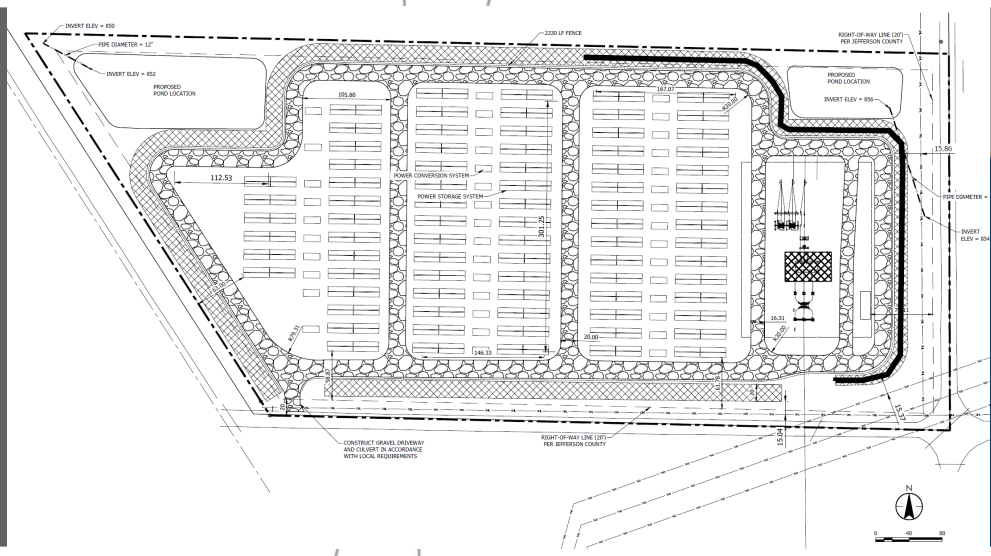
Landscape Plan

Williams Power Facility

October 2022



Cardno now Stantec

Document Information

Prepared for	Open Road Renewables
Project Name	Williams Power Facility
Prepared by	Sam Waltman – Senior Project Scientist
Date	October 2022

Prepared for:

Open Road Renewables, LLC
1105 Navasota St
Austin, Texas 7702

Prepared by:

Cardno, Inc.
76 San Marcos Street, Austin, TX 78702

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1 Introduction

Open Road Renewables, LLC (Open Road) and its affiliate Williams Power, LLC (Williams Power) is proposing to construct the Williams Power Facility (Project) in Madison, Indiana. The proposed battery energy storage system (BESS) will be constructed within an approximate area of 10 acres of private (Project Area). The Project Area is located in Jefferson County, Indiana. As part of the development of this site, Cardno now Stantec (Cardno) has worked with Open Road to develop a landscape plan to help mitigate any visual impacts of the Project from roadways and adjacent land uses while maintaining a natural character that fits within the context and character of the existing landscape. General information about proposed design methodology, plant materials, and planting modules are included in this document.

The Project will be visible from W Dawson Smit Rd and N Paper Mill Rd, as well as multiple properties, including both participating and non-participating landowners. It is important that visual mitigation be considered differently for areas depending on the adjacent uses, intensity of viewership, viewsheds and overall contextual relationship to the Project. Specific treatment modules as outlined in this plan are designed to be replicable and are able to be prescribed in various scenarios around the Project.

With any site, plant community composition varies due to differences in topography, soils, sun exposure, and other factors. It is important to not only recognize what plants are appropriate for a region, but also for a specific site. This landscape plan proposes to utilize native landscape material that will be well adapted to the climate of this region. Native plants also provide long term maintenance benefits as well as ecological benefits for soil stabilization, water quality, wildlife habitat and pollinators. These ecological benefits will all be balanced with the need to provide visual mitigation and overall aesthetic character that will complement the existing land use and setting.

