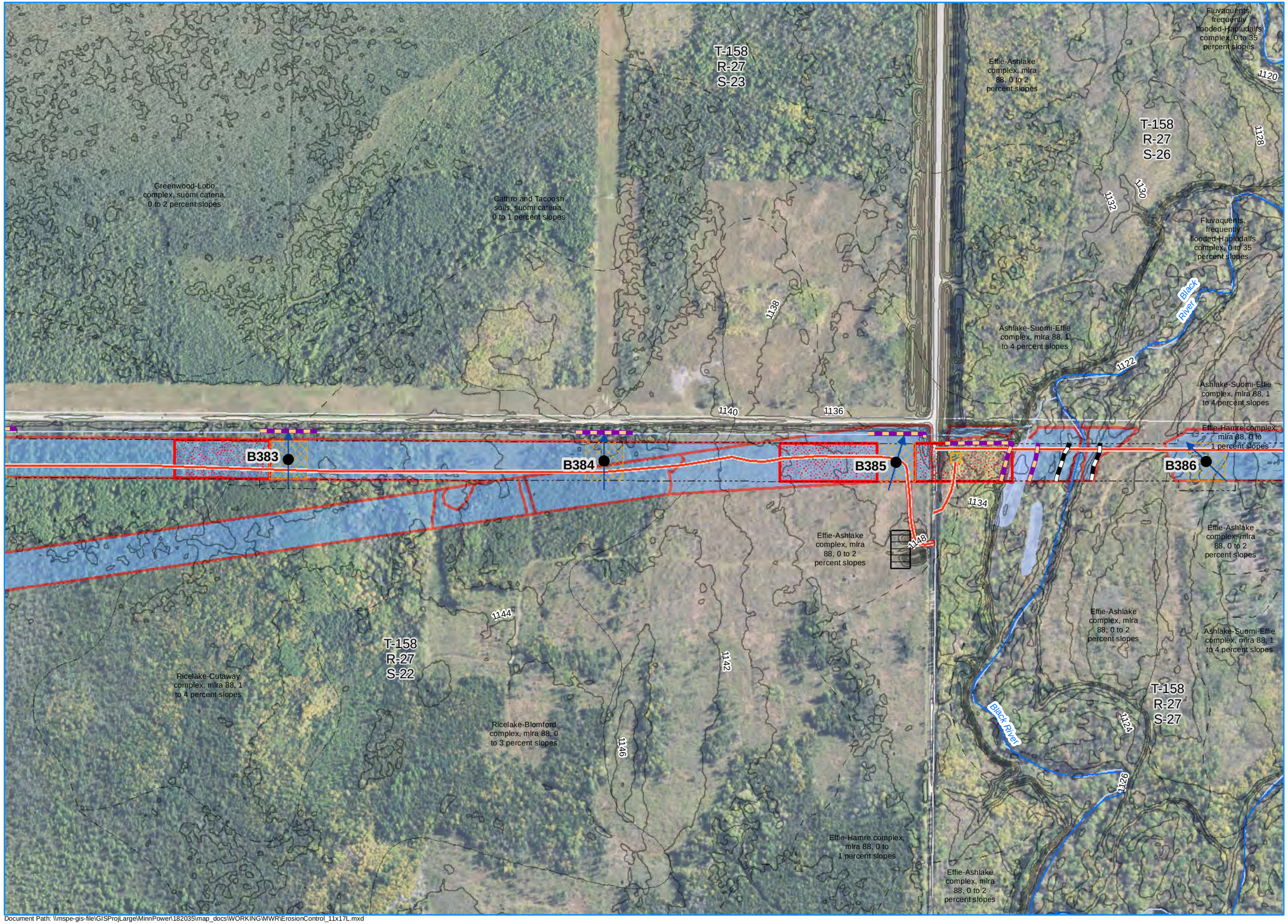

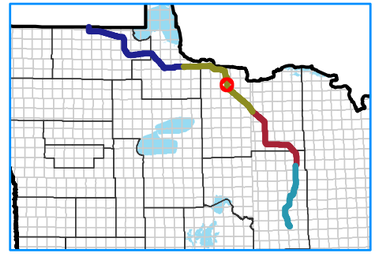

Legend

- Structure
- Flow Direction
- Silt Fence*
- SCL*
- Topsoil Berm**
- New/Improved Access Path
- Right-of-way

Support Area

- Fly Yard
- Mat Storage
- Material Yard
- Pull Site
- Regen Site
- Structure Work Area
- 2-ft Contour
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- Impaired Stream
- Impaired Lake
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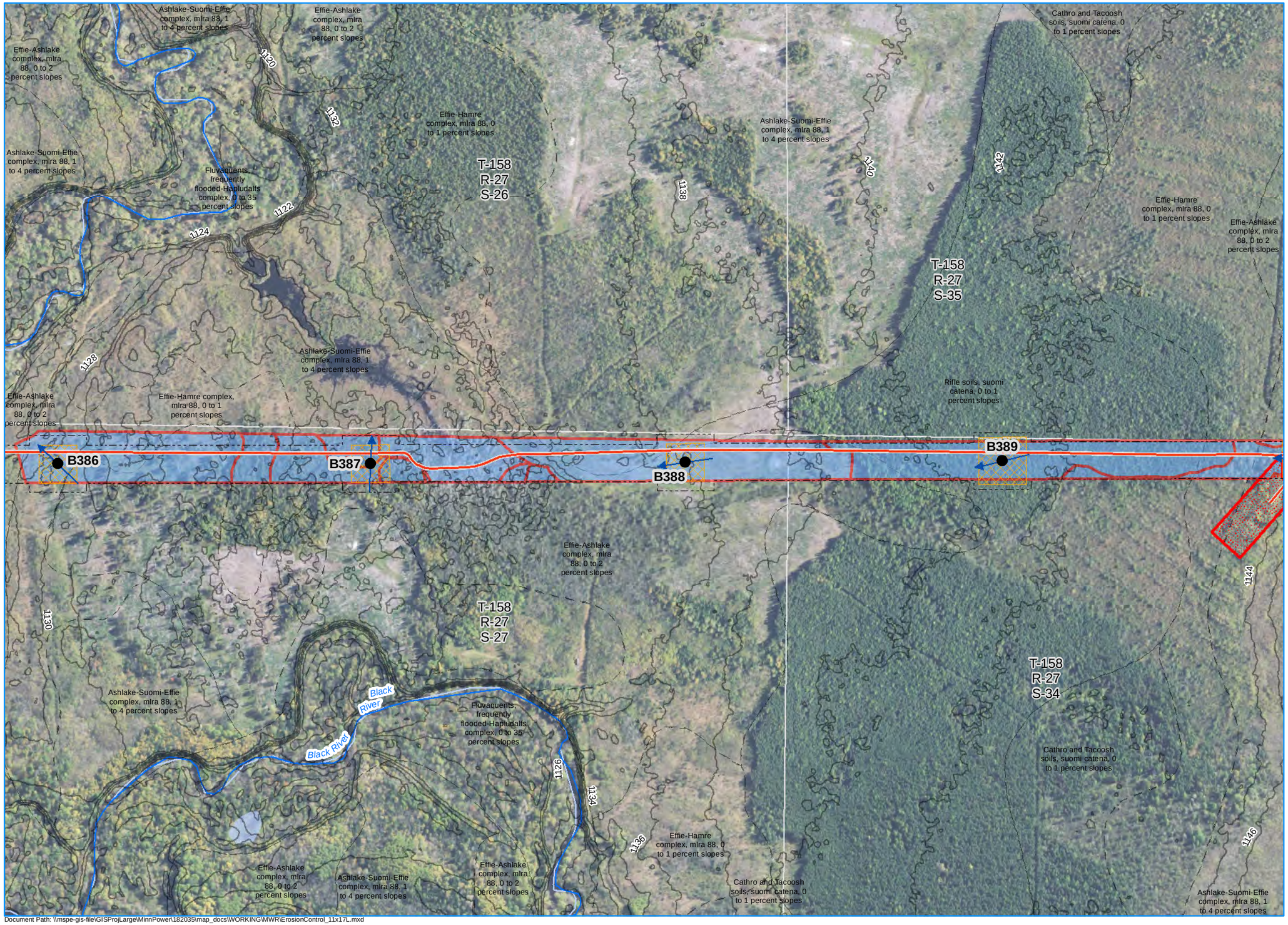

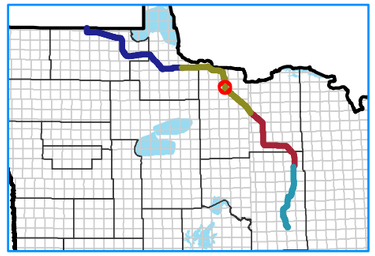

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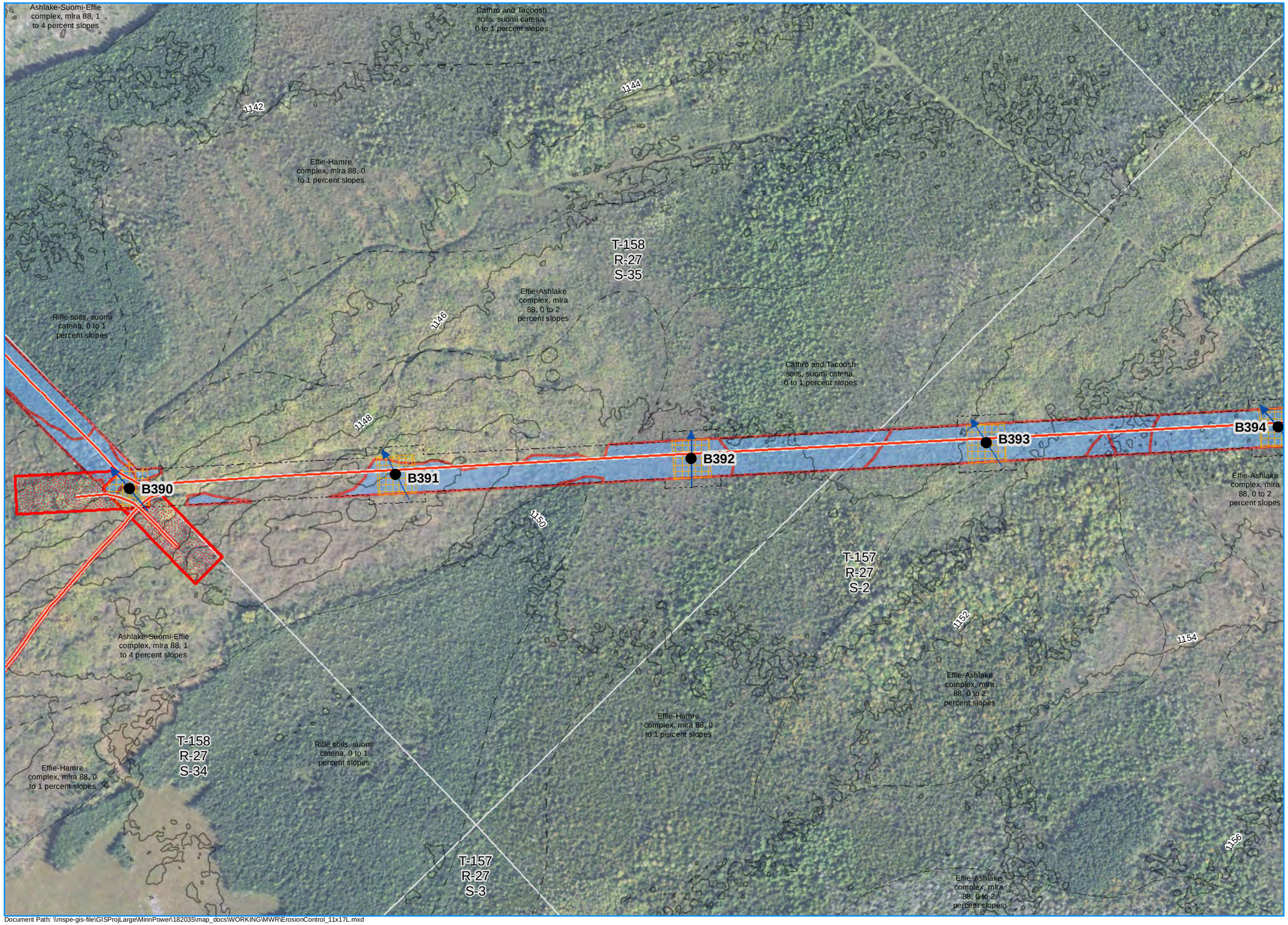

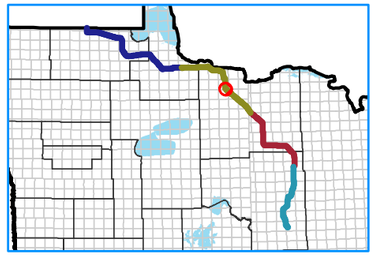

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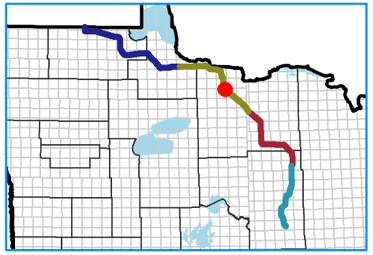

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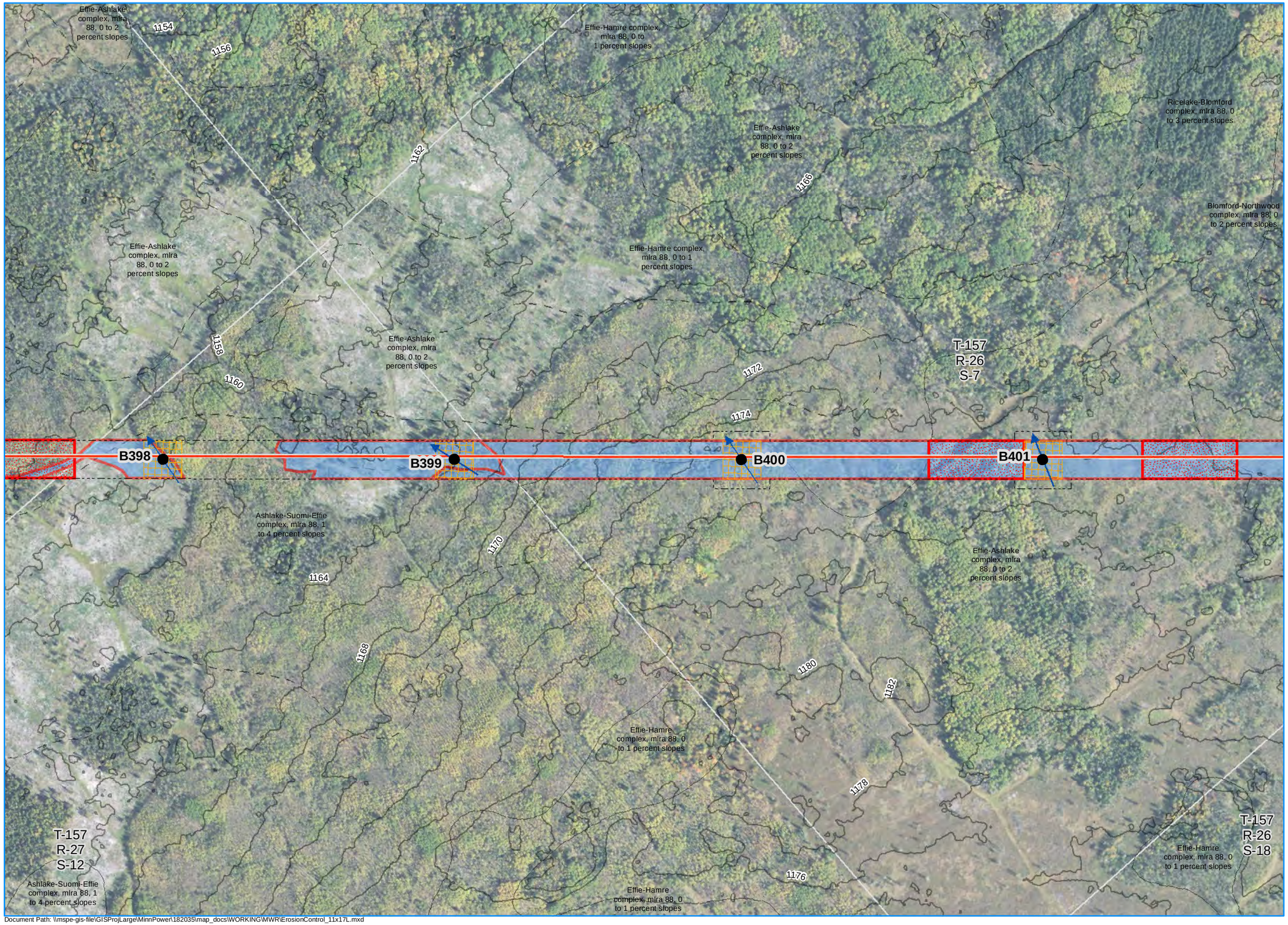

