Appendix F

Landscaping and Vegetation Management Plan

Mountain Peak Energy Storage
Conditional Use Permit Application
September 2025

Landscaping and Vegetation Management Plan

Saline County, Kansas

Stantec Project No: 193710917

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

1.0 PLAN GOALS

Specific goals of this Plan include:

- Compatibility, adaptability, and compliance with the project Storm Water Pollution Prevention Plan (SWPPP),
- Compliance with post-construction re-vegetation requirements per Kansas and Saline County regulations,
- Maintain soil health
- Manage populations of existing noxious and invasive species within the project area, as feasible,
- Develop and install permanent seed mixes that support:
  - Low growth, low maintenance, regionally appropriate grasses,
  - Species adapted to site specific environmental parameters including soils, drainage, anticipated shade, and local climate,
  - Compatible with engineering objectives including height restrictions as well as capacity to form continuous, dense vegetation stands; and
- Prepare seed beds and employ seed installation methods suitable for temporary and permanent seed, and
- Establish and maintain vegetation for the project area through the anticipated 25-year life span of the facility.

2.0 PROJECT OVERVIEW

Mountain Peak Energy Storage LLC (Mountain Peak) is developing the Mountain Peak Energy Storage Project (the Project) near Salina in Saline County, Kansas (Figure 1). The Project will be a battery storage project with a 1,400 megawatt-hour (MWh) storage capacity. Proposed project developments, including ancillary facilities, will consist of battery energy storage systems, underground collector cables, transformers, access roads, and a Project Substation.

Mountain Peak has developed this Landscaping and Vegetation Management Plan (LVMP) to establish and maintain vegetation at the Project in a manner that allows for safe and reliable energy storage while providing environmental benefits during operation of the Project. The facility will operate under a conditional use permit issued by Saline County. The purpose of the LVMP is to provide goals and guidelines for successfully establishing and maintaining vegetative cover within the Project Area for the life of the Project. This LVMP is intended for use alongside the Project's Stormwater Pollution Prevention Plan (SWPPP).

Vegetation activities typically consist of the preservation of beneficial plant communities currently in place, removal of incompatible or noxious species, preparation and restoration of disturbed areas, and goal-oriented maintenance activities. Areas with compatible vegetation will be identified as no access zones to prevent disturbance. Existing populations of incompatible or noxious species will be treated when appropriate to the target species growth and lifecycle patterns. Disturbed areas will be stabilized and seeded in compliance with project objectives. Temporary seed mixes consist of annual grasses for soil erosion control during or immediately after construction. Permanent seed mixes compatible with project vegetation objectives and suitable to local environmental conditions are installed after soil preparation, and include:

- Open Pollinator Seed Mix (grasses and wildflowers) to be established in all indicated disturbed areas.

Following permanent seeding, management of regulated noxious and invasive plant species as classified by Kansas Noxious Weed Law K.S.A. 2-1314, will be conducted. Vegetation management activities typically consist of cutting (mowing) and targeted herbicide applications over the 25-year window.

The developed portion of the Project is approximately 15 acres of the 38-acre parcel. Areas that are disturbed for Project construction purposes will be re-vegetated per the Project's SWPPP. This Plan will supplement and does not replace the guidance provided in the SWPPP since this plan addresses the long-term management of the vegetation for the Project.

2.1 SITE CONDITIONS

2.1.1 Topography

The Project area slopes generally downward from east to west. Project area slope percentages measured within the project area include:

- 90% of the project area at 3% - 7% slopes
- 10% of the project area at 1% - 3% slopes

2.1.2 Soils

Project area soils, based on United States Department of Agriculture-Natural Resource Conservation Service (USDA-NRCS) soil maps indicate Project area soils consist of the soil identified in Table 1, below. These soil series are conducive for vegetation establishment and cover and are mostly cultivated. Historical vegetation was tallgrass prairie indicating the conditions necessary to support vigorous vegetative growth.

Table 1. Soil Types within Project Area

Soil Unit Name	Drainage Class	Hydric Status	Acreage Within Study Area
Edalgo Clay Loam 3-7 percent Slopes	Moderately Well drained	Non-Hydric	3.1
Crete Silt Loam 3-7 percent Slopes	Moderately Well drained	Non-Hydric	32.8
Irwin Silty Clay Loam, 1 to 3 percent slopes, eroded	Well Drained	Non-Hydric	3.5

The primary soil hydrology associated with the project area include the majority of soils being moderately well drained. The conditions support vegetation selection to species suitable for mesic soils.

Soil matrices composed of primarily silt, clay, and loam increase the risk for erosion. All soil work, including grading and tilling, requires soil stabilization to minimize the potential for soil erosion. Soil stabilization includes planting temporary cover crop, planting cover crop and permanent seed mixes, or covering bare soils with straw mulch. Severe erosion will compromise project construction efficiency and long-term maintenance.

2.1.3 Shade

Project area solar intensities at ground layer are currently in full sun and post construction conditions will be consistent with current conditions.

2.1.4 Current Vegetation

Project area vegetation is currently comprised of perennial vegetation which is largely compatible with the long-term use of the site. Where practical this vegetation will be preserved and maintained throughout the project.

3.0 SITE PREPARATION

3.1 TEMPORARY COVER CROP CONSIDERATION

Temporary cover crop types, and associated planting schedules are found in Appendix A, Tables. We recommend that temporary cover crops or other stabilization measures be installed if disturbed or stockpiled soils are idled for extended periods or overwintered prior to construction. Idled agricultural fields, for extended periods of time, can be severely impacted by erosion and noxious weeds. Both soil erosion and noxious weeds will hinder vegetation establishment, management, and construction. The greatest potential for severe erosion occurs in late winter / early spring when surface soils thaw while subsoils remain frozen, and rain occurs. Under these conditions, gully formation on associated unprotected soils and slopes is rapid. Seeding cover crops into disturbed and idled soils will help prevent erosion, maintain soil nutrients, provide competition against noxious weeds, reduce soil compaction, and help increase construction efficiency.

3.2 POST-CONSTRUCTION SOIL PREPARATION

Most project soils will be impacted by construction and require post-construction soil preparation to develop a seedbed suitable for robust germination and compatible cover while providing a smooth surface for long-term vegetation management. Severe soil compaction caused by construction makes post-construction seedbed preparation challenging. Compaction can be tested with a soil penetrometer when soils are at field capacity. Areas determined to be compacted will require a minimum of one pass, deep tilling with an off-set disc, chisel plow or soil-ripper to fracture compacted soil layers up to 12 inches deep. Following deep tillage, soils will require at least one pass with a drag harrow to create a smooth, firm, and friable seedbed that offers good germination and recruitment potentials. All seeded areas require a final packing to increase seed germination and reduce erosion potential.

