menahga (5%)

Generated brief soil descriptions are created for major soil components. The Menahga soil is a minor component.

Component: Slimlake (3%)

Generated brief soil descriptions are created for major soil components. The Slimlake soil is a minor component.

Component: Mahtomedi (3%)

Generated brief soil descriptions are created for major soil components. The Mahtomedi soil is a minor component.

Component: Rosholt (2%)

Generated brief soil descriptions are created for major soil components. The Rosholt soil is a minor component.

Map Unit: 3448B—Grettum loamy sand, 0 to 6 percent slopes

Component: Grettum (80%)

The Grettum component makes up 80 percent of the map unit. Slopes are 0 to 6 percent. This component is on lake plains on lake plains. The parent material consists of sandy outwash or sandy lacustrine deposits with lamellae. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 54 inches during April. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria.

Component: Graycalm (10%)

Generated brief soil descriptions are created for major soil components. The Graycalm soil is a minor component.

Component: Menahga (5%)

Generated brief soil descriptions are created for major soil components. The Menahga soil is a minor component.

Component: Cress (3%)

Generated brief soil descriptions are created for major soil components. The Cress soil is a minor component.

Component: Aftad (1%)

Generated brief soil descriptions are created for major soil components. The Aftad soil is a minor component.

Component: Karlsborg (1%)

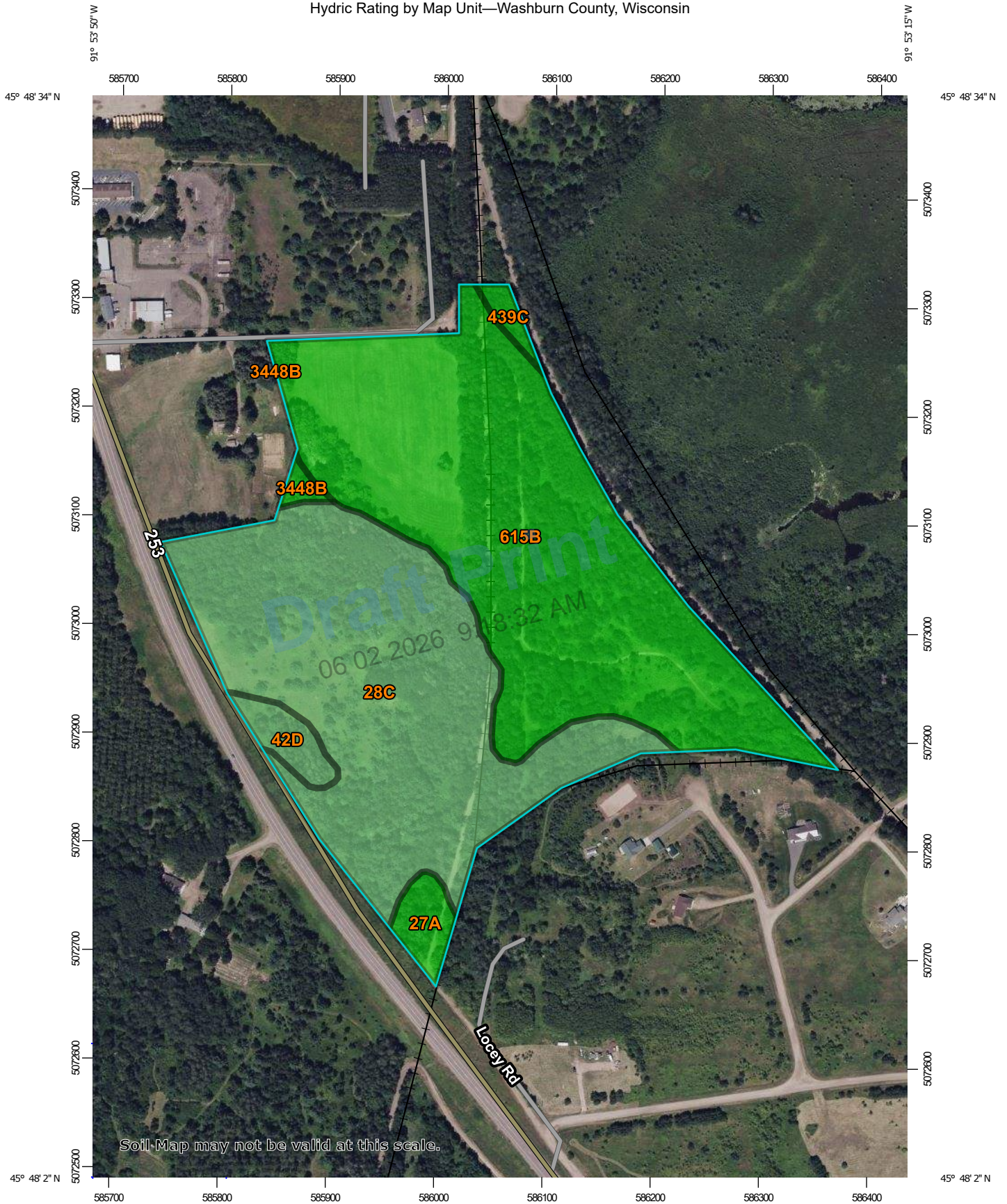
Generated brief soil descriptions are created for major soil components. The Karlsborg soil is a minor component.

Data Source Information

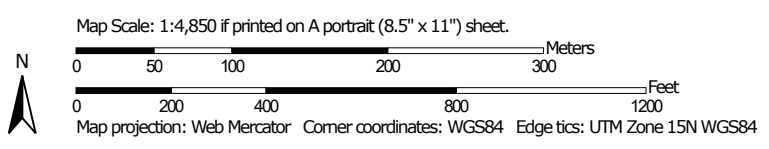
Soil Survey Area: Washburn County, Wisconsin

Survey Area Data: Version 23, Sep 8, 2023

Hydric Rating by Map Unit—Washburn County, Wisconsin




Soil Map may not be valid at this scale.



Hydric Rating by Map Unit—Washburn County, Wisconsin







MAP LEGEND

Area of Interest (AOI)







 Area of Interest (AOI)

Soils







Soil Rating Polygons

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available


Soil Rating Lines

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available






Soil Rating Points

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washburn County, Wisconsin
 Survey Area Data: Version 23, Sep 8, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 30, 2022—Sep 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
27A	Scott Lake sandy loam, 0 to 3 percent slopes	0	0.9	2.1%
28C	Haugen-Rosholt complex, 6 to 12 percent slopes, very stony	2	19.2	43.4%
42D	Amery sandy loam, 12 to 30 percent slopes, very stony	2	1.0	2.2%
439C	Graycalm-Menahga complex, 6 to 12 percent slopes	0	0.4	0.9%
615B	Cress sandy loam, 0 to 6 percent slopes	0	22.4	50.8%
3448B	Grettum loamy sand, 0 to 6 percent slopes	0	0.3	0.6%
Totals for Area of Interest			44.2	100.0%

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

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Hydric Soil List - All Components

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
 Federal Register. Doc. 2012-4733 Filed 2-28-12. February, 28, 2012. Hydric soils of the United States.
 Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
 Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
 Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
 Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Soil List - All Components

Hydric Soil List - All Components--WI129-Washburn County, Wisconsin					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
27A: Scott Lake sandy loam, 0 to 3 percent slopes	Scott Lake	85-100	Terraces, flats	No	—
	Oesterle	0-10	Terraces, flats	No	—
	Rosholt	0-5	Terraces, flats	No	—
28C: Haugen-Rosholt complex, 6 to 12 percent slopes, very stony	Haugen-Very stony	30-75	Disintegration moraines	No	—
	Rosholt-Very stony	15-50	Disintegration moraines	No	—
	Amery-Very stony	0-10	Disintegration moraines	No	—
	Freeon-Very stony	0-10	Disintegration moraines	No	—
	Capitola-Very stony	0-5	Drainageways on disintegration moraines, depressions on disintegration moraines	Yes	2,3
42D: Amery sandy loam, 12 to 30 percent slopes, very stony	Aftad	0-5	Collapsed ice-walled lakebeds on disintegration moraines	No	—
	Mahtomedi	0-5	Disintegration moraines	No	—
	Cress	0-10	Disintegration moraines	No	—
439C: Graycalm-Menahga complex, 6 to 12 percent slopes	Haugen-Very stony	0-10	Disintegration moraines	No	—
	Aftad	0-5	Collapsed ice-walled lakebeds on disintegration moraines	No	—
	Capitola-Very stony	0-5	Drainageways on disintegration moraines, depressions on disintegration moraines	Yes	2,3
	Graycalm	40-80	Outwash plains	No	—
439C: Graycalm-Menahga complex, 6 to 12 percent slopes	Menahga	20-60	Outwash plains	No	—
	Mahtomedi	0-10	Stream terraces, outwash plains	No	—
	Grettum	0-10	Outwash plains	No	—

Hydric Soil List - All Components--WI129-Washburn County, Wisconsin					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
	Cress	0-8	Outwash plains	No	—
615B: Cress sandy loam, 0 to 6 percent slopes	Cress	55-100	Outwash plains, stream terraces	No	—
	Chetek	0-15	Stream terraces, outwash plains	No	—
	Menahga	0-10	Outwash plains	No	—
	Slimlake	0-5	Outwash plains, stream terraces	No	—
	Mahtomedi	0-10	Outwash plains	No	—
	Rosholt	0-5	Stream terraces, outwash plains	No	—
3448B: Grettum loamy sand, 0 to 6 percent slopes	Grettum	60-100	Lake plains, outwash plains	No	—
	Graycalm	0-15	Lake plains	No	—
	Menahga	0-10	Outwash plains	No	—
	Cress	0-7	Stream terraces, lake plains	No	—
	Aftad	0-5	Stream terraces, lake plains	No	—
	Karlsborg	0-3	Lake plains, outwash plains	No	—