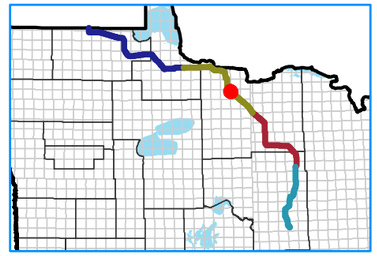

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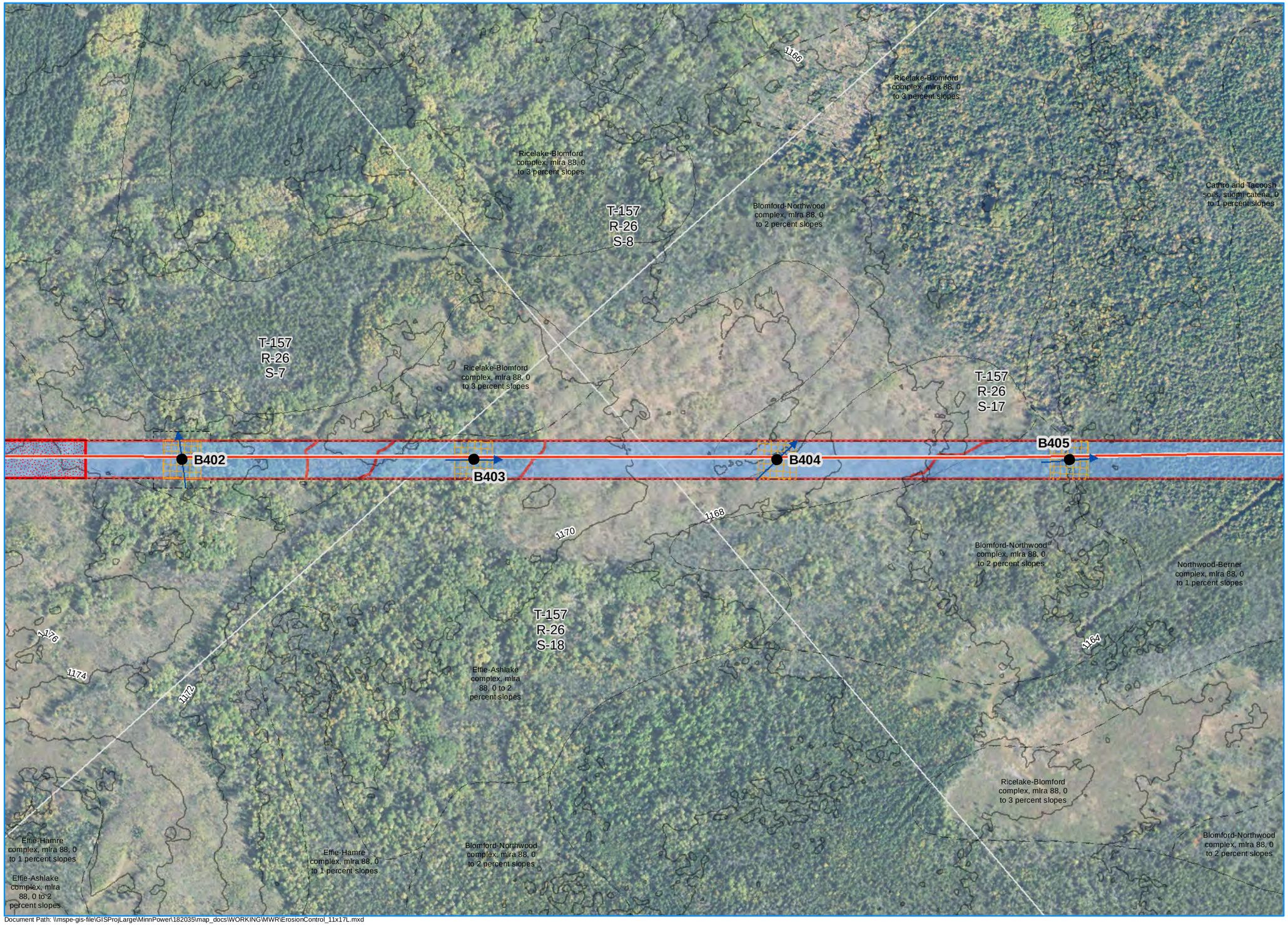

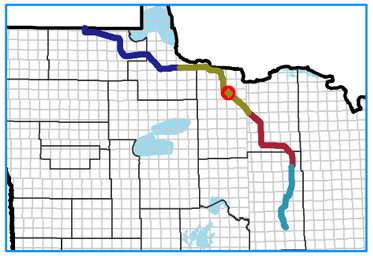

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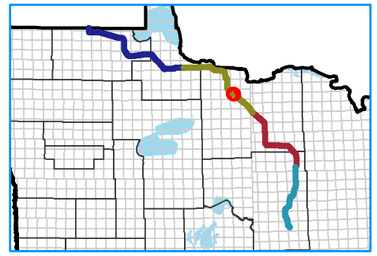

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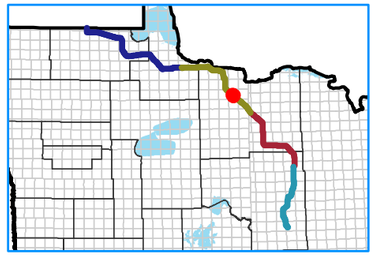

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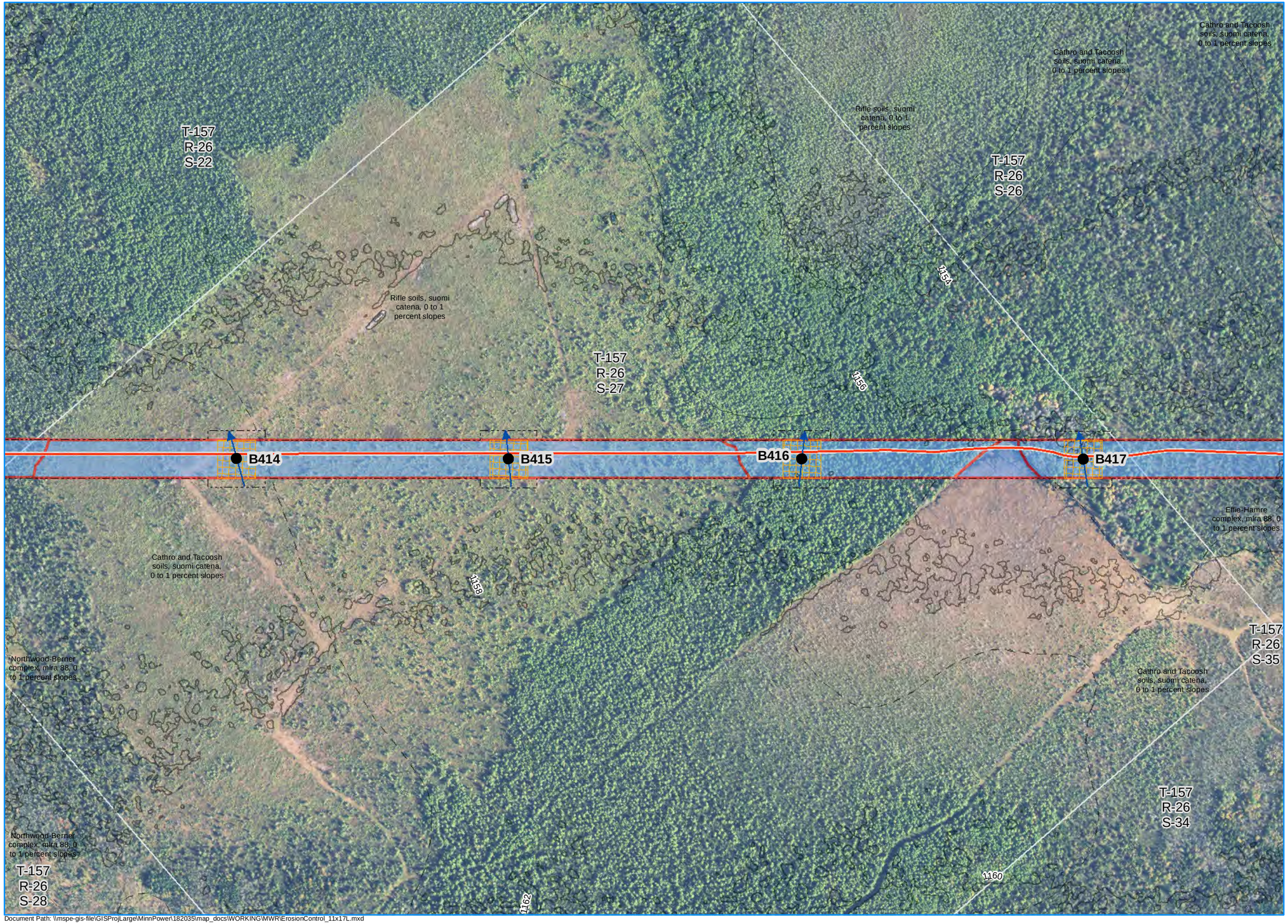

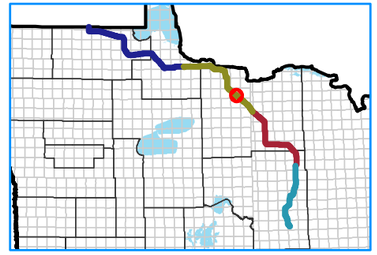

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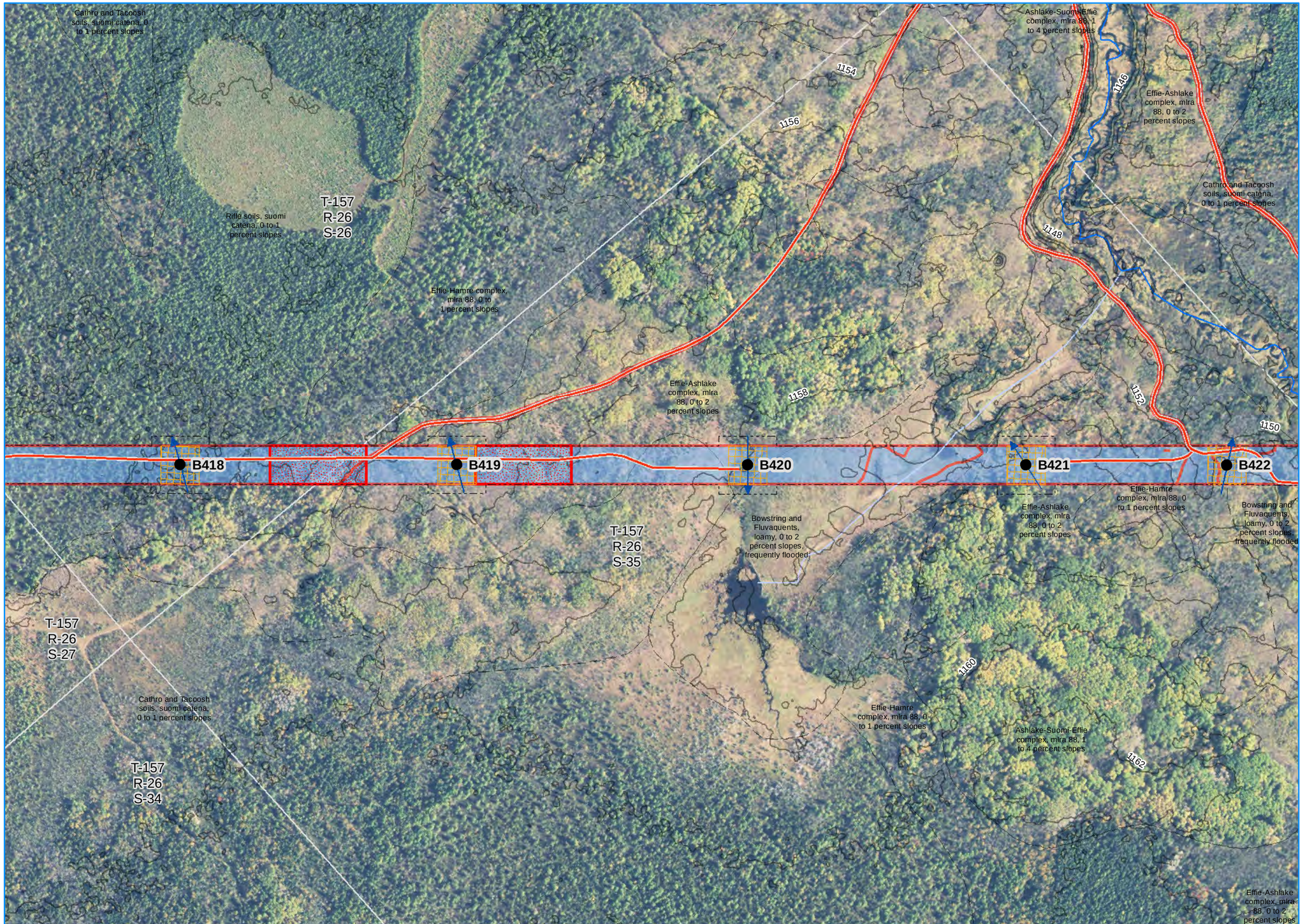

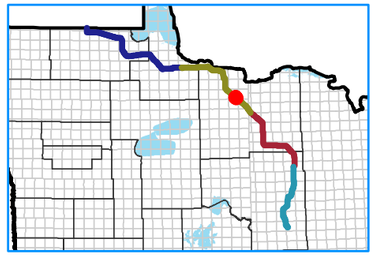

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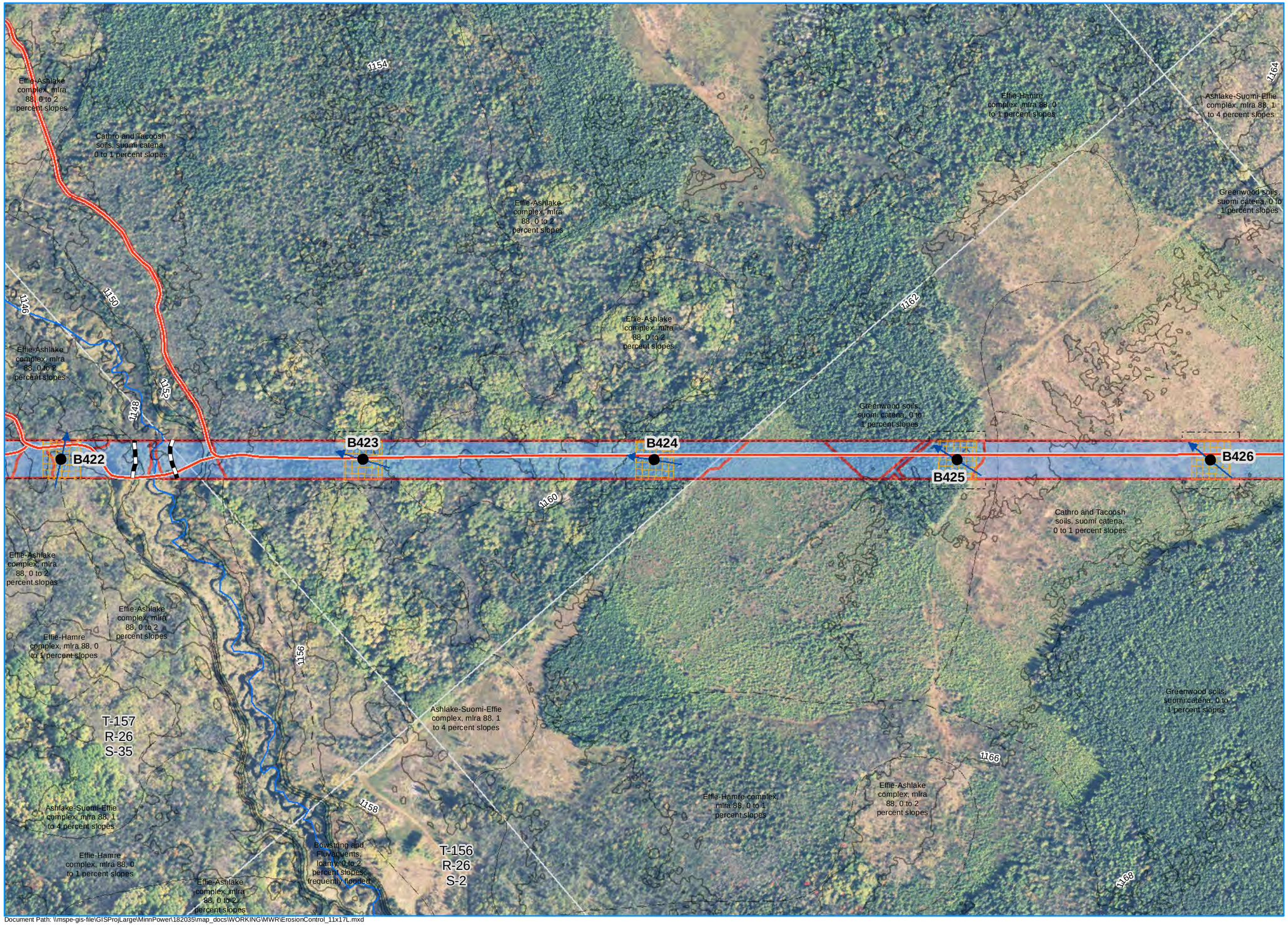