Table 2. Soil Preparation Procedures Based on Existing Vegetation and Project Construction Phase

Existing Conditions	Erosion Potential	Pre-seeding Preparation	Suitable for No-till Drill Seeding	Suitable for Broadcast seeding	Post-seeding Preparation Work
Post Construction Bare Soils	High	Disc or chisel plow to reduce soil compaction (1-2 passes) Drag soils smooth firm Seed immediately	Yes	Yes	Pack soils following seeding

Existing Conditions	Erosion Potential	Pre-seeding Preparation	Suitable for No-till Drill Seeding	Suitable for Broadcast seeding	Post-seeding Preparation Work
Post Construction Noxious Weeds	Moderate	Treat weeds with appropriate herbicide Disc or chisel plow to reduce soil compaction (1-2 passes) Drag soils smooth firm Seed immediately	Yes Follow herbicide label for seeding post herbicide treatment	Yes Follow herbicide label for seeding post herbicide treatment	Pack soils following seeding

3.2.1 Soil Seedbed Preparation

A primary failure to establish compatible vegetation is inadequate seedbed preparation. One reason is soil compaction that occurs during construction. Site preparation objectives seek to fracture soils to a minimum of 2.5 inches. This requires a minimum of one pass with either a heavy duty off-set disk or chisel plow (aka soil ripper / subsoiler). Following discing or chisel plowing, soils should be drag-harrowed to create smooth, firm, and friable soils suitable for seeding. Soil harrowing requires a minimum of one pass.

After the topsoil has been replaced, where needed, all areas within the boundaries of the facility that were traversed by vehicles and construction and/or deconstruction equipment that exhibit compaction and rutting shall be restored. Compacted areas shall be ripped at least 12 inches deep or to the extent practicable. The existence of drainage tile lines or underground utilities may necessitate less ripping depth. The disturbed area shall then be disked.

All ripping and disking shall be done at a time when the soil is dry enough for normal tillage operations to occur. Mountain Peak shall restore all rutted land to a condition as close as possible to its original condition.

3.2.2 Develop Contingencies for Erosion

Excessive post-construction soil compaction creates the potential for rill and gully erosion during the soil preparation and early seed establishment phases. For these reasons, contractors and subcontractors should have in place plans and resources to correct. This might include filling in washouts, reworking soils to prepare an adequate seed bed, and over seeding impacted areas.

3.2.3 Invasive and Weed Species Management

Despite the clean appearance of restored construction areas, several noxious weeds, such as Canada thistle (*Cirsium arvense*) and giant ragweed (*Ambrosia trifida*) can persist and thrive in construction areas. During bare soil conditions, undesirable species can begin to establish. These weeds can compromise project vegetation compatibility objectives and State and or local noxious weed laws. A list of noxious weeds in Kansas can be found here on the USDA website: https://www.agriculture.ks.gov/divisions-programs/plant-protection-weed-control/noxious-weed-control-program/kansas-noxious-weed-list Kansas Noxious Weed List | Department of Agriculture

For this plan, invasive and weed species are defined under the following two categories:

1. Compliance: Includes species covered under Kansas Noxious Weed List. These species will be referred to as 'noxious weeds.'
2. Compatibility: Includes species that are not legally defined as noxious or 'invasive' but may

interfere with ecological goals and the establishment of desirable species or may pose vegetation management concerns. Thesespecies will be referred to as 'weeds.'

Invasive and weed species management will be conducted as needed to:

- Minimize the spread of noxious weeds from existing populations, if present,
- Prepare the seeding areas for permanent vegetation to reduce competition and improve establishment and success of the permanent seed mixes, and
- Reduce vegetation impacts to facility infrastructure. Flowering non-native species that are not considered noxious and do not have heights that interfere with the project operations will not be actively managed.

Noxious weed species management may consist of spot cutting, mowing, and herbicide treatments. Owner shall ensure that all vegetation growing within the perimeter of the facility is properly and appropriately maintained. Maintenance may include, but not be limited to, mowing, trimming, chemical control, or the use of livestock as agreed to by the landowner.

3.2.4 Cutting and Mowing

Vegetation cutting shall be appropriately timed to assist with control of invasive and weedy species (e.g., mow biennial species during flowering but prior to seed production) and to remove vegetation to assist with site seedbed preparation. Methods will be selected based on the aerial extent of vegetation and site accessibility.

3.2.5 Herbicides

3.2.5.1 Purpose

Herbicide treatments are recommended for management of perennial noxious species, as mowing alone is not typically sufficient for adequate control. Ongoing management of invasive species may be required for compliance with existing invasive plant species regulations. Herbicides are also used to remove undesirable vegetation to prepare seeding areas for permanent seed installation.

3.2.5.2 Herbicide Types

There are three general types of herbicides that are applicable for use within the Project: non-selective, broadleaf-selective, and grass-selective.

Non-Selective Herbicides

Non-selective herbicides injure or kill all types of vegetation, including broadleaves, grasses, sedges, rushes, and woody plants. Glyphosate is commonly used to remove all vegetation to prepare areas for permanent seeding.

Broadleaf-Selective Herbicides

Broadleaf-selective herbicides are intended to injure or kill only broadleaf plants. There are many types of broadleaf herbicides. Two types commonly used in natural settings include 2,4-D and triclopyr. Both 2,4-D and triclopyr are used to remove broadleaf plants from grass-stands and turf lawns. Some broadleaf herbicides are highly selective; for example, the active ingredient clopyralid is very effective for controlling noxious Canada thistle (*Cirsium arvense*), giant ragweed (*Ambrosia trifida*) and weedy legumes (Fabaceae). These herbicides are all appropriate for controlling invasive broadleaf species. Extra caution should be taken to avoid injury to desirable graminoid species by waiting to apply herbicides after graminoid seedlings have matured for at least 90 days or have flowered at least once.

Grass-Selective Herbicides

Grass-selective herbicides are intended to injure or kill only grasses. The most common grass-selective herbicide is clethodim, which is used to selectively target undesirable grasses growing among desirable broadleaf plants. These herbicides may be appropriate for controlling certain invasive grasses in areas with pollinator-friendly vegetation.

3.2.5.3 Herbicide Application Methods and Timing

There are two primary methods to apply herbicides: low volume/spot applications and broadcast applications. Methods and timing should be based on a site-specific evaluation of target species, vegetation composition, and sensitivity of adjacent areas to herbicide applications. Only low volume selective treatments are planned for this Project.

Low Volume/Spot Applications

This method utilizes a hand-held sprayer mounted to small (3.5 to 25 gallon) tanks to selectively deliver herbicide to individual plants or small clumps of plants. Backpack sprayers are suitable for small areas while pistol sprayers mounted to an all-terrain vehicle or utility terrain vehicle (UTV) are suitable for larger areas or large clumps of vegetation. Wicks may also be used for ultra-low volume delivery of herbicide to undesirable plants growing in sensitive ecological areas. This method may be appropriate for managing discrete populations of weedy and invasive species before and during construction.