Data Source Information

Soil Survey Area: Washburn County, Wisconsin

Survey Area Data: Version 23, Sep 8, 2023

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APPENDIX F

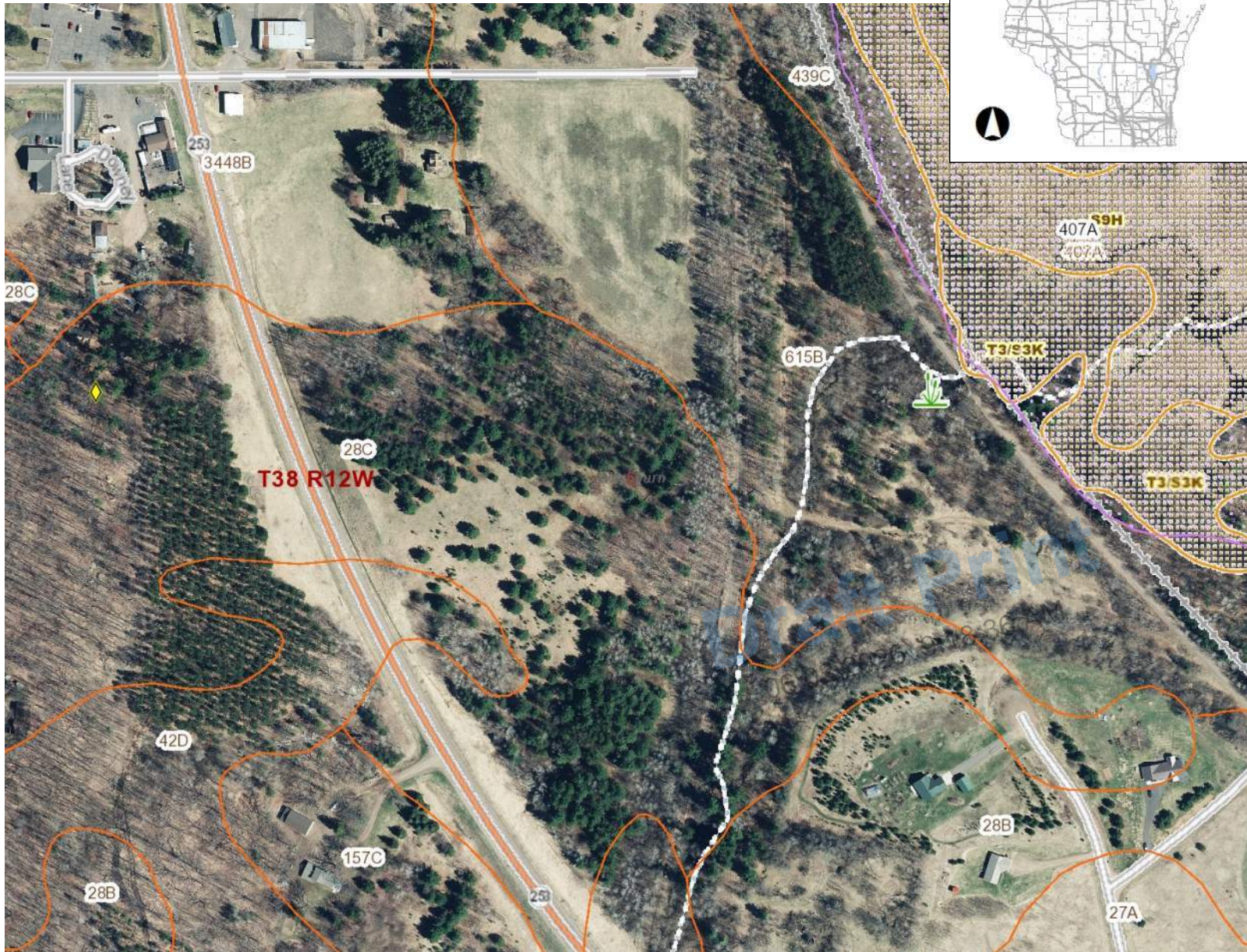
OTHER SUPPORTING DOCUMENTS



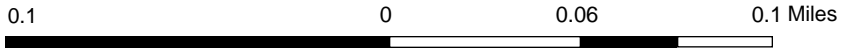
Surface Water Data Viewer Map

EXHIBIT 2.9

Legend



- Wetland Indicators
- Lake Class Areas
- Riverine/ditch Class Areas
- Wetland Class Areas
- Wetland Class Points
- Dammed pond
- Excavated pond
- Filled/draind wetland
- Wetland too small to delineate
- Filled excavated pond
- Filled Points
- Wetland Class Areas
- Filled Areas
- Lake Class Areas
- Riverine/ditch Class Areas
- Wetland Class Areas
- Wetland Class Points
- Dammed pond
- Excavated pond
- Filled/draind wetland
- Wetland too small to delineate
- Filled excavated pond
- Filled Points
- Wetland Class Areas
- Filled Areas
- Waterway and Wetland Alterations
- Formal/Informal Actions
- Exemption Determinations
- Ordinary High Water Mark Determinations
- Wetland Identifications and Confirmations
- Navigability Determinations**
- Yes



NAD_1983_HARN_Wisconsin_TM

1: 3,960

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>

Notes

WDNR SWDV WWI 2020



April 18, 2024

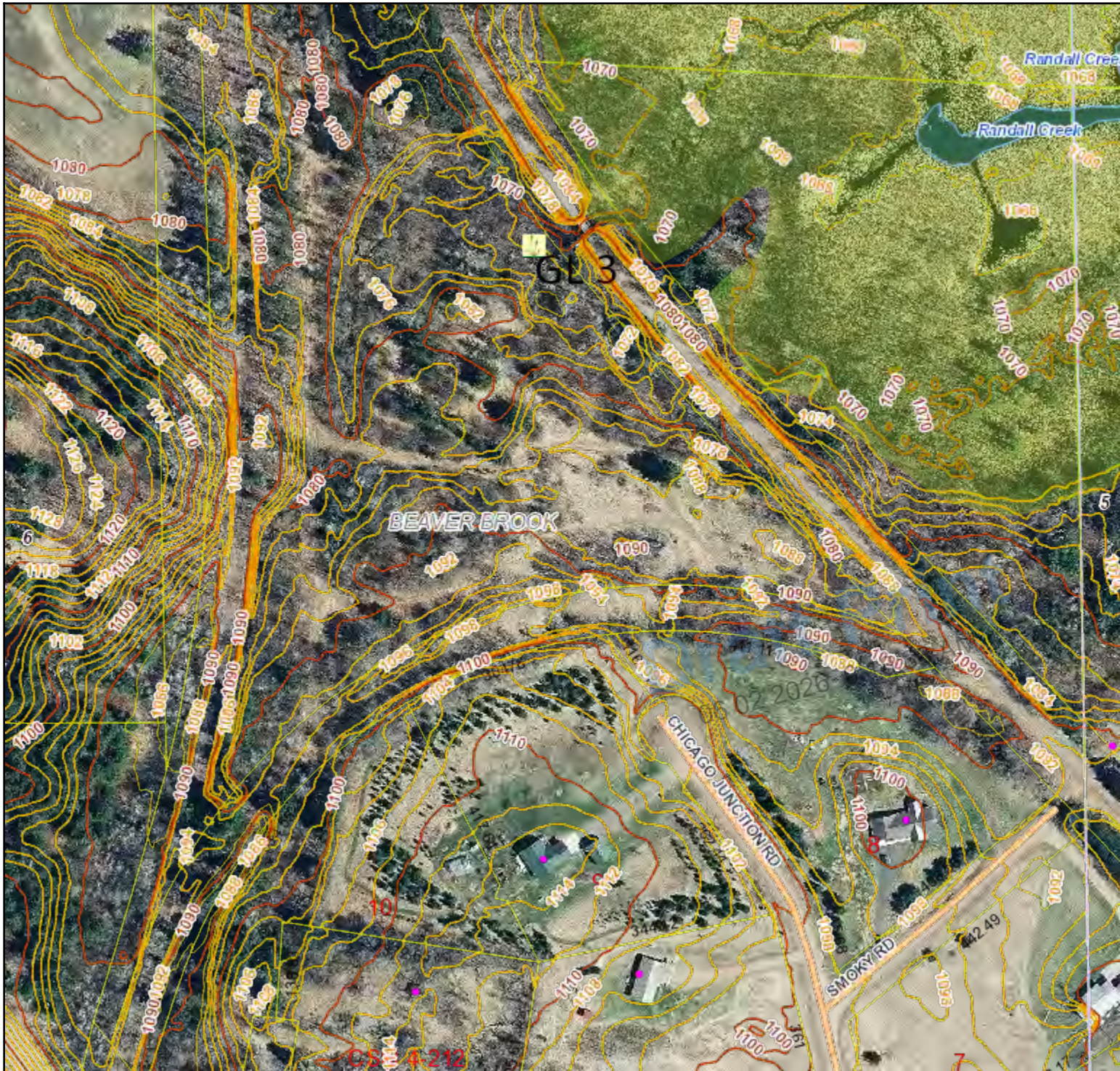
Wetlands

- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

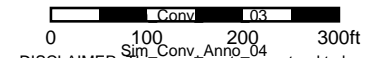
EXHIBIT 2.9

Washburn County, WI



Legend

- DNR Wetlands
- DNR Wetlands (Undelineated)
- Addresses
- Parcels (Approximate)
- Cities (Scale below 25K)
- Villages (Scale below 25K)
- Towns (Scale below 150K)
- Sections
- Surrounding Counties
- Lakes and Rivers
- Rivers and Streams
- US Highways
- State Highways
- County Roads (Scale below 100K)
- Town Roads (Scale below 150K)
- City/Village Streets (Scale below 80K)
- Private Roads
- Forest Roads
- Other Roads
- Railroads
- Sim_Conv_Blk_Anno_02
- Sim_Conv_Blk_Anno_03
- Sim_Conv_Blk_Anno_04
- Sim_Conv_Blk_Anno_06
- Sim_Conv_Blk_Anno_08
- Sim_Conv_Lot_Anno_02
- Sim_Conv_Lot_Anno_03
- Sim_Conv_Lot_Anno_04
- Sim_Conv_Lot_Anno_06



DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.

Stockpile Area #1	
Sim_Conv_Anno_10	
Author:	Quart
Date Printed:	Dim_
Sources:	Dim_
	Dim_



Dim_Anno_06

Dim_Anno_08



Legend

- DNR Wetlands
- DNR Wetlands (Undelineated)
- Addresses
- Parcels (Approximate)
- Cities (Scale below 25K)
- Villages (Scale below 25K)
- Towns (Scale below 150K)
- Sections
- Surrounding Counties
- Lakes and Rivers

Washburn County, WI



DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.

Cleared-Grub Area #2	
Author:	
Date Printed: 11/1/23 8:51 AM	
Sources: 2020	

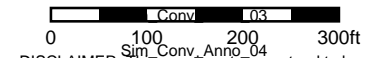
EXHIBIT 2.9

Washburn County, WI



Legend

- DNR Wetlands
- ▬ DNR Wetlands (Undelineated)
- Addresses
- Parcels (Approximate)
- Cities (Scale below 25K)
- Villages (Scale below 25K)
- Towns (Scale below 150K)
- Sections
- Surrounding Counties
- Lakes and Rivers
- Rivers and Streams
- US Highways
- State Highways
- County Roads (Scale below 100K)
- Town Roads (Scale below 150K)
- City/Village Streets (Scale below 80K)
- Private Roads
- Forest Roads
- Other Roads
- Railroads
- Sim_Conv_Blkc_Anno_02
- Sim_Conv_Blkc_Anno_03
- Sim_Conv_Blkc_Anno_04
- Sim_Conv_Blkc_Anno_06
- Sim_Conv_Blkc_Anno_08
- Sim_Conv_Blkc_Anno_10
- Sim_Conv_Lot_Anno_02
- Sim_Conv_Lot_Anno_03
- Sim_Conv_Lot_Anno_04
- Sim_Conv_Lot_Anno_06



DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.

Cleared Area #3	
Sim_Conv_Anno_10	
Author:	Quart
Date Printed:	Dim_
Sources:	Dim_
	Dim_



Dim_Anno_06

Dim_Anno_08

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
1027 W St Paul Ave
Milwaukee WI, WI, 53233

Tony Evers, Governor
Adam N. Payne, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711



March 22, 2024

Tim King, PWS
Ecosystems, LLC
PO Box 481
Rice Lake, WI 54868

Subject: 2024 Assured Wetland Delineator Confirmation

Dear Mr. King:

This letter provides Wisconsin Department of Natural Resources (WDNR) confirmation for the wetland delineations you conduct during the 2024 growing season. You and your clients will not need to wait for the WDNR to review your wetland delineations before moving forward with project planning. This will help expedite the review process for WDNR's wetland regulatory program. Your name and contact information will continue to be listed on our website at: <http://dnr.wi.gov/topic/wetlands/assurance.html>.

In the instance where a municipality may require a letter of confirmation for your work prior to moving forward in the local regulatory process, this letter shall serve as that confirmation. Although your wetland delineations do not require WDNR field review, inclusion of a Wetland Delineation Report is required for projects needing State authorized wetland, waterway and/or storm water permit approvals.

To comply with Chapter 23.321, State Statutes, please supply the department with a polygon shapefile of the wetland boundaries delineated within the project area. Please do not include data such as parcel boundaries, project limits, wetland graphic representation symbols, etc. If internal upland polygons are found within a wetland polygon, then please label as UPLAND. The shapefile should utilize a State Plane Projection and be overlain onto recent aerial photography. If a different projection system is used, please indicate in which system the data are projected. In the correspondence sent with the shapefile, please supply a brief description of each wetland's plant community (eg: wet meadow, floodplain forest, etc.). Please send these data to Calvin Lawrence (608-266-0756 or email at calvin.lawrence@wisconsin.gov).

If you or any client has a question regarding your status in the Wetland Delineation Professional Assurance Program, contact me by email at kara.brooks@wisconsin.gov or phone at 414-308-6780. Thank you for all your hard work and best wishes for the upcoming field season.

