Appendix E

Minnesota Agricultural Protection Plan

Appendix 5 –
Minnesota Agricultural Protection Plan

Agricultural Protection Plan - Minnesota

Summit Carbon Solutions

Project Name:

Summit Carbon Solutions Midwest Carbon Express

MPUC Docket Number:

IP7093/PPL-22-422

Document Control Number:

SCS-0700-ENV-01-PLN-021

Date:
September 12, 2022

REVISION HISTORY

DATE	REVISION	REVISION DESCRIPTION	PREPARED BY:	REVIEWED BY:	APPROVED BY:
9/12/2022	0	Final	AR/BB	BB	JS

Table of Contents

List of Appendices

Acronyms and Abbreviations

ATWS	Additional Temporary Workspace
BMPs	Best Management Practices
CFR	Code of Federal Regulations
EERA	Department of Commerce Energy Environmental Review and Analysis
INS	Invasive and Noxious Species
MDA	Minnesota Department of Agriculture
Minnesota ECP	Minnesota Environmental Construction Plan
Plan	Minnesota Agricultural Protection Plan
SCS	Summit Carbon Solutions, LLC
TWS	Temporary Workspace
USDA	U.S. Department of Agriculture

1 PURPOSE AND APPLICABILITY

This Minnesota Agricultural Protection Plan (Plan) was developed by Summit Carbon Solutions, to provide the Midwest Carbon Express (MCE) Project with measures for minimizing impacts on and restoring agricultural lands crossed by the MCE Project in Minnesota during and after pipeline construction. Any material amendments to this Plan must be approved by the Minnesota Department of Agriculture (MDA). Prior to construction, SCS will provide copies of this Plan to all landowners of property and persons in possession of the property that will be disturbed by the construction. Copies will also be provided to County Board of Commissioners, County Engineer, and County Inspectors in each affected county.

The construction standards described in this document apply only to construction activities occurring partially or wholly on privately owned Agricultural Land. Furthermore, Best Management Practices (BMPs) identified in the SCS' Minnesota Environmental Construction Plan (Minnesota ECP) may be utilized on Agricultural Land in conjunction with mitigation measures outlined in this Plan. Mitigation measures identified in this plan do not apply to urban land, road and railroad right-of-way, or mined and disturbed land not used for agriculture. The identified mitigation measures will be implemented as long as they do not conflict with federal, state, and local permits, approvals, and regulations.

Unless the Easement or other agreement, regardless of nature, between SCS and the Landowner specifically requires the contrary, the mitigation measures specified in this Plan will be implemented in accordance with the conditions discussed below.

Appendix A sets forth additional mitigation measures that will be applied specifically to Organic Agricultural Lands, such as Certified Organic farms or farms that are in active transition to become Certified Organic. Organic Agricultural Land is defined as farms or portions thereof, as described in the National Organic Program, Title 7 Code of Federal Regulations (CFR) § 205.

2 GENERAL PROVISIONS

All mitigation measures are subject to change by Landowners, provided such changes are negotiated in advance of construction and acceptable to SCS. If any provision of this Plan is held to be unenforceable, no other provision will be affected by that holding, and the remainder of the Plan will be interpreted as if it did not contain the unenforceable provision.

SCS will consider any federal, state, and local permit to be the controlling authority. To the extent a mitigation measure contemplated by this Plan is determined to be unenforceable in the future due to requirements of other permits issued, SCS will inform the regulatory authority and will develop reasonable alternative measures. SCS will implement the mitigation measures and BMPs described in this Plan to the extent they do not conflict with the requirements of federal, state, and local rules, regulations, or permits, and approvals obtained by SCS. Certain provisions of this Plan require SCS to consult and/or reach agreement with the Landowner of a property. SCS will engage in a good faith effort to secure the agreement. Tenants will not be consulted except where a Landowner has designated in writing that a Tenant has decision making authority on their behalf.

SCS will retain qualified contractors to perform mitigation measures; however, SCS may negotiate with Landowners to implement the mitigation measures that Landowners wish to perform themselves. SCS will not be held liable for mitigation measures performed by Landowners.

SCS has developed a Minnesota ECP to ensure that appropriate systems are in place to achieve compliance with this Plan, in addition to other plans and permits. The Minnesota ECP describes the roles and responsibilities of the personnel involved with implementing the various environmental requirements, describes the reporting structure that will be employed to document compliance during construction, and presents a series of training events to communicate the environmental requirements to the construction personnel.

The County Board of Commissioners shall designate an inspector (County Inspector) who shall conduct on-site inspections in compliance with provisions and standards in accordance with Minnesota Statutes 2021, Chapter 216G, Section 07, Subdivision 7. Each County Board of Commissioners may contract for the services of a licensed professional engineer for the purposes of inspection. The reasonable costs of the inspection shall be paid by SCS, and such reasonable costs shall be reimbursed by SCS within thirty (30) days following invoicing from the County.

SCS will employ Agricultural Inspectors whose role is to verify compliance with the requirements of this Plan during construction of the pipeline. The Agricultural Inspectors will be employed by and report to SCS and will be a part of SCS' environmental inspection team. The Agricultural Inspectors will:

- be a full-time member of SCS's environmental inspection team;
- provide construction personnel with training on provisions of this Plan before construction begins;
- provide construction personnel with field training on specific topics, such as protocols for topsoil stripping;
- observe construction activities on agricultural land on a continual basis;
- be responsible for verifying SCS' compliance with provisions of this Plan during construction;
- work collaboratively with other SCS inspectors and lands agents in achieving compliance with this Plan;
- document instances of noncompliance and work with construction personnel to identify and implement appropriate corrective actions as needed; and
- have the authority to stop construction activities that are determined to be out of compliance with the provisions of this Plan.

The Agricultural Inspectors will ideally have an agricultural background and will have received specific training on the implementation of the Plan. In addition, the Agricultural Inspectors will have demonstrated practical experience with pipeline construction and restoration on Agricultural Land.

SCS will provide each Landowner with a telephone number and address that can be used to contact SCS, during and following the completion of construction, regarding the agricultural mitigation work that is performed on their property or other construction-related matters. If the contact information changes following construction, SCS will provide the Landowner with updated contact information. SCS will respond to Landowner telephone calls and correspondence within a reasonable time.

Mitigation measures identified by SCS pursuant to this Plan, unless otherwise specified in this Plan or in an Easement or other agreement with an individual Landowner, will be initiated within 45 days following completion of Final Cleanup on an affected property, weather permitting or unless otherwise delayed at the request of the Landowner or by a federal, state, or local regulatory authority. If implementation of

mitigation measures requires additional time, SCS will make temporary repairs, as needed, to minimize the risk of additional property damage or interference with the Landowner's access to or use of the property.

3 SEQUENCE OF CONSTRUCTION EVENTS AND SCHEDULE

Pipeline construction is anticipated to commence as soon as practicable following the receipt of required permits and approvals.

The sequence of events for pipeline construction will begin with advance notification of affected persons and governmental agencies. Following notification, activities will generally be undertaken in the following sequence:

- Complete final surveys, stake right-of-way boundaries and workspace;
- Access road and mat installation;
- Grubbing and clearing of the construction corridor;
- Front-end grading;
- Right-of-way topsoil stripping, segregation, and storage;
- Stringing of pipe and other supplies along the construction corridor;
- Pipeline bending and welding where necessary;
- Weld inspection, repairs (if necessary), and field coating;
- Excavation of the pipeline trench;
- Temporary repairs to tile lines, if encountered and necessary;
- Lowering of the pipeline within the trench;
- Permanent repairs to tile lines, if encountered and necessary;
- Backfill of the trench and rough grading;
- Hydrostatic testing of the pipeline, final tie-in;
- Replace topsoil, final grading, and full restoration;
- Revegetation and post restoration monitoring (if necessary); and
- Removal of erosion control measures.

4 POINTS OF CONTACT

SCS' designated point of contact for inquiries or claims from affected persons is:

Mike Bradburn, Norfleet Land Services
Minnesota ROW Project Manager
Email: Mike.Bradburn@norfleetland.com
Telephone: 1-855-950-6352

Any change in the point of contact will be promptly communicated in writing to affected persons. The above point of contact will remain available for at least one year following project completion and, for affected persons with unresolved damage claims, until such time as those claims are resolved.

SCS general contact information:

Email: info@summitcarbon.com
Telephone: 515-531-2635
Address: 2321 North Loop Drive #221, Ames, Iowa 50010

In addition to any other notice required by law, SCS shall, at least one week prior to commencement of construction, notify each affected person of the pending construction.

5 DEFINITIONS

The following terms used in this Plan have the following definitions.

Term	Definition
Active Cropland	Land actively managed for growing row crops, small grains, or hay.
Additional Temporary Workspace (ATWS)	Temporary construction workspace needed when encountering environmental features that require special construction methods.
Affected Person	Any person with a legal right or interest in the property, including, but not limited to, a landowner, a contract purchaser of record, a person possessing the property under a lease, a record lienholder, and a record encumbrancer of the property.
Agricultural Inspector	As defined above in General Provisions section.
Agricultural Land	Any land devoted to agricultural use, including, but not limited to, land used for crop production, cleared land capable of being cultivated, hay land, pasture land, managed woodlands and woodlands of commercial value, truck gardens, farmsteads, commercial agricultural-related facilities, feedlots, rangeland, livestock confinement systems, land on which farm buildings are located, and land used to implement management practices and structures for the improvement or conservation of soil, water, air, and related plan and animal resources. Land that is actively managed for agricultural purposes, including: cropland, hay land, or pasture; silvicultural activities (i.e., tree farms); and land in government set-aside programs such as Conservation Reserve Program and Conservation Reserve Enhancement Program. Agricultural Land may also include land that is otherwise fallow but would likely be cultivated within 5 years of construction completion.

Term	Definition
Construction Right-of-Way/ Workspace	The terms "construction right-of-way," "temporary construction right-of-way," "construction workspace," and "temporary workspace" define the primary workspace area required for installation of the pipeline and associated facilities. For clarity, SCS will generically use "construction workspace" instead of "temporary construction right-of-way," "temporary construction workspace," or "construction right-of-way" as the terminology for 1) the permanent right-of-way; and 2) temporary construction area, which includes the following defined terms: Temporary Workspace and Additional Temporary Workspace. All construction equipment and vehicles will be confined to this approved construction workspace. The width of the Temporary Workspace and Additional Temporary Workspace varies by pipeline diameter, features crossed, and topography. Land located adjacent to and contiguous with the proposed permanent right-of-way.
County Inspector	As defined in Minnesota Statutes 216G.07, Subdivision 7, an inspector who shall conduct on-site inspections of the construction to determine whether the pipeline is constructed in compliance with the appropriate Minnesota Statutes.
Drainage Structures	Any permanent structure used for draining agricultural lands, including tile systems and buried terrace outlets.
Easement	The agreement(s) and/or interest in privately owned Agricultural Land held by SCS by virtue of which it has the right to construct and operate together with such other rights and obligations as may be set forth in such agreement.
Final Clean-up	Construction activity that occurs after backfilling the trench, but before restoration of fences and required reseeding. Final Cleanup activities include: replacing topsoil, removal of construction debris, removal of excess rock, decompaction of soil as required, final grading, and installation of permanent erosion control structures.
Landowner	Person(s) holding legal title to Agricultural Land from whom SCS is seeking, or has obtained, a temporary or permanent Easement. The term "Landowner" shall include any person(s) authorized in writing by the actual Landowner to make decisions regarding the mitigation or restoration of agricultural impacts on such Landowner's property. Person(s) include an individual or entity, including any partnership, corporation, association, joint stock company, trust, joint venture, limited liability company, unincorporated organization, or governmental entity (or any department, agency, or political subdivision thereof).
Livestock	Domesticated animals raised in an agricultural setting to produce labor and commodities, such as meat, eggs, milk, fur, leather, and wool; or to promote the survival of rare breeds.