3.2.5.4 Proposed Herbicides

The herbicides that may be used in the project are listed below in Table 2. These herbicides are frequently used in natural area settings to assist with management of species that would be expected to occur in the project area. These herbicides have a relatively short half-life and moderate to very unlikely potential to reach shallow groundwater.

Table 3. Environmental Information for Proposed Herbicides

Active Ingredient	Herbicide Type	Potential Uses	Rate (Ounces/ Acre)	Environmental Fate[1,2]			
				Water Solubility	Soil Half- life	Mineral Soil Sorption Coefficient KOC / FAO Mobility Classification 3	Groundwater Ubiquity Score (GUS)[4] / Potential to Reach Shallow Groundwater
Glyphosate	Non-selective systemic foliar	Non-selective treatment of grasses and broadleaf plants	64 - 96	Very soluble	3.6 days	33,025 in sandy soils / Hardly mobile	-0.29 in sandy soils / Very unlikely
2,4-D	Broadleaf systemic foliar	Selective treatment of weedy and invasive broadleaf plants	48 – 80	Moderately soluble	2.9 days	73 in sandy soils / Mobile	0.99 in sandy soils / Unlikely

Active Ingredient	Herbicide Type	Potential Uses	Rate (Ounces/ Acre)	Environmental Fate[1,2]			
				Water Solubility	Soil Half- life	Mineral Soil Sorption Coefficient KOC / FAO Mobility Classification 3	Groundwater Ubiquity Score (GUS)[4] / Potential to Reach Shallow Groundwater
Aminopyralid	Broadleaf selective foliar Species selective	Specific noxious and invasive weeds	5 - 9	Very soluble	81.5 days -	2.33 in	6.94 in
Clopyralid	Broadleaf selective foliar Species selective	Specific noxious and invasive weeds Asters and legumes	9 - 12	Very soluble	12.8 days	12.9 in sandy soils / Mobile[5]	3.96 in silt loam / Likely[5]
Clethodim	Grass-selective systemic foliar	Selective treatment of weedy and invasive grasses	12 - 16	Very soluble	3 days in unknown soil	137.5 in unknown soil / Moderately mobile	0.89 in unknown soil / Unlikely

[1] Information from Herbicide Properties Tool at the National Pesticide Information Center – Oregon State University. Accessed online on 10/28/2020 at http://npic.orst.edu/HPT/#.

[2] Reported for sandy soils unless otherwise stated in the Herbicide Properties Tool search results.

[3] Based on FAO Mobility Classification in *Guidance for Reporting on the Environmental Fate and Transport of the Stressor Concern in Problem Formulations*. Accessed online on 10/28/2020 at https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/guidance-reporting-environmental-fate-and-transport#II_C.

[4] Potential to Reach Shallow Groundwater based on discussion in the Herbicide Properties Tool search results.

[5] Appropriate for low volume foliar herbicide applications targeting individual plants or clumps of plants.

3.2.5.5 Herbicide Adjuvants

Adjuvants are typically added to herbicide mixes to improve herbicide performance. Adjuvants, typically used for natural areas management, include hard water treatment additives, surfactants, and penetrants. Herbicide labels should be consulted for recommendations on the types of adjuvants to add to a mix. In general, aquatic-approved adjuvants should be used to minimize potential impacts on wildlife, including pollinators. Aquatic-approved adjuvants should always be used in and near areas of standing water.

3.2.5.6 Herbicide Standard Industry Practices

Herbicides are a valuable vegetation management tool when used according to manufacturer's instructions and following standard industry practices. The following practices are recommended when using herbicides to manage undesirable vegetation:

1. Vegetation managers should apply principles of integrated vegetation management. Herbicides will be used as one of several available 'tools in the toolbox' to manage vegetation and habitats in an ecologically sensitive manner, in addition to cutting, engineering controls, and cultural controls.
2. Herbicide labels and Safety Data Sheets should be read prior to mixing, loading, and application.
3. The appropriate volume of herbicides and adjuvants necessary to complete a vegetation management task should be utilized. This includes targeted application techniques when practicable and use of properly calibrated equipment to minimize environmental effects.
4. The appropriate concentrations of herbicides and adjuvants as recommended by product labels are used to achieve intended outcomes. Applying herbicide lower than recommended rates might result in herbicide resistance. Applying herbicides above recommended rates may result in "top-killing" the plant before the herbicide translocates through the root system killing the entire plant, instead killing only the above ground structure.
5. Selective herbicides are used to limit effects on non-target plants.
6. Persistent noxious weeds typically require several treatments, such as a spring, fall, spring treatment regime.
7. Herbicide applications should be conducted during favorable weather conditions to maximize herbicide efficiency and minimize off-site drift and run-off. These weather conditions include:
    a. Ambient air temperatures are below 78 degrees Fahrenheit (26 Celsius) and above 38 Fahrenheit (3 Celsius)
    b. Average weather conditions have prevailed for a minimum of two weeks prior to herbicide application (e.g., avoid herbicide application during persistent heat, drought, freezing or wet conditions).
8. Herbicide should be applied to plants when plants are most physiologically prone to injury by active ingredients. Plants are most prone to herbicide injury when they are actively growing. Plant life cycles targetable for herbicide application include the flower bud-stage and the cool season photosynthesizing rosette stage. Plants that have senesced following flowering or are inactive due to high heat or drought should not be treated.

Additional practices may be developed, as needed, based on project area conditions.

3.2.5.7 Herbicide Permitting

Herbicide treatments shall be performed by individuals with a current Commercial Pesticide Applicator certification and license issued through state of Kansas, and in accordance with all applicable laws, regulations, and herbicide label instructions.

4.0 VEGETATION INSTALLATION

4.1 SEEDING PLAN

Section 4 provides information on a custom seed mix and planting methods. Seed mix information covers both temporary and permanent seed mixes. Planting methods includes final seedbed preparation, seeding methods (e.g., drilled and broadcast seeded) and post seeding procedures (e.g., packing) for temporary and permanent seed mixes. This information is designed to increase compatible vegetation establishment, long-term vegetation management objectives, and overall project construction efficiency. All site seeding activities maintain compliance with the SWPPP. Many variables contribute to seed installation timing and this plan covers procedures for a wide variety of scenarios.

4.1.1 General Seed Mix Information

Knowledge of site environmental constraints coupled to project vegetation compatible goals allows us to design custom site-specific mixes for both temporary and permanent seed. These seed mixes are customized to meet the environmental constraints that develop following installation. Seed mixes consist of fast to establish, low-growing species that thrive in mesic soil conditions under a variety of sunlight levels. This multi-species seed mix and corresponding seeding rates allow robust coverage and rapid establishment for a variety of site-specific environmental parameters throughout the project area.

Seed mix specifications for temporary cover crops are found in Appendix A, Table A.1-A – Table A.1-D. Seed mix specifications for permanent vegetation is found in Appendix A, Table A.2 – A.4.