Sincerely,

A handwritten signature in black ink that reads 'Kara Brooks'. The signature is written in a cursive, flowing style.

Kara Brooks
Wetland Identification Coordinator
Bureau of Watershed Management

Draft Print
06 02 2026 9:18:38 AM



Endangered Resources Preliminary Assessment

Created on **8/13/2025**. This report is good for one year after the created date.

DNR staff will be reviewing the ER Preliminary Assessments to verify the results provided by the Public Portal. ER Preliminary Assessments are only valid if the project habitat and waterway-related questions are answered accurately based on current site conditions. If an assessment is deemed invalid, a full ER review may be required even if the assessment indicated otherwise.

Results

A search was conducted of the NHI Portal within a 1-mile buffer (for terrestrial and wetland species) and a 2-mile buffer (for aquatic species) of the project area. Based on these search results, below are your follow-up actions.

An ER Review is recommended. You are encouraged to request a full ER Review, although it is not required (<https://dnr.wi.gov/topic/ERReview/Review.html>). If an Endangered Resources Review is requested for this project, it would provide recommended (voluntary) actions that could be taken during the course of the project. The preliminary assessment can be submitted with DNR permit applications and requests to demonstrate compliance with the Endangered Resources Review Process.

One (or more) of the following situations apply:

- The species recorded are special concern.
- The records are from natural communities or other natural features.
- The species recorded are threatened or endangered plants, but are not protected due to the project occurring on private land or due to another type of exemption (i.e. agriculture, utility, etc.).

A copy of this document can be kept on file and submitted with any other necessary DNR permit applications to show that the need for an ER Review has been met. This notice only addresses endangered resources issues. This notice does not constitute DNR authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the DNR and/or other permitting authorities.

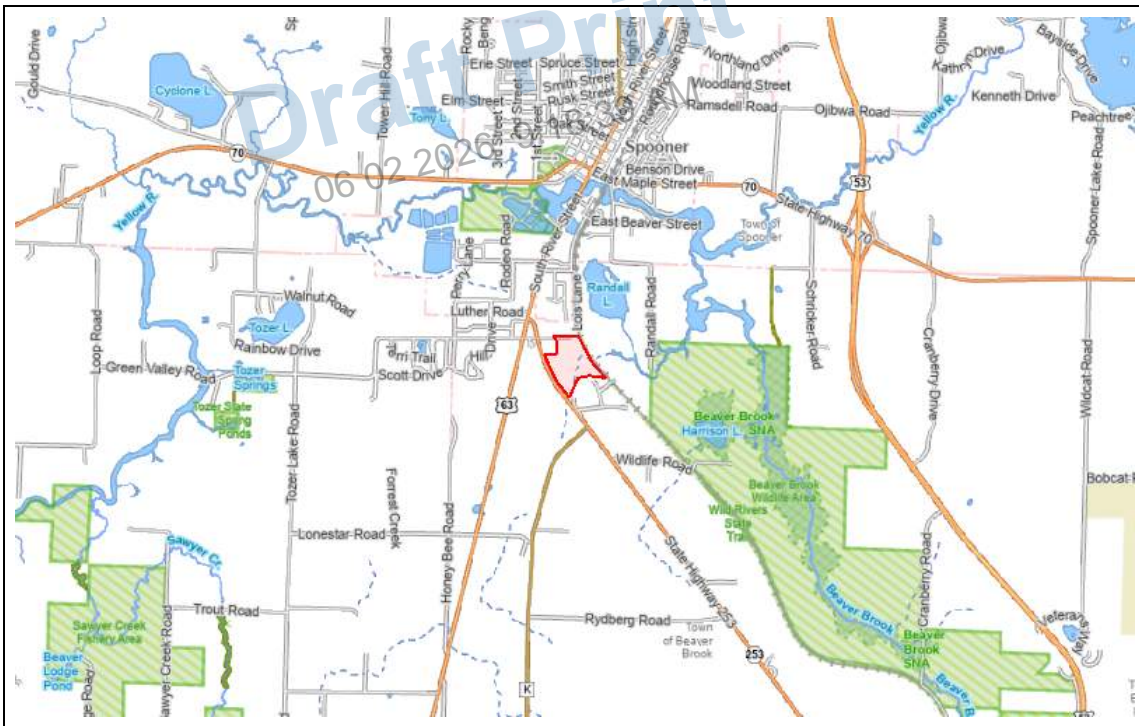
Project Information

Landowner name	Camp Ride LLC
Project address	South of Green Valley Rd, Spooner, WI
Project description	Campground

Project Questions

Does the project involve a public property?	No
Is there any federal involvement with the project?	No
Is the project a utility, agricultural, forestry or bulk sampling (associated with mining) project?	No
Is the project property in Managed Forest Law or Managed Forest Tax Law?	No
Project involves tree or shrub removal?	Yes
Is project near (within 300 ft) a waterbody or a shoreline?	Yes
Is project within a waterbody or along the shoreline?	No

Project Area Maps



The information shown on these maps has been obtained from various sources, and is of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. Users of these maps should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal>.

<https://dnr.wisconsin.gov/nhiportal/public>

101 S. Webster Street . PO Box 7921 . Madison, Wisconsin 53707-7921

FEASIBILITY ASSESSMENT
AND
ENVIRONMENTAL
ANALYSIS
OF
BEAVER BROOK
WILDLIFE AREA EXPANSION

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
IN COOPERATION WITH
THE DEPARTMENT OF TRANSPORTATION

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Attachments:

Environmental Analysis Certification
County Locator Map
Project Map

Executive Summary

This feasibility assessment and environmental analysis examines the potential boundary expansion of the Beaver Brook Wildlife Area in Washburn County, northwestern Wisconsin and the purchase of 536 acres. The proposed purchase area adjoins the south boundary of the wildlife area, 3 miles south of the City of Spooner. The wildlife area's northern boundary is located just ½-mile southeast of the city limits.

The proposal includes only one privately owned tract of land totaling approximately 536 Acres. The land type within the proposed acquisition includes a developed, 81.5-acre cranberry marsh, a 65.5-acre flowage as well as a mixture of undeveloped marsh and upland forestlands. Beaver Brook passes through the northwest quadrant of the property and three portions of its southern boundary front on Lutz Lake.

The Department of Natural Resources (DNR), in partnership with the Department of Transportation (DOT), will acquire, restore and manage the proposed purchase area. The wetland areas will be restored by DOT and used as a wetland mitigation bank site. The DNR will manage the property in its entirety consistent with the Beaver Brook Wildlife Area master plan.

Public opinions on the proposal will be sought from landowners, conservation and farming organizations as well as county planning, local government representatives and state legislators. The proposal is consistent with current local and regional land use plans. It also complements state and federal wildlife management objectives.

The Feasibility Assessment and Environmental Analysis Process

This document is a combined Feasibility Assessment and Environmental Analysis. It is intended to include the required information for both types of studies to avoid unnecessary duplication.

A Feasibility Assessment is used to determine whether it is feasible to establish, acquire, develop, and manage newly acquired property. The study takes into account the physical and biological environment and its capabilities, the views of the public and of landowners adjoining the property, and the availability of funding and staffing to accomplish the project's purpose adequately. Furthermore, a Feasibility Assessment presents boundary alternatives, general land management strategies and ensures integrated ecosystem management principles are considered.

The Feasibility Assessment also must meet the requirements of the Wisconsin Environmental Policy Act (WEPA) and its implementing codes. Certain DNR actions require an Environmental Assessment (EA) or a complete Environmental Impact Statement (EIS). The Beaver Brook Wildlife Area expansion requires an EA under Chapter NR 150 of the Wisconsin Administrative Code.

The EA process is used to evaluate the likely impacts of a proposed project, primarily impacts on the natural environment. The EA also helps determine whether an activity's impacts will be significant enough to warrant a complete EIS. Both the EA and the Feasibility Assessment are meant to provide the public and the Department of Natural Resource (DNR) decision-makers with a factual, unbiased analysis of a proposal and must also identify reasonable alternatives to help make an informed decision possible.

After you have read this document, you are invited to send any comments or questions to Nancy Christel, 810 W. Maple St., Spooner 54801, but do so no later than July 31th, 2003. Following this public comment period, DNR staff will analyze the comments and modify the document or proposed project as warranted. If you file comments, you will be notified when the assessment process has been completed.

The final proposal is then forwarded to the DNR Administration for acceptance and presentation to the Natural Resources Board. If the board approves the plan, the DNR is authorized to begin land protection efforts. More detailed planning for management of the property begins next and involves another public participation process.

I. Proposed Project

A. Project Description

This feasibility assessment and environmental analysis examines the potential boundary expansion of the Beaver Brook Wildlife Area in Washburn County, northwestern Wisconsin and the purchase of 536 acres. The proposed purchase area adjoins the south boundary of the wildlife area, 3 miles south of the City of Spooner. The wildlife area's northern boundary is located just ½-mile southeast of the city limits.

The proposed purchase and wetland restoration will be through a partnership between the Department of Transportation (DOT) and the Department of Natural Resources (DNR). The DOT has an interest to participate in this acquisition through the wetland mitigation program, which allows the DOT to replace wetlands that were lost due to highway projects. DNR and DOT plan to each pay a share of the land acquisition cost based upon the amount of wetlands involved. DOT will restore any wetlands affected by development and the DNR will be responsible for future management.

The proposed acquisition contains cranberry beds, wetlands, a flowage, frontage on Lutz Lake, and forested uplands. Wetland restoration will provide habitat for waterfowl and wetland species. Additionally, the DNR intends to restore almost 2 miles of trout stream that will enhance both fish and wildlife species. These conservation practices will improve water quality and have a positive impact on the watershed downstream from the project area.

Public recreation opportunities for the Beaver Brook Wildlife Area include activities such as hunting, fishing, trapping, wildlife viewing, snowshoeing, and cross-country skiing. The proposed 536-Acre acquisition will provide additional opportunities for the public to participate in these outdoor activities.

Description of Existing Project: The Beaver Brook Wildlife Area was established as a state project in 1951. Currently, the land acquisition boundary includes 1,588 acres and the state owns 1,323 acres of that total.

About half of the wildlife area is forested with upland hardwoods (aspen and oak). Swamp conifers, swamp hardwoods and lowland brush are the other major cover types. The lowland cover is associated with Beaver Brook, which flows northwesterly from the dam on the southern boundary across almost the entire length of the project ending at the Yellow River Flowage. A few small tracts of red and white pine are located near the stream.

Beaver Brook is a Class I trout stream and could be among the regions premiere brook and brown trout fisheries. However, the cranberry operation upstream hampers water quality and restricts the fishery. Within the wildlife area, 10 small spring ponds and numerous bank seeps that help to improve water quality feed the stream. Beaver Brook has good in-stream habitat consisting of undercut banks, tag alder roots, boulders and DNR installed devices.

Wildlife found on the property were identified by Department of Natural Resources staff using field observations, inventories and estimates by experienced personnel (see tables below). State

endangered (e), threatened (t) and special concern (sc) wildlife found here further indicates that this is a land type critical to the survival of some species.

