



Permittee:	Aurora Distributed Solar, LLC
Permit Type:	Solar Energy Project
Project Location (Facility)¹:	Lawrence Creek
Docket No:	IP6928/GS-14-515
Permit Section:	Site Permit Section 6.1 – Site Plan
Date of Submission:	REVISED December 21, 2015

Aurora Distributed Solar, LLC (“Aurora”) respectfully submits this filing in compliance with Section 6.1 of the Site Permit.

“At least fourteen (14) days prior to the pre-construction meeting for each Facility, the Permittee shall submit to the Commission:

- (a) a ready-for-construction site plan for each solar site Facility to include the solar panel layouts, access roads, electrical equipment, collector and feeder lines, and other associated facilities to be constructed;
- (b) engineering drawings for site preparation and construction of each of the Facilities;
- (c) a landscaping plan that describes adjacent land uses and identifies any site-specific strategies to minimize the visual impact of the Facility to adjacent land uses; and
- (d) plans for restoration of the Facility following construction.

Construction is defined under Minnesota Statutes, section 216E.01, subdivision 3. The Permittee may submit a site plan and engineering drawings for one or more Facilities if the Permittee intends to commence construction on certain Facilities before completing the site plan and engineering drawings for other Facilities. The Permittee shall document, through GIS mapping, compliance with the setbacks and site layout restrictions required by this permit, including compliance with the noise standards pursuant to

¹ The Facilities listed in the Project Location (Facility) category above are those that are affected by this filing. Facility names correspond to Facility names as presented in the Site Permit issued to Aurora Distributed Solar, LLC on June 30, 2015.

Minnesota Rules, chapter 7030. The Permittee shall describe its considerations in determining the location of any fencing."

Aurora efiled an Overall Site Plan, engineering drawings, a Constraints Map, and a site plan narrative in compliance with Section 6.1 on October 30, 2015 (eDocket ID. No. 201510-115266-02). Aurora has since revised the same to respond to comments from the Minnesota Department of Commerce Environmental Review and Analysis department.

Aurora submits with this cover sheet:

- A revised Overall Site Plan for the solar panel layouts, access roads, electrical equipment, collector and feeder lines and other associated facilities to be constructed at the above-mentioned facility;
- Revised engineering drawings for the above-mentioned facility;
- A revised Constraints Map demonstrating compliance with the setbacks and site layout restrictions required by the Site Permit, including compliance with the noise standards pursuant to Minnesota Rules, Chapter 7030.
- A revised site plan narrative demonstrating full compliance with the requirements of the Site Permit as to this facility.

A plan for restoration of this site is part of Aurora's Stormwater Pollution Prevention Plan, which has been filed in response to Section 8.14 of the Site Permit.



SITE PLAN NARRATIVE

1 Context

On June 30, 2015, the Minnesota Public Utilities Commission (the Commission) issued Aurora Distributed Solar, LLC (Aurora) a Site Permit to construct a distributed solar energy project. Since the issuance of the Site Permit, Aurora has continued to refine its plans, including the selection of equipment and design of the facilities. The Lawrence Creek Facility will be operated and maintained by Aurora through Aurora’s wholly owned subsidiary Lawrence Creek Solar, LLC. Aurora has provided maps, diagrams, and this memorandum in compliance with the Commission’s Site Permit Sections 6.1 (a) through (d) for Lawrence Creek; these maps and diagrams are referenced through the document. Aurora provides this memorandum to discuss Lawrence Creek’s final design, the final design’s overall human and environmental impacts, and construction methods. Additional plans addressing restoration of the facility are provided in the compliance filings associated with Sections 6.4, 6.5, and 8.14 of the Site Permit. This memorandum takes into account the impacts evaluated by Aurora in application for a Site Permit, the Minnesota Department of Commerce in their Environmental Assessment (EA), and the Commission’s Site Permit and associated Findings of Fact supporting its permit decision.