The final components and quantities will be subject to market availability and cost fluctuations at the time of purchase. Any substitutions in species or quantity shall be approved by a qualified restoration or plant ecologist. Substitution selections shall aim to replace unavailable materials with species and quantities that are similar in:

- Growth and Structure
- Coverage Density, by adjusting seed count per square foot appropriately, and
- Height

4.1.2 General Seed Installation (Seeding) Information

There are two primary seed installation methods: drill seeding and broadcast seeding. Appendix B, Table B.1 provides a comparison summary of proposed seeding methods. Drill seeding requires less soil preparation and less seed. However, drill seeding is difficult in tight spaces. Broadcast seeding requires greater soil preparation, increased seed amounts (e.g., >20%), and post-seeding packing to ensure adequate soil to seed contact and germination.

Differences between drill and broadcast seed installation dictates which method is preferable. Drill seeding is the preferred method to install temporary cover crops and, when applicable, permanent seed mixes, in large open areas.

Broadcast seeding is the preferred method to install post-construction temporary and permanent seed mixes in tight spaces. It is important to note that while broadcast seeding covers more acres per hour, it requires two additional procedures, including pre-seeding soil tilling and post seeding packing to ensure adequate germination and establishment.

Packing soils following broadcast seeding is required to achieve good soil to seed contact. Although drill seeders do not require soil packing post seed installation, drilled seed still benefits from packing. In all

cases, packing soils following seeding ensures good soil to seed contact, smoother soil surfaces, and reduction in potential erosion.

4.1.2.1 Seed Depth

Seed depth is another important general consideration. A primarily failure in seed recruitment is planting too deep. This is especially true when soils are shallow disced prior to seeding. The key term in shallow discing is shallow. In the best-case scenario, all seed should be incorporated into the soils between 1/16th and 1/4 inches deep. Large seed, such as cover crop seed can be seeded deeper, up to ½ inch deep. The permanent seed mixes are dominated by small-seed species that should be seeded between 1/16th and 1/4 inches deep. Some permanent seed species are very small and perform best when left on the surface. The best way to ensure seed is not installed too deep is to drag-harrow or pack soils following soil fracturing and before seeding. Drag harrowing or packing soils prior to seeding creates a firm, friable seedbed that prevents seed from being planted too deep.

4.1.2.2 Fertilizer

We recommend no fertilizer be applied to soils before, during or following seeding of both temporary cover crops and permanent seed mixes.

For sites developed on infertile soils, or on highly disturbed soils, the addition of legumes in cover crops can enhance fertility for permanent seed mixes. As such, legumes included in cover crops are not necessary for this project.

4.1.2.3 Seed Mix Vendors

Seed should be purchased from vendors that supply quality, locally sourced seed, or at a minimum, seed that has proven successful in local environmental parameters. All seed, including temporary cover crop and permanent seed mixes, requires seed tags that indicate seed weight, pure live seed, region of origin, and noxious weed content. Low Grow mixes have no genotypic restriction.

4.2 TEMPORARY COVER CROPS

Temporary seeding of cover crops is employed to stabilize soils disturbed by project construction that are not ready for permanent seed and will be idled for extended periods, over winter, or as otherwise specified in the SWPPP.

Temporary cover crops are replaced by permanent vegetation. Temporary cover crop seeding rates (e.g., seeds per square foot) are higher when permanent seed is not installed to provide adequate vegetative cover and protection from soil erosion. Cover crop seed mixes are designed to meet two primary objectives:

1. Compliance with the SWPPP, and
2. Stabilization of soils to assist with establishment of permanent vegetation.

Cover crop options provided in this LVMP are composed of annual grasses that establish quickly, provide erosion control, establish residue for later permanent seedings, build soil organic matter, maintain soil nutrients, reduce soil compaction, and assist with weed suppression. Three annual grasses – winter wheat (*Triticum aestivum*), seed oats (*Avena sativa*), and annual rye grass (*Lolium multiflorum*) are utilized, depending on installation timing. Each of these species should be installed per industry standards and each species has a relatively wide tolerance of soil conditions.

Specific species and installation rates are selected based on installation timing, mechanism (drilled

versus broadcast seeded), and whether cover crops are installed with or without permanent seed. Cover crop mixes, rates, and timings are provided in Tables A.1-A through A.1-D (Appendix A).

4.2.1 Battery Storage Area

The battery storage area is comprised of areas between and around the units themselves. These areas will be gravel or paved. No vegetation is planned within the Battery Storage Area itself.

Temporarily disturbed areas outside of the battery storage area will be revegetated with an appropriate mix to suit the short term stabilization and maintenance requirements for the project. Revegetation may include:

- Phase 1 - Fall and Winter (November-February) Temporary seeding will include species listed in Table A.1-A.
- Phase 2 – Spring (mid-April-June). The temporary cover crop seeding occurs in early spring to early summer. Cover crops for this time period are species listed in Table A.1-C.
- Phase 3 – Spring-Fall (mid-April-September). Aforementioned cover crop seed mixes (Tables A.1-A and A.1-C) will be installed, as needed, to revegetate areas disturbed by construction activities.

4.3 PERMANENT SEED

The permanent seed mix proposed for the project area is as follows:

1. Open Pollinator Seed Mix (Table A.2)

A general description of the seed mix is described in greater detail below. Recommended species are listed in Appendix A, Table A.2. Final seed mix design will occur when tentative seeding dates are known, and actual species composition and rates will be based on supply and cost just prior to seeding.

4.3.1 Open Pollinator Seed Mix (Table A.2)

This seed mix is intended to provide cost-effective, permanent, low maintenance, SWPPP compliant, project compatible vegetation over a variety of environmental conditions throughout the project area. This mix blends warm and cool season grasses along with resilient pollinator species. Together, the proposed species ensemble is adapted to site conditions and soils. Once established, this mix will provide multiple ecosystem services. Immediate ecological benefits include reductions in soil erosion, run off, nutrient sloughing, and soil compaction. None of the species are considered invasive or noxious under Kansas invasive or noxious law.

4.3.2 Permanent Seed Installation

Permanent seed will be installed following construction and seedbed preparation. During construction, soils are frequently compacted and rutted, and soil erosion can occur. Therefore, prior to permanent seed installation, soils typically require additional soil preparation procedures as described in Section 3. Permanent seed installation should occur immediately following final soil preparation.

Seeding can be accomplished by either a drill seeder, broadcast seeder, or packer seeder (e.g., Brillion seeder). There are positives and negatives associated with each seeding method, as described earlier in Section 4, and summarized in Appendix B, Table B.1.

All broadcast seeding should be followed by packing or at minimum a shallow drag-harrowing, to help increase germination rates, decrease soil erosion potentials, and provide a smooth, level soil surface conducive to long term management.

The most efficient method for seeding larger areas (> 1 acre) is by drill seeding.

Post-seeding packing by a cultipacker or roller benefits both drill and broadcast seeding. These benefits include: 1. Increase soil to seed contact, 2. Increase germination rates, 3. Decreases erosion potential, 4. Provides a finished soil surface conducive to on-going vegetation maintenance and management.