Table 1: Birds

American bittern – sc	crested flycatcher	black-throated green warbler
great blue heron – sc	eastern kingbird – sc	pine warbler
Canada goose	tree swallow	cerulean warbler – t
wood duck	rough-winged swallow	black and white warbler,
mallard	bank swallow	American redstart
blue-winged teal	cliff swallow	Ovenbird
turkey vulture	barn swallow	northern waterthrush
bald eagle – sc	blue jay	mourning warbler
northern harrier – sc	northern raven	common yellowthroat
red-shouldered hawk – t	American crow	Canada warbler
common loon – sc	black-capped chickadee	scarlet tanager
broad-winged hawk	white-breasted nuthatch	red-breasted grosbeak
ruffed grouse	house wren	indigo bunting
wild turkey	sedge wren - sc	rufous-sided towhee
Virginia rail	blue-gray gnatcatcher	chipping sparrow
sandhill crane	eastern bluebird	clay-colored sparrow
killdeer	veery - sc	field sparrow – sc
spotted sandpiper	hermit thrush	savannah sparrow
American woodcock	wood thrush - sc	song sparrow
mourning dove	American robin	swamp sparrow
yellow-billed cuckoo – sc	gray catbird	white-throated sparrow
barred owl	brown thrasher	bobolink – sc
ruby-throated hummingbird	cedar waxwing	red-winged blackbird
red-bellied woodpecker	yellow-throated vireo	eastern meadowlark – sc
yellow-bellied sapsucker	warbling vireo	common grackle
downy woodpecker	red-eyed vireo	brown-headed cowbird
hairy woodpecker	blue-winged warbler	northern oriole
northern flicker	golden-winged warbler-sc	purple finch
eastern wood pewee	Nashville warbler - sc	American goldfinch
alder flycatcher	northern parula	trumpeter swan – e
least flycatcher	yellow warbler	
eastern phoebe	chestnut-sided warbler	black-throated blue warbler –
		sc

Table 2: Mammals

white-tailed deer	striped skunk
black bear	Woodchuck
Otter	Fisher
Beaver	snowshoe hare

Muskrat	cottontail rabbit
Eastern chipmunk	gray squirrel
Coyote	short-tailed weasel
gray fox	

Table 3: Reptiles and Amphibians

blue-spotted salamander	leopard frog
red-backed salamander	gray tree frog
four-toed salamander – sc	eastern garter snake
spotted salamander	brown snake
Copes tree frog	American toad
chorus frog	wood frog
	spring peeper

Public use of the property is considered moderate by statewide standards. Gun and bow deer hunting provides the most popular recreation throughout their respective seasons. Trout fishing is a low use activity, but remains steady throughout the season. Ruffed grouse, woodcock and waterfowl hunting are at constant levels through the fall. Trapping activity is light with muskrat and beaver attracting the most activity.

Winter use of the area has been increasing in recent years when snow conditions are favorable. Cross-country skiing is steady throughout the season. A 5-mile trail provides hunter, snowmobiler and cross-country skier use in conjunction with the Washburn County trail network and is very popular. Some snowshoeing use occurs and participants say the wildlife area is ideal for that type of recreation.

Management of the area evolves around forest habitat improvement aimed at maintaining a good age class distribution within aspen stands as well as installation of in-stream habitat work to improve conditions for trout. An osprey platform was placed in the flowage in 1988. It was active for 6 years and produced young at least 2 of those years. A bald eagle has nested within the wildlife area since 1984 and has produced 18 young.

B. Project Goals

The proposed goal is for the DNR and DOT to purchase 536 acres and incorporate it within the approved land acquisition boundaries of the Beaver Brook Wildlife Area.

C. Need

Statewide: Recreation needs in Wisconsin continue to grow. The *Wisconsin State Wide Comprehensive Outdoor Recreation Plan (SCORP) 2000-2005* provides an assessment of recreational trends and identifies general needs for accommodating future uses in the state and is reflected in the following information.

Trail-based activities continue to be popular with 41% of Wisconsin residents participating. Hiking (675,000 participants) is ranked third among 12 recreational activities. The Ice Age National Scenic Trail has generated renewed interest in hiking according to the Ice Age Park and Trail foundation. The SCORP cites trail based recreation as a high priority need for northern Wisconsin.

Wisconsin ranks fourth in the nation for participation in public hunting and hunting has an economic impact of millions of dollars (combined with wildlife watching and fishing, \$6.4 billion according to *Preserving Wisconsin's Outdoor Legacy* by William J. Vander Zouwen, November, 1998).

Public fishing has always been popular in the state. It is estimated that between 1990 and 1996, an average of 1.5 million state residents age 7 and above took part in fishing activities annually (SCORP, 2000). In addition, another 400,000 nonresidents (16 and older) fish in Wisconsin each year.

Other outdoor recreational activities which continue to be popular in Wisconsin (SCORP 1997 levels) include snowmobiling (460,000 users), cross-country skiing (613,000 users), biking (930,000 users), horseback riding (255,000 users), backpacking (457,000 users), canoeing (230,000 users) and primitive camping (200,000).

The DNR's strategic plan (1999) identifies providing outdoor recreation as one of its four primary goals. The DNR and the United States Fish and Wildlife Service (F&WS) strategic plans emphasize wetland wildlife production and public hunting opportunities.

SCORP also identifies four principles effecting future recreational planning:

1. Land-use patterns are shifting
2. Ownership patterns in rural areas are changing.
3. Budgets for operations and maintenance of recreational resources are not expected to increase.
4. State demographics are shifting.

Regional: In Washburn County, the economy is centered on agriculture, recreation, and wood product manufacturing and state-federal government employment. Most of the land is forested, about 17% of the land is classified as agricultural and the county contains 7% of Wisconsin's lakes. The county population growth rate is slow (4%), but recreational use demands are increasing rapidly because of its proximity to the Twin Cities. A high, seasonal population reflected by its 40% seasonal housing occupancy rate indicates the transient nature of people using the area.

The Washburn County Park and Open Space Plan encourages land to be set aside for recreational use. The plan also states important natural resources such as wetlands, plant communities, geological formations, and historical sites should be identified, acquired and preserved.

A variety of state, regional and local planning reports support the concept of more public recreational land in northwest Wisconsin including Washburn County. *Preserving Wisconsin's Outdoor Legacy* indicates over 40% of hunters using public lands in northwest Wisconsin report they feel crowded.

The *Washburn County Parks and Outdoor Recreation Plan* outlines the need to balance public and private efforts in accommodating county recreational needs and cautions that haphazard development can have serious, negative impact on natural resources.

D. Proposed Designation

Because the proposed project adjoins an existing state wildlife area and encompasses a variety of habitats that lend themselves to wildlife management and compatible public recreation including hunting, trapping and fishing, "wildlife area" designation is most appropriate for the proposed purchase area.

In Wisconsin, "wildlife area" designation is consistent with the statutory purpose of lands acquired by the DNR. That authority is "*for shooting, trapping or fishing grounds or waters for the purpose of providing areas in which any citizen may hunt, trap or fish*".

II. Environmental Description

A. Regional Description

The proposed purchase area and the Beaver Brook Wildlife Area are located in northwestern Wisconsin, in the south central portion of Washburn County, Beaver Brook Township (Figure 2). It adjoins the southeast corner of Spooner and also the Village of Beaver Brook. Shell Lake is 2 miles west. The Twin Cities are within a 2-hour drive of the property; Madison is 4 hours southeast. The north south running State Highway 53 passes within ½ mile east of the proposal and State Highway 70 oriented east and west is one mile north.

Washburn County's topography is generally flat to gently rolling as a result of glaciation 13,000 years ago. The underlying sandstone bedrock is 100 to 150 feet below this glacial material and the surface soils are either muck in the lowlands or sand and silt loams in the uplands. Numerous bogs, ephemeral ponds, marshes, lakes and rivers create a richly diverse landscape and its associated wildlife is equally diverse.

B. Site Description

Physical: The Badger Cranberry Company, an active cranberry production operation, owns the proposed purchase area. The entire property contains 586 acres, but the owner will retain 50 acres including the residence and buildings.

Access to the property on the west is from Cranberry Road. A former railroad right-of-way, now maintained as a DNR public trail, follows the entire west edge of the proposed purchase area. Access from the east is from State Highway 53.

Biological: Of the 536 acres proposed for purchase, about 184 acres are considered wetlands, 74 acres open water and the balance is forested uplands. The major wetlands are 81.5 acres of developed cranberry beds located in the northern one-third of the property, a 65.5-acre flowage in the central portion and about 30 acres of scattered wetlands in the southern portion of the property. There are also about 65 acres consisting of 3 irregularly shaped parcels adjoining Lutz Lake, a 19-acre drainage lake west of State Highway 53.

The eastern portion of the land is wooded and sloped uplands. Access along the entire western boundary is difficult because of steep terrain. The core wetlands are comprised of muck soils while the uplands are mostly sandy and silt loams.

Cultural: There is no known cultural or archeological sites located on the property.

III. Proposed Protection Strategies

A. Costs

Land acquisition costs are established by private contract appraisals and will be approximately \$1,350,000 based upon appraisals and the Departments review of other recent sales in Polk County. No high value improvements are included in the purchase.

Taxes on all land purchased by the DNR are paid on a prorated basis at the time of purchase. Subsequently, the Department pays aids-in-lieu-of taxes each year. Those payments are estimated at \$9,500 per year.

Initial land management costs including site clean-up, initial posting and large sign construction are estimated at \$2,000. Maintenance including annual posting, patrolling, litter pickup, fish structures, nesting structures, prescribed burning, trail mowing and parking lot grading/mowing will average about \$2,000 per year.

Staffing will be provided by the DNR's wildlife management function at Spooner, 2 miles northwest of the wildlife area. One wildlife biologist, one wildlife technician and one half-time limited term employee (wildlife technician) stationed at Spooner are responsible for the wildlife area management program and will manage the expanded wildlife area. One Conservation Warden also stationed at Spooner accomplishes routine law enforcement.

Cost Summary

Land Acquisition	\$1,350,000 (DOT cost-shared)
Taxes (full acquisition)	\$9500/yr.(estimated)
Initial development	\$2,000
Maintenance	\$2,000/yr.

B. Proposed Strategies and Partners

The land will be acquired by DNR with funding assistance provided by DOT. DNR and DOT will each pay a share of the land acquisition cost based upon the amount of wetlands involved.

DOT will restore the wetlands as part of the wetland mitigation bank project. The DNR will manage the land for public use.

C. Funding Sources and Authorities

The DOT has interest to participate under their program of wetland mitigation which allows them to purchase and restore wetland acreage in trade for highway projects that produce a loss of wetlands.

DNR is authorized to acquire land for a variety of public purposes under ss. 23.09(2) and (10), 23.11, 23.14 and 27.01(2)(a) of the Wisconsin Statutes. Such lands are administered consistent with Natural Resources Board policy established in Chapter NR 1 of the Wisconsin Administrative Code.

As a general agency policy, new land acquisition opportunities are identified in long-range plans or presented in agency briefing documents to the Natural Resources Board in advance of initiating any formal planning activity involving public participation.

The Knowles-Nelson Stewardship Program provides Land acquisition funding for the DNR. This fund provides \$22.5 million for DNR fee title and easement acquisition for the fiscal year ending June 30, 2003. This program is authorized through the year 2010 at a similar funding level, but is subject to annual appropriations by the Governor and the legislature.

D. Proposed Management Goals

The management regime proposed for this project is to remove the ditches, culverts, dikes and dams and restore the wetlands to a natural condition. Once the dams are removed, it is anticipated that the free-flowing stream will find its natural meander and associated wetlands will improve in quality and function.

The restoration of the normal stream flow, protection of spring discharge areas, natural vegetation and elimination of disturbances caused by the cranberry operation will rejuvenate this cold-water stream and provide the habitat conditions that will again make Beaver Brook one of the region's premiere brook and brown trout fisheries.

III. Public Involvement

Letters and personal contacts will be used to inform area landowners, local officials and various interest groups to alert them of the proposal and to solicit their early opinions about the proposal. News media announcements and letters will be used to notify a broad mix of public participants and legislators of the proposed land acquisition and boundary expansion.

V. Environmental Analysis

A. Environmental Effects and Their Significance

The environmental impacts associated with the proposed land acquisition and management by the DNR is very positive. State ownership will protect habitat for wildlife and ensure public recreational opportunities in a county with an expanding human population and demands for public outdoor recreation opportunities.

Habitat development activities will focus on restoration of about 185 acres of wetland and almost 2 miles of trout stream. The improvement of wetland quality will enhance fish and wildlife populations and have a positive impact on the watershed downstream from the project. Some limited forest management practices will improve conditions for forest wildlife.

Prescribed burning will be used to control vegetation. Burning is essential for maintaining a healthy grassland ecosystem as well as promoting plant and animal species diversity. The use of prescribed burning and herbicides as vegetative control tools can generate some public concern. When done properly, the benefits outweigh costs. Prescribed burning will be carefully controlled to minimize the risk of inadvertently allowing fire to spread to adjoining private lands.