2 Design Methodology

The overall goal of the landscape plan is to provide visual interest while softening the infrastructure of the Project. Screening should be provided in higher viewership areas and where there are adjacent land uses that would require them. Screening intensity will vary based on the need to provide a visual barrier. Two specific treatment modules are proposed for this Project and are designed to be replicable and flexible in order to be prescribed in the various scenarios around the Project. The primary goals of the landscape plan are to:

1. Provide visual interest to soften the proposed infrastructure;
2. Provide screening and visual barriers that consider viewership intensity and adjacent land use;
3. Develop modules that would be appropriate for the existing landscape;
4. Utilize existing landscape where possible;
5. Avoid monocultures of same species in order to increase biodiversity and;
6. Utilize native plant material when possible.

It is important to note that the vegetation will not provide 100% screening or visual obstruction from the Project. The primary intent is to provide visual relief in order to break up the lines of the infrastructure and enhance the overall aesthetics of the Project. Existing landscape along roadways, property lines and fence rows should be maintained where possible.

3 Vegetation Protection

The Project has been sited in a way to minimize impacts to the forested lands, shrublands, wetlands, and streams located in the area, thereby minimizing impacts to trees and woody vegetation. Project infrastructure and the maintained buffers around them will be located entirely on agriculture and open land. In order to protect vegetation from unauthorized removal, Project drawings will clearly illustrate the limits of construction. Prior to any ground disturbing activities, the limits for clearing will be adequately flagged or staked in the field.

4 Vegetation Management

4.1 Construction

Construction activities for BESS infrastructure have the potential to impact vegetation through cutting and clearing, removal of stumps and roots, and increased ground disturbance and soil exposure. In order to limit the impacts to vegetation, all clearing will be confined to the Project infrastructure footprint.

Project construction will require a limited area of permanent disturbance of vegetation. The entirety of disturbance activities will occur in agricultural land. Efforts to establish and retain desirable vegetation growth post-construction will be maximized to the extent practicable.

After construction, disturbed areas not used for Project infrastructure will be established with native vegetation. Disturbed soils inside the Project's fence line will be re-seeded to stabilize exposed soils and control sedimentation and erosion.

4.2 Operation

During Project operation, on-site vegetation within the fence line of the Project will be regularly maintained through mowing. During maintenance inspections, the Project area will also be assessed for the growth of noxious weeds. If noxious weeds do become established, herbicide treatment may be conducted, as appropriate, by a licensed professional. All vegetation monitoring and maintenance will be conducted by an experienced and qualified contractor.

5 Plant Materials

5.1 Native Plants

There are many benefits to utilizing native plants to screen commercial development. Most notably, they are adapted to the specific conditions of a region and can better tolerate weather, drought, disease, and soil conditions than non-native species. Because of these benefits, native plants generally survive longer and are easier to maintain over the course of their establishment. Native plants will also blend better into the existing landscape since many of these plants are naturally occurring in existing fields, roadsides, fence rows, etc.

While many species of native trees may typically be found in proximity to the Project site, it is important to select species that are best suited to provide screening and ornamental value, as well as diversity. The following native trees (Table 5-1) were selected from those typically found in the region which will best serve the purposes of the screening modules.

Table 5-1 Proposed Tree and Shrub Selection for the Williams Power Facility

Scientific Name	Common Name
Pinus strobus	Eastern White Pine
Acer rubrum	Red Maple
Juniperus viginiana "Hetzi"	Hetzi Red Cedar
Viburnum acerifolium	Mapleleaf Viburnum


Eastern White Pine


Red Maple


Hetzi Red Cedar


Mapleleaf Viburnum

6 Planting Modules

Two modules have been developed for this Project to mitigate the visual impacts of the Project from different adjacent land uses. Module 1 is designed to mitigate visual impacts from less intensive uses such as adjacent agricultural uses or roadways. The intent of this module is to provide a year-round visual landscape screen while also enhancing aesthetics of the Project to non-stationary receptors. Module 2 is designed to mitigate visual impacts from neighboring stationary receptors within ~1000 feet of the Project, providing a year-round visual landscape screen that enhances the aesthetics of the Project. For both Module 1 and Module 2, when the landscape matures, more vegetation is visible than the Project itself during the growing season.