Term	Definition
Permanent Right-of Way	The legally acquired land rights used to install, maintain, operate, and access the pipeline and associated facilities.
Pipeline	Any pipe, pipes, or pipelines used for the transportation or transmission of any solid, liquid, or gaseous substance, except water, or hazardous liquid, within or through Minnesota.
Pipeline Construction	Activity associated with installation, relocation, replacement, removal or operation or maintenance of a pipeline that disturbs agricultural land, but shall not include work performed during an emergency, tree clearing, or topsoil surveying completed on land under Easement with approval from the landowner.
Planned Tile	Locations where the proposed Tile installation is made known in writing to SCS by the Landowner either: 1) within 60 days after the signing of an Easement; or 2) before the issuance of a Route Permit to SCS; whichever is sooner.
Soil Conservation Practices	Any land conservation practice recognized by federal or state soil conservation agencies including, but not limited to, grasslands and grassed waterways, hay land planting, pasture, and tree plantings.
Temporary Access Roads	An access road is a road used to access the pipeline construction workspace, permanent right-of-way, or associated facility. Access roads can be public roads or private drives and can be existing, modified, or newly constructed.
Temporary Workspace (TWS)	Temporary construction workspace outside the Easement that will be used during construction for soil storage and operation of equipment and vehicles along the entire length of the pipeline.
Tenants	Any person, other than the Landowner, lawfully residing on or in possession or control of the land that makes up the "right-of-way" as defined in this Plan.
Tile	Subsurface drainage systems and their aboveground appurtenances.
Wet Conditions	Adverse soil conditions due to rain events, antecedent moisture, or ponded water, where the passage of construction equipment may cause rutting that mixes topsoil and subsoil, may prevent the effective removal or replacement of topsoil and subsoil, may prevent proper decompaction, or may damage underground tile lines.

6 MITIGATION MEASURES

6.1 Right-of-Way Width

Prior to the commencement of clearing activities, civil survey crews will flag the boundaries of the construction workspace in Agricultural Lands. The construction plan and profile, tract (property) boundaries, and environmental features will be shown on alignment sheet drawings provided to the SCS

construction contractor, County Inspector, SCS Environmental Inspector, SCS Agricultural Inspector, and regulatory authorities.

A. The Construction Workspace is expected to be typically 100 feet wide in uplands, of which 50 feet will typically be retained in a permanent right-of-way or Easement, and 50 feet, respectively, will be TWS. The TWS will be used during construction for soil storage and operation of equipment and vehicles along the entire length of the pipeline. At certain select areas where the pipeline crosses natural geographic or larger man-made features such as roads, railroads, streams, or wetland crossings, a defined area of ATWS may be required on each side of the feature.

B. If, for a variety of reasons, the area of the Construction Workspace is not sufficient to perform the work and implement BMPs, SCS will discuss the need for ATWS with the construction contractor, inspection team, Agricultural Inspector(s) and the Landowner, and will not use any additional workspace until approved by the Landowner and regulatory authorities, as applicable.

6.2 Pipeline Depth of Cover

A. Except for aboveground facilities, such as mainline valves, pig launcher/receiver sites, and cathodic protection system components, and except as otherwise stated in this Plan, the pipeline will be buried with the following depths of cover on Agricultural Land:

   1) The pipeline will be constructed with a minimum depth of cover of 54 inches as required by Section 216G.07 of the Minnesota Statutes.

   2) Where existing Tile systems are present, and where landowners have, prior to construction, consulted with SCS on specific future Planned Tile systems that may be impacted by construction, the pipeline will be installed at a depth that will achieve at least a 12-inch separation between the pipeline and overlying Tiles as described in Section 2.C. of this Plan, or have an agreed upon separation distance with the Landowner and/or appropriate local jurisdiction.

B. SCS will construct the pipeline under existing non-abandoned Tile and Planned Tile within 8 feet of the existing ground level unless the Landowner determines otherwise in writing. SCS may install the pipeline over Tile that is buried deeper than 8 feet. If, prior to construction, the Landowner plans to install a new Tile system, the Landowner must provide to SCS plans drawn by a qualified professional with experience in Tile design and installation. In determining the proper depth of the pipeline, SCS will accommodate the depth and grade needed for both existing and Planned Tile to function properly. SCS will not change the grade of existing Tile to accommodate the pipeline without the Landowner's advance written consent.

C. A minimum of 12 inches of separation will be maintained between the pipeline and Tile unless the Landowner and/or appropriate local jurisdiction agrees in writing to a lesser separation. If unforeseen physical conditions are discovered during construction that prevents minimum separation, the Landowner will be informed of the situation prior to the installation of the pipeline over the Tile. If a good faith effort is made and the Landowner is unavailable, the Agricultural Inspector(s) will be informed, and construction will continue.

6.3 Winter Construction

Should winter construction be required, SCS would develop winter construction procedures that would be described in a Winter Construction Plan. If constructing the pipeline in frozen conditions through agricultural lands is necessary, the following mitigation measures are proposed to protect the productivity of agricultural lands:

A. Minimize topsoil stripping in frozen conditions. Frozen conditions can preclude effective topsoil stripping. When soil is frozen to a depth greater than the depth of the topsoil, topsoil cannot be efficiently separated from the subsoil without pulling subsoil and mixing it with topsoil. If topsoil stripping must proceed under these conditions, it will only be removed from the area of the trench. A ripper (deep tillage device or scarifier) may be used to break up the frozen topsoil over the trenchline and a backhoe will remove the topsoil layer and store the material in a separate pile. The ripper will extend to the depth of topsoil or to a maximum depth of 12 inches, whichever is less.

B. Minimize Final Clean-up activities in frozen conditions. Frozen conditions can preclude effective topsoil replacement, removal of construction debris, removal of excess rock, decompaction of soil as required, final grading, and installation of permanent erosion control structures. If seasonal or other weather conditions preclude Final Clean-up activities, the trench will be backfilled, stabilized, and temporary erosion control measures will be installed until restoration can be completed. Frozen topsoil would not be placed back into the trench until thawing has occurred to prevent settlement of soil in the trench. If topsoil/spoil piles remain throughout the winter, the topsoil/spoil piles will be stabilized methods approved by the regulatory authority. To prevent subsidence, backfill operations will resume when the ground is thawed, and the subsoil will be compacted (as needed) prior to Final Clean-up activities. The construction contractor must monitor these areas until final restoration is complete.

C. Topsoil Stripping and Final Clean-up activities proposed in Agricultural Lands in frozen conditions in Minnesota will be discussed with the MDA as part of the development of the Winter Construction Plan, prior to commencement of these activities.

6.4 Temporary Erosion and Sediment Control BMPs

Temporary erosion and sediment control BMPs will be implemented as required and are described in the Minnesota ECP.

6.5 Topsoil Stripping, Trenching, Soil Storage, and Replacement

A. When segregating topsoil, the Contractor will strip all topsoil. Topsoil depth will be determined onsite. Equipment operators will be trained to discriminate between topsoil and subsoil based on obvious color changes. In locations where the topsoil and subsoil color changes are not easily distinguishable or variable, the Agricultural Inspector will determine the depth.

B. SCS will use the following topsoil segregation methods during construction on Agricultural Lands. The method selected will be dependent on specific Landowner approvals or agreements, field conditions, regulatory authority, permit requirements, and/or other factors:

- Conventional Lay with Double Ditch Method (refer to Figure B-1)
- Conventional Lay Method (refer to Figure B-2)

The Conventional Lay with Double Ditch Method (Figure B-1) will typically be used in active cropland and pasture, which will consist of stripping topsoil from the full width of the construction right-of-way excepting the areas reserved for topsoil storage. This method typically limits soil mixing between topsoil and subsoil caused by equipment working over areas where topsoil was not stripped. A larger volume of topsoil will be generated using this method and, consequently, may warrant the need for topsoil to also be stored on both sides of the construction right-of-way.

The Conventional Lay Method (Figure B-2) will consist of stripping a layer of topsoil across the full width of the construction right-of-way sufficient to establish a level working surface, and such shall be stored on opposite side of the construction right-of-way. This method will be used where requested by the landowner or regulatory agency.

C. Before removing topsoil during wet soil conditions, the Agricultural Inspector will assess whether the moisture content in the surface horizon is suitable for grading. If the soil is considered too wet to segregate, stripping may be postponed. Based on the Agricultural Inspector recommendation, SCS may allow Topsoil removal in areas where soils are persistently wet.

D. SCS may also remove topsoil from ATWS as dictated by site-specific conditions and Landowner agreements. Topsoil will be removed in all “cut and fill” areas prior to grading.

E. Areas requiring topsoil stripping may be adjusted where the Agricultural Inspector determines that such modification is necessary for safety or is more protective of the soil resource. The adjusted method may include Conventional Lay with Single Ditch Method topsoil segregation, such as in instances where topsoil is removed under frozen conditions. In all cases where modifications are proposed, approval from SCS, the MDA, or other regulatory authority is required.

F. Subsoil will be placed in a stockpile that is separate from topsoil. SCS will typically maintain a minimum 1-foot-wide separation or place a barrier between topsoil and subsoil piles to avoid mixing. In areas where the topsoil has not been stripped from the subsoil storage area, subsoil can be stored on a thick layer of mulch or another physical barrier that prevents mixing.

G. Backfilling will follow lowering the pipe into the trench. During trench backfilling, subsoil material will be replaced first, followed by topsoil. To prevent subsidence, subsoil will be backfilled and compacted. Compaction by operating construction equipment along the trench is acceptable. See Section 10 regarding decompaction.

H. Rock excavated from the trench may be included with backfill provided the rock content of the pre-construction soils is not significantly increased. In the event excess rock cannot be returned to the trench without substantially increasing pre-existing rock content, rocks will be considered construction debris and removed (see Section 9 of this Plan).

I. The topsoil and subsoil shall be replaced in the reverse order in which they were excavated from the trench. The depth of the replaced topsoil shall conform as near as possible to the depth of topsoil that was removed. Where excavations are made for road, stream, drainage ditch, or other crossings, the original depth of topsoil shall be replaced as near as possible.

   Replacing topsoil will be initiated within 14 days after backfilling the trench. If seasonal or other weather conditions prevent compliance with this timeframe, temporary erosion control measures must be implemented and maintained until conditions allow completion of cleanup. Topsoil will be replaced across the stripped area as near as practicable to its original depth. A trench crown over the trenchline is permissible to offset potential settling. Following placement of the subsoil crown, topsoil would be uniformly returned across the stripped area. The height of the crown will generally be equal to, or less than, 12 inches at the center. Breaks in the crown may be cut to accommodate overland water flow across the right-of-way.

6.6 Protection of Livestock

SCS will work with landowners with livestock in proximity of the construction area to ensure livestock are protected during all phases of construction and restoration. As described in the Minnesota ECP, where deemed appropriate by SCS, the Contractor will leave plugs of subsoil in the ditch or will construct temporary access bridges across the trench to move livestock or equipment. Trenches may also be sloped where started and ended to allow ramps for livestock or other wildlife to escape. Space of plugs and ramps will be determined in the field.

6.7 Temporary and Permanent Repair of Drain Tiles

Tile disturbed or damaged by pipeline construction will be repaired to its original or better condition. Permanent repairs will be completed within 21 days after the pipeline is installed in accordance with the Minnesota ECP. Permanent repair and replacement of damaged drain tile will be performed in accordance with the following requirements:

A. All damaged, broken, or cracked tile will be removed.

B. Only unobstructed tile will be used for replacement.

C. The tile furnished for replacement purposes will be of a quality, size, and flow capacity at least equal to that of the tile being replaced.

D. Tile will be replaced using a laser transit, or similar instrument or method, to ensure that its proper gradient and alignment are restored, except where relocation or rerouting is required for angled crossings. Tile lines will be repaired in a comparable manner shown on Figure B-3.

The temporary repair and replacement of damaged drain tile will be firmly supported to prevent loss of gradient or alignment due to soil settlement. The ends of the existing tile will not be plugged and continuous flow will be maintained in the tile system during construction, unless otherwise authorized by the Landowner. The method used will be comparable to that shown on Figure B-4.

6.8 Agricultural Drainage Ditches

Where the pipeline route crosses agricultural drainage ditches that are operated by the Landowner, the pipeline will be installed at a depth that is sufficient to allow for ongoing maintenance of the ditch. After

the pipeline is installed, the ditch will be restored to its pre-construction contours with erosion controls as needed. Ditches that are operated and maintained by a public entity (e.g., local watershed district) will be crossed in accordance with applicable licenses, permits, and/or development agreement.

6.9 Removal of Rocks and Debris from the Right-of-Way

Excess rocks will be removed from the right-of-way. The topsoil, when backfilled, and the easement area shall be free of all rock larger than three inches in average diameter not native to the topsoil prior to excavation. Where rocks over three inches in size are present, their size and frequency shall be similar to adjacent soil not disturbed by construction.

The top 24 inches of the trench backfill will not contain rocks in any greater concentration or size than exist in the adjacent natural soils. Consolidated rock removed by blasting or mechanical means shall not be placed in the backfill above the natural bedrock profile or above the frost line. In addition, SCS will examine areas adjacent to the easement and along access roads and will remove any large rocks or debris that may have rolled or blown from the right-of-way or fallen from vehicles.

Rock that cannot remain in or be used as backfill will be disposed of at locations and in a manner mutually satisfactory to the company's environmental inspector and the landowner. Soil from which excess rock has been removed may be used for backfill. All debris attributable to the pipeline construction and related activities will be removed and disposed of properly; such debris includes spilled oil, grease, fuel, or other petroleum or chemical products. Such products and any contaminated soil will be removed for proper disposal or treated by appropriate in situ remediation.