The Lawrence Creek Facility has not changed its location, facility size, facility land control, or preliminary development area from what was evaluated in Aurora’s Site Permit Application, EA and in the Commission’s Permit. Table 1 summarizes facility acreage and size.

Table 1. Area and Capacity of the Lawrence Creek Facility

Lawrence Creek Facility	Facility Land Control	Development Area	MW-AC
Evaluated for Environmental Impacts	74.3 acres	39.4 acres	4.0
Current Design	74.3 acres	39.4 acres	4.0

Aurora notes that there is a slight difference in the Facility Land Control used on maps used in the Site Permit and Site Permit Application and those used in the EA. For the purposes of consistency with the Site Permit, Aurora has used the boundary for Facility Land Control shown on the maps in the Site Permit though the use of the boundary in the EA would not materially change the analysis in this memo.

2 Summary of Final Design Refinements

2.1 Selected Equipment

The Lawrence Creek Facility’s Constraint Site Plan offers a visual depiction of the facility’s design refinements. The Construction Details provide technical drawings for the equipment.

Site Plan Narrative

Page 2 of 6

Aurora plans to install a single axis tracking system at the site with two inverter skids, a collection system, and a small metering and switching system.

2.1.1 Solar Arrays

The solar array consists of photovoltaic modules mounted upon a tracker racking system. The specifications of the solar array comply with the Site Permit and are consistent with the environmental review.

2.1.1.1 Modules

The modules will be polycrystalline with a silver border and a dark, sun absorbing surface with an antireflective coating. They will be 6.4 feet by 3.1 feet and designed to be installed in a landscape orientation. The array will follow the sun path in a single, horizontal axis from 45 degrees east in the morning to 45 degrees west in the evening with the maximum height of approximately 10 feet at a 45 degree tilt.

2.1.1.2 Racking

Aurora selected a tracker racking system with individual motors for each tracker row allowing more flexibility. The racking will allow for 3 panels in a column resulting in the rotational plane of panels being just less than 10 feet in length. The racking system will have 24 rows of panels on the north south axis (the non-tracking axis) resulting in a total length of approximately 155 feet per rack or row. Each rack or row will have a drive shaft with a motor located central to the row that will slowly turn the three panel plane from east to west. The racking system will be mounted to the ground through piles driven approximately 12 feet into the ground, the piles will have a 6 ½ foot reveal upon which the mounting bracket and drive shaft will be installed. Rows of tracking panel racks will typically be installed at 15 ½ foot intervals east to west and 10 feet north to south with some variations to accommodate topography, landscape features or other project components.

2.1.2 Inverters

Inverters will be installed on a cement pad or cement pier foundation system that will be determined in situ based on the observations of the hydrological conditions at the inverter location. The inverters will be contained within a neutral earth tone low gloss or semi-matte painted metal enclosure with a standard service door. The inverters will be 30 feet long, 11 feet wide, and 12 feet tall. They will have an external cooling fan that will generate a maximum of 85 dB(A) at a distance of 1 meter. A motion-activated, downward facing exterior light will be mounted on the inverter housing. The exterior light will be mounted approximately two feet above the inverter housing's entrance door. The inverter housing, because of its enclosed nature, will also serve as the operations and maintenance area for the facility. Depending on final installation and site grade there may be a set of stairs to access the service door to the enclosure.

2.1.3 Electrical Collection and Feeder System

The electrical collection and feeder system will be predominantly underground connecting module rows to each other and to the inverters. There will be an underground feeder line running from the inverters to the point of interconnection where Aurora will mount electrical switching and metering equipment needed to meet Xcel Energy's interconnection requirements.