Module 1: "Full Planting"

The intent of Module 1 is to provide softening, visual interest and some screening in areas of higher viewership. These areas include major/through roads where viewership is higher and the viewing period is longer. There are several areas where Module 1 would also be used to screen residential lots where the Project is set back further from the landowner lot line and not directly across or next to a residential dwelling. Module 1 is comprised of a single row of evergreen trees spaced at 15 feet on center to help provide visual screening from the infrastructure of the Project (Figure 6-1).

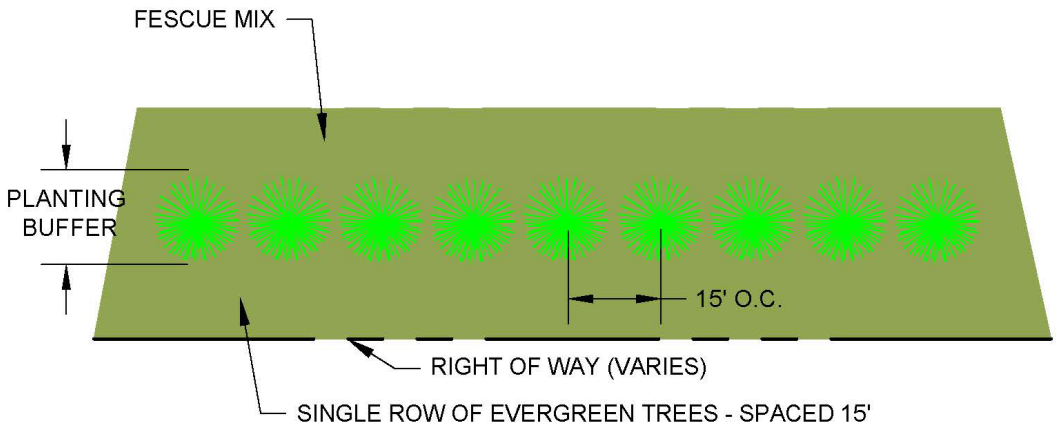


Figure 6-1 Module 1 Screening

Module 2: “Intensive Planting”

The intent of Module 2 is to provide softening, visual interest and more robust screening in areas of the highest viewership and the longest viewing period The intent is to provide a year-round visual landscape screen for more stationary viewers while also enhancing aesthetics of the Project to non-stationary receptors. Module 2 is comprised of a double row of evergreen trees spaced at 15 feet on center to help provide visual screening from the infrastructure of the Project (Figure 6-2).

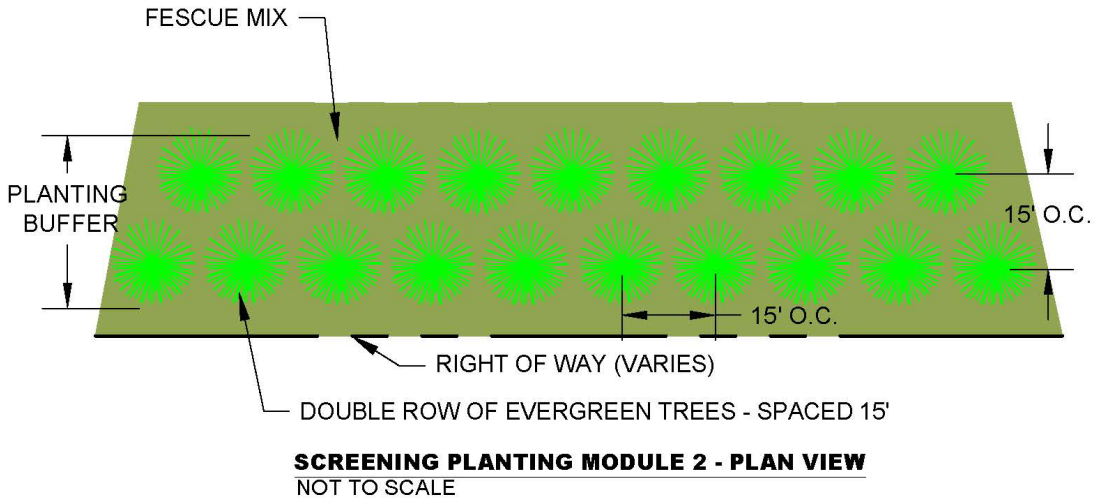


Figure 6-2 Module 2 Screening

6.1 Buffer Landscape Maintenance

Maintenance of planted landscape buffers will be conducted as needed following installation and will focus on ensuring survival of planted materials.