The proposed purchase is not expected to appreciably add to increased traffic or human disturbance to the natural environment. Use levels will increase, but because they will occur over a 12-month use period, the risk of sharp increases occurring from one month to the next will be minimized.

State land purchasing will reduce residential real estate potential. However, opportunities for such development are available within the county. Existing zoning will allow residential development in the immediate vicinity of the wildlife area.

B. Significance of Cumulative Effects

The acquisition of these lands by the DNR and DOT will protect additional wildlife habitat, restore a quality trout stream, improve natural aesthetics in the area and have a positive effect on water quality. The cumulative effect of state ownership over time is significant for wildlife and the human environment when considering the potential loss of wildlife and outdoor recreation benefits.

Payments in lieu of taxes resulting from the DNR ownership will help offset any reduction in actual property tax payments. Further, the DNR generally does not require local governmental services for its properties. In situations where the DNR receives services which are also provided the general public, it typically pays for these services, whether used or not, directly via special agreement with the municipality.

Several independent tax studies have concluded that not only is there little or no impact on the local tax base, but often the public land itself generates dollars for local businesses. The most recent of those studies, *Public Lands and Property Taxes* by Danuel P. Huegel, Wisconsin Department of Revenue, January 2000, clearly documents that taxpayers do not pay higher taxes as a result of public ownership.

C. Significance of Risk

There is little or no risk associated with the proposed purchase of 536 acres of lands by the DNR or its subsequent management. However, there is a risk that if the land is not purchased, water quality will be affected because of the nature of cranberry operations. Weed and disease control chemicals adversely affect ecosystems resulting in reduced fish and wildlife populations. Mechanical disturbances during maintenance and harvest operations also produce less fish and wildlife use of the area.

Endangered, threatened or special concern plant and animal species may not be protected or maintained if this area is not purchased and restored by the DNR and DOT.

There are no known historical or archaeological sites within the proposed purchase area. However, such sites may exist. Archaeological and historic sites, while afforded some protection by state and federal laws are more apt to be at risk if the lands were acquired by the DNR. The risk for a private individual or business to harm or destroy these resources is high because most people are not familiar with historic preservation laws or aware that the resources exist on their land.

Public outdoor recreational activities are expected to increase in the area as a result of the purchase and protection of this land.

D. Significance of Precedent

The proposed land acquisition and management is not precedent setting. The DNR has purchased and manages similar properties in other parts of Washburn County and elsewhere in the state. Partnerships with the DOT have also occurred in several areas of the state and are considered an effective way of protecting and restoring wetlands.

E. Significance of Controversy

No controversial management is proposed for the proposed wildlife area and no controversy is anticipated for the proposed purchase.

VI. Alternatives

A. No Action

Under this alternative, the DNR will not acquire the 536 acres. The property will likely be sold to private citizens interested in continuing the cranberry production operation. This will mean that environmental conditions for fish and wildlife as well as current water quality conditions will likely continue without improvement and may possibly be degraded over time.

Future residential development could negatively impact fish and wildlife habitat and public hunting opportunities in the area. Endangered, threatened and special concern plant and animals present now could be displaced. Residential development could also prevent rare plant and animal species from becoming established. Historic and archaeological sites (if existing on the site) could also be damaged or destroyed. Public use opportunities will also be more restricted.

B. 536-Acre Boundary Expansion

This alternative is explained in the text of this study. It involves the purchase of 536 acres of wetland and forested uplands for protection and management for wildlife and compatible recreation.

C. 1,000-Acre Boundary Expansion

This alternative considers purchase of additional land located adjoining the wildlife area, the cranberry operation and lands adjoining that operation. The acreage is approximate and is used to demonstrate potential for a much larger area than the preferred alternative.

This alternative will expand the wildlife production opportunities as well as increasing public recreation. The trout stream and associated wetlands will be restored to their natural condition. Water quality will likely be improved over a larger area. It will also have a greater impact on preserving the natural aesthetics and rural character of the area. The DNR will have to dispose of most buildings and all residences, increasing acquisition and administrative costs considerably. Buildings sold for salvage return significantly less revenue to the agency than full purchase price.

Larger tracts of land are currently not for sale on the open market and will require time for contact, negotiation, appraisal and purchase. There is no guarantee that additional lands could be purchased at anytime in the near future. Based on similar experiences elsewhere, it's likely that some lands will not be acquired for an extended period of time thereby preventing the DNR from accomplishing project objectives.

Costs for this alternative are estimated in excess of \$3 million for the land with additional costs for staffing, management and development. Most of the expanded acreage will not be cost-shared with the DOT.

VII. Project Feasibility

Based upon the information and evaluation presented in this study, and anticipating a favorable public reaction to the proposal, the DNR staff has concluded that the proposed 536-acre land purchase and wildlife area expansion is feasible from the standpoint of legal authority, ecological soundness, public support and funding.

ENVIRONMENTAL ANALYSIS DECISION

(This decision is not final until certified by the appropriate DNR authority)

In accordance with s.11.1, Wis. Stats. and Ch. NR 150, Wis. Adm. Code, the Department is authorized and required to determine whether it has complied with these cited regulations (check 1. or 2. below):

- 1. EIS process not required.....()
Analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action, which will significantly affect the quality of the human environment. In my opinion, therefore, an environmental impact statement is not required prior to final action by the Department on this project.
- 2. Major action requiring the full EIS process.....()
The proposal is of such magnitude and complexity with such considerable and important impacts on the quality of the human environment that it constitutes a major action significantly affecting the quality of the human environment.

Evaluators Signature _____ Date Signed _____

Regional Director _____ Date Signed _____

Draft Print
2026 9:18:44 AM

Copy of news release or other public notice attached? Yes () No ()

Number of responses to the notice _____

Public response log attached? Yes () No ()

Certified in Compliance with WEPA

Chief of the Environmental Analysis and Liaison Section _____

George Albright

Date Signed _____

Notice of Appeal Rights

If you believe that you have a right to challenge this decision, you should know that Wisconsin law and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to s. 227.52 and 227.53, Stats. you have 30 days after the decision is mailed or otherwise served by the Department to file your petition with the appropriate circuit court and serve the petition on the Department. Such petition for judicial review shall name the Department of Natural Resources as the respondent.

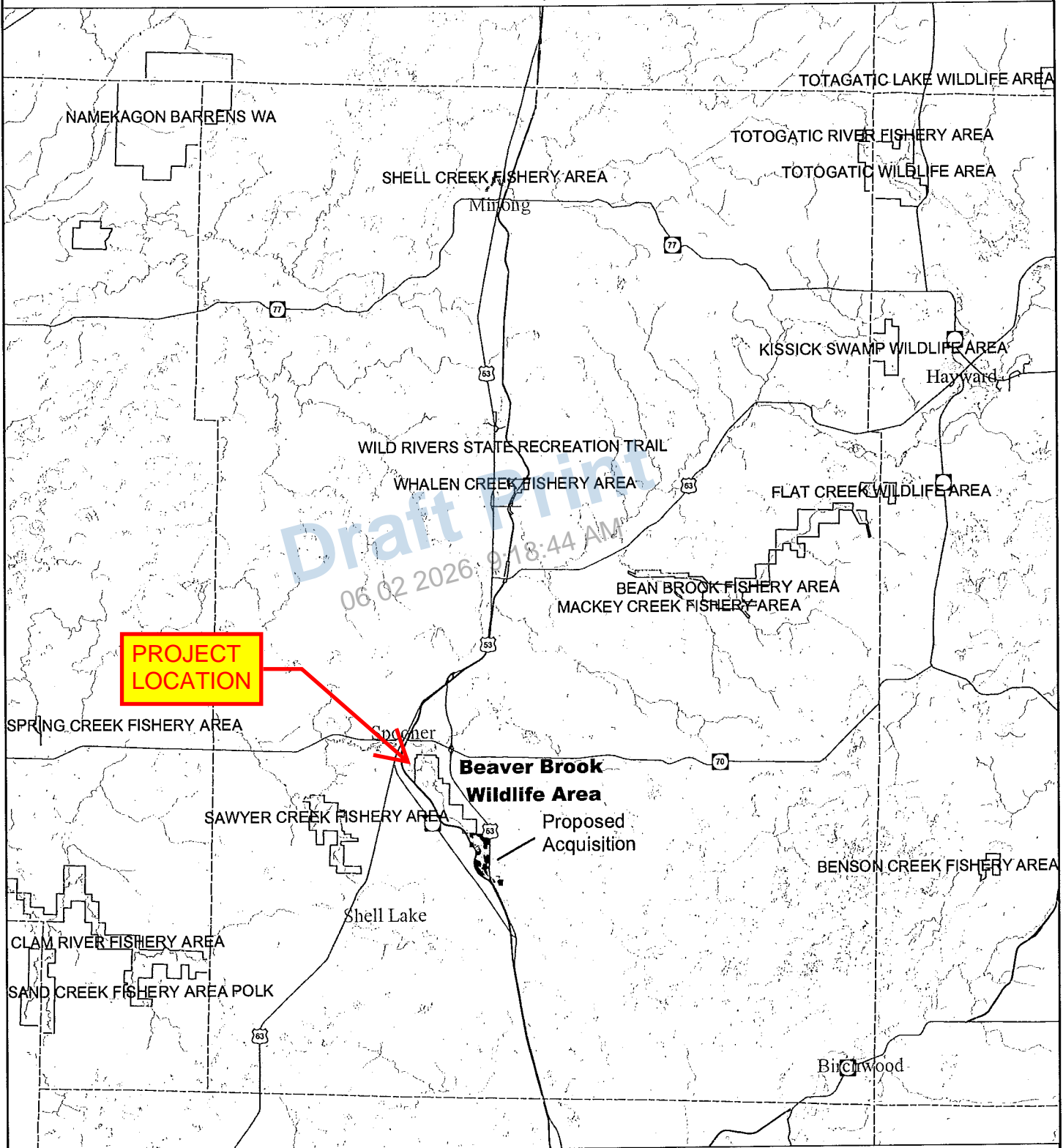
To request a contested case hearing pursuant to 227.42, you have 30 days after the decision is mailed or otherwise served by the Department to serve a petition for hearing on the Department of Natural Resources Secretary. The filing of a request for a contested case hearing is not a prerequisite for judicial review and does not extend the 30-day period for filing a petition for judicial review.

This notice is provided pursuant to section 227.48 (2), Wis. Stats.