2.1.4 Fence

The security fence surrounding the facility will consist of up to seven feet of chain link, agricultural fence attached to wooden posts topped by a one to two foot extension of monofilament cable tilted 45 degrees outward from the vertical plane of the agricultural fence portion. The agricultural fence will consist of a square or rectangular grid of woven wire. A gap, approximately 7" in height, will be left open between the ground and the agricultural fence sections to allow for movement of smaller animal species into and out of the site. There will be two gates (approximately sixteen to twenty feet wide) designed to allow access to and from the site. One gate will be located on the southeast side of the fence, and one gate on the northwest side of the fence. One downward facing security light mounted on a ten foot pole will be located near each gate. The lighting will be used on a minimal basis for maintenance activities and security reasons. The lighting will have the ability to be activated manually or automatically by the security system.

2.2 Layout

The final design at the Lawrence Creek Facility creates a more efficient solar energy facility than the design shown in the map accompanying the permit. It meets final equipment specifications, and addresses the Commission's and other regulatory agencies' permit conditions. The changes employed from the preliminary design resulted in a reduction in the solar panel array area and the number of inverters. The selection and specifications of the final equipment made it possible for Aurora to reduce the amount of infrastructure while maintaining a 4.0 MW solar energy project. The selection of a more flexible racking system also allowed Aurora to limit grading at the site.

The final design refinements allowed Aurora to reduce the impacts to the human and natural environment. The refinements reduced the length of the access road at the facility, which created less impervious surface. The reduction in impervious surface also allowed for a smaller stormwater retention area. The noise impacts from the inverters will be less than anticipated because there are fewer inverters in the final design than in the preliminary design. The amount of grading has been reduced due to the decreased footprint of the solar array. The reduced solar array footprint has also allowed for a reduction in wetland impacts. The visual impact of the facility is smaller because of the reduced number of solar panel arrays. A temporary laydown area was added within the development area because the facility redesign increased the space available to accommodate construction activity.

3 Landscaping

3.1 Adjacent Land Uses and Existing Topography

The Lawrence Creek Facility is generally surrounded by agricultural and rural residential land with isolated patches of woodland and wetland habitat. The facility is located west of the city of Taylors Falls, and north of County Road 37 (310th Street North). The facility location avoids the developed and forested areas near Taylors Falls and the St. Croix River Valley to the east, which are tourist destinations. Land cover within the development area is dominated by agricultural cover including both cultivated crops (97.6 percent) and pasture and haylands (2.2 percent). The nearest homesite (hosting a house and outbuildings) is located approximately two hundred eighty feet southeast from the facility (and two hundred feet from the proposed access road at the southern end of the facility), as shown on the Constraints Site Plan. Topography at the site and immediately surrounding it is flat to gently rolling.

3.2 Planned Landscaping

A site-specific landscaping plan has been developed to mitigate the visual impact of the facility to neighboring homes. Tree clearing at the site will be limited to a portion of the proposed access road and a small line of trees nears the northwestern edge of the solar array. The proposed planned landscaping at the facility includes forty (40) Cardinal Dogwood plants and twenty-eight (28) Black Hills Spruce trees in various locations along the southeastern portion of the site to provide a naturally vegetated visual buffer for the benefit of the resident east of the facility, as shown on the Landscape Plan.

The seeding plan for the facility includes planting a no mow turf with forbs under the array and between rows of panels. Large open areas within and around the array will be planted with a pollinator friendly mix. Delineated wetlands within the fenced areas will be planted with a wet meadow seed mix. Maintenance will include intermittent haying (or mowing provided minimum blade heights are established and the cut biomass is bagged). The seed mixes have been selected through ongoing collaboration with the Minnesota Department of Natural Resources.

4 Consistency with Environmental Review

The information that follows documents consistency with and changes to the environmental information provided in the EA, the Commission's Site Permit process, and the Commission's Findings of Fact supporting its permit decision for the Lawrence Creek Facility. If a category is not addressed herein, it can be assumed there is no change to the impact discussed in the record developed for the Site Permit. The equipment-associated footprint of the Lawrence Creek Facility is smaller than what was proposed in the initial design. As a result, the impacts are generally equal to or less than those discussed in the Site Permit Application and the EA.