6.10 Compaction, Rutting, and Soil Restoration

A. In an effort to minimize soil compaction prior to trenching activities, SCS will, where practical, transport pipe joints (i.e., stringing trucks) as closely as possible along the pipeline centerline.

B. After construction, compaction of the subsoil will be alleviated on Cropland using deep-tillage device or chisel plow, as needed and approved by the Landowner or Land-Managing Agency. Decompaction of the soil, if necessary, will be performed during favorable soil conditions. If the Agricultural Inspector(s) determine that the soil is too wet, decompaction will be delayed until the subsoil is friable/tillable in the top 18 inches.

C. Deep subsoil ripping in Cropland will occur in all traffic and work areas of the pipeline construction workspace where there was full construction workspace topsoil stripping unless the Agricultural Inspector(s) determines compaction has not occurred. This includes ATWS that has been disturbed.

D. Subsoil ripping equipment may include v-rippers, chisel plows, or equivalents.

E. SCS will restore rutted land as near as practical to its pre-construction condition.

F. SCS will compensate Landowners, as appropriate, for damages caused by SCS during construction. Agreed upon damages will be paid for the cost of soil restoration on the construction workspace to the extent such restoration work is not performed by SCS.

G. In the event of a dispute between the Landowner and SCS regarding what areas need to be deep tilled (i.e., ripped) or chiseled, or the depth at which compacted areas should be ripped or chiseled, SCS will determine the appropriate actions based on the County Inspector's opinion.

H. Rutted land will be graded and tilled until restored as near as practical to its preconstruction condition. On lands where topsoil was removed, rutting will be remedied before topsoil is replaced.

6.11 Land Leveling

Following completion of the construction, SCS will restore the construction workspace to as close to the original pre-construction contours as practicable. If uneven settling occurs or surface drainage problems develop as a result of pipeline construction, SCS will provide additional land leveling services after receiving a Landowner's written notice, weather and soil conditions permitting. Alternatively, SCS will negotiate with the Landowner for reasonable compensation in lieu of restoration.

SCS will work with landowners to ensure restoration of terraces to their pre-construction condition. If requested by the landowner, SCS may hire a local contractor to restore the terraces.

Civil surveys will be conducted to document the terraces and contours before disturbance occurs. The pre-construction drainage along the terrace channel will be maintained and additional BMPs may be installed if necessary. SCS will perform post-construction monitoring and inspection to ensure restoration methods of the terraces are sufficient and that they are to their pre-construction elevation and condition. If the terraces require further work, SCS will either compensate the landowner or arrange for a local contractor to perform the work.

6.12 Prevention of Soil Erosion

SCS will follow BMPs and industry standards for erosion and sedimentation control during construction and post-construction. SCS will develop a Minnesota Construction Storm Water Pollution Prevention Plan that will detail the project specific stormwater and soil erosion prevention measures. SCS will install permanent erosion control devices during restoration to prevent erosion as described in SCS' Minnesota ECP. All applicable federal and state regulations and conditions associated with surface water quality criteria will require SCS' full compliance.

6.13 Repair of Damaged Soil Conservation Practices

Soil conservation practices (e.g., terraces, grassed waterways) that are damaged by pipeline construction will be restored to their pre-construction condition.

6.14 Interference with Irrigation Systems

A. If it is feasible and mutually acceptable to SCS and the Landowner, temporary measures will be implemented to allow an irrigation system to continue to operate across land on which the pipeline is being constructed.

B. If the construction workspace interferes with an operational (or soon-to-be operational) spray irrigation system, SCS will inform the Landowner of the need to take the irrigation system out of service. SCS and the Landowner will agree upon an acceptable amount of time the irrigation system may be out of service. If SCS and the Landowner are unable to agree on the amount of

time within 10 days of SCS informing the Landowner of the need to take the irrigation system out of service, construction will proceed, and the Landowner will be asked to take the irrigation system out of service.

C. If, as a result of pipeline construction, interruption of an irrigation system results in crop damages, either within the construction workspace or outside of the construction workspace, compensation of Landowners will be determined as described in Section 20 of this Plan.

6.15 Ingress and Egress

Prior to pipeline construction, SCS will identify the means of entering and exiting the construction workspace should access not be practical or feasible from adjacent tracts or from public highway or railroad rights-of-way, consistent with SCS' Easement rights. Temporary access ramps/pads may be constructed using rock on top of geotextile fabric or construction mats as needed to facilitate the movement of equipment between public roads and the construction workspace.

6.16 Temporary Access Roads

A. If public roads do not provide sufficient access, SCS will attempt to use existing farms roads for access to and from the construction workspace, subject to approval from the Landowner or SCS' Easement rights. Where SCS needs to construct a new temporary access road across Agricultural Land, the location will be made in collaboration with the Landowner. Temporary access roads that are needed during construction will be located to minimize impacts on the landowner's or tenant's use of the Agricultural Land. If temporary access roads in Agricultural Lands require gravel stabilization, geotextile construction fabric will be placed beneath the rock to add stability and to provide a distinctive barrier between the rock and soil surface. During restoration of the construction workspace, temporary access roads will be removed or restored to pre-construction conditions unless otherwise agreed to with landowner.

B. Temporary bridges or culverts will be implemented along access roads so as not to impede drainage and will be constructed to minimize soil erosion as described in the Minnesota ECP.

C. Following construction, new temporary access roads may be left intact through mutual agreement of the Landowner and SCS, except for where gravel or rock was placed during construction, or unless otherwise restricted by federal, state, or local regulations. All rock and gravel used for access road improvement will be removed.

D. Where temporary access roads are removed, the Agricultural Land on which the temporary roads are constructed will be returned to its previous use and restored to a condition equivalent to what existed prior to construction. Restoration techniques for temporary access roads will be similar to those used in restoring the construction workspace (e.g., decompaction).

6.17 Invasive and Noxious Terrestrial Plant Management

SCS will manage invasive and noxious (INS) terrestrial plants per the Minnesota ECP. SCS will provide for weed control in a manner that prevents the spread of weeds onto adjacent lands used for agricultural purposes. Where necessary and in accordance with federal, state, and local regulations, spraying shall be done by an herbicide applicator that is appropriately licensed. If SCS fails to control weeds resulting from

construction activities within 45 days after receiving written notice from a landowner, SCS will be responsible for reimbursing all reasonable costs of weed control incurred by owners of adjacent land.

SCS will also manage INS species at its aboveground facility sites (e.g., mainline valve sites) during operational activities. Herbicide spraying will be conducted in accordance with applicable regulatory authorities.

6.18 Construction Water Discharges

A. Prior to construction, SCS will identify the need to discharge water pumped out of trenches or excavations, or from buoyancy control and hydrostatic testing activities; these activities will be permitted by appropriate state regulatory agencies and will be conducted in accordance with the Minnesota ECP, federal and state regulations, and permit conditions.

B. When dewatering trenches in Agricultural Land, SCS will discharge the water in a manner that is in compliance with any permits and will minimize damaging adjacent Agricultural Land, crops, and/or pasture. Such damages may include, but are not limited to, inundation of crops for more than 24 hours and deposition of sediment in cropland and drainage ditches. If water-related damage during discharge from trenches results in a loss of yield, compensation of Landowners will be determined as described in Section 20 of this Plan.

6.19 Construction in Wet Conditions

The Agricultural Inspector and/or County Inspector, in consultation with SCS shall determine when construction should not proceed in a given area due to wet conditions. The County Inspector will work with SCS construction management and the construction superintendent to shut down construction if conditions are too wet to proceed.

Construction in wet soil conditions will not commence or continue at times when or locations where the passage of heavy construction equipment may cause rutting to the extent that the topsoil and subsoil are mixed or underground drainage structures may be damaged.

To facilitate construction in wet soils, SCS may elect to install mats or padding, or use other methods acceptable to the County Inspector.

6.20 Procedures for Determining Construction-Related Damages

A. SCS will negotiate in good faith with Landowners who assert claims for construction-related damages. The procedure for resolution of these claims will be in accordance with the terms of the Easements.

B. Negotiations between SCS and any affected Landowner will be voluntary in nature and no party is obligated to follow a specific procedure or method for computing the amount of loss for which compensation is sought or paid, except as otherwise specifically provided in the Easements. In the event a Landowner should decide not to accept compensation offered by SCS, the compensation offered is only an offer to settle, and the offer shall not be introduced in any proceeding brought by the Landowner to establish the amount of damages SCS must pay. In the event SCS and a Landowner are unable to reach an agreement on the amount of compensation, any such Landowner may seek further recourse as provided in the Easement.

6.21 Advance Notice of Access to Private Property

A. SCS or its agents will provide the Landowner with a minimum one week notice before accessing his/her property for construction, in addition to any regulatory notifications.

B. Prior notice will consist of a personal or telephone contact, whereby the Landowner is informed of SCS' intent to access the land. If the Landowner cannot be reached in person or by telephone, SCS will mail or hand-deliver to the Landowner's home a dated, written notice of SCS's intent. The Landowner need not acknowledge receipt of the written notice before SCS enters the property.

6.22 Indemnification

Indemnification obligations relating to the pipeline installation covered by this Plan shall be determined in accordance with the terms of the Easement and applicable law.

6.23 Tile Repair Following Pipeline Installation

SCS will consult with affected persons regarding plans for future drain tile installation. Where an affected person provides SCS with written plans prepared by a qualified tile technician for future drain tile improvements before an easement is secured, the pipeline will be installed at a depth which will allow for proper clearance between the pipeline and the proposed future tile installation.

SCS will consult with affected persons regarding plans for future use or installation of soil conservation practices or structures. Where an affected person provides SCS with a design for such practice or structure prepared by a qualified technician before an easement is secured, the pipeline will be installed at a depth that will retain the integrity of the pipeline.

Appendix A - Mitigation Measures for Organic Agricultural Land

INTRODUCTION

This appendix identifies mitigation measures that apply specifically to farms that are Certified Organic or farms in Minnesota that are in active transition to become Certified Organic and is intended to address the unique management and certification requirements of these operations. All protections provided in the Plan must also be applied to Organic Agricultural Land in addition to the provisions of this appendix. The provisions of this appendix will apply to Organic Agricultural Land for which the Landowner has provided to SCS a true, correct, and current version of the Organic System Plan. SCS recognizes that Organic Agricultural Land is a unique feature of the landscape and will treat this land with the same level of care as other sensitive environmental features.

DEFINITIONS

Unless otherwise provided to the contrary in this appendix, capitalized terms used in this appendix shall have the meanings provided below and in the Plan. In the event of a conflict between this appendix and the Plan with respect to definitions, the definition provided in this appendix will prevail but only to the extent such conflicting terms are used in this appendix. The definition provided for the defined words used herein shall apply to all forms of the words.

Apply	To intentionally or inadvertently spread or distribute any substance onto the exposed surface of the soil.
Certifying Agent	As defined by the National Organic Program Standards, 7 CFR § 205.2.
Decertified or Decertification	Loss of Organic Certification.
Organic Agricultural Land	Farms, or portions thereof, that have been Certified Organic.
Certified Organic	“Certified” as defined in 7 CFR § 205.2.
Organic System Plan	As defined by the National Organic Program Standards, 7 CFR § 205.2.
Prohibited Substance	As defined in 7 CFR § 205.2. Prohibited Substances are further described in 7 CFR §§ 205.600-607.

ORGANIC SYSTEM PLAN

SCS recognizes the importance of the individualized Organic System Plan to the Organic Certification process. SCS will work with the Landowner, the Landowner’s Certifying Agent, and/or a U.S. Department of Agriculture (USDA)-approved organic consultant to identify site-specific construction practices and develop an organic construction plan that will minimize the potential for Decertification as a result of construction activities. SCS also recognizes that Organic System Plans are proprietary in nature and confidentiality will be respected.

PROHIBITED SUBSTANCES

SCS will avoid the application of Prohibited Substances onto Organic Agricultural Land. No herbicides, pesticides, fertilizers, or seed will be applied unless requested and approved by the Landowner. Likewise, no refueling, no fuel, or lubricant storage or routine equipment maintenance will be allowed on Organic Agricultural Land. Equipment will be checked prior to entry to make sure that fuel, hydraulic, and

lubrication systems are in good working order before working on Organic Agricultural Land. If Prohibited Substances are used on land adjacent to Organic Agricultural Land, these substances will be used in such a way as to prevent them from entering Organic Agricultural Land.