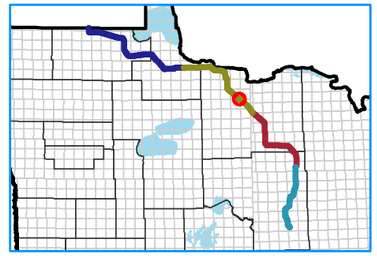

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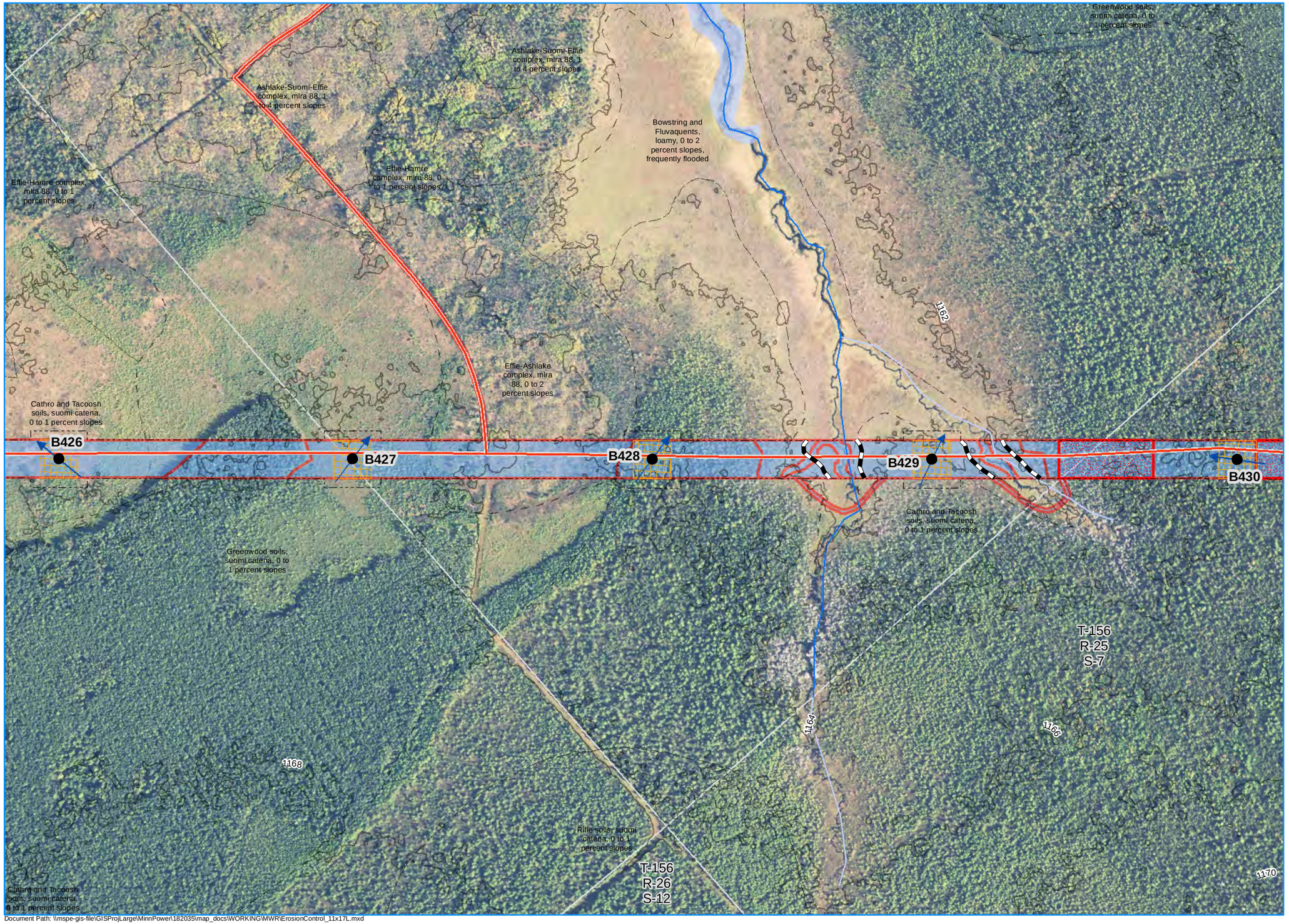

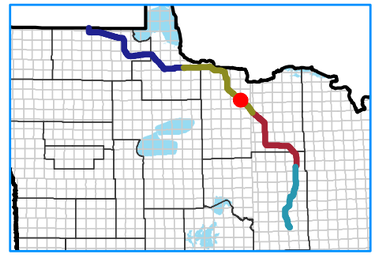

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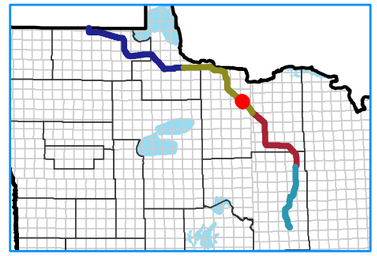

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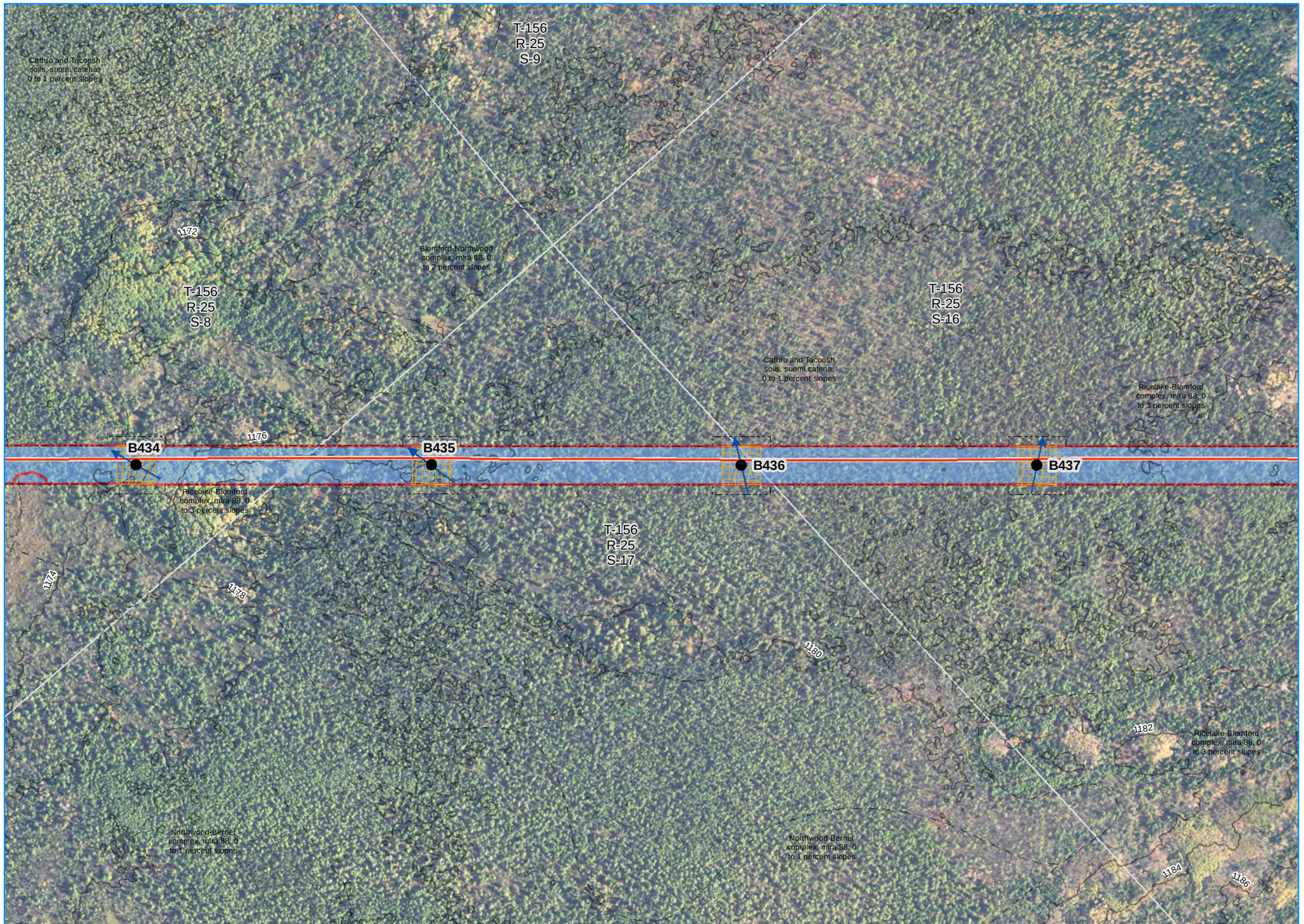

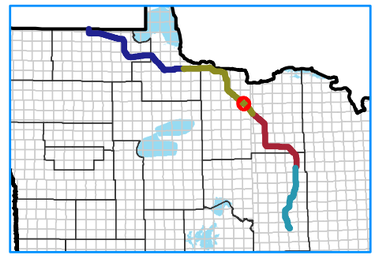

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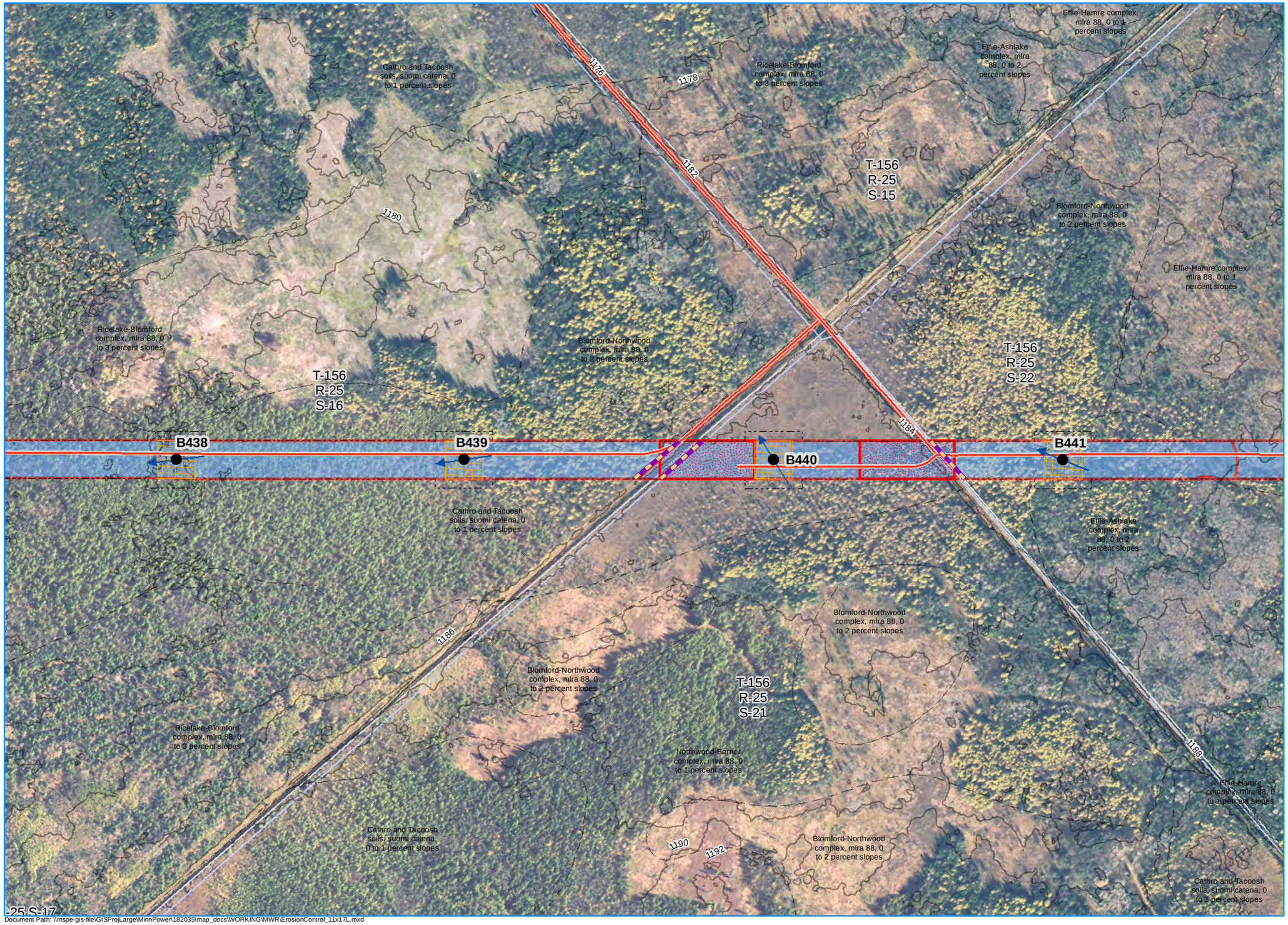

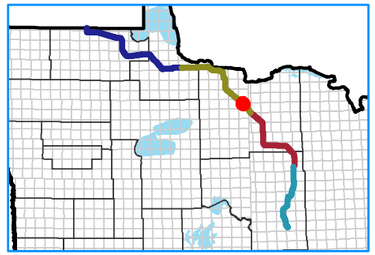

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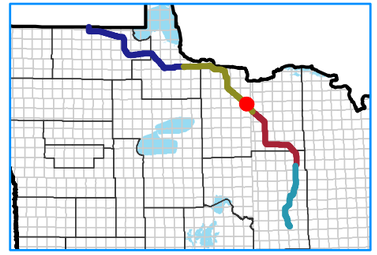

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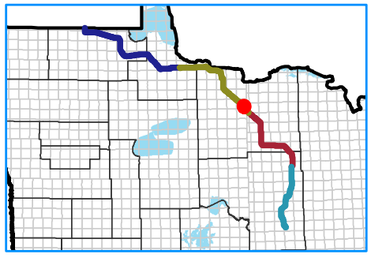

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- Flow Direction
- Silt Fence*
- SCL*
- Topsoil Berm**
- New/Improved Access Path
- Right-of-way

Support Area

- Fly Yard
- Mat Storage
- Material Yard
- Pull Site
- Regen Site
- Structure Work Area
- 2-ft Contour
- Trout Stream
- Impaired Stream
- Impaired Lake
- PWI Stream
- PWI Lake
- NHD Stream
- NHD Water Body
- Soil Group
- County Line
- Section Line

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** Topsoil berms subject to the availability of suitable soil. Where a topsoil berm cannot be constructed, silt fence may be used as an alternate BMP.

Refer to the Vegetation Management Plan for stream crossing details and site restoration/ revegetation methods.