6.1.1 Plants

After the initial planting, maintenance of native trees will include:

- Guying and maintenance of guying for at least one season for trees to ensure they stay upright during the establishment period;
- Application of mulch around tree rings – mulch should be consistently at a depth of 2-3" to help retain moisture and prevent weed growth;
- Pruning of plants as needed to remove dead limbs or unwanted growth; and
- Watering as needed until final acceptance/warranty period expires.

After the initial maintenance period and 1-year warranty (provided by contractor), the plant material selected should not require ongoing intensive maintenance since the proposed species were selected because they are native to Indiana. Williams Power will replace any plantings that die within the first five years to ensure a minimum of 90% survival. Typically, plant material that has sustained one full growing season has a very high likelihood of continued survival. Williams Power will monitor the plantings annually during operations to ensure no significant dieback or loss is occurring. Some dieback is expected, mimicking natural succession, and Williams Power will evaluate any areas of concern to make sure the intent of the module prescribed is still being met for any specific area. If significant dieback were to occur, Williams Power would evaluate the need for mitigation options to ensure the goals of the landscape plan are still being met.

6.1.2 Native Herbaceous Mix

After the initial seeding, native grasses and forb mixes require some maintenance to ensure seed gets established. After the establishment period (5 years) the need for maintenance decreases. After the plantings are established, site maintenance is primarily dictated by the need to control woody growth and grass height, which is limited to 1-2 annual mowing events and spot spraying as needed. Williams Power will monitor any areas planted in native seed mix for the first 5-years to ensure adequate establishment and desired fescue abundance is present and to make sure the goals of the landscape plan are still being met.

6.2 On-site Vegetation Establishment

The vegetation contractor shall be responsible for supplemental seeding, exotic and invasive species control, and any other activity that may contribute to the establishment of the vegetation. The contractor must have supervisors and crew who are experienced with identification of a variety of herbaceous vegetation. All crew members performing chemical applications must be licensed in accordance with state laws pertaining to the specific application being performed. There are several methods or techniques typically utilized to facilitate the establishment of a newly vegetated area. The exact techniques and frequencies used will depend largely on the degree of development of the site, as well as special social and cultural concerns that may arise from specific techniques. Typically after several years of intensive maintenance and more robust growth of desirable species the frequency of the establishment activities will be reduced.

6.2.1 Supplemental Seeding

The need for supplemental seeding can usually be determined by the middle of the first growing season following installation. If the site contains bare ground or is very sparsely vegetated, seeding should be performed with a no-till rangeland type drill planter.

6.2.2 Mowing

Mowing should be used for site management if an abundance of annual weeds are present which may compromise the success of the planting in the first few years after installation. Species such as Foxtail (*Setaria spp*.) and Ragweed (*Ambrosia spp.)* can be controlled by mowing.

6.2.3 Chemical Applications

Many perennial weed species in uplands, such as teasel (*Dipsacus Fullonum*), canada thistle (*Cirsium arvense*), poison hemlock (*Conium maculatum*), spotted knapweed (*Centaurea maculosa*), purple loosestrife (*Lythrum salicaria*), and Common Reed (*Phragmites australis*), are best controlled through chemical applications. If left unmanaged, many of these weed species will quickly outcompete the young native species for sunlight, nutrients, and space. Additionally, allelopathic species such as spotted knapweed will actually emit chemicals into the soil that will inhibit the growth of other species.