SOIL HANDLING

Topsoil and subsoil layers that are removed during construction will be stored separately and replaced in the proper sequence after the pipeline is installed. Unless otherwise specified in the site-specific plan described above, SCS will not use this soil for other purposes, including creating access ramps/pads at road crossings. No topsoil or subsoil (other than incidental amounts) may be removed from Organic Agricultural Land. Likewise, Organic Agricultural Land will not be used for storage of soil from non-Organic Agricultural Land.

EROSION CONTROL

On Organic Agricultural Land, SCS will, to the extent feasible, implement erosion control methods consistent with the Landowner's Organic System Plan. On land adjacent to Organic Agricultural Land, SCS's erosion control procedures will be designed so that sediment from adjacent non-Organic Agricultural Land will not flow along the construction workspace and be deposited on Organic Agricultural Land. Treated lumber will not be used in erosion control measures on Organic Agricultural Land.

WATER IN TRENCHES

During construction, SCS will leave an earthen plug in the trench at the boundary of Organic Agricultural Land to prevent trench water from adjacent land from flowing into the trench on Organic Agricultural Land. Likewise, SCS will not allow trench water from adjacent land to be pumped onto Organic Agricultural Land.

INVASIVE AND NOXIOUS TERRESTRIAL PLANT MANAGEMENT

On Organic Agricultural Land, SCS will, to the extent feasible, implement INS management methods consistent with the Landowner's Organic System Plan. Prohibited Substances will not be used for INS management on Organic Agricultural Land. In addition, SCS will not use Prohibited Substances for INS management on land adjacent to Organic Agricultural Land in such a way as to allow these materials to drift onto Organic Agricultural Land.

MITIGATION OF NATURAL RESOURCE IMPACTS

SCS will not use Organic Agricultural Land for the purpose of required compensatory mitigation of impacts on natural resources such as wetlands or woodlands unless approved by the Landowner.

MONITORING

In addition to the responsibilities of the Agricultural Inspectors described in the Plan, the following will apply:

- The Agricultural Inspectors or a trained Organic Inspector (trained through a USDA-approved Organic Inspection Program and retained by SCS) will routinely monitor construction and restoration activities on Organic Agricultural Land for compliance with the provisions of this appendix and will document activities that could result in Decertification; and

- Instances of noncompliance will be documented according to International Organic Inspectors Association protocol consistent with the Landowner's Organic System Plan, and will be made available to the MDA, the Landowner, the Landowner's Certifying Agent, and to SCS.

COMPENSATION FOR CONSTRUCTION DAMAGES

The settlement of damages will be based on crop yield and/or crop quality determination and the need for additional restoration measures and will proceed in accordance with the terms of the Easement. Unless the Landowner of Organic Agricultural Land and SCS agree otherwise, at SCS's expense, a mutually agreed upon professional agronomist will make crop yield determinations, and the MDA Fruit and Vegetable Inspection Unit will make crop quality determinations. If the crop yield and/or crop quality determinations indicate the need for soil testing, the testing will be conducted by a commercial laboratory that is properly certified to conduct the necessary tests and is mutually agreeable to SCS and the Landowner. Fieldwork for soil testing will be conducted by a Professional Soil Scientist or Professional Engineer licensed by the State of Minnesota. SCS will be responsible for the cost of sampling, testing, and additional restoration activities, if needed. Landowners may elect to settle damages with SCS in advance of construction on a mutually acceptable basis or to settle after construction based on a mutually agreeable determination of actual damages.

COMPENSATION FOR DAMAGES DUE TO DECERTIFICATION

Should any portion of Organic Agricultural Land be Decertified as a result of construction activities, the settlement of damages will be based on the difference between revenue generated from the land affected before Decertification and after Decertification, for the entire period of time the land is Decertified, so long as a good faith effort is made by the Landowner to regain certification.

Appendix B - Construction Typicals

Figure B-1: Typical 100' Construction ROW Conventional Lay with Double Ditch Method

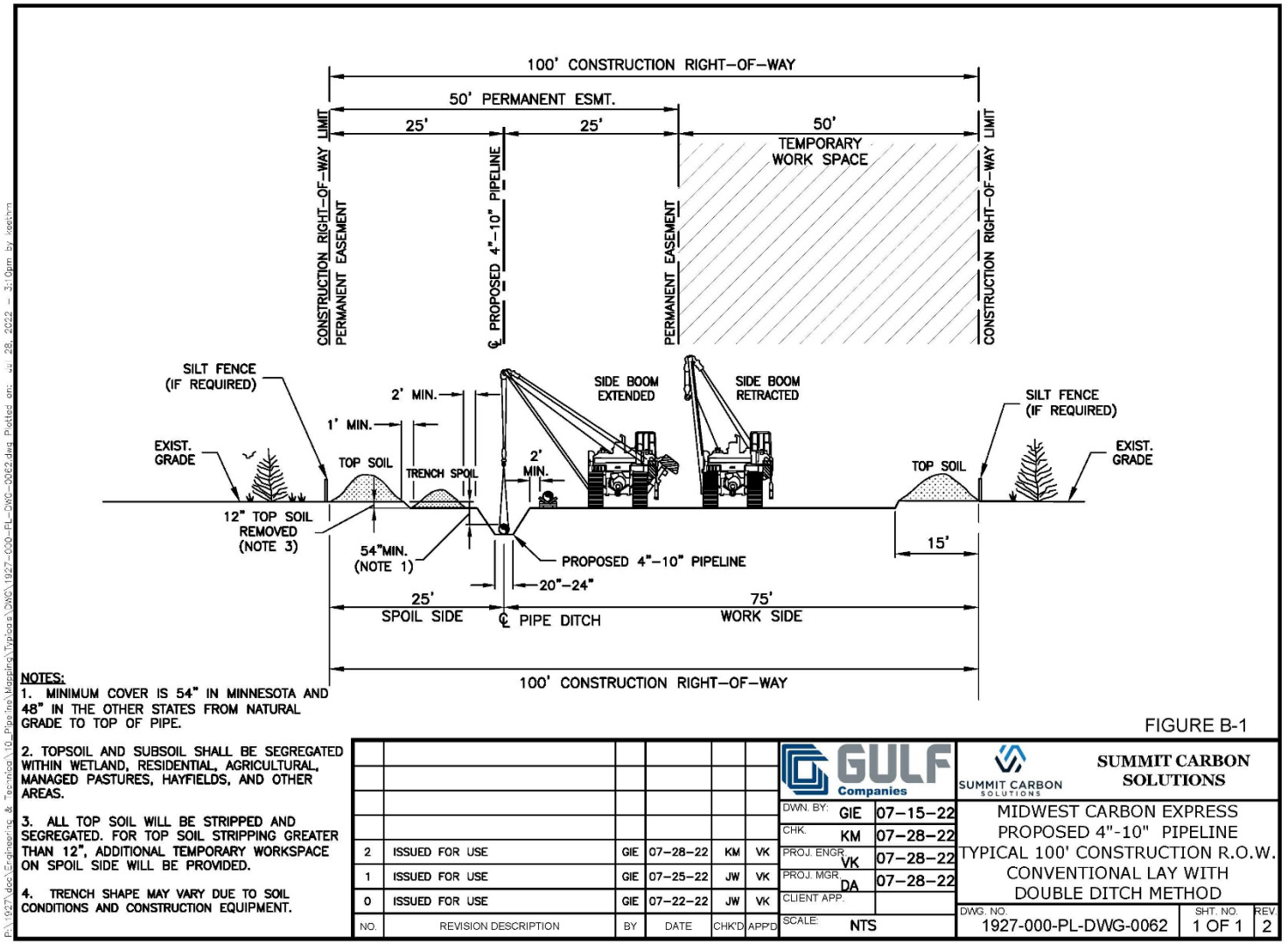


FIGURE B-1

NOTES:
1. MINIMUM COVER IS 54" IN MINNESOTA AND 48" IN THE OTHER STATES FROM NATURAL GRADE TO TOP OF PIPE.
2. TOPSOIL AND SUBSOIL SHALL BE SEGREGATED WITHIN WETLAND, RESIDENTIAL, AGRICULTURAL, MANAGED PASTURES, HAYFIELDS, AND OTHER AREAS.
3. ALL TOP SOIL WILL BE STRIPPED AND SEGREGATED. FOR TOP SOIL STRIPPING GREATER THAN 12", ADDITIONAL TEMPORARY WORKSPACE ON SPOIL SIDE WILL BE PROVIDED.
4. TRENCH SHAPE MAY VARY DUE TO SOIL CONDITIONS AND CONSTRUCTION EQUIPMENT.

NO.	REVISION DESCRIPTION	BY	DATE	CHK'D	APP'D
2	ISSUED FOR USE	GIE	07-28-22	KM	VK
1	ISSUED FOR USE	GIE	07-25-22	JW	VK
0	ISSUED FOR USE	GIE	07-22-22	JW	VK

GULF Companies

DWN. BY:	GIE	07-15-22
CHK.	KM	07-28-22
PROJ. ENGR.	VK	07-28-22
PROJ. MGR.	DA	07-28-22
CLIENT APP.		
SCALE:	NTS	

SUMMIT CARBON SOLUTIONS

SUMMIT CARBON SOLUTIONS

MIDWEST CARBON EXPRESS
PROPOSED 4"-10" PIPELINE
TYPICAL 100' CONSTRUCTION R.O.W.
CONVENTIONAL LAY WITH
DOUBLE DITCH METHOD

DWG. NO.	SHT. NO.	REV.
1927-000-PL-DWG-0062	1 OF 1	2

P:\1927\doc\Engineering & Technical\10_Pipeline Mapping\Typicals\DWG\1927-000-PL-DWG-0062.dwg Plotted on: Jul 28, 2022 - 3:10pm by zechm

Figure B-2: Typical 100' Construction ROW Conventional Lay

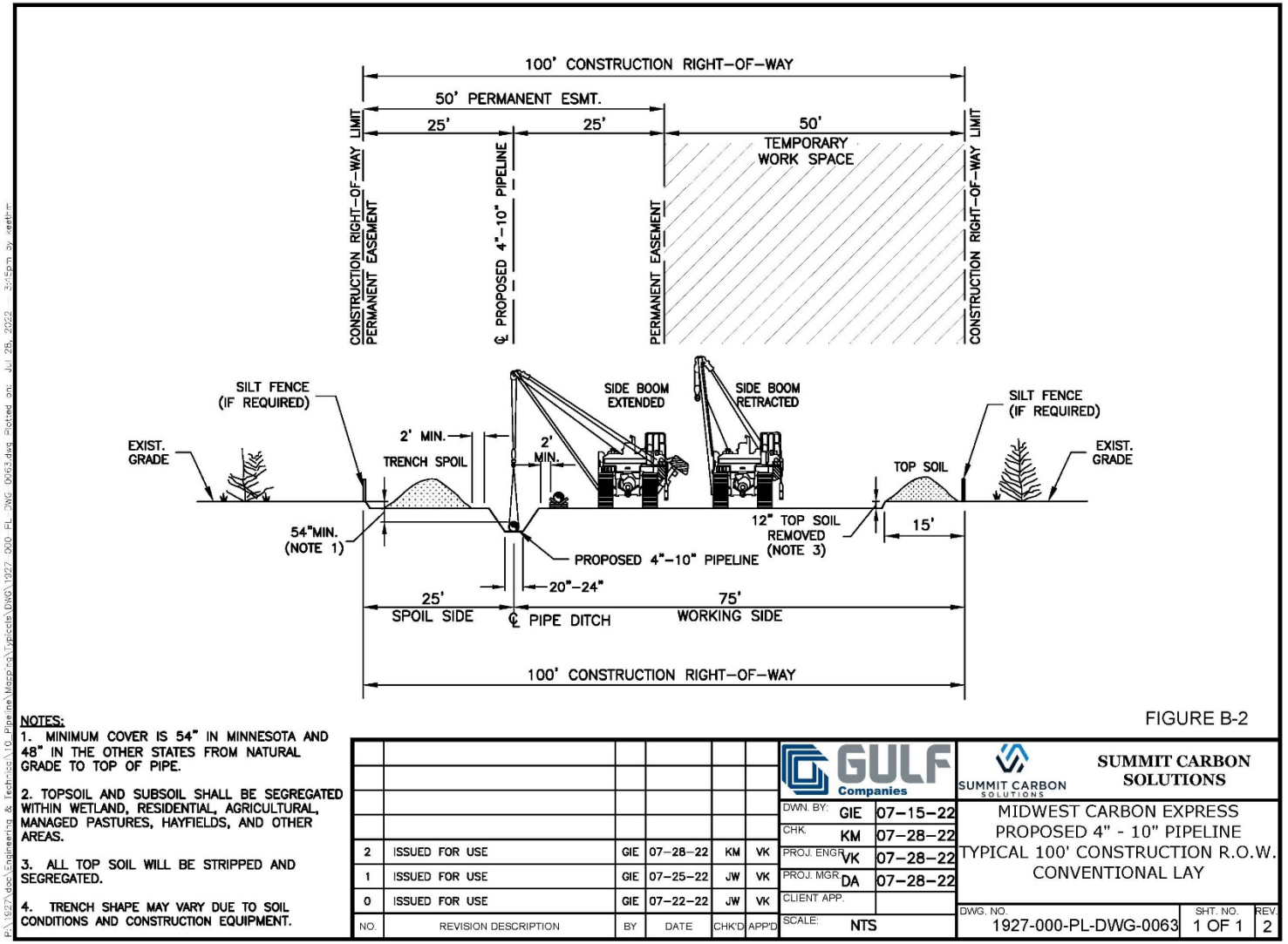


FIGURE B-2

NOTES:
1. MINIMUM COVER IS 54" IN MINNESOTA AND 48" IN THE OTHER STATES FROM NATURAL GRADE TO TOP OF PIPE.
2. TOPSOIL AND SUBSOIL SHALL BE SEGREGATED WITHIN WETLAND, RESIDENTIAL, AGRICULTURAL, MANAGED PASTURES, HAYFIELDS, AND OTHER AREAS.
3. ALL TOP SOIL WILL BE STRIPPED AND SEGREGATED.
4. TRENCH SHAPE MAY VARY DUE TO SOIL CONDITIONS AND CONSTRUCTION EQUIPMENT.