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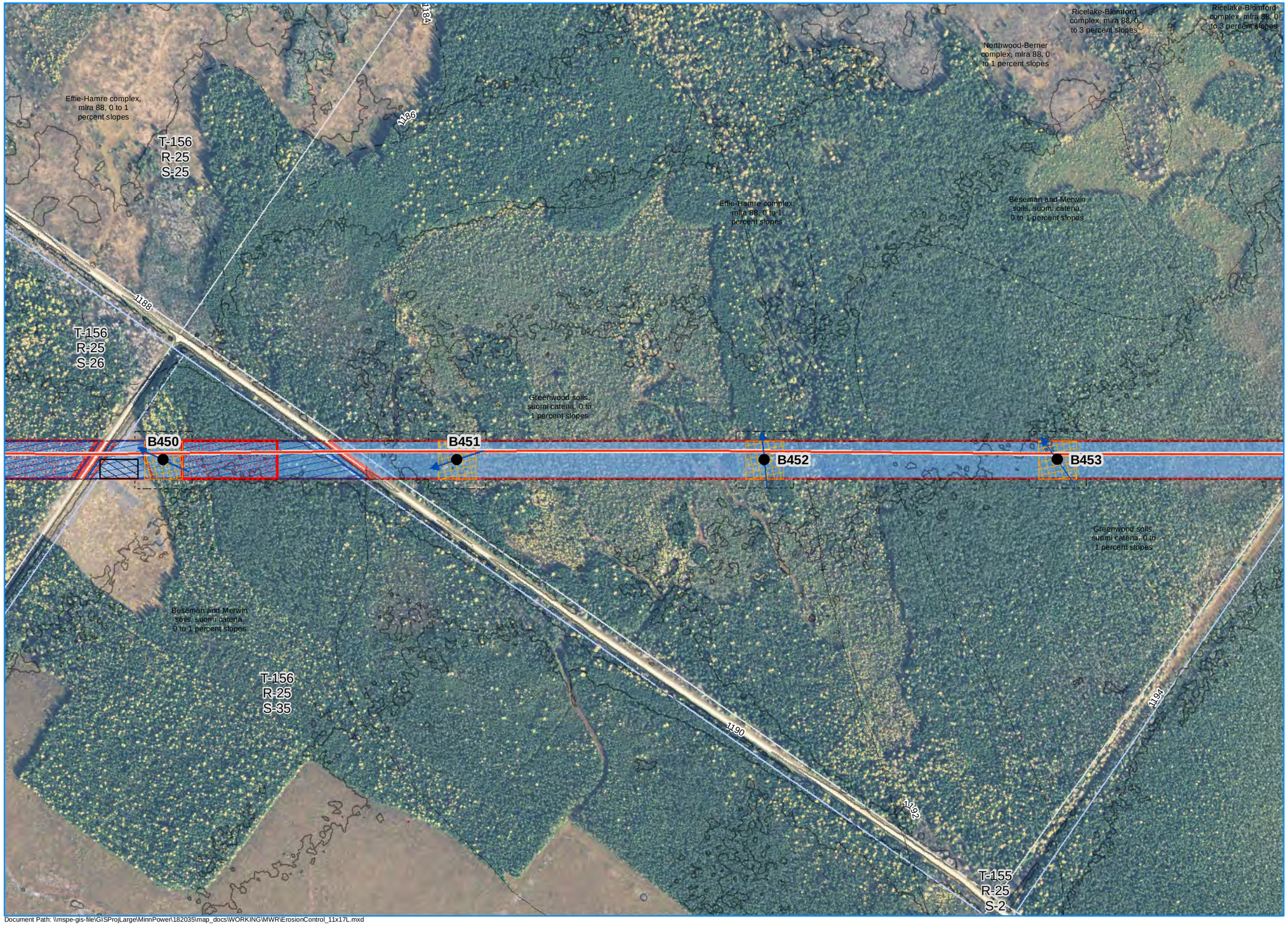

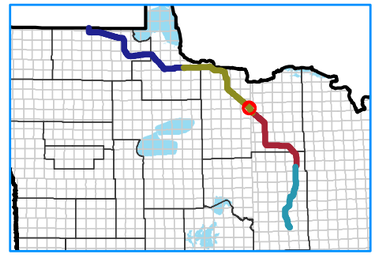

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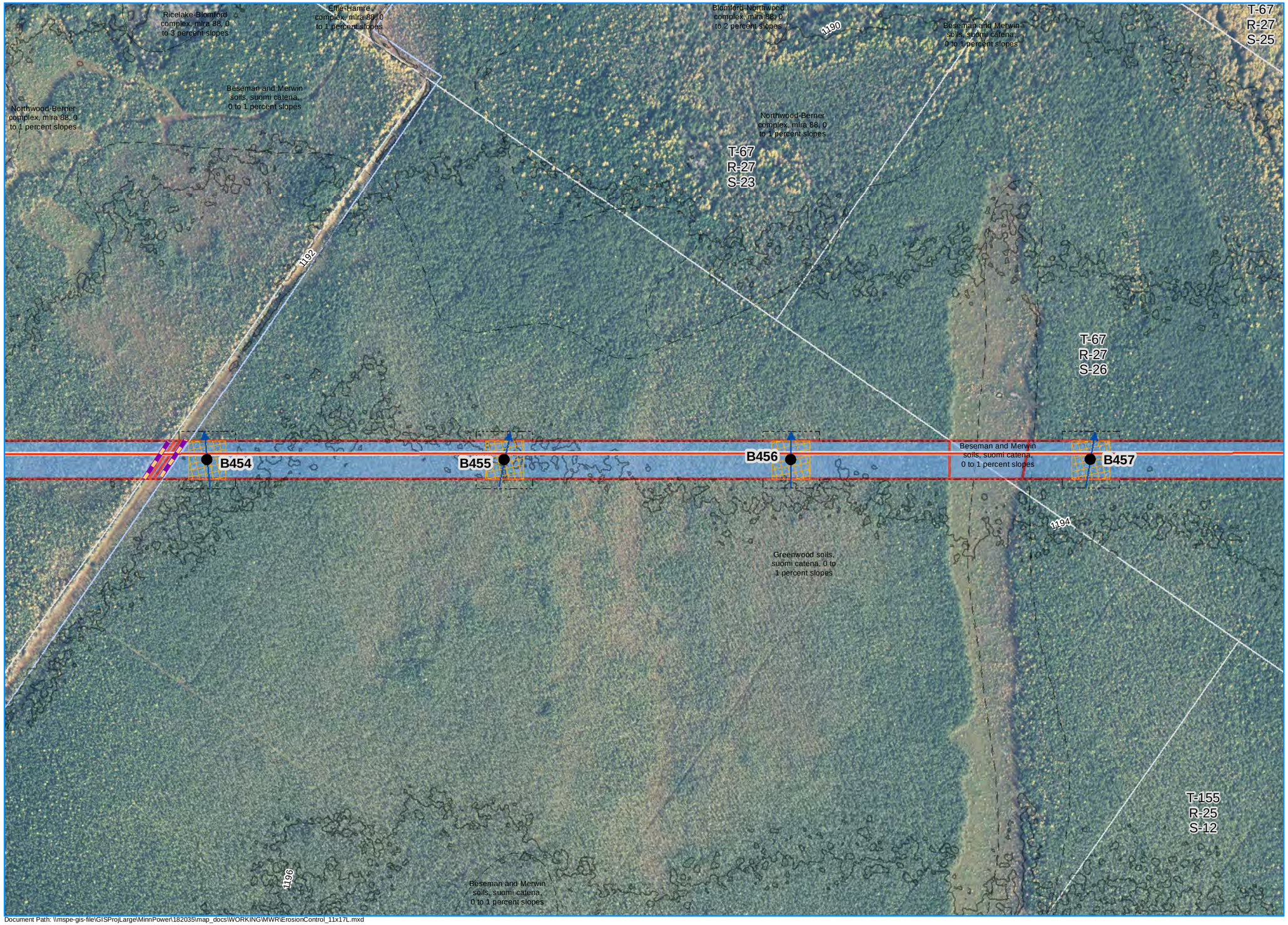

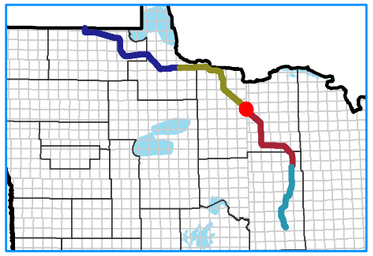

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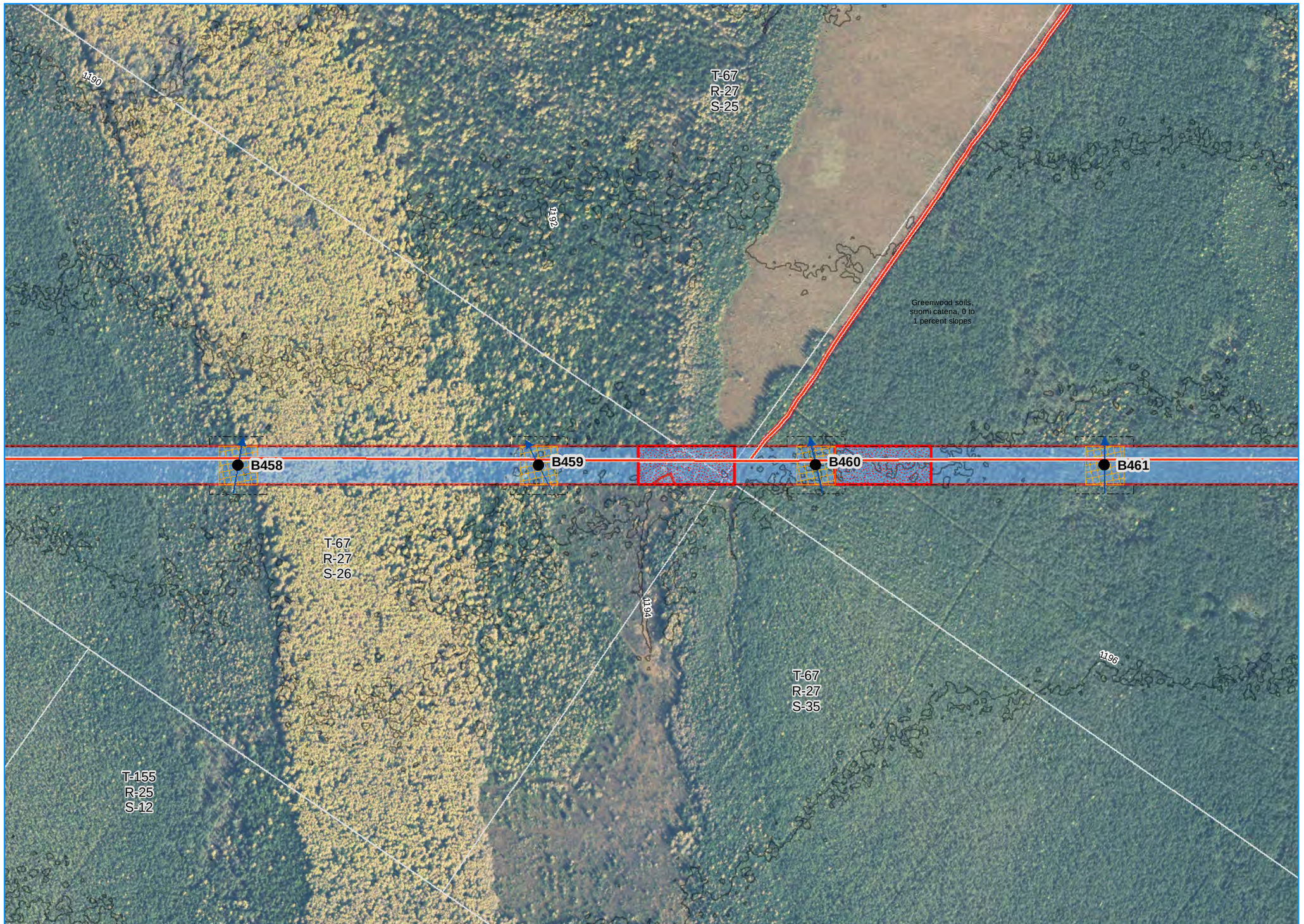

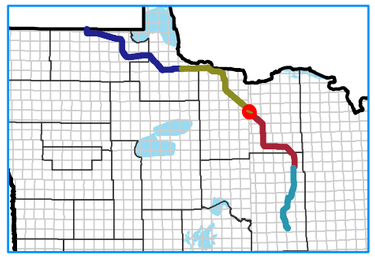

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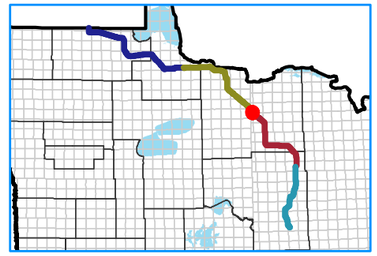

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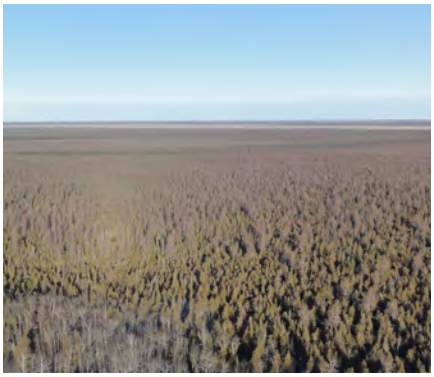

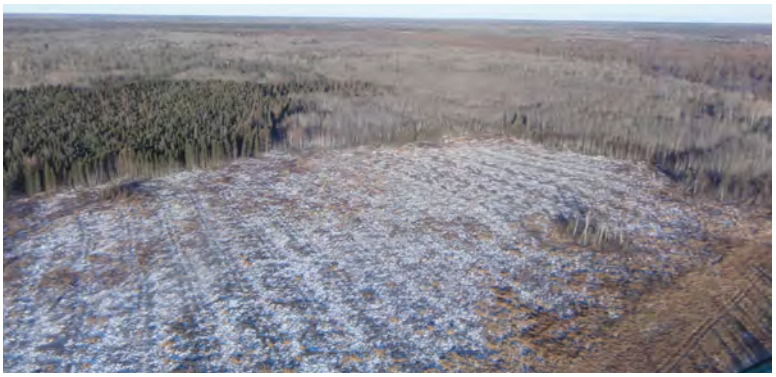

VEGETATION MANAGEMENT PLAN

OCTOBER 14, 2016

Minnesota Power | 30 West Superior Street | Duluth, MN 55802

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1.0 Introduction

This Vegetation Management Plan (Plan) outlines construction-related policies, regulations, procedures, minimization, and mitigation measures as they relate to the management of vegetation within the work areas of the Great Northern Transmission Line Project (Project). Minnesota Power, an operating division of ALLETE, Inc., (Minnesota Power) has developed this Plan in order to facilitate vegetation management activities in compliance with permit conditions included in the Department of Natural Resources (DNR) Licenses to Cross Public Lands and Waters, the Agricultural Impact Mitigation Plan, and the Public Utilities Commission (PUC) Route Permit.

The Vegetation Management Plan shall:

- → Identify measures taken to minimize the impact of vegetation and tree removal and minimize ground disturbance.
- → Identify a comprehensive revegetation/restoration plan for non-cropland areas.
- → Identify vegetation control methods to be used during the operation and maintenance of the high voltage transmission line (HVTL).
- → Identify measures to prevent the introduction of noxious weeds and invasive species on lands disturbed by construction activities.

Typical right-of-way (ROW) for the Project is 200-feet-wide, with an expanded ROW in select locations where required. For example, 'bump-out' areas at tangent and angle structures may extend outside of the 200 foot ROW.

2.0 Equipment Access

Generally, access to and on the ROW may be by overland travel using traditional construction equipment or with low ground pressure equipment (either large flotation tired or large tracked type) designed to minimize ground impacts. When soft ground conditions exist that don't allow for overland travel, matting will be used to provide for a smooth access way leading to or on the ROW, as well as in work areas that require a more stable travel or work surface. Matting of two types may be used on the Project:

- → **Wood timber matting** consists of a series of square timbers bolted together to generally form a surface 8 to 12 inches thick and 4 feet wide by 12 to 18 feet long. These mats are hauled to the area where they are to be used by means of flatbed trucks or truck-trailer rigs, unloaded and placed end to end or side by side as needed. The typical equipment required for placement is forklifts, small tracked crawlers with lift, and/or flatbed truck with a boom. In many instances a single layer of mats is all that is required to provide for a safe travel way or work area. If soil conditions are not adequate to support the equipment loads with single layers of matting, multiple layers of matting may be installed to increase the height above ground and/or widen the footprint of the travel surface and distribute the weight.

→ **Composite matting** is matting made of composite material that comes in sheets or panels typically 4 inches thick and 7 feet wide by 15 feet long. These mats are installed with equipment similar to timber matting. Composite mats are often interconnected together with a pin system that holds the matting in place, and as with timber matting, multiple layers of matting may be installed, as well as widening the overall footprint to reduce ground pressure.

Ice Roads -During winter seasons, cold weather construction techniques may be used for construction in peatlands, wetlands and other areas. A path within the ROW is cleared of all brush and debris in the fall or early winter, either manually or by using light tracked vehicles. An amphibious vehicle such as a Marsh Master may be used to breakdown tall grassy vegetation to enhance freezing. After the upper crust has frozen sufficiently, a light bulldozer, blade, snow blowers or other snow removal devices will push or remove the snow off the area that will serve as the road (see Figure 5). This snow plowing allows the frost to penetrate deep into the access road area. Care is taken not to pile snow where construction activities will occur, as this will prevent the frost line from advancing as deep as necessary to support heavy equipment. In specific areas, water may also be applied on the future road in an attempt to create a roadbed capable of supporting larger loads. In specific areas it may be necessary to make several trips over the roadway first with small equipment that breaks the crust to allow water to seep back into the track to make for a thicker layer of ice. This is repeated with heavier and heavier equipment until the intended equipment can travel over the ice road in a safe manner. At times this is accomplished by adding several layers of water to the travel way using water trucks or by pumping and manual spraying of water from adjacent wetlands. Water appropriation permits would be obtained as necessary for on-site pumping.

Access roads for tree clearing and construction have been identified for portions of the Project. The contractor will be the responsible party for all access roads and the repair of damage during operation of heavy equipment, both on and off ROW. Minnesota Power is negotiating access agreements with private landowners for access that crosses private land. Minnesota Power is also coordinating with the local governments (townships and counties) to develop agreements for use of public roads. Minnesota Power is also submitting access lease requests for DNR forestry roads and other access roads that cross DNR parcels. This request will outline road development and maintenance responsibilities. Minnesota Power anticipates that the DNR access leases will identify general and special provisions regarding access road use and maintenance.

3.0 Right Of Way Vegetation Management

3.1 General Clearing Practices

The following provides a list of general practices that Minnesota Power will follow during clearing and construction within the ROW to minimize vegetation impacts.

→ The ROW will be surveyed and marked in advance of tree clearing to identify the extent of Project activities.