County Locator Map

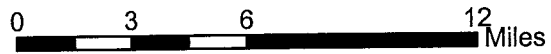
Beaver Brook Wildlife Area Proposed Boundary Expansion

Washburn County, Wisconsin



Legend

- Proposed Acquisition
- DNR Project Boundary
- DNR Managed Land
- Fee
- Easement



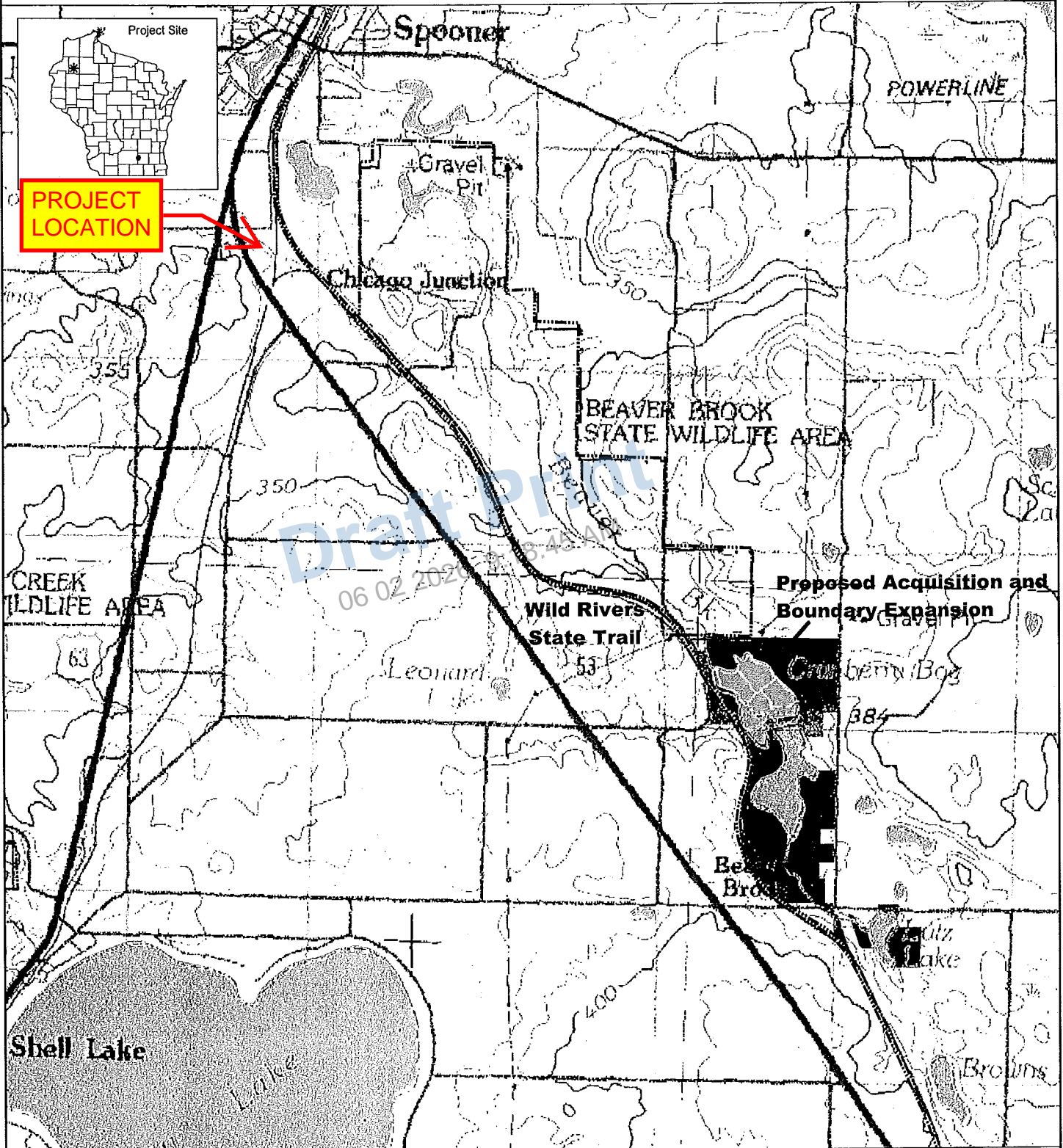
Created by WIDNR Real Estate Section
June 9, 2003






Project Map

Beaver Brook Wildlife Area Proposed Boundary Expansion

Washburn County, Wisconsin



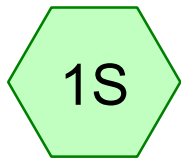
Legend

-  Proposed Acquisition
-  DNR Project Boundary
-  DNR Owned Land

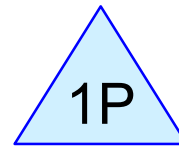


Created by WIDNR Real Estate Section
May 12, 2003

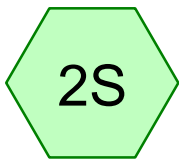




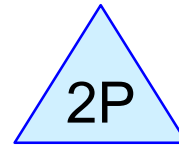
100% Area Active Mine



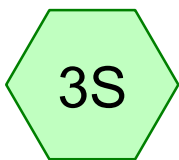
Mine Pit



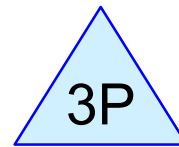
Topsoil Stockpile
(WEST)



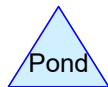
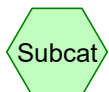
Topsoil Stockpile Pond
(WEST)



Topsoil Stockpile
(EAST)



Topsoil Stockpile Pond
(EAST)



Internally Drained Pond Sizing

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MSE 24-hr 4 25-Year Rainfall=5.06"

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Page 2

Summary for Subcatchment 1S: 100% Area Active Mine

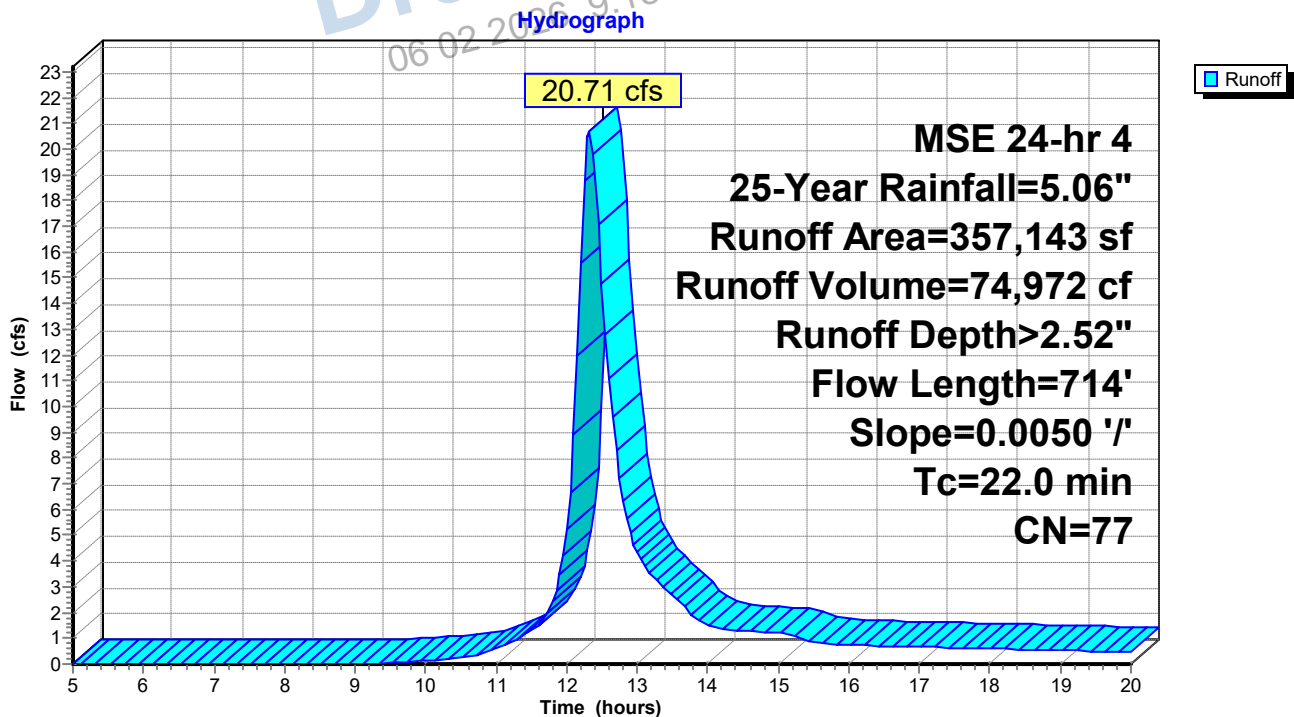
Runoff = 20.71 cfs @ 12.32 hrs, Volume= 74,972 cf, Depth> 2.52"
Routed to Pond 1P : Mine Pit

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 25-Year Rainfall=5.06"

Area (sf)	CN	Description
357,143	77	Newly graded area, HSG A
357,143		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.0050	0.22		Sheet Flow, Fallow n= 0.050 P2= 2.84"
14.5	614	0.0050	0.71		Shallow Concentrated Flow, Nearly Bare & Untilled Kv= 10.0 fps
22.0	714	Total			

Subcatchment 1S: 100% Area Active Mine



Internally Drained Pond Sizing

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MSE 24-hr 4 25-Year Rainfall=5.06"

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Page 3

Summary for Subcatchment 2S: Topsoil Stockpile (WEST)

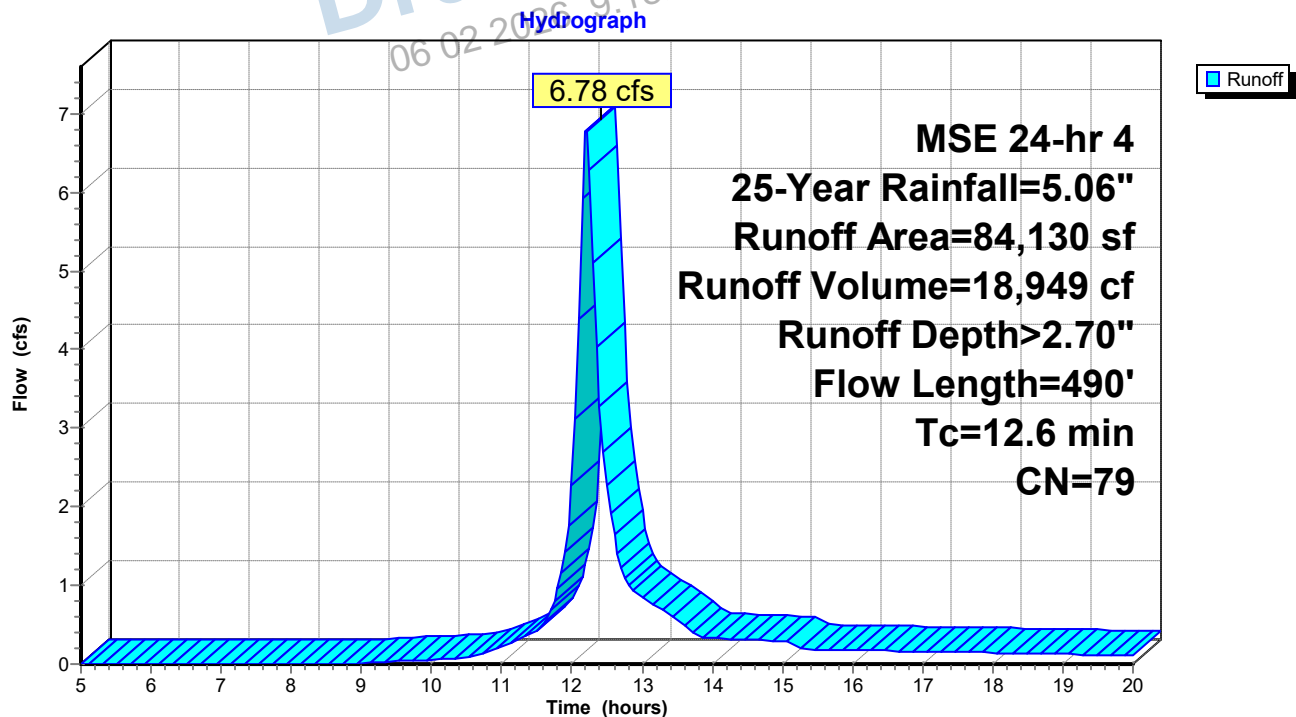
Runoff = 6.78 cfs @ 12.21 hrs, Volume= 18,949 cf, Depth> 2.70"
Routed to Pond 2P : Topsoil Stockpile Pond (WEST)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 25-Year Rainfall=5.06"

Area (sf)	CN	Description
84,130	79	<50% Grass cover, Poor, HSG B
84,130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	270	0.0110	0.73		Shallow Concentrated Flow, Long-Grass Short Grass Pasture Kv= 7.0 fps
6.5	220	0.0065	0.56		Shallow Concentrated Flow, Long-Grass Short Grass Pasture Kv= 7.0 fps
12.6	490	Total			

Subcatchment 2S: Topsoil Stockpile (WEST)



Internally Drained Pond Sizing

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MSE 24-hr 4 25-Year Rainfall=5.06"

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Page 4

Summary for Subcatchment 3S: Topsoil Stockpile (EAST)

Runoff = 6.35 cfs @ 12.19 hrs, Volume= 16,740 cf, Depth> 2.11"
Routed to Pond 3P : Topsoil Stockpile Pond (EAST)