NO.	REVISION DESCRIPTION	BY	DATE	CHK'D	APP'D
2	ISSUED FOR USE	GIE	07-28-22	KM	VK
1	ISSUED FOR USE	GIE	07-25-22	JW	VK
0	ISSUED FOR USE	GIE	07-22-22	JW	VK

GULF Companies

DWN. BY:	GIE	07-15-22
CHK.	KM	07-28-22
PROJ. ENGR.	VK	07-28-22
PROJ. MGR.	DA	07-28-22
CLIENT APP.		
SCALE:	NTS	

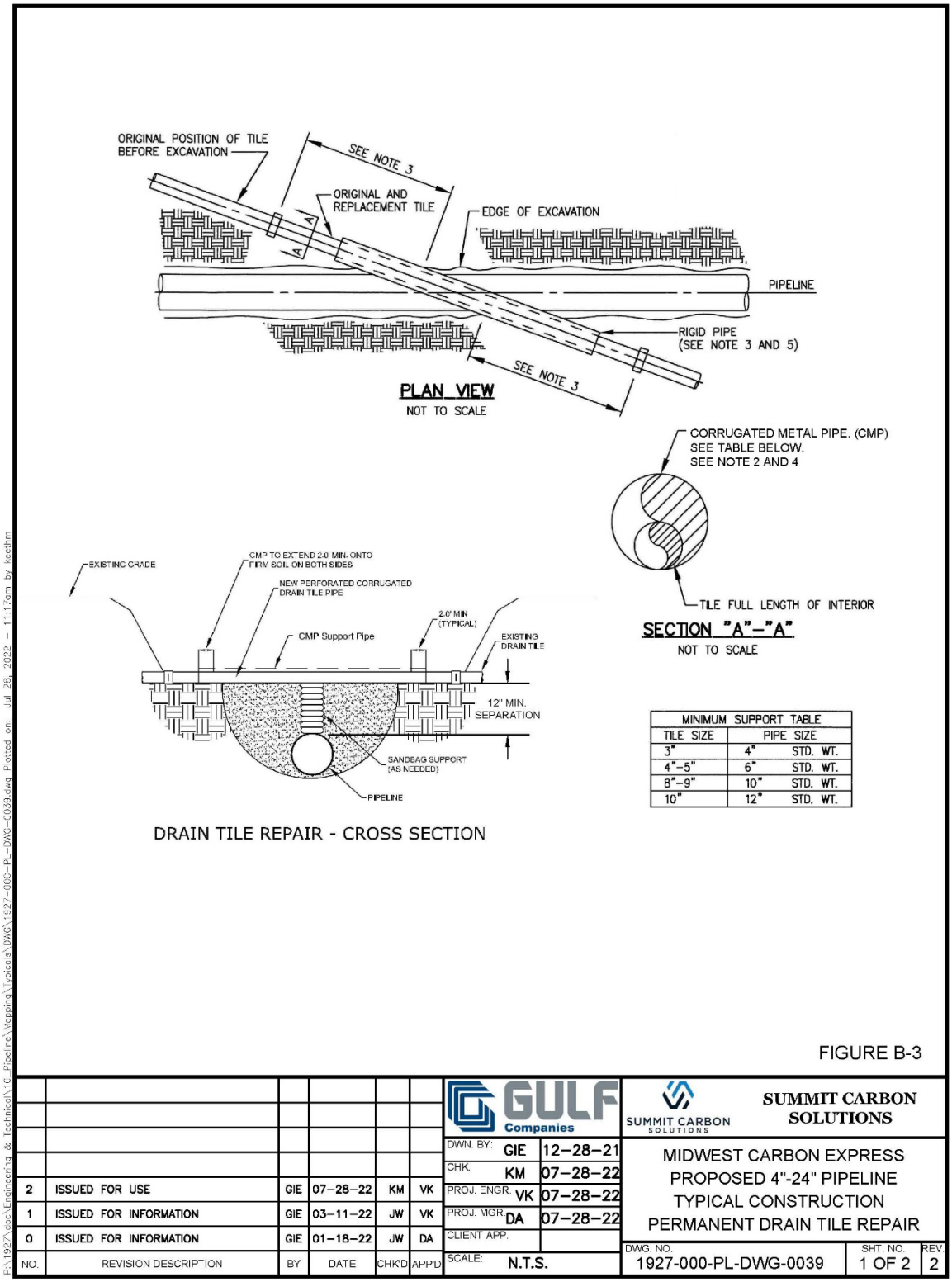
SUMMIT CARBON SOLUTIONS

MIDWEST CARBON EXPRESS
PROPOSED 4" - 10" PIPELINE
TYPICAL 100' CONSTRUCTION R.O.W.
CONVENTIONAL LAY

DWG. NO.	SHT. NO.	REV.
1927-000-PL-DWG-0063	1 OF 1	2

P:\1927\doc\Engineering & Technical\10 Pipeline\Mapping\Typicals\DWG\1927-000-PL-DWG-0063.dwg Plotted on: Jul 28, 2022 - 3:45pm by eatherton

Figure B-3: Typical Construction Permanent Drain Tile Repair



1. TILE REPAIR AND REPLACEMENT SHALL MAINTAIN ORIGINAL ALIGNMENT GRADIENT AND WATER FLOW TO THE WATER FLOW TO THE GREATEST EXTENT POSSIBLE, IF THE TILE NEEDS TO BE RELOCATED, THE INSTALLATION ANGLE MAY VARY DUE TO SITE SPECIFIC CONDITIONS AND LANDOWNER RECOMMENDATIONS.

2. 2'–0" MINIMUM LENGTH OF RIGID PIPE SHALL BE SUPPORTED BY UNDISTURBED SOIL, OR IF CROSSING IS NOT AT RIGHT ANGLES TO PIPELINE, EQUIVALENT LENGTH PERPENDICULAR TO TRENCH. (SHIM WITH SAND BAGS ONLY TO UNDISTURBED SOIL FOR SUPPORT AND DRAINAGE GRADIENT MAINTENANCE (TYPICAL BOTH SIDES) IF NEEDED ONLY.

3. DRAIN TILES WILL BE PERMANENTLY CONNECTED TO EXISTING DRAIN TILES A MINIMUM OF THREE FEET OUTSIDE OF EXCAVATED TRENCH LINE USING INDUSTRY STANDARDS TO ENSURE PROPER SEAL OF REPAIRED DRAIN TILES INCLUDING SLIP COUPLINGS.

4. DIAMETER OF RIGID PIPE SHALL BE OF ADEQUATE SIZE TO ALLOW FOR THE INSTALLATION OF THE TILE FOR THE FULL LENGTH OF RIGID PIPE.

5. ALL MATERIAL TO BE FURNISHED BY CONTRACTOR.

6. PRIOR TO REPAIRING TILE, CONTRACTOR SWAB LATERALLY INTO THE EXISTING TILE TO FULL WIDTH OF THE RIGHTS OF WAY TO DETERMINE IF ADDITIONAL DAMAGE HAS OCCURRED. ALL DAMAGE/DISTURBED TILE SHALL BE REPAIRED AS NEAR AS PRACTICABLE TO ITS ORIGINAL OR BETTER CONDITION.

7. ALL DAMAGED, BROKEN, OR CRACKED TILE SHALL BE REMOVED.

8. ONLY OBSTRUCTED TILE SHALL BE USED FOR REPLACEMENT.

9. THE REPLACE TILE SHALL BE FIRMLY SUPPORTED TO PREVENT LOSS OF GRADIENT OR ALIGNMENT DUE TO SOIL SETTLEMENT.

10. INSPECTION, PRIOR TO BACKFILLING OF THE APPLICABLE TRENCH AREA, EACH PERMANENT TILE REPAIR SHALL BE INSPECTED FOR COMPLIANCE BY THE COUNTY INSPECTOR. IF PROPER NOTICE IS GIVEN, CONSTRUCTION SHALL NOT BE DELAYED DUE TO AND INSPECTOR'S FAILURE TO BE PRESENT.

11. BACKFILLING, THE BACKFILL SURROUNDING THE PERMANENTLY REPAIRED DRAIN TILE SHALL BE COMPLETED AT THE TIME OF REPAIR AND IN A MANNER THAT ENSURES THAT ANY FURTHER BACKFILLING WILL NOT DAMAGE OR MISALIGN THE REPAIRED SECTION OF THE LINE. THE BACKFILL SHALL BE INSPECTED FOR COMPLIANCE BY THE COUNTY INSPECTOR.

FIGURE B-3

NO.	REVISION DESCRIPTION	BY	DATE	CHK'D	APP'D
2	ISSUED FOR USE	GIE	07–28–22	KM	VK
1	ISSUED FOR INFORMATION	GIE	03–11–22	JW	VK
0	ISSUED FOR INFORMATION	GIE	01–18–22	JW	DA

GULF Companies

DWN. BY:	GIE	12–28–21
CHK.	JW	07–28–22
PROJ. ENGR.	VK	07–28–22
PROJ. MGR.	DA	07–28–22
CLIENT APP.		
SCALE:	N.T.S.	