- → Vegetation within the ROW will be cut at or slightly above the ground surface. Where applicable, rootstock will be left in place to stabilize existing soils and to regenerate vegetation after construction.
- → Merchantable timber typically is cut to standard log lengths and stacked along the ROW for removal.
- → To minimize the potential for damage to construction equipment, and to maintain a safe, level access path and structure installation area, stump removal may occur. Stumps that interfere with the placement of mats or movement of construction equipment will be ground down to a point at or slightly below ground level.
- → All work will comply with the Project Stormwater Pollution Prevention Plan (SWPPP) developed as part of the Project National Pollution Discharge Elimination System (NPDES) permit.
- → Best Management Practices (BMPs) will be used to minimize the potential for spills or leaks from equipment during construction, including frequent inspections of equipment, requiring portable spill containment kits for construction equipment, ensuring that equipment operators are present at the nozzle at all times when fueling is in progress. See Section 3.3 for spill control measures in wetlands and waterbodies.
- → Refueling of equipment in wetlands will be minimized when possible but if needed, BMPs will be used for refueling of equipment in wetlands. See section 3.3.
- → BMPs will be used to minimize the spread of invasive/noxious weeds. See section 5.
- → BMPs will be used to control fugitive dust during construction including: monitor dust generation; operate vehicles at reduced speeds; and use water and dust abatement methods in accordance with the Project SWPPP.
- → Minnesota Power will follow the DNR's guidelines for rutting during clearing and construction within the ROW to minimize vegetation impacts. Prior to reaching any of the levels of rutting described below, the contractor will take appropriate measures to reduce rutting so that the maximum extent of rutting is not reached.
    - o ROW and Access Roads through Wetlands – In any contiguous mile of ROW or access road, rutting greater than or equal to 6 inches deep shall not exceed a cumulative length of 300 feet.
    - o ROW and Access Roads through Uplands – In any contiguous mile of ROW or access road, rutting greater than or equal to 6 inches deep shall not exceed a cumulative length of 500 feet.
- → Avoid disturbing soils and excavating in steeply sloped areas, to extent practical.
- → Develop procedures for the proper storage and disposal of all hazardous and nonhazardous wastes generated during construction in accordance with the Project SWPPP.

- → Repair or replace fences, gates, and similar improvements that are removed or damaged during clearing activities.
- → Post signs during construction and clearing activities to provide residents and visitors with advance notice of what recreational activities may be affected by the Project.
- → Implement traffic control measures during clearing, which could include flag persons, barriers, and flashing lights as per Minnesota Department of Transportation (Mn/DOT) standards.
- → Temporary revegetation and restoration is to occur upon completion of localized Project activities, as directed by the Environmental Inspector (EI). See section7.

DNR has indicated that project BMPs should comply with the "Voluntary Site-Level Forest Management Guidelines". The Guidelines sections most pertinent to this project are related to access roads. MP anticipates that final BMP measures for tree clearing and access roads will be identified in the DNR license general and special provisions and the DNR lease agreements, and will be consistent with DNR Guidelines.

3.2 Clearing Off-ROW Work Areas

The following provides a list of additional practices that Minnesota Power will follow during clearing and construction of off-ROW work areas, including but not limited to; multipurpose yards, landings, staging areas, laydown yards, off-ROW access and other areas determined necessary for construction of the Project.

- → Off-ROW areas will be designed to the minimum size required.
- → Off-ROW facilities will be located on upland areas whenever practical.
- → Off-ROW areas will be located in previously disturbed areas whenever practical.
- → Off-ROW work areas will not be located on frozen, open-water wetlands/ponds/lakes.
- → Locate, design, construct, and maintain skid trails to minimize damage to the residual vegetation, minimize rutting, maintain surface and subsurface water flows in wetlands, and reduce erosion and sedimentation.
- → Use controlled staging areas for refueling and hazardous material loading/unloading when possible.

More detailed clearing protocols for off-ROW areas will be identified when locations have been finalized and a contractor has been selected.

3.3 Refueling, Fuel Storage and Spill Control Near Wetlands and Waterbodies

In certain instances, refueling may be unavoidable due to site-specific conditions or unique construction requirements. These locations must be approved in advance by the Environmental Inspector. Minnesota Power requires that the storage of petroleum products, refueling and lubricating operations take place in upland areas that are more than 100 feet from wetlands, streams, and waterbodies (including drainage ditches), and water supply wells where practical. In addition, the Contractor must store hazardous materials, chemicals, fuel and lubricating oils,

and perform concrete coating activities outside these areas. Auxiliary fuel tanks solidly attached to construction equipment or pumps are not considered storage and are acceptable. In addition to those practices described above, the following precautions will be taken when refueling within 100 feet of streams, wetlands or other waterbodies:

- → Operators will be present at the nozzle at all times when refueling is in progress.
- → Portable drip pans will be employed under the point of fueling.
- → Adequate amounts of absorbent materials and containment booms must be kept on hand by each construction crew to enable the rapid cleanup of any spill which may occur.

In addition to the above measures, the following conditions shall apply if a spill occurs near or into a stream, wetland or other waterbody, regardless of size:

- → If a spill should occur during refueling operations, STOP the operation until the spill can be controlled and the situation corrected.
- → For spills into streams, lakes or other waterbodies containing standing or flowing water, regardless of size, the Contractor Representative must apprise MP of the incident and notify the National Response Center immediately.
- → For spills in standing water, sorbent booms and pads shall be on hand and used by the Contractor to contain and recover released materials. In addition, other spill response materials and equipment shall be on hand as appropriate for each waterbody and used to contain and recover foreseeable spills. This may include containment booms, skimmer pumps, holding tanks, boats, and other equipment.
- → If necessary, for large spills in waterbodies, an Emergency Response Contractor must be secured to further contain and clean up the spill.
- → Contaminated soils in wetlands must be excavated and temporarily placed on plastic sheeting in a bermed area, a minimum of 100 feet away from the wetland. Contaminated soils shall be covered with plastic sheeting while being stored temporarily and properly disposed of as soon as possible.

3.4 Rare Species Surveys

Minnesota Power will work with the DNR Endangered Species Coordinator to address impact avoidance and minimization for new protected species locations identified during the 2016 biological surveys effort. Construction avoidance or minimization standards for each of these sites will be incorporated into the Vegetation Management Plan after consultation is complete.

4.0 Clearing Methods

4.1 ROW Structure Work Areas, Pull Sites and Temporary Work Areas

Structure work areas are the areas surrounding each structure, typically 200-foot by 200-foot. Pull Sites are the areas where activities for wire stringing would occur, typically 200-foot by

500-foot. Other temporary work areas may include fly yards, mat storage areas and similar sites. Other temporary work areas vary in size depending on the required use. All of these locations (structure work areas, pull sites and temporary work areas) require the removal of all woody vegetation. At structure locations, woody species with the potential to be tall growing will be removed in 'bump-out' areas that are 50 feet by 300 feet. Rootstock will be left in place unless it hinders structure or anchor placement. Stump removal may occur if they interfere with the placement of construction mats, anchor or structure locations, or pose a risk to construction tires and equipment. Structure sites and typical ROW clearing are illustrated in Figure 1.

4.2 Right-of-Way Clearing Between Structures

ROW clearing between the structure work areas will be conducted to minimize impacts to wetlands and wildlife habitat, consistent with Minnesota Power's permit commitments. The initial clearing will be contained within the ROW and notifications will be made to landowners in accord with landowner agreements. As illustrated in Figures 2 and 3, all woody vegetation within a center 70-foot strip will be cut and maintained to ground level. Along the outer 65 feet to each side of the ROW, trees and shrubs that are or have potential to be tall will be cleared; low growing woody vegetation and shrubs will be retained. Tall vegetation will not be allowed to persist along the outer 65 feet to each side of the ROW to ensure compliance with North American Electric Reliability Corporation (NERC) requirements and transmission line safety. Due to NERC safety requirements, there are no special practices to reduce the clearing extent that can be incorporated for lowland conifer old growth complexes.

In some circumstances, access paths may be outside of the center 70-foot strip. In these cases, all woody material will be removed from access paths, typically 16 to 20 feet wide.

Stump removal may occur if they interfere with the placement of construction mats or pose a risk to construction tires and equipment. Where removal is required for access, stumps will be ground to a point at or slightly below the ground surface.

Additionally, tall trees outside of the ROW that may impact the operation of the line (danger trees) may need to be removed and will be marked prior to their removal. Minnesota Power expects that there will be few instances of tree removal beyond the ROW. If this is required, Minnesota Power would complete notifications as required by landowner agreement and DNR license.

4.3 Clearing Near DNR Protected Waters and Wetlands

Special clearing set-backs are required when working near DNR Protected Waters/Streams (Figure 4) and Protected Wetlands. DNR protected streams have a 75-foot-wide buffer, to each side of the stream, where clearing and equipment use are restricted. In some circumstances, the Project will need to cross a DNR protected water. Minnesota Power will follow the notification requirements in accord with conditions of the license agreement prior to clearing. Figure 4 illustrates the typical buffer with an opening for the crossing.

4.4 Merchantable Timber on Private Lands

At the time of clearing, merchantable trees will be cut to standard logging lengths and stacked within the ROW where it was cut. The landowner will retain the title to all timber material. In areas where title to timber material is transferred to Minnesota Power, Minnesota Power and its contractor(s) will remove and utilize merchantable timber where practical. Generally, unmerchantable material, including trees, brush, and slash will be either lop and scattered, , chipped, or burned within the ROW as approved by property owner or local land management agency and in compliance with permit requirements. MP and the contractor will work with the DNR and/or local fire warden to secure burn permits should burning be identified as a necessary practice.

4.5 Merchantable Timber on DNR Lands

At the time of clearing, merchantable trees will be cut to standard logging lengths and stacked within the ROW where it was cut. Minnesota Power and its contractor(s) will remove and utilize merchantable timber where practical. Generally, merchantable timber includes the following:

- → 3 inches for Cordwood
- → 6 inches for bolts (spruce, pine, balsam fir, birch, basswood, oak, maple)
- → 6 inches for saw timber (conifers, aspen, balm of Gilead, birch)
- → 10 inches for saw timber (other hardwoods)

One of the primary wetland impact mitigation measures for the Project is to minimize the number of travel passes along the ROW. Therefore, the identification of merchantable timber will also consider the accessibility and density of timber stands, as well as the timber size and type listed above. In areas where access is difficult and/or where the stand density is insufficient to make timber removal economical, the Contractor will work with the Agency Inspector to determine merchantability of the resource.

4.6 Disposal of Vegetative Material

Cut vegetative material generated through clearing operations may be either left in place after clearing or removed from the ROW as described in the processes below.

4.6.1 Lop and Scatter

Lop and scatter method may be used in areas in either wetlands or uplands. Tree tops, branches, and non-merchantable trees are to be cut and scattered in place. The scattered material should be dispersed across the ground surface to permit natural regrowth of the existing vegetation. Generally, chips will not be spread deeper than 1 inch.

The purpose of this method is to limit the need for unnecessarily hauling and potentially disturbing existing ground or vegetation. Likely situations where this method will be used are in shrub and brush areas with limited numbers of trees.

Slash or woody vegetation that originates within the wetland can be left in place as long as it is widely scattered and does not modify the course or cross section of the wetland basin. Slash or woody vegetation that originates from outside wetlands is not to be left in wetlands as this is prohibited under the Project's wetland permits.

On DNR lands, Lop and Scatter will not occur within 200 yards of any public roads, trails, or other treadways.

4.6.2 Mowing/Hydro-ax

Mowing and hydro-ax operations are typically used on tall grasses, shrubs and non-merchantable woody materials. The residue of these operations is unevenly cut vegetative material spread along the right of way in a loose arrangement. The material will be placed so as not to impact natural regrowth of existing vegetation.

4.6.3 Mulching and Chipping

Chipping is a more refined process of vegetation removal whereby non-merchantable trees and slash are processed to create uniform residue size or chips of consistent size. If this process is used, chips will be scattered over the ROW such that the vegetation regrowth is not completely restricted. Generally, chips will not be spread deeper than 1 inch. Chipping in wetlands may occur as long as the chipped materials are evenly scattered so that existing herbaceous and shrub vegetation can regenerate. The use of mulching or chipping will be determined on a case by case basis in consultation with the Project Environmental Inspector (EI) and Contractor. Mulch can provide protection of potentially erodible soils. If the area is expected to require seeding, then the EI will determine if mulch should be excluded from the site.

4.6.4 Slash Burning

Slash burning will only occur within the new ROW where burn permits have been approved by the local authority, including DNR. A variance to the DNR burn permit may be requested for burn piles that do not fit into typical permit standards, i.e. size or timing restrictions.

If burning of slash is approved by appropriate agencies and landowners, brush will be burned in the center of the ROW in piles located away from forested areas. No burns are to occur on peat soils. Slash piles are not to be placed in or near waterways where fire debris has the potential to wash into adjacent streams and waterbodies.

Post-burn, the site will be restored using a temporary and/or permanent seeding method, in consultation with the EI.

5.0 Herbicides

Herbicides may be used within the ROW with exceptions described below. Herbicides will not be used if landowners prohibit their use. Herbicides must be used in accordance with manufacturer's specifications and all applicable federal and state regulations. Herbicides may be used to control the re-sprout of the stumps of tall-growing tree species or to control listed invasive or noxious weed species when permitted.

5.1 Wetland Use

Herbicides used in or near all wetlands and waterbodies must be designed for use in wet areas as designated by manufacturer's specifications and federal and state regulations. Cut stump or basal treatments are acceptable practices within the 75-foot vegetative buffer zone of DNR waterbody crossings.

5.2 State Lands

Herbicides may not be used on state lands managed by the DNR without a permit approved by the DNR.

6.0 Noxious Weeds and Invasive Species Control

6.1 Introduction

During all phases of Project activities including clearing, construction, operation and maintenance, the Project will minimize the introduction and spread of noxious weeds and invasive species (NWIS) along the ROW by conducting weed surveys, implementing BMPs that discourage the spread of identified species, and routine cleaning of equipment to remove dirt and plant debris. It is important to note that this Project will be constructed adjacent to existing utility corridors with established concentrations of invasive species of concern. While this does not preclude the Project from responsibility for managing, to the greatest extent possible, the spread of invasive species, this ability may be limited by pre-existing conditions.

There are 29 plant species regulated as noxious weeds under the Minnesota Noxious Weed Law, Minnesota Statutes Sections 18.75-18.91 (Table 1). The Minnesota Noxious Weed Law defines several categories of noxious weeds including;

- → Prohibited Eradicate – Must be eradicated by killing the above and belowground parts of the plant.
- → Prohibited Control – Must be controlled preventing the maturation and spread of propagating parts.
- → Restricted noxious Weeds – May not be sold, transported without a permit, or intentionally planted in Minnesota,
- → Specially Regulated Plants – Shall be handled, controlled or eradicated according to specified regulations as defined by Minnesota Department of Agriculture.

Table 1. Minnesota State Noxious Weeds

Common Name	Scientific Name	Designated List
Yellow starthistle	*Centaurea solstitialis*	Prohibited Eradicate
Grecian foxglove	*Digitalis lanata*	Prohibited Eradicate
Oriental bittersweet	*Celastrus orbiculatus*	Prohibited Eradicate
Japanese hops	*Humulus japonicas*	Prohibited Eradicate

Common Name	Scientific Name	Designated List
Dalmatian Toadflax	*Linaria dalmatica*	Prohibited Eradicate
Common teasel	*Dipsacus fullonum*	Prohibited Eradicate
Giant hogweed	*Heracleum mantegazzianum*	Prohibited Eradicate
Brown knapweed	*Centaurea jacea*	Prohibited Eradicate
Meadow knapweed	*Centaurea x mincktonii*	Prohibited Eradicate
Black swallow-wart	*Cynanchum louiseae*	Prohibited Eradicate
Palmer Amaranth	*Amaranthus palmeri*	Prohibited Eradicate
Plumeless thistle	*Carduus acanthoides*	Prohibited Control
Canada thistle	*Cirsium arvense*	Prohibited Control
Leafy spurge	*Euphorbia esula*	Prohibited Control
Purple loosestrife	*Lythrum salicaria*	Prohibited Control
Wild parsnip	*Pastinaca sativa*	Prohibited Control
Common Tansy	*Tanacetum vulgare*	Prohibited Control
Spotted Knapweed	*Centaurea stoebe*	Prohibited Control
Narrowleaf Bittercress	*Cardamine impatiens*	Prohibited Control
Common or European buckthorn	*Rhamnus cathartica*	Restricted Noxious Weed
Glossy buckthorn	*Frangula alnus*	Restricted Noxious Weed
Multiflora rose	*Rosa multiflora*	Restricted Noxious Weed
Common reed	*Phragmites australis*	Restricted Noxious Weed
Garlic mustard	*Alliaria petiolata*	Restricted Noxious Weed
Poison Ivy	*Toxicodendron radicans*	Specially Regulated Plant
Japanese knotweed	*Polygonum cuspidatum*	Specially Regulated Plant
Giant knotweed	*Polygonum sachalinense*	Specially Regulated Plant
Japanese barberry	*Berberis thunbergii*	Specially Regulated Plant

In addition to the species listed above, the project will also document areas of reed canary grass infestation so that BMPs will minimize spread of this species.