7 Summary

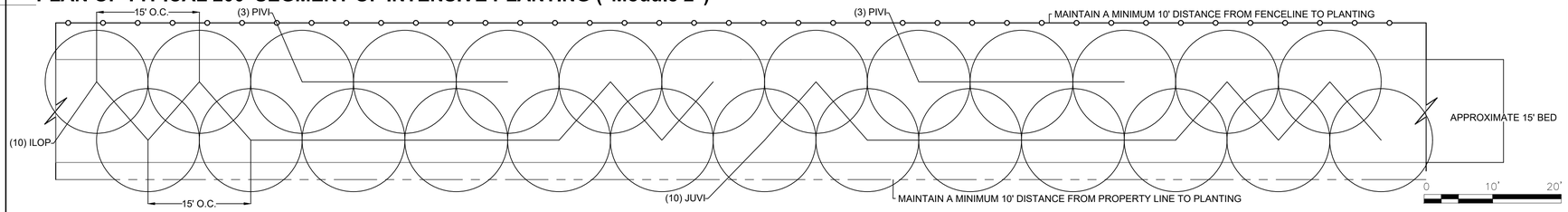
The proposed modules and maintenance activities outlined in this plan serve as a guideline for the final landscape design to ensure that the installation of plant material will align with the objectives set forth for the Project. It is important that visual mitigation be planned according to adjacent uses, intensity of viewership, viewsheds and overall contextual relationship to the Project. It is also important that the proposed landscape blends into the overall character of the existing habitat by utilizing much of the same native plant materials found onsite. Doing so will create a landscape that will visually soften the infrastructure of the Project where needed while providing ecological benefits by incorporating native species.

Williams Power Facility

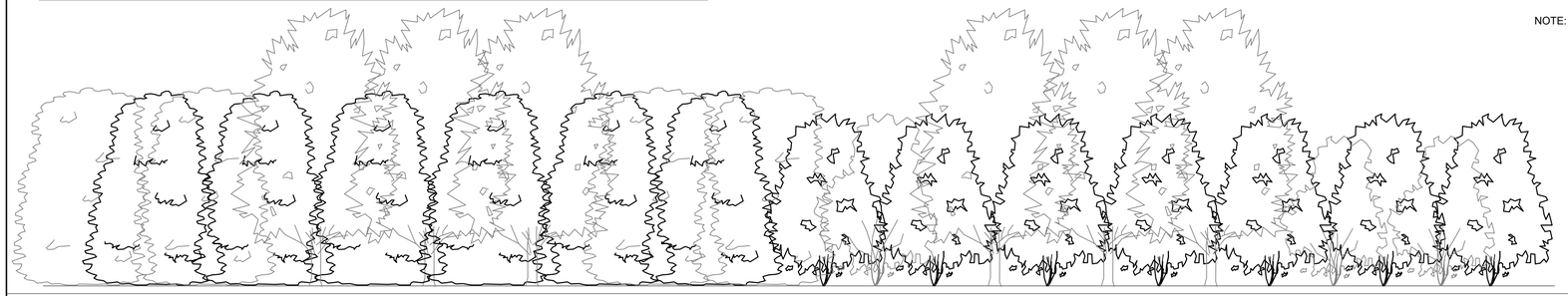
APPENDIX A

SCREENING PLAN

PLAN OF TYPICAL 200' SEGMENT OF INTENSIVE PLANTING ("Module 2")