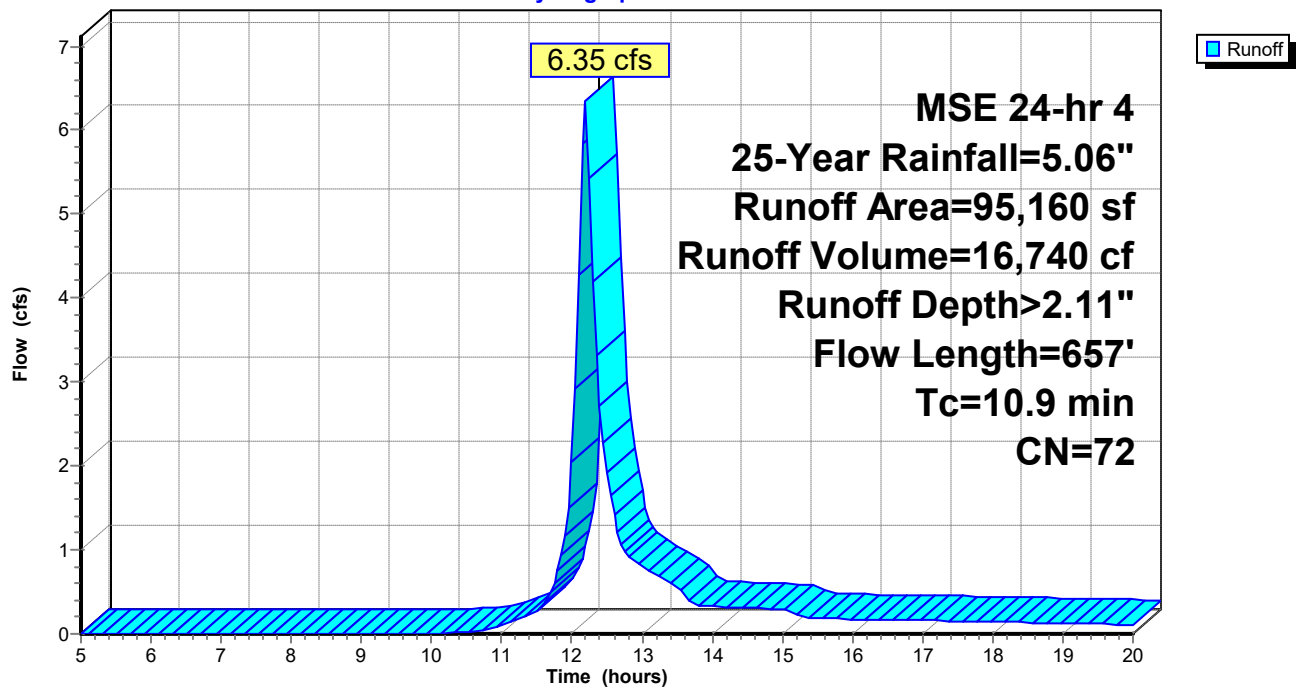
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 25-Year Rainfall=5.06"

Area (sf)	CN	Description
61,854	79	<50% Grass cover, Poor, HSG B
33,306	60	Woods, Fair, HSG B
95,160	72	Weighted Average
95,160		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	311	0.0196	0.70		Shallow Concentrated Flow, Forested Woodland Kv= 5.0 fps
3.5	346	0.0344	1.67		Shallow Concentrated Flow, Long-Grass Cultivated Straight Rows Kv= 9.0 fps
10.9	657	Total			

Subcatchment 3S: Topsoil Stockpile (EAST)

Hydrograph



Internally Drained Pond Sizing

MSE 24-hr 4 25-Year Rainfall=5.06"

Prepared by Northern Wisconsin-Based Eng Inc

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Summary for Pond 1P: Mine Pit

Inflow Area = 357,143 sf, 0.00% Impervious, Inflow Depth > 2.52" for 25-Year event
 Inflow = 20.71 cfs @ 12.32 hrs, Volume= 74,972 cf
 Outflow = 1.99 cfs @ 13.75 hrs, Volume= 51,142 cf, Atten= 90%, Lag= 85.5 min
 Discarded = 1.99 cfs @ 13.75 hrs, Volume= 51,142 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,088.31' @ 13.75 hrs Surf.Area= 23,904 sf Storage= 44,576 cf

Plug-Flow detention time= 204.7 min calculated for 50,972 cf (68% of inflow)
 Center-of-Mass det. time= 143.9 min (945.1 - 801.2)

Volume	Invert	Avail.Storage	Storage Description			
#1	1,083.50'	172,264 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
1,083.50	10	12.0	0	0	10	
1,084.00	306	75.0	62	62	447	
1,085.00	3,250	390.0	1,518	1,580	12,105	
1,086.00	9,285	600.0	6,009	7,589	28,657	
1,087.00	14,500	680.0	11,796	19,385	36,831	
1,088.00	21,810	830.0	18,031	37,416	54,871	
1,089.00	28,830	850.0	25,239	62,655	57,673	
1,090.00	34,500	895.0	31,623	94,277	63,983	
1,091.00	39,060	930.0	36,756	131,034	69,147	
1,092.00	43,440	976.0	41,231	172,264	76,189	

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,083.50'	3.600 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=1.99 cfs @ 13.75 hrs HW=1,088.31' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 1.99 cfs)

InternallyDrainedPondSizing

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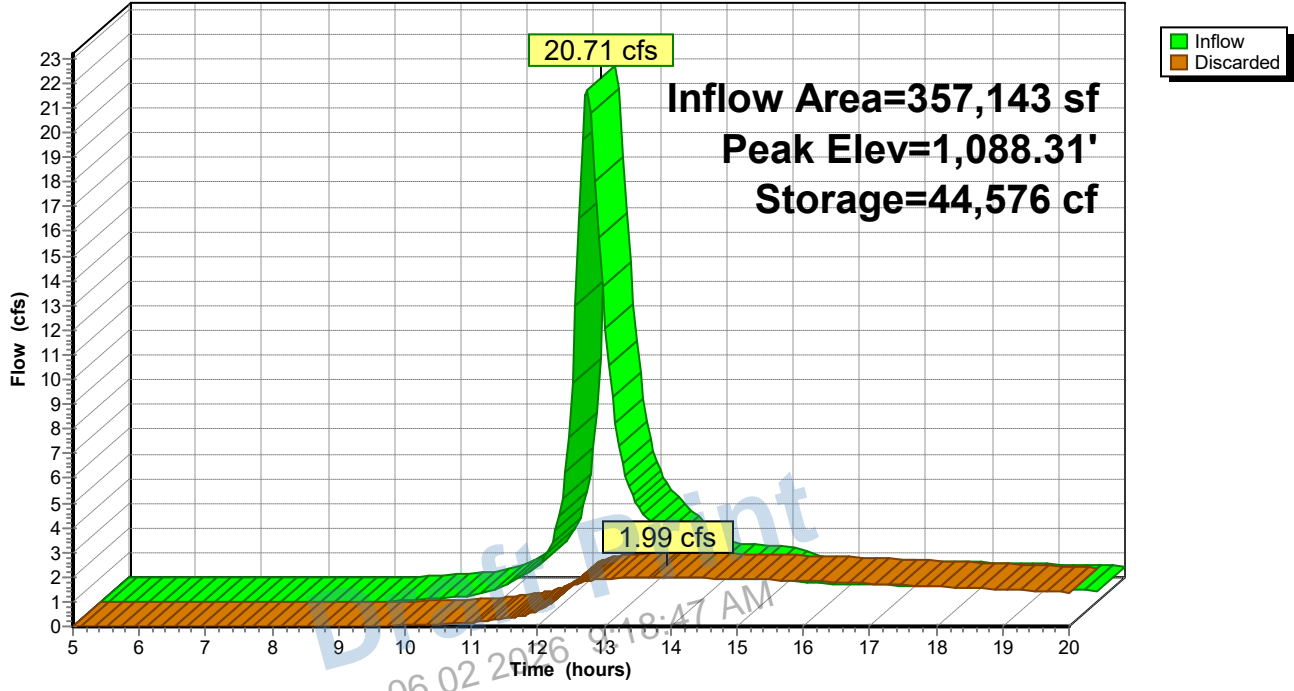
MSE 24-hr 4 25-Year Rainfall=5.06"

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Pond 1P: Mine Pit

Hydrograph



Internally Drained Pond Sizing

MSE 24-hr 4 25-Year Rainfall=5.06"

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Summary for Pond 2P: Topsoil Stockpile Pond (WEST)

Inflow Area = 84,130 sf, 0.00% Impervious, Inflow Depth > 2.70" for 25-Year event
 Inflow = 6.78 cfs @ 12.21 hrs, Volume= 18,949 cf
 Outflow = 0.27 cfs @ 15.12 hrs, Volume= 8,533 cf, Atten= 96%, Lag= 175.0 min
 Discarded = 0.27 cfs @ 15.12 hrs, Volume= 8,533 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 102.15' @ 15.12 hrs Surf.Area= 7,115 sf Storage= 12,369 cf

Plug-Flow detention time= 209.8 min calculated for 8,505 cf (45% of inflow)
 Center-of-Mass det. time= 136.4 min (926.7 - 790.2)

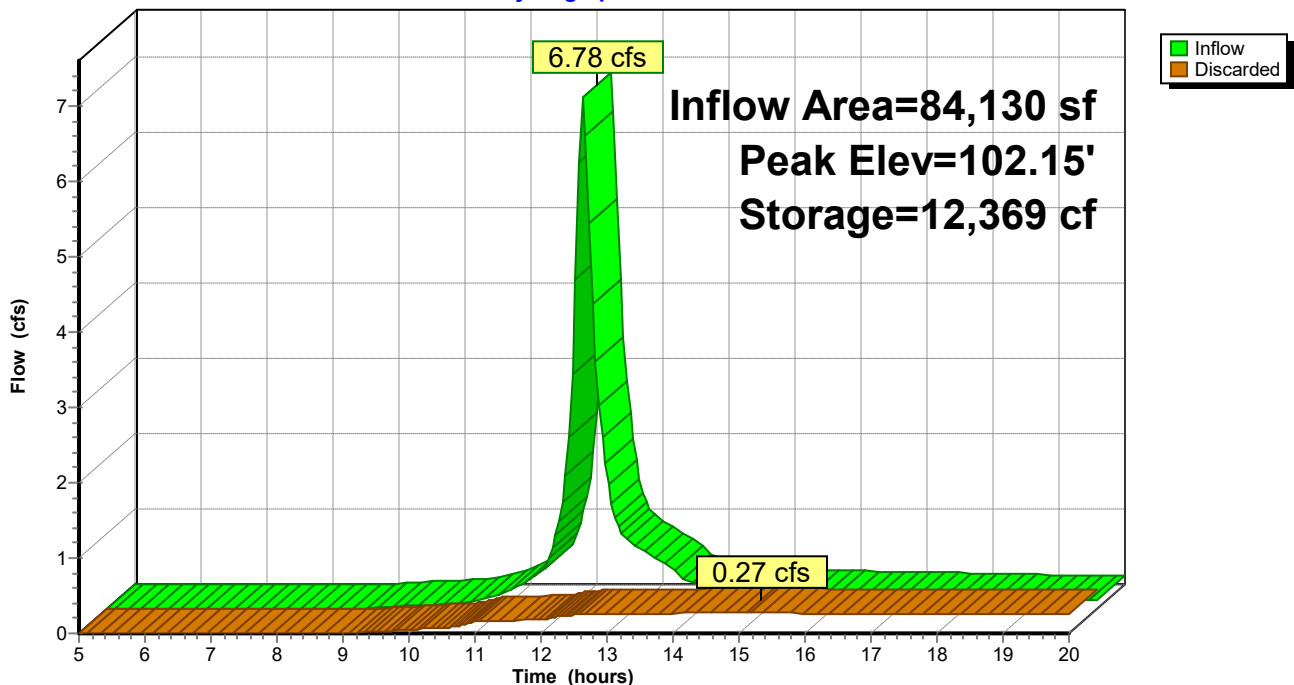
Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	18,936 cf	75.00'W x 60.00'L x 3.00'H Prismatic Z=4.0