Early growing season surveys will be conducted prior to clearing and construction to assess NWIS infestations. Weed infestations within the ROW will be considered significant and controlled when any of the species listed by the state except for "prohibited eradicate" achieves a density greater than 20 percent of a 1,000 square foot area. Species listed as "prohibited eradicate", will be eradicated or eliminated upon discovery. Assessments will identify areas of infestations within the newly cleared ROW. Assessments will identify areas where equipment cleaning will be targeted and will document areas where the Project will be responsible for NWIS control.

6.2 Minnesota DNR Lands

The Minnesota DNR specifies operational procedures for the control of Invasive Species on DNR lands under Operational Order #113 (January 9, 2013). The Order provides guidance on the Department's policies regarding Invasive species setting forth procedures to "Prevent or limit the introduction, establishment and spread of invasive species" and to "Implement site-level management to limit the spread and impact of invasive species." The list of invasive species addressed in the order is periodically updated and may be more inclusive than the Minnesota State Noxious Weed list, included above. Minnesota Power will work with the DNR to identify other species that may be of concern.

6.3 Prevention and Control Measures

In order to prevent the introduction and spread of NWIS and reed canary grass into the Project area from off-site, equipment and matting will be cleaned prior to arrival at the Project. Visible dirt must be removed from all equipment and matting using high pressure compressed air blowers, brushing or pressure washing. Contractors must keep a cleaning log for each piece of equipment used onsite. Logs will be made available to the Agency Inspector upon request. In additional to the initial cleaning, equipment and mats will be cleaned each time they are moved from a site that has documented weed infestations and where weed seed has potential to be transported. Weed infestation locations may be identified by pre-construction surveys or by environmental inspectors in the field. Non-compliance with equipment cleaning requirements may cause a stop work order to be issued until non-compliant equipment has been removed from the site and adequately cleaned.

Major infestation areas identified will be treated with the recommended herbicides or by mechanical methods such as mowing or burning. The contractor will be required to obtain the necessary permits and/or certifications for the use of applicable herbicides, such as the Minnesota Aquatic Nuisance Control permit required when spraying within the boundaries of DNR Protected Waters. Contractors must keep proper documentation of location and timing of herbicide use and be prepared to provide documentation to the EI upon request.

6.4 Construction Practices

Tree clearing will occur, to the extent practical, during winter months in order to minimize the spread of NWIS. Ideally, packing snow over frozen ground limits direct contact between heavy equipment and soils, minimizing the potential for disturbed soils and spread of NWIS.

The EI will survey for and document NWIS infestations each growing season following clearing and during construction through Project completion. If Contractors identify an area of NWIS infestations it must be reported to the EI who will provide further instructions for control. The EI will report to the appropriate agencies regarding NWIS infestations. Where NWIS infestations are identified near a work area, equipment will require cleaning prior to relocation from the infested area as defined above. Documentation regarding equipment cleaning will be required and will be made available upon request of the EI.

6.5 Post Construction Measures

Revegetation in non-agricultural areas will be considered successful when the cover of acceptable vegetation is dominant and non-NWIS species density is less than or similar to surrounding lands that have not been affected by the Project. If monitoring indicates a higher density of NWIS, the Project will take appropriate measures to control NWIS.

6.6 Non-native Invasive Earthworms

Non-native, invasive earthworms are recognized in the Final Environmental Impact Statement (FEIS) as a major threat to the vegetation of forest floor plant communities. Equipment cleaning control measures implemented as part of the NWIS control plan will mitigate the potential for non-native invasive earth worm translocation. The EI may identify specific areas along the ROW where additional vehicle cleaning may be required in order to protect sensitive species.

7.0 Vegetation Restoration Plan

The Project will be required to meet all conditions as specified in the local, state, and federal permits and private landowner agreements for final restoration and clean up. Revegetation and restoration of disturbed areas associated with Project activities are intended to protect wetland and water resources from issues associated with sedimentation, to protect wildlife habitat, and reduce the movement of NWIS species within the ROW. The revegetation and restoration components of this Plan are derived from the permitting process and discussions with both the DNR and USACE. If it is found that any conditions or requirements of this plan are in violation of state or federal law or ordinance, the applicable law will take precedence, but not nullify other, unrelated portions of the Plan.

Minnesota Power proposes that in most situations, natural revegetation by the local seed bank is the preferred restoration method. Temporary cover crops would be used to minimize weed establishment. In some circumstances, such as large areas of vegetation removal with bare soil exposure, restoration using native seed/plant species would be required. Minnesota Power will consider the inclusion of pollinator species based on availability of local genotypes and appropriateness for the location/site.

7.1 Seed Specifications

Native vegetation establishment and enhancement protocols, and seed mixes from the Minnesota Board of Water and Soil are included in this plan. Additional seed mixes (not currently included) will be considered on a case-by-case basis, depending on local site characteristics and conditions.

Seed used will be purchased on a pure live seed (PLS) basis for seeding revegetation areas. Seed tags will identify:

- → Purity;
- → Germination;
- → Date tested;

- → Total weight and PLS weight;
- → Weed seed content; and
- → Seed supplier's name and business information.

Seed will be used within 12 months of testing as required by applicable state rules and regulations. Seed must come from state approved list of native seed providers.

Seed rates used on the Project will be based on PLS rate, not actual weight. The species components of individual mixes are subject to availability at the time of purchase. Species may be substituted with alternative native species subject to approval by the EI.

Seed tags must be collected by the contractor and provided to the EI during seeding activities.

The tags will be reviewed by the EI prior to use to ensure that the seed mix complies with this Plan's specifications.

Legume seed (where specified) will be treated with inoculants specific to the species and in accordance with the manufacturer's recommended rate, appropriate for the seeding method (broadcast, drill, or hydroseeding).

7.2 Temporary Stabilization

7.2.1 Temporary Seeding

Temporary revegetation is applied in order to quickly establish vegetative cover with the primary purposes of minimizing soil erosion and reducing the potential for the establishment of NWIS. Temporary seed mixes are considered a cover crop, and are made up of annual grasses, have rapid germination, and provide quick ground cover. These seed mixes are not intended to provide multi-year cover. Unless specifically requested by landowners or regulatory agencies, the Project will not establish temporary vegetation on cultivated land or in areas of open water. Temporary seed mixes 21-111 and 21-112 are included as Tables 2 and 3, respectively.

Table 2. Temporary Cover Crop Seed Mix (Planting Dates April 1- Aug 1)

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq. ft
Oats	*Avena sativa*	112	100	100%	45
	Totals:	112	100	100%	45

Table 3. Temporary Cover Crop Seed Mix (Planting Dates August 1 – September 30)

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq. ft
Winter wheat	*Triticum aestivum*	112	100	100%	26
	Totals:	112	100	100%	26

Temporary seeding of cover crop will occur in locations if unfrozen, bare soil surface conditions and ruts will not be permanently restored within 30 days of completion of active work.

Temporary restoration activities will include the repair of rutted surfaces and an even broadcast-seeding of the temporary cover-crop seed mix at a rate of 100 lbs/acre. No mulch is to be applied in wetland areas.

The EI may require contractors to install temporary vegetation earlier than 30 days in locations where concerns regarding sensitive species and/or soil erosion are present.

Temporary vegetation establishment may be expected to be successful between April 1 and September 30. Establishment of temporary vegetation is unlikely to be successful outside of this time window. Temporary use of mulch to stabilize soils should be applied outside of the April 1 through September 30 window.

7.2.2 Temporary Stabilization Using Mulch

Straw or wood chip mulch may be used to help stabilize areas of bare soils during the establishment of temporary vegetation or during the period between October 1 and April 1 (winter). The contractor will apply mulch during the establishment of temporary vegetation as requested by the landowner, specified in licenses or permits, or as requested by the EI.

Wood chip mulch, free of soil material and derived from on-site sources, may be used to protect areas where bare soils have been exposed due to tree clearing and construction activities. In winter situations, wood chips may be used to provide protection for bare soils exposed due to Project activities where out of season seeding is not applicable. Woodchip mulch derived from on-site locations may be spread up to 6 inches deep in upland areas to provide ground protection along access paths. Upon abandonment of access routes, woodchip mulch is to be spread evenly to a depth no greater than 1 inch. Wood chip mulch is not to be used within wetlands.

Straw mulch may be used outside of the seeding window as a temporary erosion control measure, followed by temporary or permanent seeding at the earliest possible time after the April 1 seeding date. Refer to Straw Mulch Specifications (below) for straw mulch requirements.

7.3 Permanent Restoration

Allowing for and encouraging native species to naturally re-establish temporarily disturbed area is a primary BMP for this Project. Appropriate vegetative cover of the ROW will be required along the entire length of the Project. Since this Project does not require major grading activities, in most cases natural revegetation by early successional native species following tree clearing is expected to occur. In areas where native species revegetate the corridor, active restoration may not be required. Monthly monitoring during the first growing season after completion of construction will be required to ensure that NWIS are controlled, that desirable native plant species become the dominant vegetation communities in natural areas, and that bare soils are quickly stabilized to reduce erosion. In areas of minimal disturbance, vegetation will be allowed to regenerate naturally.

Where standing water is not present and where surrounding vegetation is dominated by abundant native species, restoration of bare soils may be completed by using the temporary cover crop seed mix and allowing native species to revegetate the area. The EI will consult with

the appropriate agencies during the construction period to assess application of techniques in specific locations.

Permanent seed mixes for the Project include native seed varieties commonly found and/or available from local seed distributors. The permanent seed mixes are designed to augment the natural colonization of bare ground by local, native seed sources.

7.3.1 Uplands

Two upland seed mixes have been developed to provide rapid establishment of a permanent vegetative cover in upland areas. These mixes have been developed to establish vegetation appropriate to the pre-Project land use settings. All of the mixes are designed for areas that have been cleared of overhead canopy. Within existing forested areas, no seeding is proposed.

7.3.1.1 Native Vegetation Area Seed Mix

MnDOT seed mix 36-311, as shown in Table 4, is designed to provide permanent herbaceous cover in areas where forest has been cleared of canopy or along existing natural openings where native vegetation is present currently or is the desired condition. This mix will be used on all uplands on DNR lands where bare ground conditions exist, unless otherwise specified. This mix will also be used on uplands located on private lands adjacent to natural areas unless landowners request an alternate mix.

Table 4. Native Vegetation Area Seed Mix

Common Name	Scientific Name	Rate (kg/ha)*	Rate (lb/ac)*	% of Mix (% by wt)	Seeds/ sq ft
Fringed brome	*Bromus ciliatus*	2.24	2.00	16.04%	8.10
Bluejoint	*Calamagrostis canadensis*	0.11	0.10	0.78%	10.00
Poverty grass	*Danthonia spicata*	0.56	0.50	1.50%	4.60
Nodding wild rye	*Elymus canadensis*	1.68	1.50	11.99%	2.31
Slender wheatgrass	*Elymus trachycaulus*	1.40	1.25	3.73%	2.38
Fowl bluegrass	*Poa palustris*	0.73	0.65	5.19%	31.00
False Melic	*Schizachne purpurascens*	0.28	0.25	0.75%	2.90
	Total Grasses	5.04	4.50	35.96%	57.71
Common yarrow	*Achillea millefolium*	0.03	0.03	0.09%	2.00
Pearly everlasting	*Anaphalis margaritacea*	0.02	0.02	0.05%	1.30
Flat-topped aster	*Doellingeria umbellate*	0.04	0.04	0.12%	1.00
Tall cinquefoil	*Drymocallis arguta*	0.07	0.06	0.19%	5.30
Large-leaved aster	*Eurybia macrophylla*	0.02	0.02	0.05%	0.18
Stiff goldenrod	*Olegoneuron rigidum*	0.16	0.14	0.42%	2.10
Smooth wild rose	*Rosa blanda*	0.18	0.16	0.47%	0.15
Black-eyed susan	*Rudbeckia hirta*	0.29	0.26	0.77%	0.29

Common Name	Scientific Name	Rate (kg/ha)*	Rate (lb/ac)*	% of Mix (% by wt)	Seeds/ sq ft
Gray goldenrod	*Solidago nemoralis*	0.07	0.06	0.18%	6.80
Upland white aster	*Solidago ptarmicoides*	0.04	0.04	0.13%	1.00
Lindley's Aster	*Symphyotrichum ciliolatum*	0.03	0.03	0.10%	1.00
Smooth aster	*Symphyotrichum leave*	0.16	0.14	0.43%	2.90
American vetch	*Vicia americana*	0.56	0.50	1.50%	0.38
	Total Forbs	1.68	1.50	4.50%	32.81
Oats or winter wheat (see note at beginning of list for recommended dates)		28.02	25.00	74.63%	11.14
	Total Cover Crop	28.02	25.00	74.63%	11.14
	Totals:	37.55	33.50	100.00%	121.39

*Rates should be doubled for broadcast or hydroseed application methods.

7.3.1.2 Residential Area Seed Mix

The residential seed mix, as shown in table 5, is intended for areas where landowners request the re-establishment of residential lawns or "turf" land cover.

Table 5. Residential Area Seed Mix

Seed Name	Scientific Name	Rate (PLS) (lb/ac)*	% of Mix (% by wt)
Kentucky Bluegrass	*Poa pratensis*	80	50.00%
Perennial ryegrass	*Lolium perenne*	33	20.625%
Creeping red fescue	*Restuca rubra*	33	20.625%
Annual ryegrass	*Lolium italicum*	10	8.75%
	Total	160	100%

*Rates should be doubled for broadcast or hydroseed application methods.

7.3.1.3 Agricultural Area Seeding

On private agricultural lands, the Project will work with landowners to develop appropriate measures for reseeding of disturbed lands. Unless requested by the landowner, the native area vegetation seed mix will be used.

7.3.2 Wetlands

The preferred method for revegetation of disturbed areas within wetland is reliance on revegetation by resident plant communities. The EI, in consultation with the appropriate regulatory agencies, will determine whether disturbed areas will require the use of the temporary cover crop only, or seeding with a wetland-specific mix.

In areas where the wetland plant community is dominated by native species with rhizomatous root systems that will likely recolonize areas of limited disturbance, bare soils are to be broadcast-seeded with the seasonally appropriate temporary cover-crop seed mix.

Large bare soil disturbance areas are defined as greater than 100 square feet of exposed soils that is greater than 2 feet wide. These areas are large enough to preclude revegetation from the local, native seed source. Large bare soil areas should be seeded using wetland seed mix (MnDOT seed mix 34-371); apply as shown in Table 6.

Table 6. Wetland Seed Mix

Common Name	Scientific Name	Rate* (kg/ha)	Rate* (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
Fringed brome	*Bromus ciliatus*	2.24	2.00	16.04%	8.10
Bluejoint	*Calamagrostis canadensis*	0.11	0.10	0.78%	10.00
Virginia wild rye	*Elymus virginicus*	1.68	1.50	11.99%	2.31
Tall manna grass	*Glyceria grandis*	0.28	0.25	1.96%	6.30
Fowl bluegrass	*Poa palustris*	0.73	0.65	5.19%	31.00
	Total Grasses	5.04	4.50	35.96%	57.71
Tussock sedge	*Carex stricta*	0.04	0.04	0.35%	0.85
Pointed broom sedge	*Carex scoparia*	0.06	0.05	0.39%	1.50
Dark green bulrush	*Scirpus atrovirens*	0.22	0.20	1.56%	33.00
Woolgrass	*Scirpus cyperinus*	0.07	0.06	0.51%	40.00
	Total Sedges and Rushes	0.39	0.35	2.81%	75.35
Canada anemone	*Anemone canadensis*	0.11	0.10	0.82%	0.30
Marsh milkweed	*Asclepias incarnata*	0.27	0.24	1.95%	0.43
Flat-topped aster	*Doellingeria umbellata*	0.11	0.10	0.81%	2.50
Common boneset	*Eupatorium perfoliatum*	0.10	0.09	0.68%	5.00
Grass-leaved goldenrod	*Euthamia graminifolia*	0.04	0.04	0.31%	5.00
Spotted Joe pye weed	*Eutrochium maculatum*	0.16	0.14	1.15%	5.00
Blue monkey flower	*Mimulus ringens*	0.03	0.03	0.24%	25.00
Giant goldenrod	*Solidago gigantea*	0.03	0.03	0.20%	2.30
Eastern panicled aster	*Symphyotrichum lanceolatum*	0.03	0.03	0.28%	2.00
	Total Forbs	0.90	0.80	6.44%	47.53
Oats or winter wheat (see note at beginning of list for recommended dates)		7.68	6.85	54.79%	3.05
	Total Cover Crop	7.68	6.85	54.79%	3.05
	Totals:	14.01	12.50	100.00%	183.64

*Rates should be doubled for broadcast or hydroseed application methods.

7.4 Seedbed Preparation

Seedbed preparation and seeding are to occur immediately following completion of construction activities and site cleanup in any given location. Where applicable, and in accordance with applicable permits, soil will be tilled to a minimum depth of 4 inches with a disc, field cultivator, or chisel plow to prepare the seedbed, breaking up large clumps and firming of the soil surface. Prior to seeding, prepared beds should be sufficiently soft to allow for seed penetration and mulch anchoring, while sufficiently firm to provide surface soil stability.