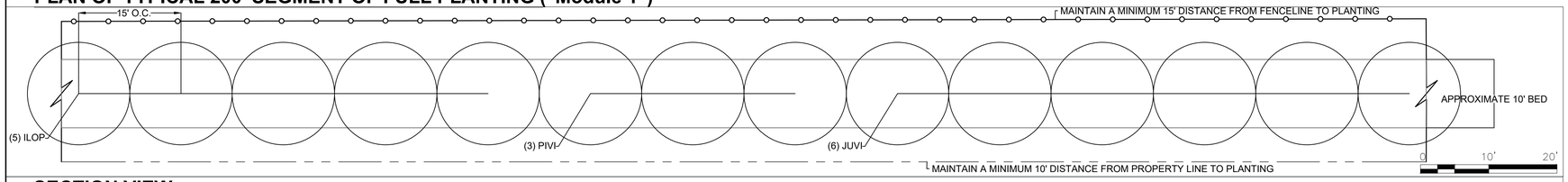


SECTION VIEW OF TYPICAL 200' SEGMENT OF DENSE PLANTING

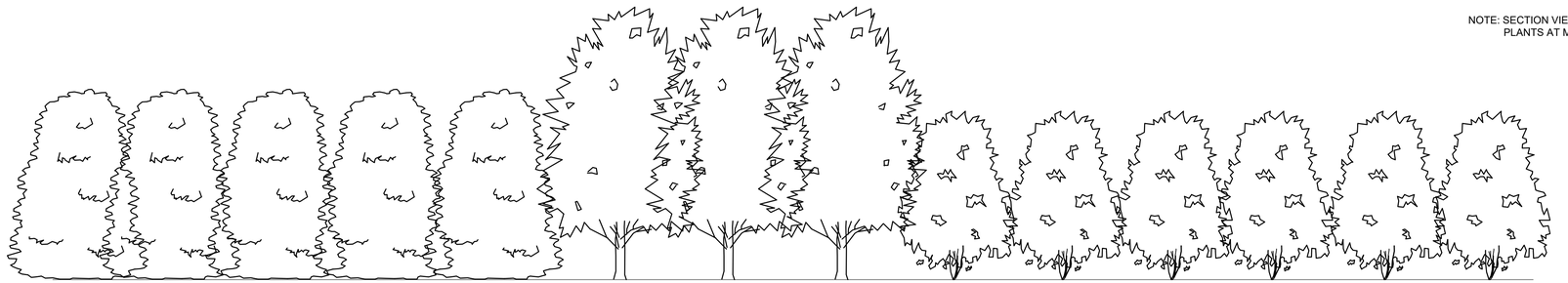


NOTE: SECTION VIEW REPRESENTS PLANTS AT MATURITY.

PLAN OF TYPICAL 200' SEGMENT OF FULL PLANTING ("Module 1")



SECTION VIEW



NOTE: SECTION VIEW REPRESENTS PLANTS AT MATURITY.

INTENSIVE PLANTING (MODULE 2): ~800 LINEAR FEET								
SYMBOL	BOTANICAL NAME	COMMON NAME	APPROXIMATE MATURE HEIGHT	APPROXIMATE MATURE SPREAD	CONTAINER TYPE	SPECIFICATION	TOTAL ESTIMATED QUANTITY	NOTES
ILOP	ILEX OPACA 'SATYR HILL'*	AMERICAN HOLLY	30'	20'	CONTAINER / B&B	MINIMUM 4' HEIGHT	40	•SPACE PLANTS AS SHOWN IN TYPICAL LAYOUT. •INTENT IS TO LET THE CANOPIES GROW TOGETHER AND CREATE A SCREEN OF THE SOLAR EQUIPMENT.
JUVI	JUNIPERUS VIRGINIANA 'HETZII'*	HETZII REDCEDAR	15'	15'	CONTAINER / B&B	MINIMUM 4' HEIGHT	24	
PIVI	PINUS VIRGINIANA*	VIRGINIA PINE	40'	25'	CONTAINER / B&B	MINIMUM 4' HEIGHT	40	
						TOTAL QUANTITY	**104**	
FULL PLANTING (MODULE 1): ~1,600 LINEAR FEET								
ILOP	ILEX OPACA 'SATYR HILL'*	AMERICAN HOLLY	30'	20'	CONTAINER / B&B	MINIMUM 4' HEIGHT	40	•SPACE PLANTS AS SHOWN IN TYPICAL LAYOUT. •INTENT IS TO LET THE CANOPIES GROW TOGETHER AND CREATE A SCREEN OF THE SOLAR EQUIPMENT.
JUVI	JUNIPERUS VIRGINIANA 'HETZII'*	HETZII REDCEDAR	15'	15'	CONTAINER / B&B	MINIMUM 4' HEIGHT	24	
PIVI	PINUS VIRGINIANA*	VIRGINIA PINE	40'	25'	CONTAINER / B&B	MINIMUM 4' HEIGHT	48	
	* INDICATES NATIVE SPECIES					**TOTAL QUANTITY**	**112**	