The following topics are of note when considering the design refinements at the Lawrence Creek Facility:

- As shown on the Constraints Site Plan, the distance between the nearest home and the development area is 280 feet (200 feet to the development area of the proposed access road); in the Site Permit Application and Section 6.12 (Lawrence Creek site-specific information) of the EA, the distance was listed as approximately 230 feet;

Site Plan Narrative

Page 5 of 6

- The noise impacts from the inverters will be less than anticipated because there are fewer inverters in the final design than in the preliminary design. The noise level remains within the range of noise levels discussed in the Site Permit Application and will not exceed maximum noise levels set forth in Minnesota Rules 7030.0040;
- The visual impact of the facility is smaller because of the reduced number of solar panel arrays;
- An Agricultural Impact Mitigation Plan has been developed in cooperation with the Minnesota Department of Natural Resources and Minnesota Department of Agriculture. This plan will be carried out beginning with construction and continue during the life of the project to minimize impacts on soil for future agricultural use;
- The facility requires some grading to provide a level surface for the solar arrays. The preliminary design for the facility anticipated grading of approximately 10.7 acres of the site during construction. Because the facility will host less infrastructure than initially thought, the amount of impact from grading is expected to be closer to 3.0 acres based on the final design;
- Per field surveys, the Lawrence Creek Facility does not host any non-agricultural production grassland or shrub land vegetative cover. There are no sensitive native plant communities at the facility. The impacts to vegetation will be positive because the facility will be re-vegetated with low-growing species, as shown on the Seeding Plan. The pollinator friendly plants typically provide better quality habitat and soil-building conditions than cultivated crops;
- No rare or unique natural resources were identified in the field surveys of the facility making the impacts similar to less than those described in the site permit application;
- As depicted on the constraints plan, tree clearing at the site will be limited to a portion of the proposed access road and a small line of trees near the northwestern edge of the solar array. All sites located within Northern Long Eared Bat territory with less than one acre of trees will not be subject to tree removal from June 1 thru July 30, Sites with greater than one acre of tree removal will not be subject to tree removal from April 1 through September 30.
- The facility's final design has resulted in a reduction of direct wetland impact to approximately 0.02 acres (765 square feet). The unavoidable direct impact will include construction of access road into the site and a portion of the perimeter fencing. The preliminary design for the Lawrence Creek Facility, as permitted and approved on November 4, 2014 by Chisago County as local government unit under the Minnesota Wetland Conservation Act and on April 17, 2015 by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act, indicated that a wetland impact, primarily associated with grading in, was estimated at approximately 0.12 acres (5,200 square feet). In accordance with that approval, Aurora has provided compensatory mitigation for the proposed 0.12 acres of wetland impact through the purchase of corresponding wetland preservation credits through

Site Plan Narrative

Page 6 of 6

the State wetland bank system. This mitigation remains unchanged, despite the subsequent reduction in wetland impact.

- In the site permit application, Aurora noted that there was potentially a test well located in the immediate vicinity of the Lawrence Creek Facility. Aurora obtained documentation through the Minnesota Department of Health County Well index that the well, Taylor Falls Well (ID# 686274) located to the south of the facility was abandoned and sealed.

Lawrence Creek Solar, LLC

Solar Array Project Chisago County, Minnesota Issued For Construction

Project Contact Information

No.	Company	Name	Contact #
OWNER	AURORA DISTRIBUTED SOLAR, LLC SPV: LAWRENCE CREEK SOLAR, LLC	STEVE ROUSSEAU	775-453-8868
CONTRACTOR	BIOSAR AMERICA LLC	JONMARK PIERCE	760-908-0672
CIVIL ENGINEER OF RECORD	WESTWOOD	AUGUST CHRISTENSEN	952-906-7430

Data Set Information

BASE FILE	FILE NAME	PROVIDER	DATE
PV ARRAY	Layout_Lawrence Creek_3x24_rev01.dwg	BIOSAR	10/07/2015
ALTA	0003557.01SURV.dwg	WESTWOOD	04/15/2014
TOPO	0003557.01D.TM.dwg	WESTWOOD	04/24/2014
CIVIL	0006690-10SITE.dwg	WESTWOOD	10/09/2014
WETLANDS	0006690-10WTLND.dwg	STANTEC	JUNE, 2014