SUMMIT CARBON SOLUTIONS

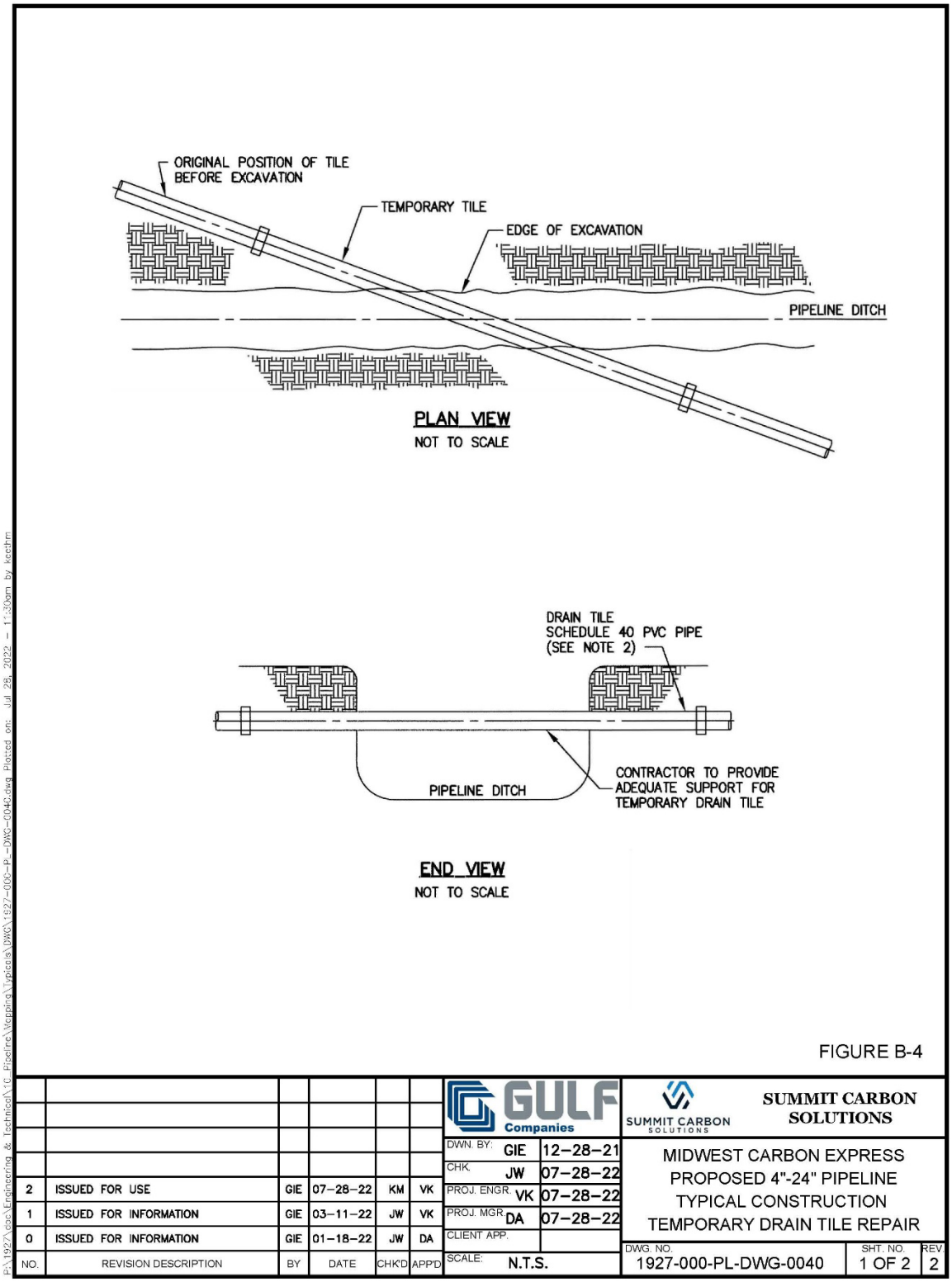
SUMMIT CARBON SOLUTIONS

MIDWEST CARBON EXPRESS
PROPOSED 4"-24" PIPELINE
TYPICAL CONSTRUCTION
PERMANENT DRAIN TILE REPAIR

DWG. NO.	SHT. NO.	REV.
1927-000-PL-DWG-0039	2 OF 2	2

P:\1927\dac\Engineering & Technical\10_Pipeline\Mapping\Typicals\DWG\1927-000-PL-DWG-0039 - Notes.dwg Plotted on: Jul 29, 2022 - 11:06am by acchm

Figure B-4: Typical Construction Temporary Drain Tile Repair



NOTES:

1. TEMPORARY TILE REPAIR AND REPLACEMENT SHALL MAINTAIN ORIGINAL ALIGNMENT GRADIENT AND WATER FLOW TO THE GREATEST EXTENT POSSIBLE.
2. TEMPORARY DRAIN TILE TO BE SIZED TO MAINTAIN ADEQUATE FLOW AND CONNECTED TO EXISTING DRAIN TILES.
3. ANY UNDERGROUND DRAIN TILE DAMAGED, CUT, OR REMOVED AND FOUND TO BE FLOWING OR WHICH SUBSEQUENTLY BEGINS TO FLOW SHALL BE TEMPORARILY REPAIRED AS SOON AS PRACTICABLE, AND THE REPAIR SHALL BE MAINTAINED AS NECESSARY TO ALLOW FOR PROPER FUNCTION DURING CONSTRUCTION OF THE PIPELINE. THE TEMPORARY REPAIRS SHALL BE MAINTAINED IN GOOD CONDITION UNTIL PERMANENT REPAIRS ARE MADE.
4. TEMPORARY REPAIR IS NOT REQUIRED IF THE ANGLE BETWEEN THE TRENCH AND THE TILE LINES PLACES THE TILE END POINTS TOO FAR APART FOR TEMPORARY REPAIR TO BE PRACTICAL.
5. IF TEMPORARY REPAIR OF THE LINE IS NOT MADE, THE UPSTREAM EXPOSED TILE LINE SHALL NOT BE OBSTRUCTED BUT SHALL NONETHELESS BE SCREENED OR OTHERWISE PROTECTED TO PREVENT THE ENTRY OF THE FOREIGN MATERIALS AND SMALL ANIMALS INTO THE TILE LINE SYSTEM, AND THE DOWNSTREAM TILE LINE ENTRANCE SHALL BE CAPPED OR FILTERED TO PREVENT ENTRY OF MUD OR FOREIGN MATERIAL INTO THE LINE IF THE WATER LEVEL RISES IN THE TRENCH.
6. MARKING. ANY UNDERGROUND DRAIN TILE DAMAGED, CUT, OR REMOVAL SHALL BE MARKED BY PLACING A HIGHLY VISIBLE FLAG IN THE TRENCH SPOIL BANK DIRECTLY OVER OR OPPOSITE SUCH TILE. THIS MARKER SHALL NOT BE REMOVED UNTIL THE TILE HAS BEEN PERMANENTLY REPAIRED AND THE REPAIRS HAVE BEEN APPROVED AND ACCEPTED BY THE COUNTY INSPECTOR. IF PROPER NOTICE IS GIVEN, CONSTRUCTION SHALL NOT BE DELAYED DUE TO AN INSPECTORS'S FAILURE TO BE PRESENT ON THE SITE.

FIGURE B-4

NO.	REVISION DESCRIPTION	BY	DATE	CHK'D	APP'D
2	ISSUED FOR USE	GIE	07-28-22	KM	VK
1	ISSUED FOR INFORMATION	GIE	03-11-22	JW	VK
0	ISSUED FOR INFORMATION	GIE	01-18-22	JW	DA

GULF Companies

DWN. BY:	GIE	12-28-21
CHK.	KM	07-28-22
PROJ. ENGR.	VK	07-28-22
PROJ. MGR.	DA	07-28-22
CLIENT APP.		
SCALE:	N.T.S.	

SUMMIT CARBON SOLUTIONS

SUMMIT CARBON SOLUTIONS

MIDWEST CARBON EXPRESS
PROPOSED 4"-24" PIPELINE
TYPICAL CONSTRUCTION
TEMPORARY DRAIN TILE REPAIR

DWG. NO.	SHT. NO.	REV.
1927-000-PL-DWG-0040	2 OF 2	2

P:\1927\dac\Engineering & Technical\10_Pipeline\Mapping\Typicals\DWG\1927-000-PL-DWG-0040.dwg Plotted on: Jul 26, 2022 - 11:28am by keehm

Appendix F

Winter Construction Plan

Minnesota Winter Construction Plan

Summit Carbon Solutions

Project Name:
Summit Carbon Solutions (SCS) Midwest Carbon Express Project

SCS Document Number :

SCS-0700-ENV-01-PLN-042

Date
November 2023

REVISION HISTORY

DATE	REVISION	REVISION DESCRIPTION	PREPARED BY:	REVIEWED BY:	APPROVED BY:
2023-11-07	0	Initial Version	BB	JZ	JZ

Table of Contents

ACRONYMS AND ABBREVIATIONS

ATWS	additional temporary workspace
BMPs	Best Management Practices
BWSR	Minnesota Board of Water & Soil Resources
EI	Environmental Inspector
HDD	horizontal directional drill
INS	invasive or noxious species
MDNR	Minnesota Department of Natural Resources
Minnesota ECP	Minnesota Environmental Construction Plan
MPCA	Minnesota Pollution Control Agency
Plan	Winter Construction Plan
Project	the Midwest Carbon Express Project
ROW	right-of-way
SCS	Summit Carbon Solutions, LLC
USACE	U.S. Army Corps of Engineers

1 INTRODUCTION

The Winter Construction Plan (Plan) provides an overview of the procedures that will be employed by Summit Carbon Solutions, LLC (SCS) and its Contractor during winter conditions on the Midwest Carbon Express Project (Project). Winter construction weather conditions assume the presence of frozen surface soils or frozen precipitation covering the ground surface, and an extended forecast of below freezing temperatures. Due to the variability in weather conditions and site-specific conditions along the Project route, SCS and the Contractor will determine if frozen or non-frozen conditions apply at a given site and will select the construction technique and associated Best Management Practices (BMPs) as appropriate for the conditions at the time of crossing. Written approval from SCS must be obtained prior to implementing an alternative crossing method.

2 GENERAL MITIGATION MEASURES

2.1 Environmental Inspection

As described in the Minnesota ECP, SCS will employ Environmental Inspectors (EIs) to monitor erosion and sediment control BMPs and stabilization efforts and to adjust or repairs as needed in accordance with conditions identified in the applicable Project permits, certifications, and/or licenses. The EI will determine the most effective means of dealing with identified problems, taking into consideration the suitability of access to the ROW, potential equipment damage to the ROW, and the urgency of the issue to be addressed.

2.2 Identification of Avoidance Areas

The EI will confirm that signage or flagging for the avoidance areas described in Section 2.1 of the Minnesota Environmental Construction Plan (Minnesota ECP) has been maintained or replaced for visibility during winter conditions. Federally or state-listed species observations within the construction workspace will be reported to the appropriate agency(ies).

2.3 Wet Weather Shutdown

The transitional periods between fall and winter, and winter and spring may require a wet weather shutdown period. Weather conditions that fluctuate between above freezing temperatures during the day and below freezing temperatures at night often result in soils that are wet and greasy, which are susceptible to rutting, which then results in the mixing of topsoil and subsoil.

SCS will follow the process described in Section 2.5.1 of the Minnesota ECP to determine the need for and duration of a wet weather shutdown or other mitigative actions in these situations.

2.4 Right-of-Way Access

Construction of frost/ice roads may be needed to access the right-of-way (ROW). Development will begin as soon as weather conditions allow. The Contractor will clear all woody vegetation from areas where the frost/ice roads are to be located. After clearing, lightweight equipment such as snowcats and/or amphibious all-terrain vehicles (e.g., Argos) will be used to push and pack existing ice and snow together. This process is referred to as “snow pack.” This initial snowpack provides the foundation for frost/ice roads. As the snowpack builds up and hardens, larger and heavier equipment will be used to progressively increase the thickness and density of the snowpack. Typically, a minimum of 30 inches of snow pack is necessary to safely support construction equipment. In some cases, water may

be added to the surface to help build snow pack from the top. If there is insufficient snow pack to safely support construction activities, it may be necessary to lay construction mats in addition to snow pack.

No deicing products will be used on the Project; however, snow removal may be required to allow safe access to the ROW. Snow is typically pushed off an access road with equipment such as a grader, snowplow, or bulldozer and then stockpiled along the edge of the access road. To minimize scraping off underlying soil or gravel during snow removal, snowblower attachments will be installed on compatible equipment. All equipment will remain on the access road and snow will not be pushed or blown onto environmentally sensitive features off ROW.

2.4.1 Bridges and Culverts

The Contractor may utilize waterbody bridges as described in Section 4.2 of the Minnesota ECP. The Contractor may also utilize ice bridges to cross small waterbodies. Ice bridges are suitable over small waterbodies where the ice is thick and solid, generally on relatively shallow, low velocity and narrow watercourses.

2.4.2 Temporary Access Road Restoration

After construction, the Contractor will return improved ice/frost roads to their pre-construction condition. Revegetation of temporary access roads will proceed as described in Section 7.0. No temporary infrastructure in wetlands or waterbodies (e.g., bridges, construction mats) will be permanently left in place without the appropriate regulatory permits, authorizations, and certifications.

2.5 Right-of-Way Requirements

All construction equipment and vehicles will be confined to the approved construction workspace and additional temporary workspace (ATWS), except where landowners or land-managing agencies have given permission for construction dewatering activities outside of the construction workspace (see Section 5.0).

The width of the construction workspace for the Project will vary depending on adjacent features such as utilities, roads, railroads, cultural, and environmental features such as wetlands and waterbodies. Typical construction configurations are included in Figure 1 and 2 of the Minnesota ECP. The construction workspace is inclusive of the permanent ROW, construction workspace, and site-specific extra workspaces (referred to as ATWS). The construction workspace width will be reduced (i.e., necked down) in selected locations (e.g., wetlands, waterbodies, in/near sensitive features), as indicated on the Project construction alignment sheets and in the field using staking.

2.6 Management of Undesirable Species

The Contractor will minimize the potential for introduction and/or spread of undesirable species (i.e., invasive or noxious species) along the construction workspace and temporary access roads due to pipeline construction activities. The measures the Contractor will implement to manage the spread of terrestrial and aquatic INS are described in more detail in Section 2.6 and 7.4 of the Minnesota ECP.

2.7 Upland Clearing

Clearing during winter conditions will proceed as described in Section 3.1 of the Minnesota ECP. Removal of snow from the construction workspace may be necessary to provide safe and efficient working conditions and to expose soils for grading and excavation. Snow is typically pushed off the working area with equipment such as a grader, snowplow, or bulldozer and then stockpiled along the outer portions of the workspace. To minimize scraping off underlying soil or gravel during snow removal, snowblower attachments will be installed on compatible equipment. All equipment will remain within the workspace, and snow will not be pushed or blown onto environmentally sensitive features off ROW. When snow is stored on the ROW, a physical barrier such as mulch or separation of snow piles from spoil piles will be conducted to avoid mixing.