4.3.2.1 Timing

Open Pollinator Seed Mix (Table A.2) should be seeded during preferred seeding windows described below. Seeding outside the preferred windows can result in substantial seedling loss and the need for supplemental seeding during the next preferred seeding window. The preferred dates for seeding permanent seed mixes are during the spring, between April 1 – May 15, and again in late summer between September 15 – October 15. Dormant season seeding in late fall through winter is not recommended for Open Pollinator seed mixes. Associated compacted soils can encounter severe rill erosion during winter rains or rapid snow melt that can wash seed away. These areas can be difficult and expensive to re-seed and repair. For best results, seed should be planted during times that facilitates seed germination. The sooner the seed germinates, the less washing occurs, and the more successful results. If dormant season seeding is the only option, permanent seed rates should be increased by 20%, a dormant season cover crop should be installed (Table A.1-B), and a contingency for over-seeding bare areas should be agreed upon between the contractor and service provider. Seeding between May 15 and September 15 is not recommended. If necessary, it should be accompanied with straw mulch or equivalent to retain moisture in the soil and facilitate germination. Seeding during this time may result in poor establishment and a contingency for over-seeding bare areas should be agreed upon between the contractor and service provider.

Cover crop seed mixes should be installed with the permanent seed. If permanent seed is installed during fall through winter, the cover crop should consist of winter wheat and annual ryegrass (Table A.1-B). If permanent seeding occurs in the spring through early summer, the cover crop should consist of oats and annual ryegrass (Table A.1-D). Cover crop is installed at a lower rate when combined with permanent seed.

5.0 MONITORING AND MAINTENANCE PLAN

Section 5 provides information on post seed installation monitoring and maintenance that promotes the establishment of desirable vegetation compatible with project objectives. Monitoring and maintenance activities seek to establish and maintain compliance with the SWPPP.

All areas, including seeded areas and preserved existing vegetation, will require ongoing maintenance to establish and maintain desirable vegetation that is compatible with project objectives and in compliance with noxious weed laws. Maintenance is expected to be most intensive in the establishment phase, or approximately the first two growing seasons following seeding as desirable species germinate, grow, and mature. In general, native species take longer to mature than non-native species. Vegetation cutting and herbicide applications are typical management activities as discussed below. Monitoring will occur for the first two years to confirm compatibility of vegetation with project goals concurrently with routine vegetation maintenance activities.

5.1 VEGETATION CUTTING

Cutting, by mowing or hand-trimming, is the primary management tool used to aid in the establishment of desirable vegetation. Cutting is employed to reduce height, reduce flowering of undesirable vegetation, and maintain sunlight at the ground surface to encourage germination and growth of desirable species. Mowing using a deck mower is applicable in areas that are accessible with a small tractor and mower. Flail mowers are preferred but rotary mowers are acceptable if significant clumping of grass clippings is minimized.

5.1.1 Mowing Frequency and Timing

Establishment Phase
Frequent cutting is required in all seeding areas during the establishment phase (post-seeding Years 1 and 2) to reduce fast-growing (annual and biennial) weeds, minimize vegetation height, and assist growth of desirable species. Following permanent seeding, anticipate establishment mowing to occur 4 weeks following seeding and about every 4-6 weeks thereafter from mid-spring to mid-fall. A minimum of three mowings should occur during the first establishment year and a minimum of 2 mowings should occur during the second establishment year. Timing can vary depending on plant density and growth habit, but, undesirable species should not be allowed to flower and sunlight should reach the ground continuously. Should either condition arise additional mowing events should be implemented.

Transition Phase
By the third growing season, desirable vegetation should be established. Years 3-5 represent a transition phase where desirable vegetation becomes increasingly established but remains susceptible to weed invasion. The frequency of cutting is reduced, and in the best-case scenario, mowing targets only specific areas of weed growth.

Long-Term Maintenance
Over the long-term (Years 6-25), mowing should occur on an annual or biannual basis. Annual or biannual mows should occur during the dormant season (late fall or early spring), or in mid-summer. The goal of annual / biannual mows is to reduce thatch, encourage lateral growth, encourage root development, and minimize the establishment of woody vegetation. Actual mowing frequency is dependent upon soil moisture; wet areas and wet weather requires more frequent mowing while dry areas and dry weather reduces mowing frequency.

5.1.2 Mowing Height

Specific recommendations for mowing height vary by seed mix.

Open Pollinator Seed Mix (Table A.2)
During the establishment phase (post-seeding years 1 and 2), areas seeded with this mix should be mowed when vegetation reaches a height of 12-18 inches and be cut back to a height of 4-6 inches. Expect to mow the vegetation three to four times during the first growing season, two times during the second growing season and once or twice per year until fully established.

5.2 HERBICIDE APPLICATIONS

Herbicides may be used for long-term maintenance. Herbicide type and method of application are highly dependent on target species and vegetation maintenance goals. Low volume / spot applications are appropriate for use in all areas during the establishment period (years 1 and 2) to spot treat invasive and incompatible species. Beyond the establishment period, this method is also appropriate for use in areas to minimize impacts on desirable vegetation and wildlife. Broadcast applications are generally not appropriate in areas planted with native species. A combination of herbicides and application techniques is typically required to manage large areas. Herbicide use will be minimized to the extent practicable and will be conducted by trained and licensed personnel in accordance with label directions and standard industry practices.

APPENDIX A: SEED MIX TABLES

Table A.1-A – Table A.1-D. Temporary Cover Crop Seed Mixes*

Table A.1-A Temporary Fall (Late August – Early November) Project Area Cover Crop Seed Mix without Permanent Seed*	
Scientific Name	**Common Name**
Triticum aestivum	Winter Wheat
Lolium multiflorum	Annual Rye

Table A.1-B Temporary Fall (Late August – Early November) Project Area Cover Crop Seed Mix with Permanent Seed*	
Scientific Name	**Common Name**
Triticum aestivum	Winter Wheat
Lolium multiflorum	Annual Rye

Table A.1-C Temporary Spring-Summer (Mid-April – Mid-August) Project Area Cover Crop Seed Mix without Permanent Seed*	
Scientific Name	**Common Name**
Avena sativa	Seed Oats
Lolium multiflorum	Annual Rye
Trifolium pratense	Red Clover

Table A.1-D Spring-Summer and Early Fall (Mid-April – Mid-August) Project Area Cover Crop Seed Mix with Permanent Seed*	
Scientific Name	**Common Name**
Avena sativa	Seed Oats
Lolium multiflorum	Annual Rye

All seed mixes calculated at Pure Live Seed (PLS). Seeding rates are designed for drilling seed in spring through summer. Broadcasting seed and seeding during the dormant season will require 20% increase in PLS rates. Broadcast seed should be packed or harrowed into the soils.