LEGEND

- Individual Screening Plant
- Project Fence (Design By Others)
- Property Line

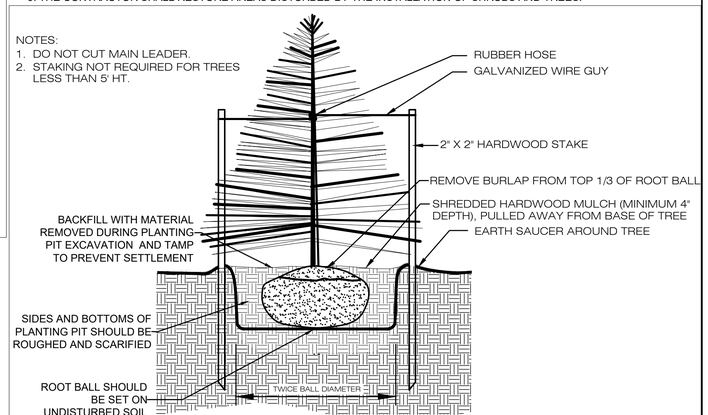
VEGETATIVE SCREENING NOTES:

SHRUB 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 DEFECTS, DECAY, DISEASES, 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.
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

1. DIG THE PLANTING HOLE A MINIMUM OF 2x WIDTH OF ROOTBALL FOR AT LEAST THE FIRST 12 INCHES OF DEPTH. BELOW 12 INCHES, DIG HOLE WIDE ENOUGH TO PERMIT ADJUSTING. DO NOT DIG THE HOLE DEEPER THAN ROOT BALL DEPTH.
2. HOLES FOR INDIVIDUAL PLANTINGS SHALL BE EXCAVATED TO PRODUCE VERTICAL SIDES AND FLAT BOTTOMS. ALL PLANTING HOLES SHALL HAVE ROUGHED, SCARIFIED SIDES AND BOTTOMS.
3. THE CONTRACTOR SHALL APPLY AGRIFORM FOREST STARTER TABLETS, OR EQUIVALENT PRODUCT, TO EACH PLANT AS PER MANUFACTURER'S DIRECTIONS ON LABEL AT TIME OF PLANTING.
4. 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.
5. SET THE TOP OF THE ROOT BALL LEVEL WITH THE SOIL SURFACE OR SLIGHTLY HIGHER IF THE SOIL IS PRONE TO SETTLING.
6. BACKFILL WITH EXISTING SOIL THAT HAS BEEN WELL-TILLED OR BROKEN UP.
7. PRUNING SHALL BE LIMITED TO DEAD, DISEASED, OR BROKEN LIMBS ONLY AND SHALL BE IN ACCORDANCE WITH ANSI A300 SPECIFICATIONS.
8. REMOVE ANY TRUNK WRAP REMAINING AT TIME OF PLANTING. NO WRAPS SHALL BE PLACED ON TRUNK.
9. THE CONTRACTOR SHALL RESTORE AREAS DISTURBED BY THE INSTALLATION OF SHRUBS AND TREES.



DETAIL: CONIFEROUS TREE PLANTING
N.T.S.