Site Preparation Quantities	
Item	Quantity
Site Preparation Area	24.5 acres
Tree Removal Area	3,340 SF

Site Disturbance Quantities	
Item	Quantity
Proposed Grading Area	0.38 acres
Proposed Road Area	0.61 acres
Proposed Site Disturbance Area	23.54 acres

Project Quantities	
Item	Quantity
Project Access Road Centerline Length	605 LF
Internal Road Centerline Length	1,875 LF
Permanent Security Fence Length	5,675 LF
16' Gate	2 EA.
Proposed Arch Culverts	2 EA.
Silt Fence Length	5,265 LF
Fiber Roll Length	6,335 LF
Entrance Light Poles	2 EA.
Aggregate Road Base	675 CY
Wetland Impacts	785 SF

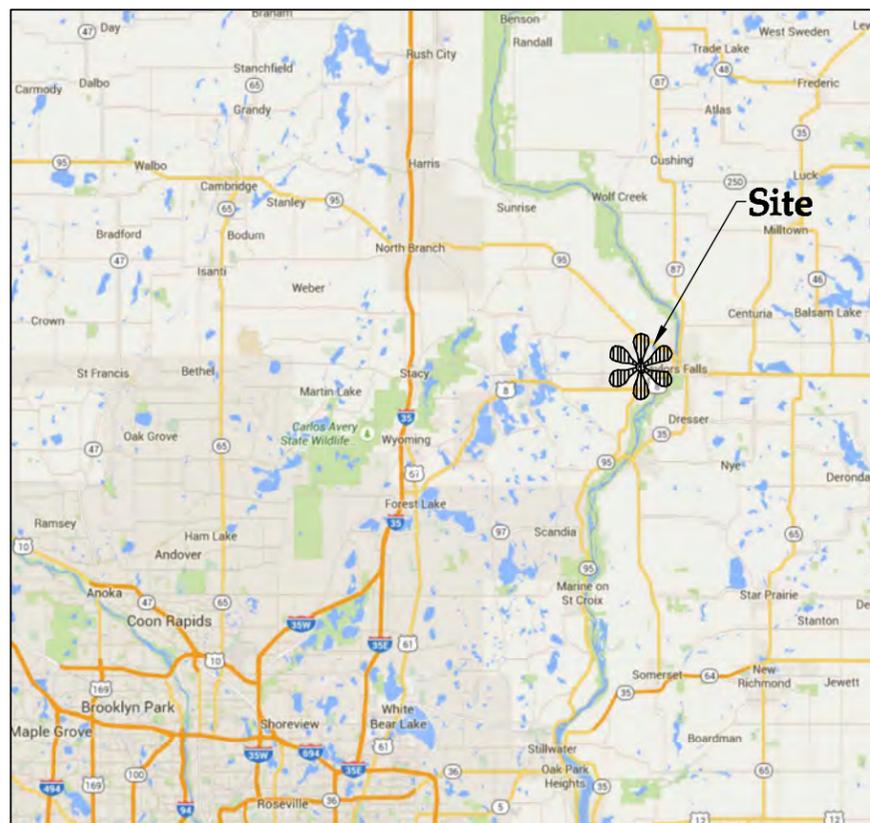
Earthwork		
Item	Cut	Fill
Inverter Skid Fill*	0 CY	30 CY
Road Grading	0 CY	645 CY
Road Subcut (8")	675 CY	0 CY
Total	675 CY	675 CY

EXCESS = 0 CY

QUANTITIES SHOWN ARE IN-PLACE ESTIMATES
 NO SHRINK OR SWELL IS ASSUMED
 NO GROUND LOSS IS INCLUDED
 NO TRENCH SPOILS ARE INCLUDED
 NO TOPSOIL STRIPPING INCLUDED
 *ON SITE SOILS MAY NOT BE DEEMED SUITABLE FOR
 INVERTER FILL MATERIAL