Table A.2 Open Pollinator Seed Mix

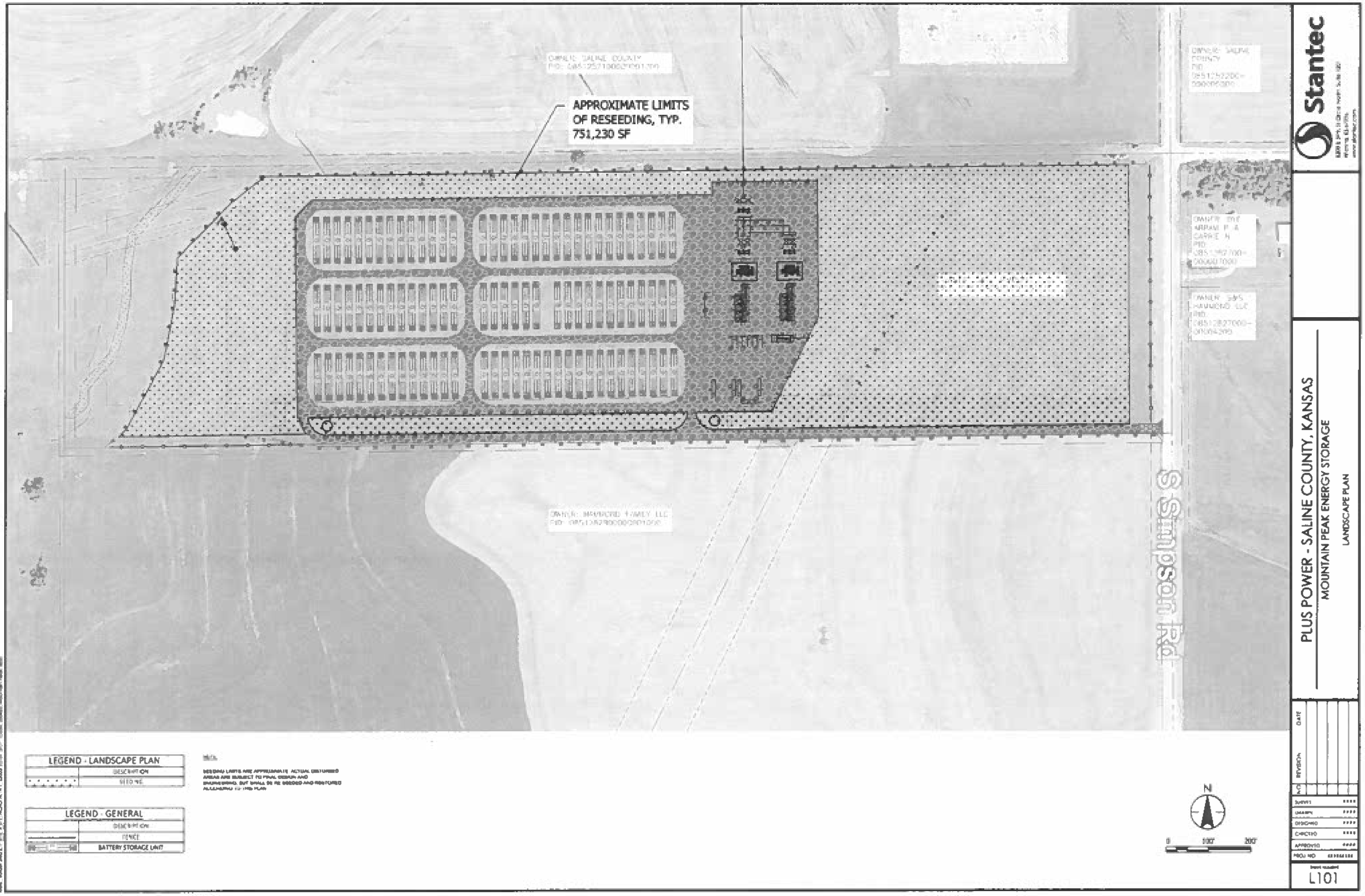
Scientific Name	Common Name	Ounces per Acre	% Mix
Avena sativa	Seed Oats	480	Temp
Lolium multiflorum	Annual Rye	32	Temp
Allium cernuum	nodding wild onion	0.5	0%
Bouteloua curtipendula	Side Oats	40	17%
Coreopsis lanceolata	sand coreopsis	4	2%
Dalea candida	white prairie clover	2	1%
Dalea purpurea	purple prairie clover	2	1%
Elymus trachycaulus	Slender Wheat Grass	16	7%
Fesctuca rubra var commutata	"Rushmore" chewing fescue	32	14%
Festuca rubra var. rubra	"Boreal" creeping red fescue	32	14%
Monarda fistulosa	Wild Bergamont	0.5	0%
Pascopyrum smithii	Western Wheatgrass	30	13%
Poa pratensis	Kentucky blue grass	32	14%
Rudbeckia hirta	black-eyed susan	6	3%
Schizachyrium scoparium	Little Bluestem	40	17%
Totals		237	100%

APPENDIX B: COMPARISON OF SEEDING METHODS

Table B.1 Comparison Summary Between Drill and Broadcast Seeding Methods

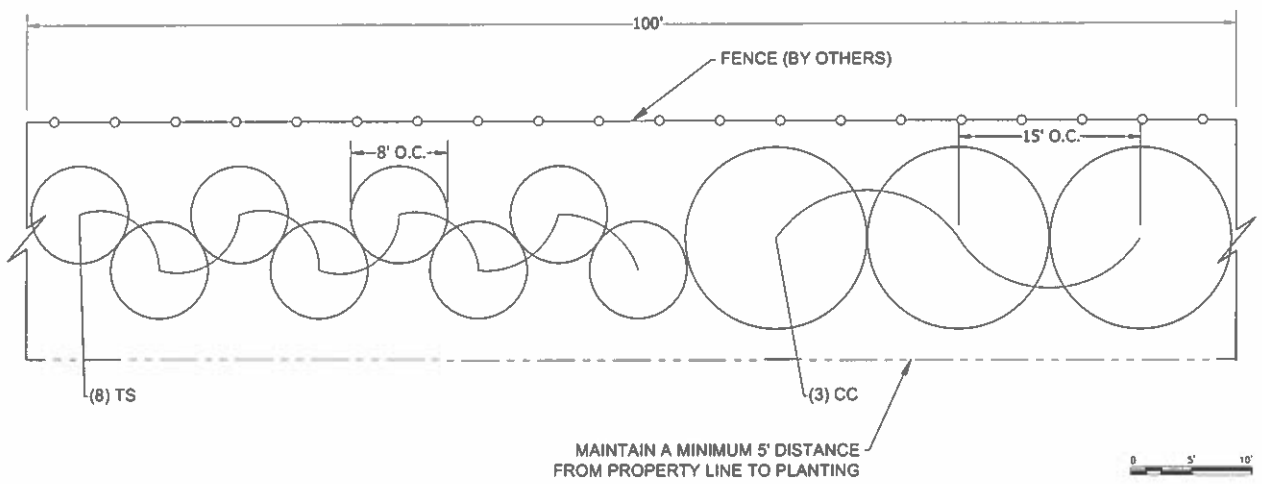
Circumstance	Drill Seeding	Broadcast Seeding	Post Seeding Packing
Soil to Seed Contact	High	Low	Increase soil seed contact
Germination Efficiency	High	Low	Increase germination rates
Extra Seed Required to Achieve Compatibility	No	≥ 20%	No extra seed required
Seedbed Preparation	Low	High	Decreases soil preparation
Soil Finishing (packing or rolling)	Low	High	N.A.
Efficiency in Tight Spaces	Low	High	Low
Ability to Seed Under PV Panels	No	High	No
Impact on Erosion Potential	Decrease	Increase	Decreases erosion potentials
Harvested Soybean Field	Yes	Yes	Increase germination rates
Harvested Corn Field (followed by mowing, baling, and light discing)	Yes	Yes	Increase germination rates
Harvested Forage (hay or silage) Field	Yes	Yes	Increase germination rates
Post-construction Seeding Within Array Field	Not advised	Advised	Advised
Potential for Second Seeding Event	Low	High	Decreases