In order to minimize ground disturbance along the entire corridor, forested areas are being cleared, but roots and stumps are being left in place. Within areas of cleared forest, it may not be practical to access large areas of ground with seeding and seedbed preparation equipment. In these areas, smaller vehicles may be required to perform tasks such as smoothing ruts, preparing seedbeds with small rakes, and surface packing after seeding. The contractor will work with the EI to develop strategies to work around stumps.

Fertilizers and other soil amendments are not recommended and will only be applied as requested by and agreed to in ROW negotiations with individual landowners.

7.5 Seeding Methods

Seeding and mulching should occur parallel to ground contours as practical.

7.5.1 Seed Drilling

Seed drilling may be used in areas where stumps have been removed and a prepared seed bed can be created. These areas are expected to be infrequent and may not occur on the Project. Drilled seed will be sown at a depth of 0.25 inches. Seeding equipment will be able to accommodate and uniformly distribute different sizes of seed at the required depth. Feeding mechanisms will be able to evenly distribute different seed types at the rates specified. Seedbed soil is to be suitably firmed immediately following seed drilling.

7.5.2 Broadcast Seeding

Broadcast seeding may be used at all disturbed areas where bare soil is created.

Broadcast seeding will occur at **double the rate** specified in the seed mixes. Seed is to be uniformly distributed by a mechanical, hand-operated seeder; or in small seeding areas, by hand. Following seeding, the surface is to be raked with a cultipacker, harrow, or hand rake. The bed is to be firmed as appropriate to site conditions.

7.5.3 Hydroseeding

Hydroseeding may be used at all disturbed upland areas where bare soil is created. Hydroseeding is not approved in wetland locations as the method requires extra access by heavy vehicles.

Hydroseeding will occur at **double the rate** specified in the seed mixes. Seed will be applied in a broadcast, hydromulch slurry. The hydromulch seed mix will allow the contractor to see where application has taken place, ensuring uniform coverage of the seeding area. The

hydroseeder must provide for continuous agitation of slurry and provide for a uniform flow of slurry.

Hydroseed slurry is not to be held in the tank for more than one hour prior to application.

7.5.4 Dormant Seeding

Dormant seeding of the Permanent Seed Mix may be used after soil temperatures have fallen below 55 degrees Fahrenheit. Lower temperatures prevent seed from germinating. Winter broadcast seeding at the specified rate is required where winter activities have created bare ground conditions greater than 100 square feet in all non-agricultural upland areas of the ROW.

Cover Crop seeding is not required during dormant seeding.

Contractors are required to broadcast seed newly created bare soils immediately upon completion of work in a given area. Following seeding, the surface is to be raked with a cultipacker, harrow, or hand rake. The bed is to be firmed as appropriate to site conditions.

7.6 Timing

Seeding periods for application of the permanent seed mixes are limited to April 1 to June 30, during spring, or when soil temperatures have fallen below 55 degrees Fahrenheit in the fall. Outside of these time windows, temporary seed mixes, applied according to temporary cover-crop seed mix specifications, are to be used. Prior to installation of native seed mixes, the seedbed should be mowed and prepared for final seeding.

Seeding of the ROW is to occur within 7 days of final cleanup/grading activities during the growing season (April-September). Where seeding is not possible within 7 days, temporary stabilization using erosion control matting or mulch is required.

7.7 Straw Mulch Specifications

Weed-free straw mulch (from approved sources) will be applied to disturbed, non-cultivated upland areas if requested by landowners or land managers. Contractors will be responsible for acquiring weed-free straw mulch from approved sources and copies of applicable documentation must be provided to the EI. Mulch will be required on disturbed, exposed soils on all slopes greater than 5 percent, and on dry, sandy soils prone to erosion by wind or rain.

Straw mulch will be applied at a rate of 2 tons per acre in upland areas unless otherwise specified in permit conditions. Mulch will be uniformly distributed by mechanical blower or by hand in areas where vehicular access is limited. Mulch stalks are to be a minimum of 8 inches long in order to facilitate adequate anchoring. Mulch will be crimped to a depth of 2-3 inches using a mulch anchoring device where accessible. In areas where stumps and slash limit access by vehicles, mulch may be applied by hand at the specified rate and anchored in place by a liquid trackifier approved by the Project EI.

7.8 Performance Standards

The Project will be required to meet license and easement conditions and obligations on all lands and will continue to work, as appropriate, with landowners and land managing agencies during the construction process to achieve standards set forth in these agreements.

8.0 Monitoring

The Project Environmental Management and Monitoring Plan will be followed. The Project EI will be responsible for reviewing clearing and construction practices to make sure that they comply with this Vegetation Management Plan. The EI will monitor areas where seeding and erosion control measures have been implemented and specify the most appropriate practices necessary to provide long term stability and sustainable native plant communities. Vegetation monitoring will be conducted through the tree clearing and construction periods, and will continue as required by provisions identified in federal, state, and local permits. Minnesota Power anticipates that the NPDES permit will identify the timeframe for close-out of vegetation monitoring until revegetation has been adequately established.

9.0 Operation and Maintenance of the ROW

9.1 Routine Right-of-Way Clearing and Brushing

To conduct required aerial and visual inspection of the ROW, to maintain a safe and apparent corridor, and to allow access for maintenance activities or emergencies, Minnesota Power will periodically clear vegetation from the existing ROW. Clearing typically includes brushing equipment traveling down the ROW, which may consist of tracked or rubber-tired equipment to cut brush and trees, and hand-held brush saws or other manual methods. Small cuttings will be left in place, non-merchantable timber or slash will be disposed of where it originates, hauled off-site, or chipped and evenly spread on the ROW. If burning is proposed, Minnesota Power will consult with DNR and other authorities to obtain necessary authorization or permits.

Mitigation measures employed during operation and maintenance will include:

- → No herbicides will be used within state lands managed by the DNR unless authorized in writing, in advance, by the DNR.
- → Maintenance clearing equipment does not normally cause excessive soil disturbance in upland areas. For wetland areas, low ground-pressure equipment will be used or clearing will occur in winter when soils are frozen.
- → Steep slopes and slopes adjacent to waterbodies will be cleared by hand, leaving adequate herbaceous or low shrub cover to minimize potential erosion.

9.2 Extraordinary Activities (Emergencies)

In the event of an emergency along the transmission line, Minnesota Power is prepared to rapidly respond and coordinate with relevant agencies to protect public health and the environment. An emergency may include, but is not limited to, a component failure affecting

the normal operation of the transmission line such as a structure yielding during a storm event, broken insulators causing electrical flashover to the supporting structure, a broken conductor, overhead ground wire, or communication line; or any other symptom that may cause an imminent risk to human health or the environment.

9.3 Wetlands

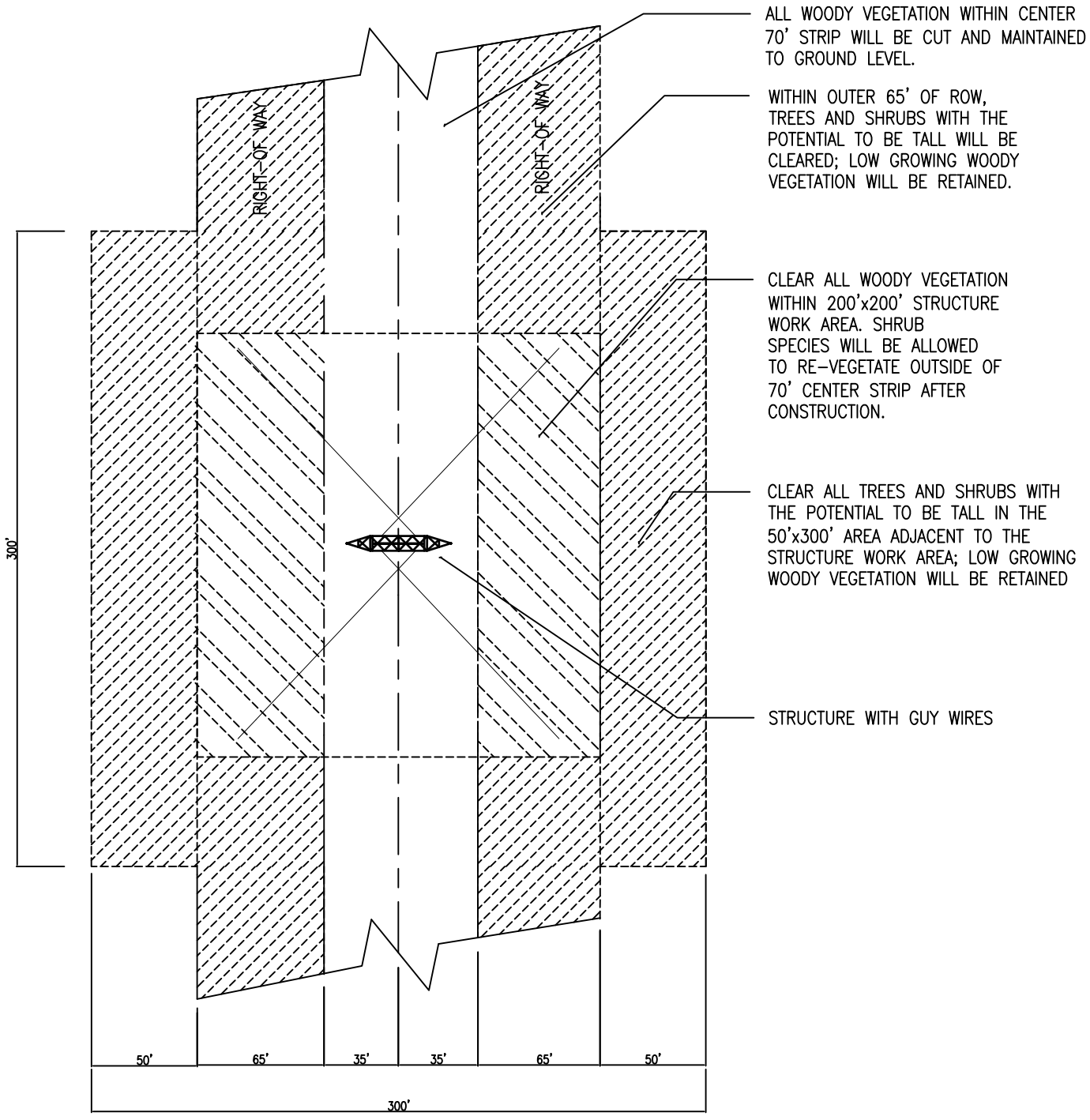
Due to the typically unstable nature of soils in wetlands, and to preserve wetland hydrology and function, special practices are necessary for operation and maintenance activities.

- → Within wetlands, if the ROW surface is stable enough to support equipment present, work can proceed as in upland areas.
- → If the surface is unstable such that rutting, soil compaction, or soil mixing may occur, low ground-pressure equipment will be used or maintenance equipment will be operated from mats or temporary timber rip-rap (which will be removed upon completion of the work). Ice roads may be utilized during frozen conditions.
- → Equipment passage through wetlands will be limited to only the amount necessary to complete the Operation and Maintenance activity.

Figures

Right of Way Clearing Plan

Typical Construction Drawings



minnesota power

AN ALLETE COMPANY

GREAT NORTHERN TRANSMISSION LINE

Figure 1

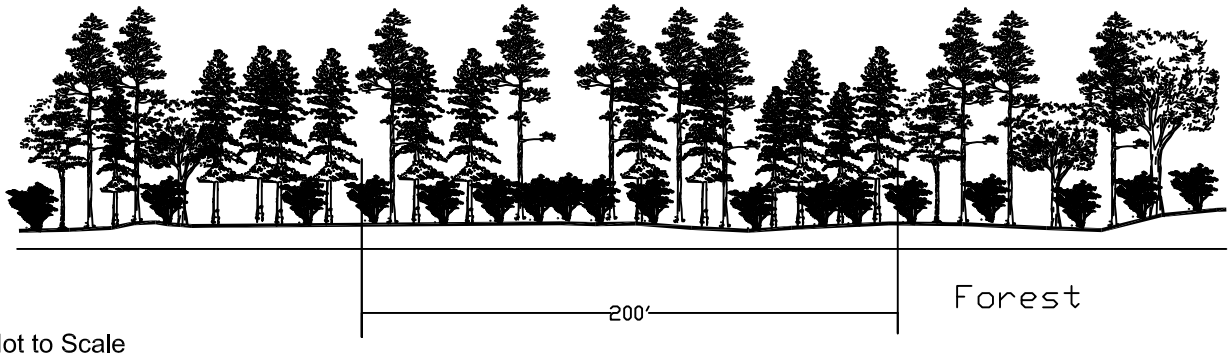
Date: 08/10/2016

Drawn By: AJRandazzo

Forest Clearing: Transmission Line

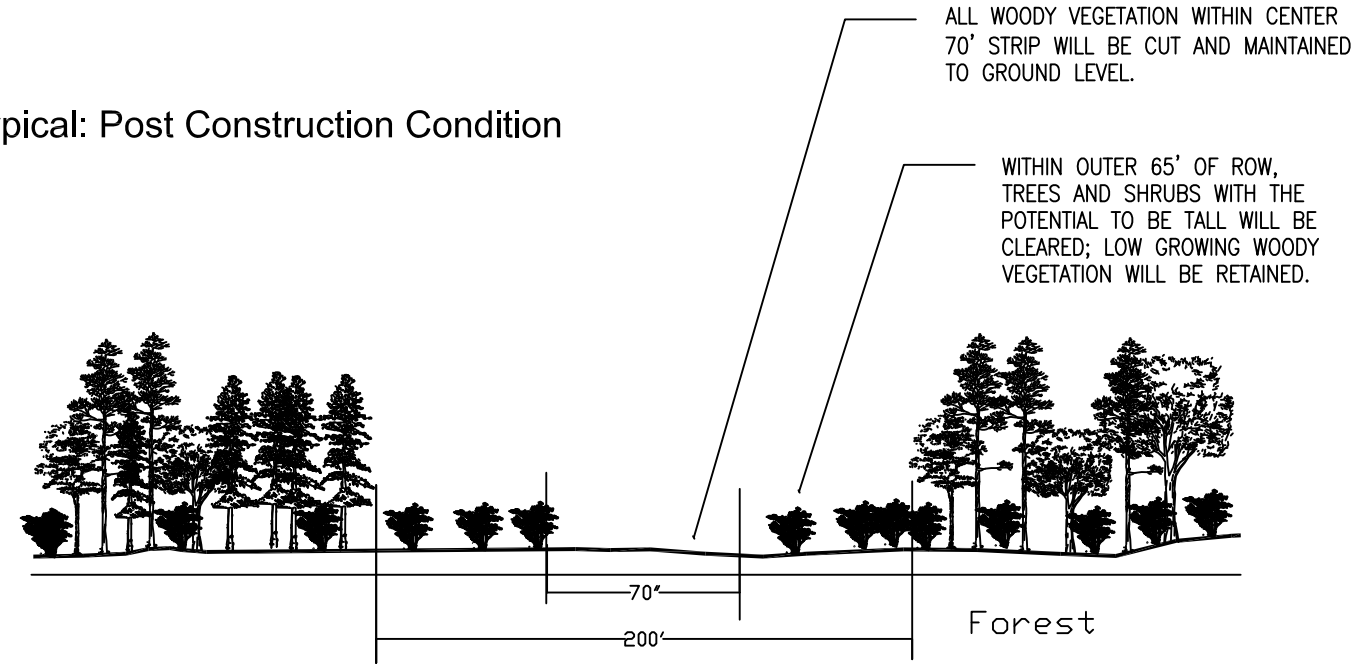
Typical Construction Drawing

Typical: Existing Condition



Not to Scale

Typical: Post Construction Condition



Not to Scale

New 500kV
Transmission Line

minnesota power
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GREAT NORTHERN
TRANSMISSION LINE