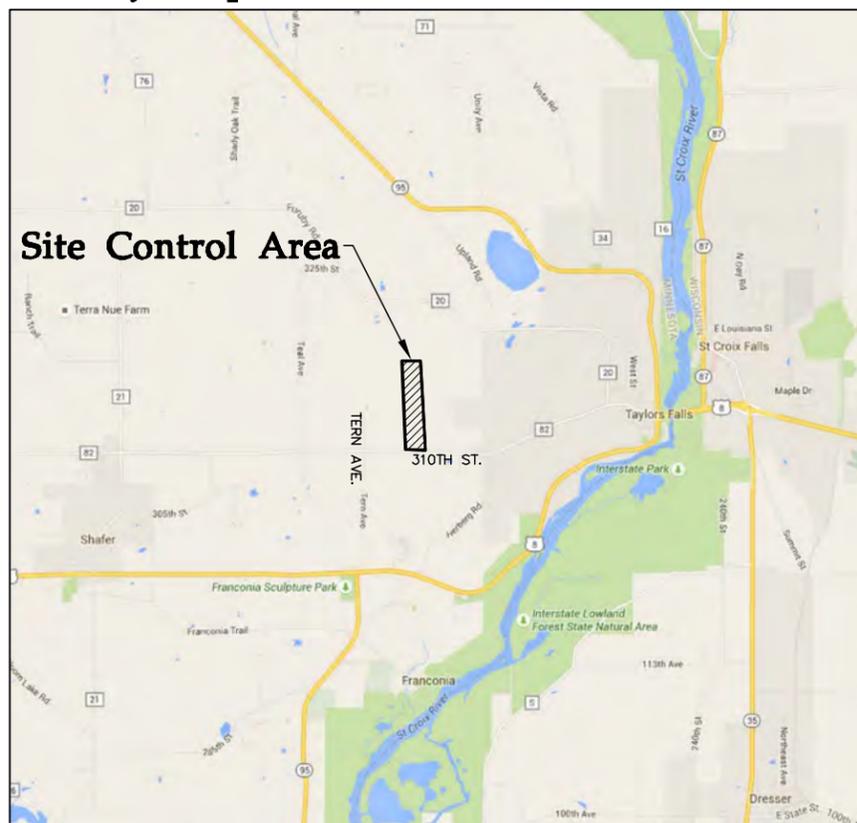
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Sheet Number	Sheet Title
T.100	Cover
C.100	Overall Site Plan
C.200	Grading Plan 1
C.201	Grading Plan 2
C.202	Grading Plan 3
C.300	Construction Details
C.301	Construction Details
C.302	Construction Details
C.303	Erosion Control Details

Regional Map



SOURCE: MAP DATA ©2015 GOOGLE (NOT TO SCALE)