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

Stantec

76 San Marcos Street
Austin, TX 78702
www.stantec.com

Client/Project

OPEN ROAD RENEWABLES

WILLIAMS POWER FACILITY

MADISON, INDIANA

Dwn.	Chkd.	Dsgn.	YY.MM.DD

Title

PLANTING SCHEDULE AND DETAILS

Project No.	Scale	
237800330	AS SHOWN	
Drawing No.	Sheet	Revision
	3 of 3	0

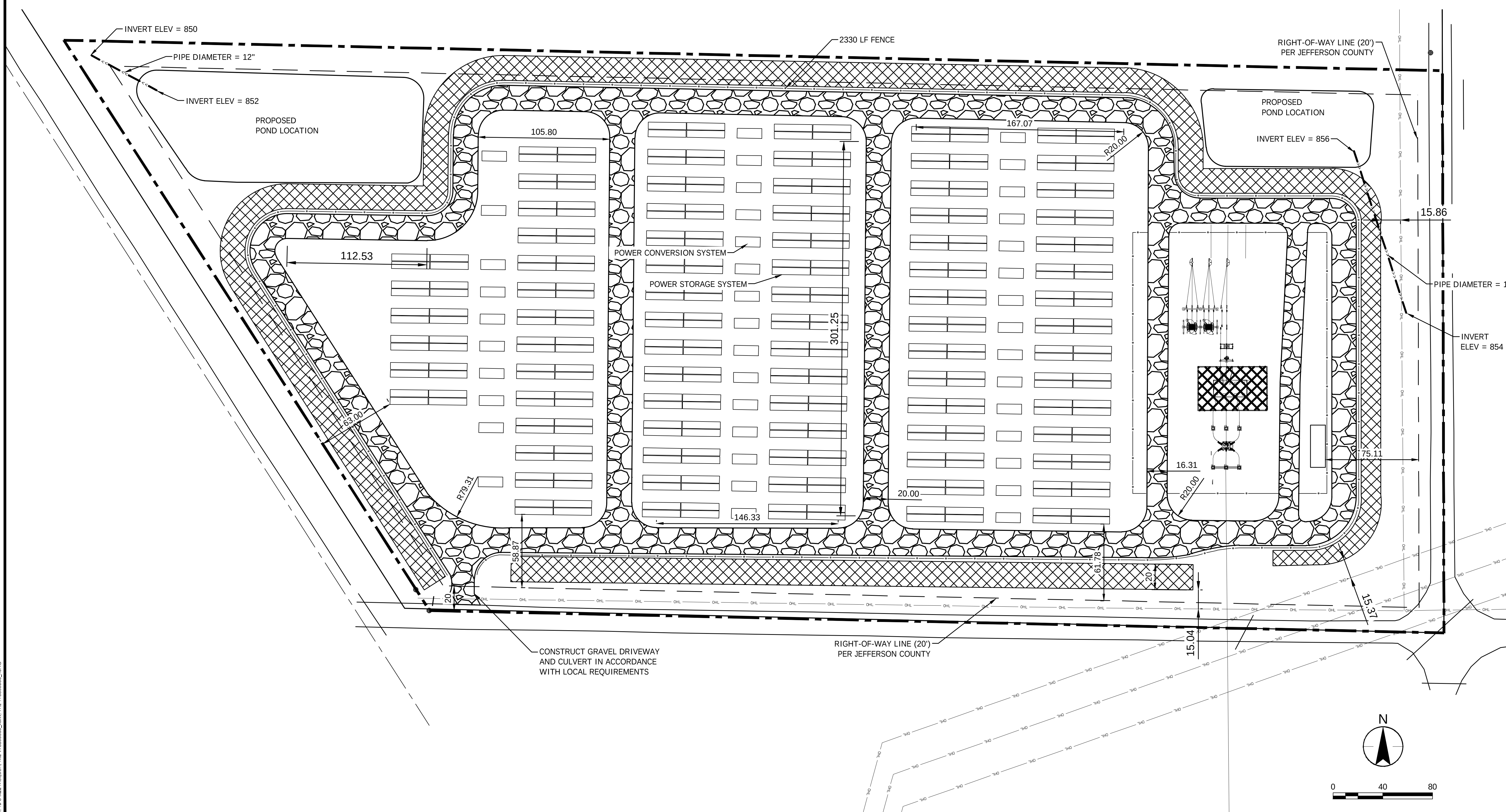
ORIGINAL SHEET - ANSI D

LEGEND

ACCESS ROAD	FENCE
FULL SCREENING ("Module 1")	INTENSIVE SCREENING ("Module 2")
POND	BOLLARDS
PROJECT BOUNDARY	GATE
SETBACK	

NOTES:

- SEE SHEET L1.01 PROTOTYPE B2 FOR BASIC LANDSCAPE SCREENING DETAILS.
- SEE SHEET L8.01 FOR TREE AND SHRUB PLANTING DETAILS.



Stantec

12075 N. Corporate Parkway, Suite 200
Mequon, WI 53092
www.stantec.com

PRELIMINARY FOR PERMITS

SITE PLAN

WILLIAMS POWER FACILITY
OPEN ROAD BATTERY ENERGY STORAGE SYSTEMS
MADISION TOWNSHIP, JEFFERSON COUNTY, INDIANA

DATE OF ISSUANCE		
March 30, 2022		
NO	REVISION	DATE

SURVEY	
DRAWN	
DESIGNED	
CHECKED	####
APPROVED	
PROJ. NO.	XXXX

SHEET NUMBER
C2.01