Figure 2A

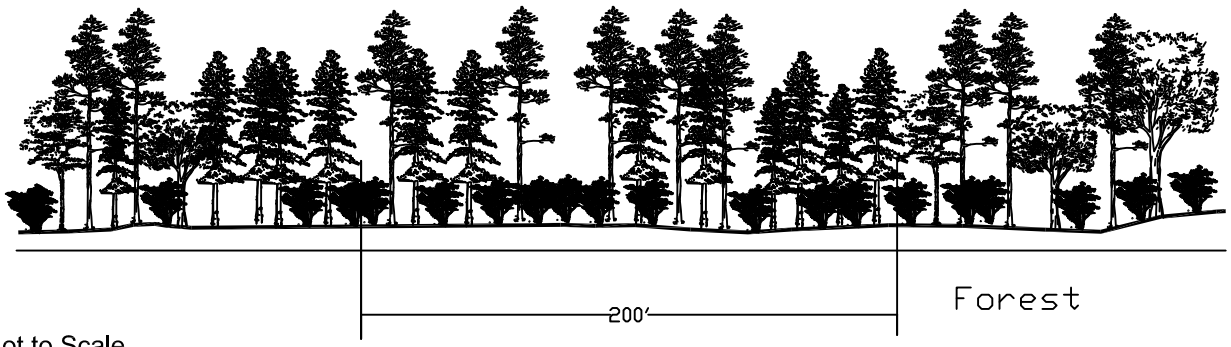
Date: 08/10/2016

Drawn By: AJRandazzo

Forest Clearing: At Structures

Typical Construction Drawing

Typical: Existing Condition



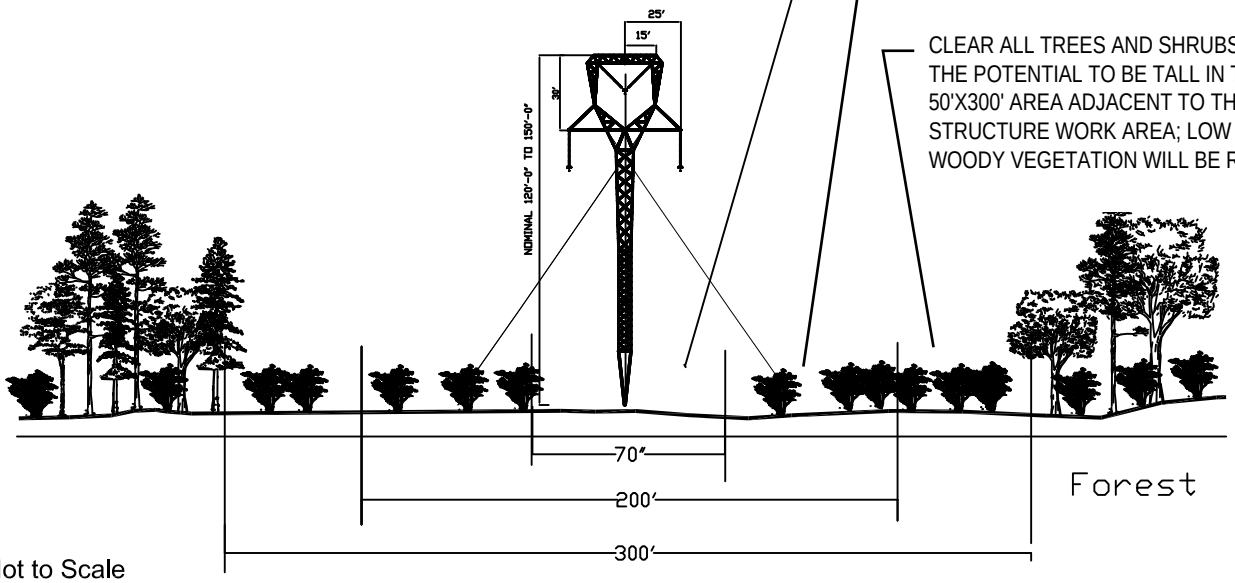
Not to Scale

Typical: Post Construction Condition

ALL WOODY VEGETATION WITHIN CENTER 70' STRIP WILL BE CUT AND MAINTAINED TO GROUND LEVEL.

CLEAR ALL WOODY VEGETATION WITHIN 200'X200' STRUCTURE WORK AREA. SHRUB SPECIES WILL BE ALLOWED TO RE-VEGETATE OUTSIDE OF 70' CENTER STRIP AFTER CONSTRUCTION.

CLEAR ALL TREES AND SHRUBS WITH THE POTENTIAL TO BE TALL IN THE 50'X300' AREA ADJACENT TO THE STRUCTURE WORK AREA; LOW GROWING WOODY VEGETATION WILL BE RETAINED.



Not to Scale

New 500kV
Transmission Line

minnesota power
AN ALLETE COMPANY

GREAT NORTHERN
TRANSMISSION LINE

Figure 2B

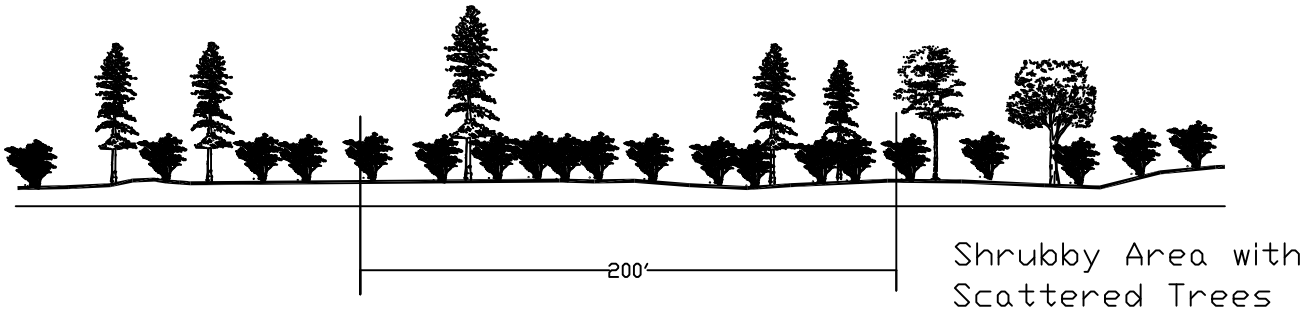
Date: 08/10/2016

Drawn By: AJRandazzo

Shrubby Area Clearing: Transmission Line

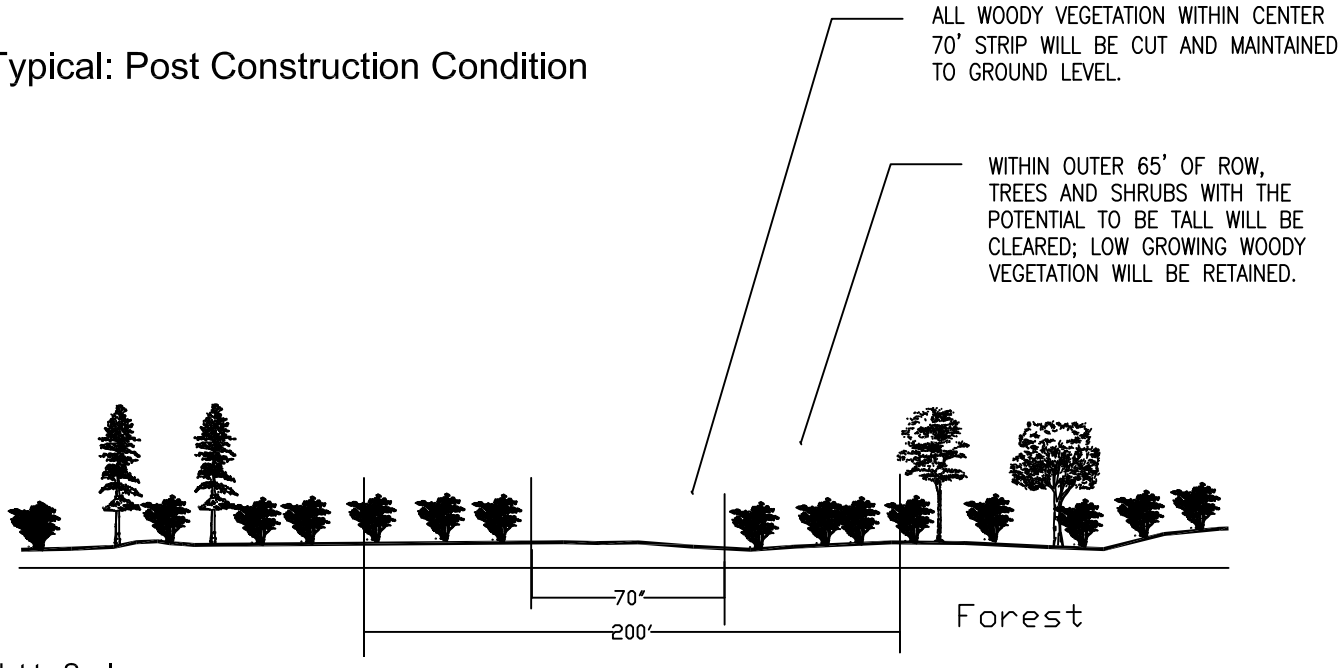
Typical Construction Drawings

Typical: Existing Condition



Not to Scale

Typical: Post Construction Condition



Not to Scale

New 500kV
Transmission Line

minnesota power
AN ALLETE COMPANY

GREAT NORTHERN
TRANSMISSION LINE

Figure 3A

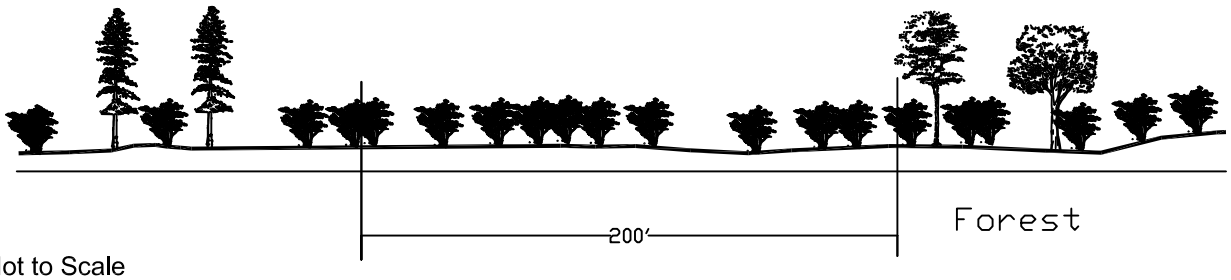
Date: 08/10/2016

Drawn By: AJRandazzo

Shrubby Area Clearing: At Structures

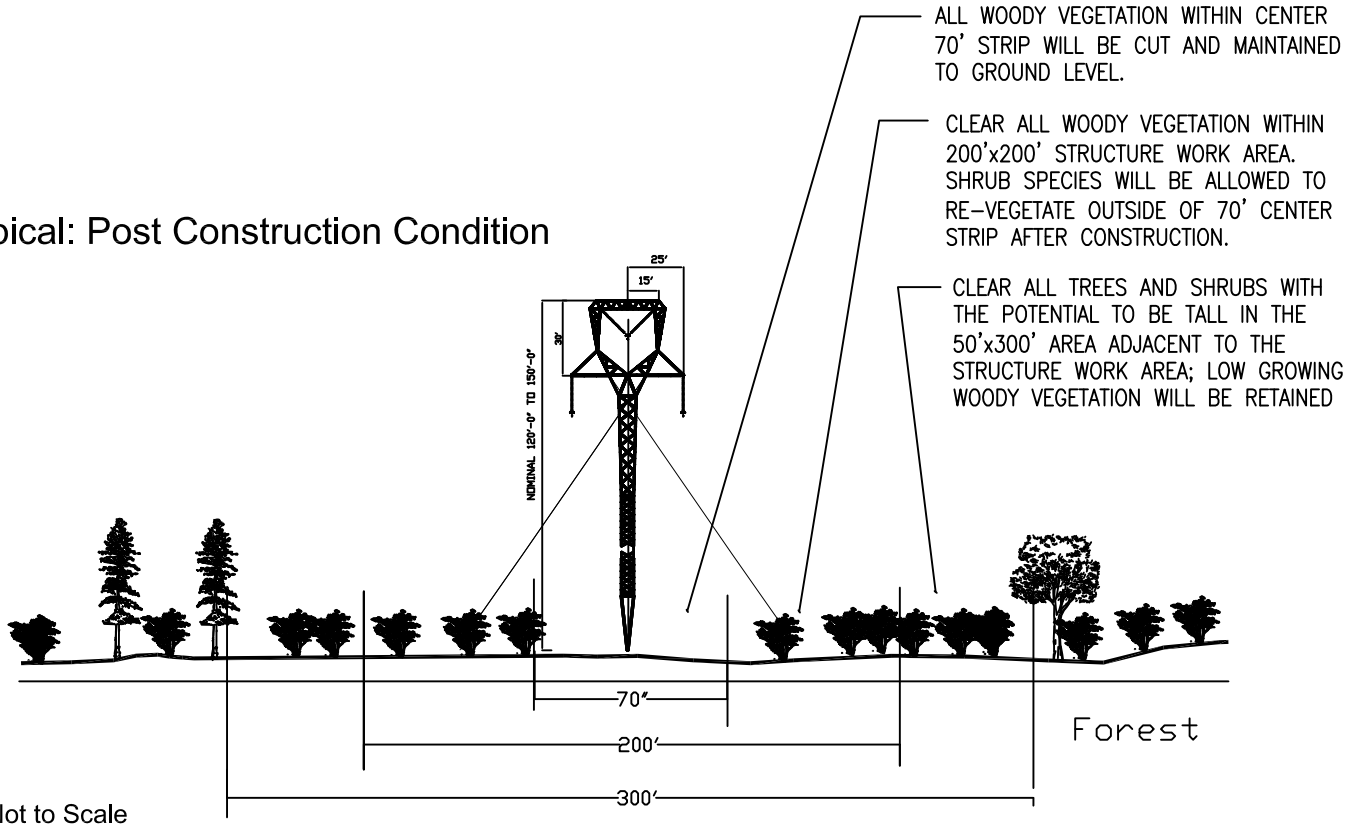
Typical Construction Drawing

Typical: Existing Condition



Not to Scale

Typical: Post Construction Condition



Not to Scale

New 500kV
Transmission Line

minnesota power
AN ALLETE COMPANY

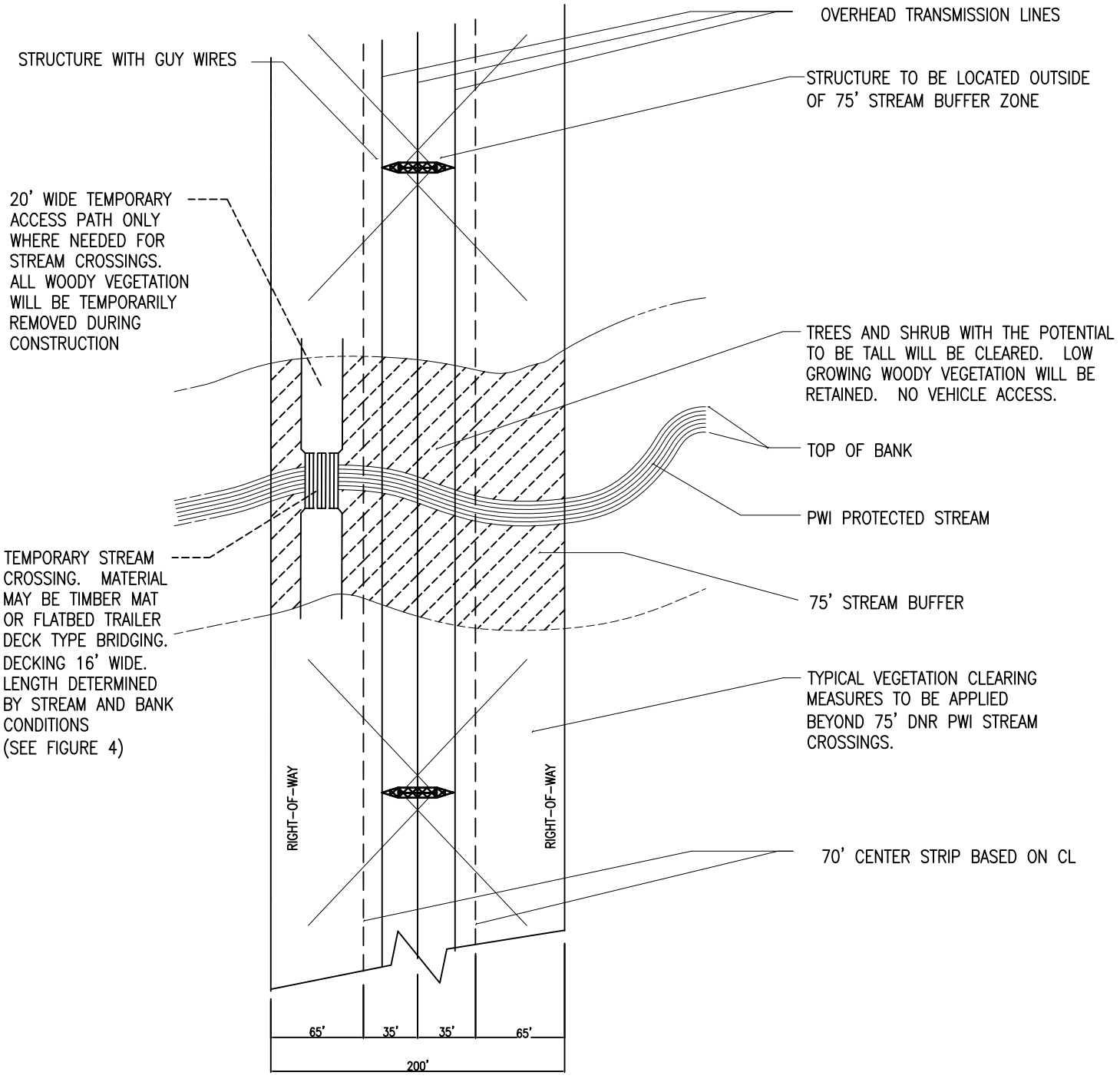
GREAT NORTHERN
TRANSMISSION LINE

Figure 3B

Date: 08/10/2016

Drawn By: AJRandazzo

DNR Public Water
Stream Buffer Plan
Typical Construction Drawings



minnesota power
AN ALLETE COMPANY

GREAT NORTHERN TRANSMISSION LINE

Figure 4

Date: 08/10/2016

Drawn By: AJRandazzo