APPENDIX C: VEGETATION PLANTING PLAN



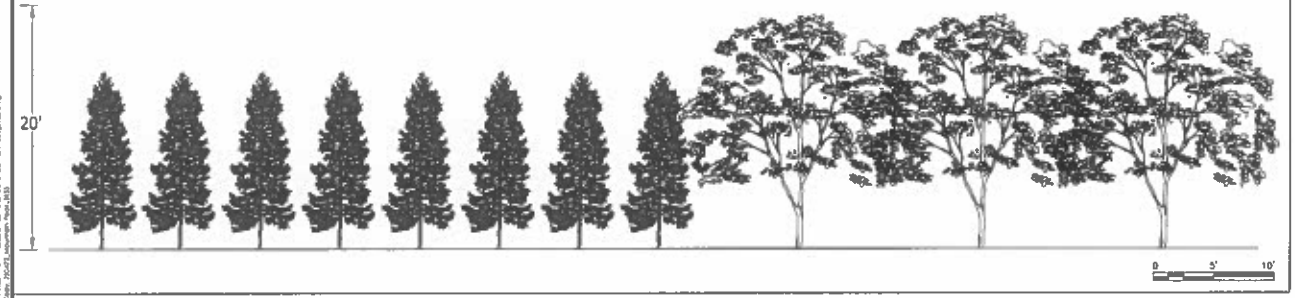
Stantec
PLUS POWER - SALINE COUNTY, KANSAS
MOUNTAIN PEAK ENERGY STORAGE
LANDSCAPE PLAN
APPROXIMATE LIMITS
OF RESEEDING, TYP.
751,230 SF
OWNER: SALINE COUNTY
OWNER: HAMMOND FAMILY LLC
S Simpson Rd
N
0
100'
200'
LEGEND - LANDSCAPE PLAN
DESCRIPTION
SEEDING
LEGEND - GENERAL
DESCRIPTION
FENCE
BATTERY STORAGE UNIT
L101

PLAN OF TYPICAL 100' SEGMENT OF STANDARD PLANTING



SECTION OF TYPICAL 100' SEGMENT OF STANDARD PLANTING

NOTE: SECTION VIEW REPRESENTS PLANTS 5-10 YEARS AFTER PLANTING.

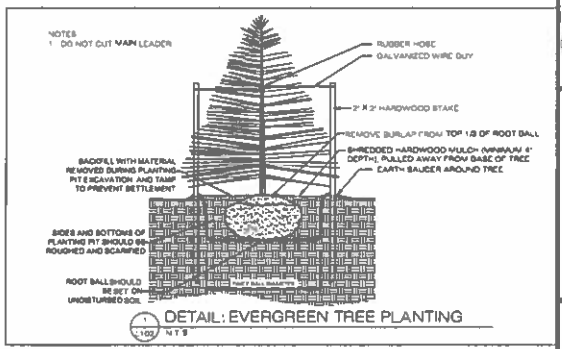


LEGEND

Individual Screening Plant

Project Fence (Design By Others)

Property Line



DETAIL: EVERGREEN TREE PLANTING

NTS

VEGETATIVE SCREENING NOTES

INSTALLATION AND TREE INSTALLATION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF ALL WORK COVERED UNDER THESE PLANS
2. ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE UNIFORMLY BRANCHED AND HAVE A VIGOROUS ROOT SYSTEM. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS AND FREE FROM DISEASE, INSECT PEST EGGS, AND ALL FORMS OF INFESTATION. ALL PLANT MATERIAL SHALL BE FRESH, FREE FROM TRANSPLANT SHOCK OR VISIBLE WILT. PLANTS DEEMED UNHEALTHY SHALL BE REJECTED
3. ALL PLANT MATERIAL SHALL MEET THE MINIMUM SPECIFICATIONS AND STANDARDS DESCRIBED IN THE CURRENT ISSUE OF "THE AMERICAN STANDARD FOR NURSERY STOCK" PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, 1250 I STREET, N.W., SUITE 500, WASHINGTON, D.C. 20005
4. ALL CONTAINER STOCK SHALL HAVE BEEN PROPAGATED IN A CONTAINER LONG ENOUGH FOR THE ROOT SYSTEM TO HAVE DEVELOPED SUFFICIENTLY TO HOLD ITS SOIL. CONTAINER STOCK WITH POORLY DEVELOPED ROOT SYSTEMS SHALL NOT BE ACCEPTED
5. PLANTS SHALL BE PREPARED FOR SHIPMENT IN A MANNER THAT SHALL NOT CAUSE DAMAGE TO THE BARK, BUDS, BRANCHES, STEMS OR OVERALL SHAPE OF THE STOCK. CONTAINER GROWN PLANTS SHALL BE TRANSPORTED IN THE CONTAINERS IN WHICH THEY HAVE BEEN GROWN
6. PLANTS NOT INSTALLED ON THE DAY OF ARRIVAL AT THE SITE SHALL BE STORED AND PROTECTED BY THE CONTRACTOR. OUTSIDE STORAGE AREAS SHALL BE SHADED AND PROTECTED FROM THE WIND AND SUN. PLANTS STORED ON SITE SHALL BE PROTECTED FROM ANY DRYING AT ALL TIMES BY COVERING THE BALLS OR ROOTS WITH MOIST SAWDUST, WET BURLAP, WOOD CHIPS, SHREDDED BARK, PEAT MOSS OR OTHER SIMILAR MULCHING MATERIAL OR OTHER METHODS APPROVED BY OWNER
7. PLANT SUBSTITUTIONS MAY BE MADE BASED ON AVAILABILITY BUT MUST BE OF SIMILAR SIZE AND LANDSCAPE (SCREENING) VALUE. ALL SUBSTITUTIONS MUST BE APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE
8. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD
9. NO PLANTING SHALL OCCUR WHEN THE SOIL IS FROZEN