Construction of frost/ice roads to serve as travel lanes may be needed in upland areas within the construction workspace. Where needed, development will begin as soon as weather conditions allow following the process described in Section 2.3.

2.8 Temporary Erosion and Sediment Control Best Management Practices

Due to frozen conditions, installation of certain temporary BMPs (also referred to as erosion control devices) to minimize erosion and control sediment (e.g., silt fence and staked straw bales) may not be practicable. In this case, alternative BMPs (such as compost filter socks, erosion control blankets, or straw wattles) will be installed on bare frozen ground or snow (less than 2 inches deep) to mitigate erosion and sediment migration.

Installed slope breakers and erosion and sediment control BMPs will be subject to inspection and repair requirements as outlined in Section 2.8 of the Minnesota ECP and/or applicable permits. When thawing conditions begin, BMPs will be monitored and upgraded as needed to prevent sediment deposition into resources or off site. Should final grading and cleanup be completed the following spring, then temporary slope breakers and sediment barriers will be installed during backfill and/or rough grade activities.

BMPs will be installed as needed to provide a conduit for the concentrated flow of melt water to ensure that snow melt will not cause erosion and sediment loss.

2.8.1 Mulch

The Contractor will stabilize[1] exposed ground surfaces within the timeframes described in Section 2.8 of the Minnesota ECP and will utilize mulch following guidance in Section 2.8.1 of the Minnesota ECP.

Mulch may be applied regardless of snow cover to cover at least 90 percent of the ground surface; sunlight will melt the straw into the snow to melt onto bare soil in the spring. Mulch will not be applied in wetlands.

2.8.2 Upland Topsoil Segregation and Storage

Once the frost road is established (as needed), crews will mobilize to the area where they will string, assemble, and install the pipeline. Special equipment, such as a trencher, ditching machine, or rock saw, will be used to cut down through the frost layer along both trench boundaries. Where frozen blocks have been cut, excavation equipment (e.g., a backhoe or excavator) will be used to remove the large frozen blocks and to place them adjacent to the trench. Depending on the depth of frost, trenching may be completed using conventional excavators. Trench topsoil will be segregated as practicable but modified dependent on depth of frost, thickness of topsoil, and the trenching method used.

2.8.3 Topsoil Storage

Gaps will be left and erosion and sediment control BMPs installed where stockpiled topsoil, spoil piles, and snow piles intersect with water conveyances (i.e., ditches, swales) to maintain natural drainage. Separation will be maintained between the topsoil, subsoil, and/or snow piles to prevent mixing. Where the separation cannot be maintained, the EI may approve the use of a physical barrier on a site-specific basis, such as a thick layer of certified weed-free straw or hay mulch or silt fence, between the spoil, topsoil, and/or snow piles to prevent mixing.

2.9 Upland Backfilling

After trench excavation, the assembled pipeline sections will be lowered into the trench. The amount of open excavation will be minimized during winter construction to reduce the amount of frozen backfill and facilitate

[1] Stabilization means that the exposed ground surface has been covered by appropriate materials such as mulch, staked sod, riprap, erosion control blanket, mats or other material that prevents erosion from occurring. Grass seeding, agricultural crop seeding, or other seeding alone is not stabilization. Mulch materials must achieve approximately 90 percent ground coverage (Minnesota Rules 7090).

restoration to pre-construction contours. As described in Section 3.2 of the Minnesota ECP, except at boreholes and tie-ins, the Contractor will limit the amount of excavated open trench in uplands to a maximum of 15 days of anticipated welding production per spread, or 15 miles per spread. For locations along the Project where the U.S. Army Corps of Engineers (USACE) Section 404 Utility Regional General Permit applies (i.e., waters of the U.S.), this will be limited to 5,280 linear feet of open trench. Within each spread, site-specific activities, such as horizontal directional drills (HDD), bores, valve work, and pump station construction may be performed independent of open trench work. Excavated soil material will then be used to backfill the trench; the subsoil will be replaced first, and then the topsoil in cases where topsoil has been segregated.

In some situations, frozen upland topsoil will not be replaced during frozen conditions. This option will be implemented when the trench, subsoil backfill, and topsoil are frozen preventing proper replacement of soils and compaction of the trench. Instead, the trench will be backfilled with subsoil only, and topsoil replacement and final grading will occur during the subsequent spring or early summer. Subsoil will be graded to the extent possible to avoid channeling of surface water if topsoil restoration is delayed for an extended amount of time. Additional erosion and sediment control BMPs will also be installed as needed to prevent channeling of surface water prior to topsoil restoration (see Section 2.8 of the Minnesota ECP).

This option will prevent multiple trips into an area to reclaim an excessive topsoil crown or repair subsidence that has taken place over the trench line during the freeze/thaw cycle. The topsoil stockpile will remain temporarily stabilized in accordance with Section 2.7 of the Minnesota ECP throughout this period to prevent erosion and or sediment migration off the construction workspace. Temporary seeding of topsoil piles may be implemented, as appropriate, following the dormant/winter seeding procedures described in Section 7.3. Adequate breaks or gaps in the topsoil stockpiles will be installed for drainage so that spring runoff and snow melt will not impact the topsoil piles and adjacent areas.

2.10 Cleanup and Rough/Final Grading

In cases where topsoil has been segregated into a pile and becomes frozen into irregularly shaped chunks, the Contractor will add a crown of approximately 12 inches or more (depending on soil type and conditions) over the backfilled trench line. Periodic breaks or gaps in the crown will be installed (as necessary) to ensure water is able to move freely across the backfilled trench and not create nuisance conditions during a precipitation event or spring run-off conditions. Crowning will not extend beyond the previously excavated trench limits. In these cases where permanent seeding is not possible, the Contractor will temporarily stabilize all exposed areas, including spoil piles, as described in Section 2.7.

As the backfill material thaws in the spring and summer, there is potential that the original crown may not completely recede to pre-construction contours. If the crown does not fully recede, additional grading will be performed once soils have thawed and conditions allow. Permanent seeding will proceed after final grading as described in Section 8.1 of the Minnesota ECP. Temporary erosion and sediment control BMPs will be maintained until permanent cover has been established. SCS will monitor areas after restoration as described in Section 8.2 of the Minnesota ECP.

3 WATERBODY CROSSING GENERAL REQUIREMENTS

The procedures in this section apply to rivers, streams, and other waterbodies such as jurisdictional ditches. These procedures require that judgment be applied in the field and will be implemented under the supervision of SCS.

Stream crossing requirements, including construction methods, timing, erosion and sediment control BMP usage, and restoration are described in this section and in the waterbody crossing permits, licenses, and certifications issued by federal, state, and local agencies, as applicable. Written approval from SCS must be obtained prior to implementing an alternative crossing method; additional agency review and approval may be required.

3.1 Time Window for Construction

All in-stream work activities (installation of dams, sheet piling, etc.) will be minimized to the extent practicable on an area and time duration basis as outlined in Section 4.4 of the Minnesota ECP.

3.2 Bridges

SCS will utilize the bridge described in Figure 8 and Section 4.2 of the Minnesota ECP, and ice bridges as described in Section 2.3.1.

3.3 Stream and River Crossing Construction Methods

3.3.1 Open Cut (Non-Isolated) Trench Method

If a waterbody that was permitted to cross using a dry crossing technique is dry or frozen at the time of construction, the Contractor will utilize the open cut (non-isolated) crossing method with required agency approval. These methods are described in Sections 4.51 and 4.5.2 of the Minnesota ECP.

3.3.2 Isolated Trench: Dam and Pump Method

Dry crossing techniques can be used in frozen conditions where there is water flow. The dam and pump method is preferred during winter construction and will proceed as outlined in Section 4.5.4 of the Minnesota ECP with the following additional steps:

- SCS will remove ice downstream of the crossing location using hand and power tools to install in-water BMPs (e.g., turbidity curtains);
- SCS will mechanically remove ice at the crossing location and install the dam;
- SCS will proceed with the remaining procedures described in Section 4.5.4 of the Minnesota ECP. Flowing water upstream of the dam will be pumped via a hose to the downstream location and discharged below the ice; and
- Measures will be taken to protect pumps from freezing to avoid disruption of water flow past the crossing location (e.g., place inside portable shelters with heaters). Backup pumps are required on site for each crossing.

3.3.3 Trenchless Methods: Horizontal Directional Drill or Bore Methods

The procedures for the bore and HDD methods are outlined in Sections 4.5.5 and 4.5.6 of the Minnesota ECP will be implemented. SCS will complete a pre-construction visit at the site at least 2 weeks prior to initiating HDD setup and operations to determine if additional materials and equipment will be needed. Monitoring, containment, and response of inadvertent release is described in Section 8.

3.4 Restoration and Stabilization

Restoration of the stream bank and bed contours will be initiated immediately after the installation of the crossing using the open cut trench method and prior to restoring flow using the dam and pump or flume method unless site and permit conditions delay permanent installation. SCS will restore the stream banks as near as practicable to pre-construction conditions unless that slope is determined to be unstable. If the slope is considered unstable, the Contractor will reshape the banks to prevent slumping. For public waters, the Contractor will return the bank to pre-construction contours, unless otherwise directed by the site-specific restoration plan. If the Contractor cannot restore to pre-construction contours at a public water, the Contractor will consult with the MDNR before proceeding further. Once the banks have been reshaped, the Contractor will commence soil stabilization activities as described in Section 2.8 of the Minnesota ECP. Temporary slope breakers will be installed on all sloped approaches to streams

in accordance with the spacing requirements identified in Section 2.8.4 of the Minnesota ECP and the outlet of the slope breaker will be directed away from the stream into a well-vegetated area.

3.4.1 Revegetation of Banks

If final grading can be completed during winter conditions, the Contractor will seed the banks following the dormant/winter seeding procedure described in Section 8.1.5 of the Minnesota ECP. If final grading and/or seeding is not feasible, the Contractor will temporarily stabilize all exposed areas, including spoil piles, as described in Section 2.8 of the Minnesota ECP.

Additional final grading may be performed once soils have thawed and conditions allow. Permanent seeding will proceed after final grading as described in Section 8 of the Minnesota ECP. Temporary erosion and sediment control BMPs will be maintained until permanent cover has been established.

3.4.2 Supplemental Bank Stabilization

The Contractor will prepare site-specific restoration plans in coordination with the applicable agencies to identify riparian areas that may require specialized seed mixes, plantings of woody vegetation, or other specialized restoration techniques. Depending on site conditions, some measures identified in the site-specific restoration plans may not be feasible to install during winter conditions. In these cases, the Contractor will temporarily stabilize all exposed areas, including spoil piles, as described in Section 2.8 of the Minnesota ECP until site conditions are such that restoration measures can be fully implemented.

4 WETLAND CROSSING GENERAL REQUIREMENTS

The various crossing techniques employed in different wetland types are described in more detail in Section 5.3 of the Minnesota ECP. Note that the proposed crossing technique may change depending on seasonality and site-specific conditions at the time of crossing (e.g., saturation level).

Wetland crossing requirements, including construction methods, timing, erosion control, and restoration, are described in this section and in the wetland crossing permits issued by federal, state, and local agencies as applicable.

4.1 Clearing

Clearing in wetlands will proceed as described in Section 5.2 of the Minnesota ECP. Removal of snow from the construction workspace may be necessary to provide safe and efficient working conditions and to expose soils for grading and excavation.

4.2 Grading and Topsoil Segregation

Grading and topsoil segregation activities will proceed as described in Section 5.2 of the Minnesota ECP.

4.3 Right-of-Way Stabilization

Construction of frost/ice roads to serve as travel lanes is typically required in winter conditions in wetlands within the construction workspace and will begin as soon as weather conditions allow following the process described in Section 2.3.

4.4 Backfilling

The area of open excavation will be minimized during winter construction to reduce amount of frozen backfill and facilitate restoration to pre-construction contours. As described in Section 3.2 of the Minnesota ECP, except at boreholes and tie-ins, the Contractor will limit the amount of excavated open trench in uplands to a maximum of 15 days of anticipated welding production per spread, or 15 miles per spread. For locations along the Project where the USACE Section 404 Utility Regional General Permit applies (i.e., waters of the U.S.), this will be limited to 5,280 linear feet of open trench. Within each spread, site-specific activities, such as HDDs, bores, valve work, and pump station

construction may be performed independent of open trench work. During backfilling, the excavated subsoil will be replaced first, and then the topsoil in cases where topsoil has been segregated.