Device	Routing	Invert	Outlet Devices
#1	Discarded	100.00'	1.630 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.27 cfs @ 15.12 hrs HW=102.15' (Free Discharge)
 ←1=Exfiltration (Exfiltration Controls 0.27 cfs)

Pond 2P: Topsoil Stockpile Pond (WEST)

Hydrograph



InternallyDrainedPondSizing

MSE 24-hr 4 25-Year Rainfall=5.06"

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Page 8

Summary for Pond 3P: Topsoil Stockpile Pond (EAST)

Inflow Area = 95,160 sf, 0.00% Impervious, Inflow Depth > 2.11" for 25-Year event
 Inflow = 6.35 cfs @ 12.19 hrs, Volume= 16,740 cf
 Outflow = 0.24 cfs @ 15.16 hrs, Volume= 7,290 cf, Atten= 96%, Lag= 178.0 min
 Discarded = 0.24 cfs @ 15.16 hrs, Volume= 7,290 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 102.03' @ 15.16 hrs Surf.Area= 6,295 sf Storage= 10,917 cf

Plug-Flow detention time= 217.1 min calculated for 7,290 cf (44% of inflow)
 Center-of-Mass det. time= 139.4 min (940.2 - 800.8)

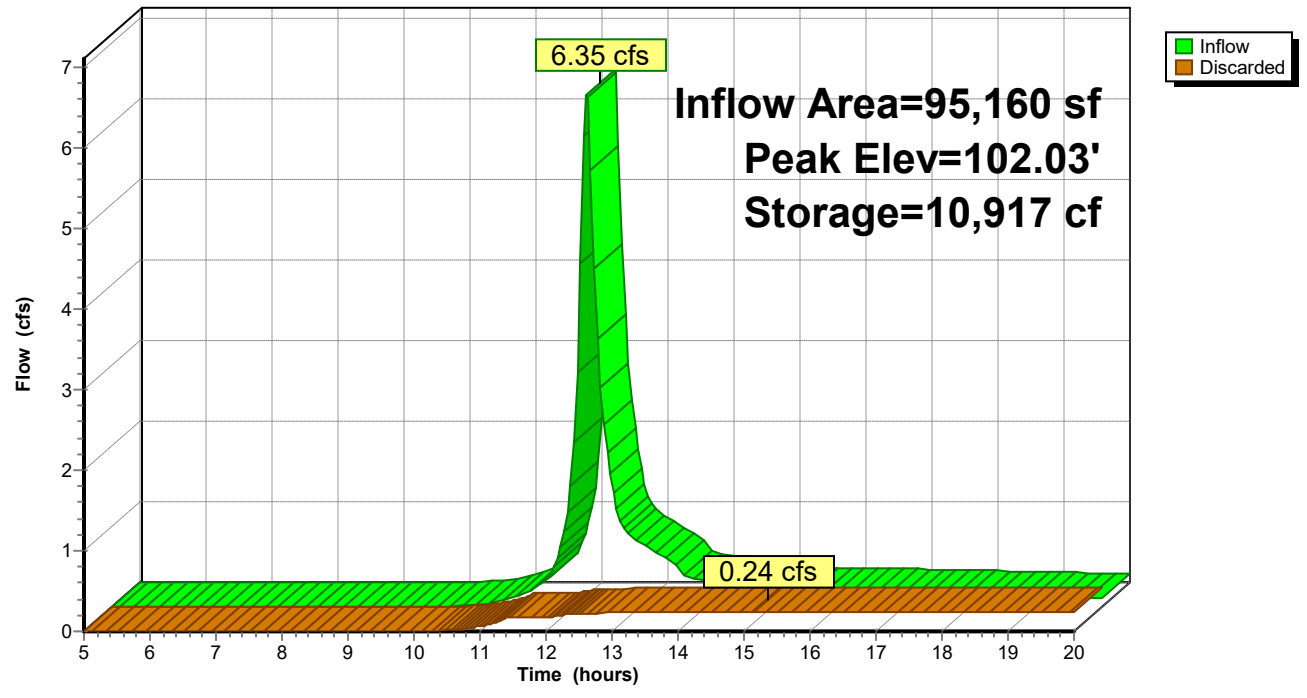
Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	17,469 cf	75.00'W x 60.00'L x 3.00'H Prismatic Z=3.0

Device	Routing	Invert	Outlet Devices
#1	Discarded	100.00'	1.630 in/hr Exfiltration over Horizontal area

Discarded OutFlow Max=0.24 cfs @ 15.16 hrs HW=102.03' (Free Discharge)
 ←1=Exfiltration (Exfiltration Controls 0.24 cfs)

Pond 3P: Topsoil Stockpile Pond (EAST)

Hydrograph



Estimate NWBE 2618-Ph3

Estimated Cost:\$508,778.89

Contingency: 0.00%

Estimated Total: \$508,778.89

Camp Ride Nonmetallic Mine Financial Assurance
W 7031 Green Valley Road
Spooner, Wisconsin 54801
OWNER: Justin Bluse DBA, Camp Ride LLC
OPERATOR: Justin Bluse DBA, Bluse Excavating LLC
Mailing Address: W 7871 Highway 70, Spooner, WI 54801

Base Date: 05/27/26

Spec Year: 25

Unit System: E

Work Type: Earthwork

Highway Type: Undivided, Local

Urban/Rural Type: Rural

Season: Summer

County: Washburn

Latitude of Midpoint: 0

Longitude of Midpoint: 0

District: NW

Federal Project Number: N/A

State Project Number: N/A

Estimate Type: Financial Assurance

Prepared by G. Colbert, PE

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
<u>Description</u>					
<u>Supplemental Description</u>					

Group 0001: Phase 3 Reclamation - Stage 1

0005	205.0100 Excavation Common	7,200.000	CY	\$6.00000	\$43,200.00
0006	619.1000 Mobilization	0.333	EACH	\$30,000.00000	\$9,990.00
0007	625.0100 Topsoil	10,560.000	SY	\$0.84778	\$8,952.56
0008	627.0200 Mulching	7,710.000	SY	\$0.36570	\$2,819.55
0009	628.1905 Mobilizations Erosion Control	2.000	EACH	\$181.81273	\$363.63
0010	628.1910 Mobilizations Emergency Erosion Control	1.000	EACH	\$88.60503	\$88.61
0011	628.2004 Erosion Mat Class I Type B	3,119.000	SY	\$1.13377	\$3,536.23
0012	628.7504 Temporary Ditch Checks	30.000	LF	\$9.37551	\$281.27
0013	629.0210 Fertilizer Type B	6.700	CWT	\$105.71108	\$708.26
0014	629.1100 Agricultural Limestone Treatment	4.500	TON	\$16.50000	\$74.25
0015	630.0400 Seeding Nurse Crop	80.000	LB	\$6.00000	\$480.00
0016	SPV.0085 Special 01. Seeding Mixture Pasture	80.000	LB	\$7.75000	\$620.00

Total for Group 0001:\$71,114.36

Group 0002: Phase 3 Reclamation - Stage 2

0017	205.0100 Excavation Common	9,700.000	CY	\$6.00000	\$58,200.00
0018	619.1000 Mobilization	0.333	EACH	\$30,000.00000	\$9,990.00
0019	625.0100 Topsoil	17,970.000	SY	\$0.84778	\$15,234.61
0020	627.0200 Mulching	13,150.000	SY	\$0.36570	\$4,808.96
0021	628.1905 Mobilizations Erosion Control	2.000	EACH	\$181.81273	\$363.63

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
<u>Description</u>					
<u>Supplemental Description</u>					
0022	628.1910	1.000	EACH	\$88.60503	\$88.61
Mobilizations Emergency Erosion Control					
0023	628.2004	4,827.000	SY	\$1.13377	\$5,472.71
Erosion Mat Class I Type B					
0024	629.0210	11.300	CWT	\$105.71108	\$1,194.54
Fertilizer Type B					
0025	629.1100	7.600	TON	\$16.50000	\$125.40
Agricultural Limestone Treatment					
0026	630.0400	130.000	LB	\$6.00000	\$780.00
Seeding Nurse Crop					
0027	SPV.0085	120.000	LB	\$7.75000	\$930.00
Special 01. Seeding Mixture Pasture					

Total for Group 0002:\$97,188.46

Group 0003: Phase 3 Reclamation - Stage 3

0028	203.0100	4.000	EACH	\$687.16153	\$2,748.65
Removing Small Pipe Culverts					
0029	205.0100	35,000.000	CY	\$6.00000	\$210,000.00
Excavation Common					
0030	312.0115	84.000	CY	\$75.26098	\$6,321.92
Select Crushed Material					
0031	520.1030	2.000	EACH	\$805.29855	\$1,610.60
Apron Endwalls for Culvert Pipe 30-Inch					
0032	520.3430	48.000	LF	\$155.00000	\$7,440.00
Culvert Pipe Class III-A Non-metal 30-Inch					
0033	521.1018	2.000	EACH	\$789.08002	\$1,578.16
Apron Endwalls for Culvert Pipe Steel 18-Inch					
0034	521.1024	4.000	EACH	\$517.26346	\$2,069.05
Apron Endwalls for Culvert Pipe Steel 24-Inch					
0035	521.3118	68.000	LF	\$81.95225	\$5,572.75
Culvert Pipe Corrugated Steel 18-Inch					
0036	521.3124	76.000	LF	\$116.28989	\$8,838.03
Culvert Pipe Corrugated Steel 24-Inch					
0037	606.0100	70.000	CY	\$99.55555	\$6,968.89
Riprap Light					
0038	619.1000	0.333	EACH	\$30,000.00000	\$9,990.00
Mobilization					

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
<u>Description</u>					
<u>Supplemental Description</u>					
0039	625.0100 Topsoil	35,370.000	SY	\$0.84778	\$29,985.98
0040	627.0200 Mulching	23,460.000	SY	\$0.36570	\$8,579.32
0041	628.1504 Silt Fence	1,185.000	LF	\$2.99263	\$3,546.27
0042	628.1520 Silt Fence Maintenance	1,185.000	LF	\$0.02754	\$32.63
0043	628.1905 Mobilizations Erosion Control	2.000	EACH	\$181.81273	\$363.63
0044	628.1910 Mobilizations Emergency Erosion Control	1.000	EACH	\$88.60503	\$88.61
0045	628.2004 Erosion Mat Class I Type B	10,839.000	SY	\$1.13377	\$12,288.93
0046	628.2008 Erosion Mat Urban Class I Type B	1,050.000	SY	\$2.60827	\$2,738.68
0047	628.7504 Temporary Ditch Checks	30.000	LF	\$9.37551	\$281.27
0048	628.7555 Culvert Pipe Checks	13.000	EACH	\$22.78942	\$296.26
0049	628.7570 Rock Bags	34.000	EACH	\$18.20802	\$619.07
0050	629.0210 Fertilizer Type B	22.500	CWT	\$105.71108	\$2,378.50
0051	629.1100 Agricultural Limestone Treatment	14.900	TON	\$16.50000	\$245.85
0052	630.0120 Seeding Mixture No. 20	857.000	LB	\$11.58735	\$9,930.36
0053	630.0171 Seeding Mixture No. 70A	3.000	LB	\$219.22449	\$657.67
0054	630.0200 Seeding Temporary	520.000	LB	\$4.33650	\$2,254.98
0055	630.0400 Seeding Nurse Crop	125.000	LB	\$6.00000	\$750.00
0056	645.0130 Geotextile Type R	254.000	SY	\$6.00399	\$1,525.01

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<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
<u>Description</u>					
<u>Supplemental Description</u>					

0057	SPV.0085	100.000	LB	\$7.75000	\$775.00
	Special				
	01. Seeding Mixture Pasture				

Total for Group 0003:\$340,476.07

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