PLANTING SEQUENCE

- ON THE PLANTING HOLE, A MINIMUM OF 2/3RDS OF ROOTBALL FOR AT LEAST THE FIRST 12 INCHES OF DEPTH, BELOW 12 INCHES, DIG HOLE WIDE ENOUGH TO PREPARE SOIL, DO NOT DIG THE HOLE DEEPER THAN ROOT BALL DEPTH
- HOLES FOR INDIVIDUAL PLANTINGS SHALL BE EXCAVATED TO PRODUCE VERTICAL SIDES AND FLAT BOTTOMS. ALL PLANTING HOLES SHALL HAVE ROUGHED, SCARIFIED SIDES AND BOTTOMS
- LIFT AND SET THE TREE BY ROOT BALL ONLY. DO NOT LIFT USING THE TREE TRUNK AND DO NOT USE TREE TRUNK AS A LEVER
- SET THE TOP OF THE ROOT BALL LEVEL WITH THE SOIL SURFACE OR SLIGHTLY HIGHER
- BACKFILL WITH EXISTING SOIL THAT HAS BEEN WELL TILLED OR BROKEN UP
- PRUNING SHALL BE LIMITED TO DEAD, DISEASED, OR BROKEN LIMBS ONLY AND SHALL BE IN ACCORDANCE WITH ANSI A300 SPECIFICATIONS
- REMOVE ANY TRUNK WRAP REMAINING AT TIME OF PLANTING. NO WRAPS SHALL BE PLACED ON TRUNK
- THE CONTRACTOR SHALL RESTORE AREAS DISTURBED BY THE INSTALLATION OF SHRUBS AND TREES

PROJECT ACCEPTANCE, MAINTENANCE, AND WARRANTY

1. PLANTED AREAS WILL BE INSPECTED AT COMPLETION OF INSTALLATION AND ACCEPTED (INITIAL ACCEPTANCE) WITH SPECIFIED MATERIALS AND INSTALLATION REQUIREMENTS. FOLLOWING INITIAL ACCEPTANCE OF THE COMPLETE INSTALLATION OF ALL PLANT MATERIAL, THE WARRANTY PERIOD WILL BEGIN
2. CONTRACTOR SHALL MAINTAIN INSTALLED SHRUBS AND TREES WITHIN THE PROJECT LIMITS UNTIL FINAL ACCEPTANCE OF THE PROJECT BY THE ENGINEER. FINAL ACCEPTANCE SHALL BE AT THE END OF THE WARRANTY PERIOD. MAINTENANCE SHALL INCLUDE PRUNING, CULTIVATING, WEEDING, WATERING, AND METHODS NECESSARY TO MAINTAIN PLANTS FREE OF INSECT, DISEASE, OR OTHER HEREAFTER DAMAGE UNTIL ACCEPTANCE. MAINTENANCE PERIOD SHALL BE ASSURED TO CONTINUE THROUGH THE DURATION OF THE WARRANTY PERIOD
3. WARRANT PLANT MATERIAL TO REMAIN ALIVE AND BE IN HEALTHY VIGOROUS CONDITION FOR A PERIOD OF ONE (1) YEAR AFTER INITIAL ACCEPTANCE. IF PLANTING TAKES PLACE OVER MULTIPLE PLANTING SEASONS, THE WARRANTY WILL REMAIN IN AFFECT ON ALL PLANT MATERIAL BASED ON THE WARRANTY PERIOD OF THE MOST RECENTLY INSTALLED PLANT MATERIAL
4. REMOVE AND IMMEDIATELY REPLACE ALL PLANTS AS DETERMINED BY THE OWNER'S REPRESENTATIVE, TO BE UNSATISFACTORY DURING THE INITIAL PLANTING INSTALLATION
5. REPLACE AT ONCE IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS ALL PLANTS THAT ARE DEAD OR, AS DETERMINED BY THE OWNER'S REPRESENTATIVE, OR ARE IN SEVERELY UNHEALTHY CONDITION WITHIN THE WARRANTY PERIOD. REPLACEMENTS TO BE INSTALLED AT THE CONTRACTOR'S EXPENSE AT NEXT BEST PLANTING SEASON
6. TREE STAKING SHOULD BE REMOVED AFTER ONE COMPLETE GROWING SEASON. IF STAKING IS REQUIRED ON REPLACED WARRANTED MATERIAL AT THE TIME OF WARRANTY PLANTING, THESE STAKES SHALL BE REMOVED AFTER ONE COMPLETE GROWING SEASON FOLLOWING INSTALLATION
7. CONTRACTOR IS RESPONSIBLE FOR PROVIDING HERBIVORY PROTECTION DURING THE MAINTENANCE AND WARRANTY PERIOD. REPLACEMENT OF PLANTS DUE TO DAMAGE FROM HERBIVORY WILL BE AT THE CONTRACTOR'S EXPENSE
8. UPON FINAL ACCEPTANCE, THE OWNER WILL ASSUME PLANT MAINTENANCE

PROJECT MEASUREMENT AND PAYMENT

1. THE QUANTITY OF PLANTING TO BE PAID FOR WILL BE THE ACTUAL INDIVIDUAL PLANTS INSTALLED AND MAINTAINED
2. ALL WORK COVERED BY THIS ITEM WILL BE PAID FOR AT THE CONTRACT RATE PER PLANT. SUCH PRICE WILL BE PARTIAL PAYMENT (90%) FOR THE WORK INCLUDING MATERIALS, LABOR, WARRANTY, AND ANY OTHER ITEMS INCIDENTAL TO THE WORK AFTER INITIAL ACCEPTANCE. FINAL PAYMENT REMAINING 10%) WILL BE PAID FOLLOWING FINAL ACCEPTANCE AFTER COMPLETION OF THE WARRANTY PERIOD

PLANT SCHEDULE

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	ZONE	APPROXIMATE MATURE HEIGHT	APPROXIMATE MATURE SPREAD	AVG. ANNUAL GROWTH	SPECIFICATION	NOTES
TREES (61)									
44	TS	THUJA OCCIDENTALIS 'SKYBOUND'	SKYBOUND ARBORVITAE	3 TO 7	15' TO 18'	3' TO 8'	12"	MIN. 3' HEIGHT - CONTAINER / B&B	SPACE PLANTS AS SHOWN IN TYPICAL LAYOUT
17	CC	CERCIS CANADENSIS	EASTERN REDBUD	4 TO 8	20' TO 30'	25' TO 35'	12" TO 24"	MIN. 4' HEIGHT - CONTAINER / B&B	

Stantec

PLUS POWER – SALINE COUNTY, KANSAS

MOUNTAIN PEAK ENERGY STORAGE

LANDSCAPE PLAN & DETAILS

NO.	REVISION	DATE

SURVEY	####
DRAWN	####
DESIGNED	####
CHECKED	####
APPROVED	####
PROJ NO	123456789

SHEET NUMBER

L102