4.5 Cleanup, Rough/Final Grading, and Temporary Restoration

The Contractor will add a crown of approximately 12 inches or more (depending on soil type and conditions) over the backfilled trench line. Periodic breaks or gaps in the crown will be installed (as necessary) to ensure water is able to move freely across the backfilled trench and not create nuisance conditions during a precipitation event or spring run-off conditions. Crowning will not extend beyond the previously excavated trench limits. The disturbed area will be temporarily stabilized in accordance with Section 2.8 of the Minnesota ECP until final grading and/or permanent revegetation can proceed.

As the backfill material thaws in the spring and summer, the frozen soil clumps will begin to break apart and collapse into void spaces, resulting in subsidence of the material. There is potential that the original crown may not completely recede to pre-construction contours. However, this is preferred over not having enough material over the trench to restore original contours. If the crown does not fully recede, additional grading will be performed once soils have thawed and conditions allow using low ground pressure equipment or excavators working off construction mats. Permanent revegetation will proceed after final grading as described in Section 8.1 of the Minnesota ECP. Temporary erosion and sediment control BMPs will be maintained until permanent cover has been established. The Contractor will monitor wetland areas after restoration in accordance with Section 8.2 of the Minnesota ECP.

5 CONSTRUCTION DEWATERING

5.1 Trench and Pit Dewatering

If construction dewatering is required during winter conditions, the procedures in Section 7.2 of the Minnesota ECP will be followed with the following additional considerations:

- Measures will be taken to protect pumps from freezing to avoid disruptions in dewatering and potential spills or leaks of lubricants or fuel (e.g., place pumps inside portable shelters with heaters);
- Dewatering structures may be installed early in the construction process before frozen ground conditions exist, where feasible;
- Locations of the filter bags placed off the ROW will be marked with lathe or a similar method to assist crews in relocating the filter bag for proper disposal; and
- Removal of dewatering structures will be conducted as soon as practicable after completion of dewatering in an attempt to remove the structure/filter bags before they are frozen.

5.2 Hydrostatic Test Discharges

Hydrostatic testing in winter conditions will proceed as described in Section 7.3 of the Minnesota ECP with the following additional considerations.

5.2.1 Mainline Hydrostatic Testing

Hydrostatic testing will be conducted in compliance with applicable appropriation and discharge permits. If the source waterbody is nearly or completely frozen to the bottom (minimal flow of water under ice) then the water will be discharged to the surface of the source waterbody on top of the ice to freeze. If there is minimal ice cover (sufficient base flow of water under ice) at the source waterbody, then ice augers will be used to drill several holes around a splash pup mounted on a barrier (e.g., construction mats, plywood) to allow the discharged water to slowly enter the waterbody under the ice without causing scour or concentrated flow to the waterbody bed. Determination on which discharge method to use will be proposed by the Contractor and determined in collaboration with SCS.

As discussed in Section 6.0, the Contractor will not appropriate from approved-groundwater sources during frozen conditions if soil conditions do not allow for infiltration during discharge activities. SCS will utilize an alternative agency-approved surface water source with adequate water flow and will follow the discharge measures outlined above.

5.2.2 HDD Hydrostatic Testing

The Contractor will either infiltrate the water if ground conditions allow (i.e., not frozen), discharge water back to the source, or haul water off-site. The HDD hydrostatic test water will be discharged in accordance with the Section 7.3 of the Minnesota ECP, and in compliance with applicable permits. If the source waterbody is nearly or completely frozen to the bottom (minimal flow of water under ice) then the water will be discharged to the surface of the source waterbody on top of the ice to freeze. If there is minimal ice cover (sufficient base flow of water under ice) at the source waterbody, then ice augers will be used to drill several holes around a splash pup mounted on a barrier (e.g., construction mats, plywood) to allow the discharged water to slowly enter the waterbody under the ice without causing scour or concentrated flow to the waterbody bed. Determination on which discharge method to use will be proposed by the Contractor and determined in collaboration with SCS.

The Contractor may appropriate from approved-groundwater sources during frozen conditions and haul water off-site if conditions do not allow for infiltration. Alternatively, the Contractor may utilize an alternative agency-approved surface water source with adequate water flow, or haul water on-site for smaller volumes. Discharge to surface water will proceed as outlined above, or if water is hauled on-site, water will be hauled off-site for disposal.

6 WATER APPROPRIATION

Water may be drawn from local sources, such as lakes, streams, and groundwater wells, for construction activities such as HDD drilling mud, buoyancy control, trench dewatering, and hydrostatic testing during frozen conditions. SCS will follow applicable permit conditions for the appropriation of water and will only utilize sources approved by the applicable agencies.

For appropriation from surface waters during frozen conditions, if the source waterbody is nearly or completely frozen to the bottom (minimal flow of water under ice) and does not have adequate water flow, an alternative agency-approved source will be used. If there is minimal ice cover (sufficient base flow of water under ice) at the source waterbody, then ice augers will be used to drill holes to allow the intake hose to enter the waterbody under the ice. The intake hose will be managed to minimize sediment intake from the waterbody bed. The Contractor will install a 3/16-inch mesh screen on the intake hose to prevent fish entrainment. During withdrawal, adequate waterbody flow rates and volumes will be maintained to protect aquatic life and allow for downstream uses. The volume and rate of withdrawal will be monitored to comply with applicable permit conditions. Measures will be taken to protect pumps from freezing and to avoid potential spills or leaks of lubricants or fuel (e.g., place pumps inside portable shelters with heaters).

For large volumes of water, the Contractor will likely not appropriate from approved-groundwater sources during frozen conditions if soil conditions do not allow for infiltration during discharge activities. For smaller volumes, the contractor may appropriate from approved-groundwater sources and haul water off-site for disposal. Alternatively, the Contractor will utilize an alternative agency-approved surface water source with adequate water flow, or haul water on-site for smaller volumes.

7 REVEGETATION

7.1 Site Preparation

Site preparation involves the following steps:

- Seed bed preparation;

- Planting of temporary cover crops (if appropriate);
- Installation of permanent erosion and sediment control BMPs; and
- Mulching.

As described in Sections 2.7, 2.9, 2.10, and 4.5, if final grading cannot occur due to frozen conditions, the Contractor will temporarily stabilize exposed soils, and install and maintain temporary erosion and sediment control BMPs until soils thaw and final grading and seed bed preparation, as outlined in Section 8 of the Minnesota ECP, can proceed.

7.1.1 Temporary Revegetation

The Contractor's temporary seed mixes will be developed based on Minnesota Board of Water & Soil Resources (BWSR) seed mixes and additional agency review as outlined in Section 8.1.2 of the Minnesota ECP. The use of short-lived temporary cover crops (e.g., oats, winter wheat, soil building cover crop [pea/oats] or a wetland rehabilitation seed mix) helps stabilize project sites and minimize the need for additional mulch in preparation of planning native seed mixes. Unless specifically requested by landowners or land-managing agencies, the Contractor does not intend to establish temporary vegetation in actively cultivated land, standing water wetlands, and/or other standing water areas.

7.1.1.1 Timing for Temporary Vegetation

Generally, oats will be used for spring or summer revegetation, and winter or spring wheat will be used in the fall. Temporary vegetation should be established at any time between April 1 and October 15 or frozen soil. Attempts at temporary revegetation after this date should be assessed on a site-specific basis and with approval from the Contractor in conformance with the required regulatory authorizations and all applicable federal, state and local regulations governing this activity. Refer to Section 2.8 of the Minnesota ECP for temporary stabilization timing requirements.

7.2 Seeding Periods

The Contractor will typically conduct permanent seeding shortly after final grading/seed bed preparation. The Contractor will delay seeding during frozen ground conditions until the ground has thawed and final grading and seed bed preparation can be completed. If conditions allow, the Contractor will complete dormant seeding. The Contractor will temporarily stabilize exposed soils and will install and maintain temporary erosion and sediment control BMPs during frozen conditions.

7.3 Dormant/Winter Seeding

Dormant seeding is a method used after soil temperatures have cooled to 40 degrees Fahrenheit or cooler to prevent seed germination of cool-season grasses and legumes, and 50 degrees Fahrenheit or below for native warm season grasses, forbs, and legumes (BWSR, 2019). Dormant seeding is only practicable if the soil is not frozen and is preferably done before the first snowfall as the snow cover will prevent loss of seeds from wind and birds (BWSR, 2014). Procedures for applying soil amendments, seedbed preparation, seeding, and mulching are the same as outlined for permanent revegetation in Section 8.1 of the Minnesota ECP.

Winter or snow seeding can be implemented during early or late winter when there is less than 1 foot of snow and on a sunny day when seed can move into the soil surface (BWSR, 2019). The freeze/thaw action helps to set the seed firmly in the soil to prepare for spring growth. The seed bed must have been previously prepared for winter seeding to be successful, and it is not recommended for areas prone to spring flooding or running water (BWSR, 2014).

Where dormant or winter seeding is conducted, one or more of the following temporary erosion and sediment control BMPs will be put in place over the freshly seeded area unless the local soil conservation authority, landowner, or land managing agency specifies otherwise. The temporary measures will be in place after seeding, and are as follows:

- certified weed-free straw or hay mulch, at 90 percent cover, anchored;
- hydromulch, according to supplier specifications; and/or
- erosion control blanket.

Additional erosion and sediment control BMPs will be applied as requested by the EI.

If conditions do not allow for final grading and seed bed preparation, seeding will not occur until soils have thawed. The Contractor will temporarily stabilize the area and install and maintain erosion and sediment control BMPs until conditions allow for final grading and permanent seeding.

8 DRILLING FLUID RESPONSE, CONTAINMENT, AND NOTIFICATION PROCEDURES

8.1 On-Site Observation During Construction

Early detection is key to minimizing the area of potential impact from an inadvertent release. The Contractor will monitor the drill path by observing land surfaces and the waterbodies for surface migration during drilling, reaming, and pipe installation procedures. The Contractor will also walk the drill path to monitor for surface seepage, sinkholes, and settlement. The Contractor will clear snow from the HDD path where practical and as needed to facilitate visual identification of drilling fluid at the surface. In addition, a flowing stream will be monitored both upstream and downstream of the drill path. If an observer notices inadvertent release conditions or lowered pressure readings on the drilling equipment, shutdown will occur immediately. The on-site observation notification process during construction is further described in Section 9 of the Minnesota ECP.

If drilling is performed during frozen conditions, holes shall be established in the frozen portion of a waterbody to monitor for fluid release. The following shall apply:

- Upstream of the drill path – holes (6-inch minimum diameter) will be drilled within the waterbody 10 feet upstream of the drill path at intervals starting 10 feet from the existing bank with a minimum of one hole (if the waterbody is less than 20 feet wide). These holes will be monitored throughout the duration of drilling operations.
- Downstream of the drill path – holes (6-inch minimum diameter) will be drilled within the waterbody 25 feet downstream of the drill path at intervals starting 10 feet from the existing bank with a minimum of one hole (if the waterbody is less than 20 feet wide). In addition, a second set of holes will be located 75 feet downstream of the drill path at intervals starting 10 feet from the existing bank with a minimum of one hole (if the waterbody is less than 20 feet wide). All downstream holes will be monitored throughout the duration of drilling operations.
- Equipment such as portable shelters may be used as needed to increase underwater visibility.

Voice contact shall be maintained at all times between all drill personnel to ensure that any operational changes are communicated immediately and effectively between observation personnel and drilling rig operators. The Contractor shall provide handheld two-way radio communications for this purpose.

8.2 Response

If an inadvertent release occurs in a waterbody with frozen ice, the Contractor will immediately notify the Minnesota Duty Officer (1-800-422-0798 or 651-649-5451) and the appropriate agencies of the release and will mechanically remove the ice downstream of the release as rapidly as possible, assuming ability to access the waterbody and ensuring the safety of all people and equipment and will install in-water BMP(s) to contain any drilling mud that may migrate downstream. The Contractor will then remove ice at the location of the upstream inadvertent release to

contain drilling mud at that location and prevent any further downstream migration. The in-water BMPs selected will correspond with site-specific conditions and these response materials will be on-site and available for rapid deployment in the event of an inadvertent release.

8.3 Clean-Up

Drilling fluid recovery methodology is not as variable as containment measures. When such measures effectively isolate the release from the stream flow, pumps or other appropriate measures are used to recover drilling fluid. When the release location cannot be isolated after initial in-water containment installation, drilling fluid that has settled from the water column typically collects in the acute upstream angle of the containment tool, and recovery efforts will be localized to that location.

9 REFERENCES

BWSR. 2014. Minnesota Wetland Restoration Guide. 2nd Edition. Available online at: https://bwsr.state.mn.us/mn-wetland-restoration-guide.

BWSR. 2019. Native Vegetation Establishment and Enhancement Guidelines. January 2019. Available online at: https://bwsr.state.mn.us/sites/default/files/2019-07/Updated%20guidelines%20Final%2007-01-19.pdf.