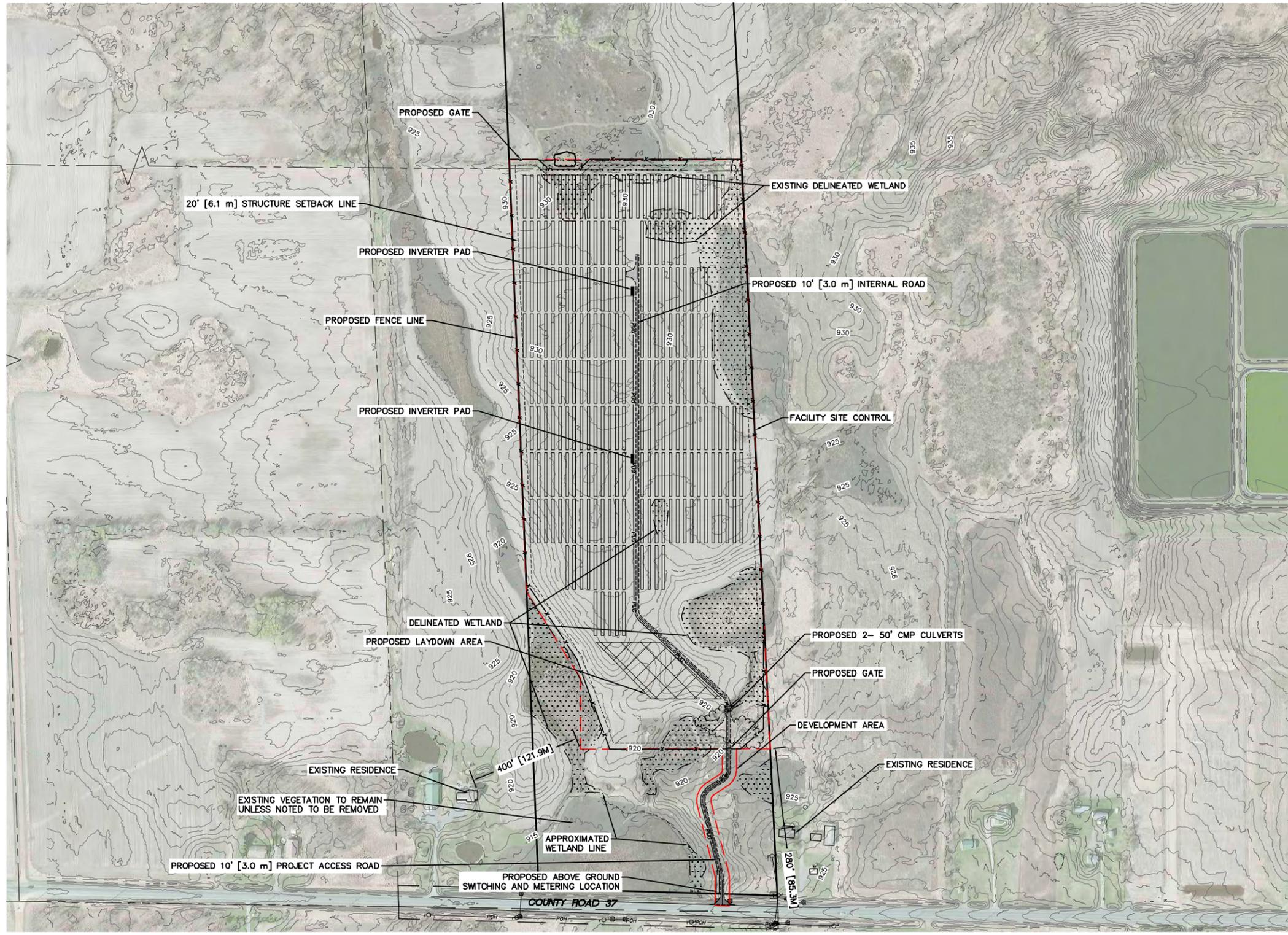
Vicinity Map



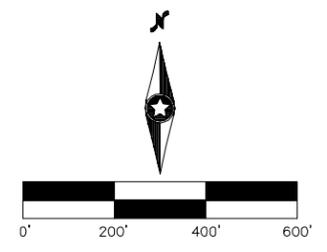
SOURCE: MAP DATA ©2015 GOOGLE (NOT TO SCALE)

Issued For Construction

 Biosar America, LLC 5962 La Pl Ct #220 Carlsbad, CA 92008		 Aurora Distributed Solar, LLC One Tech Drive, Suite 220 Andover, MA 01810		I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly licensed PROFESSIONAL ENGINEER under the laws of the State of Minnesota. Print Name: August Dean Christensen Signature: Date: 12/16/2015 License No.: 47173	
 Phone (952) 937-5150 7699 Anagram Drive Fax (952) 937-5822 Eden Prairie, MN 55344 Toll Free (888) 937-5150 westwoodps.com Westwood Professional Services, Inc.		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
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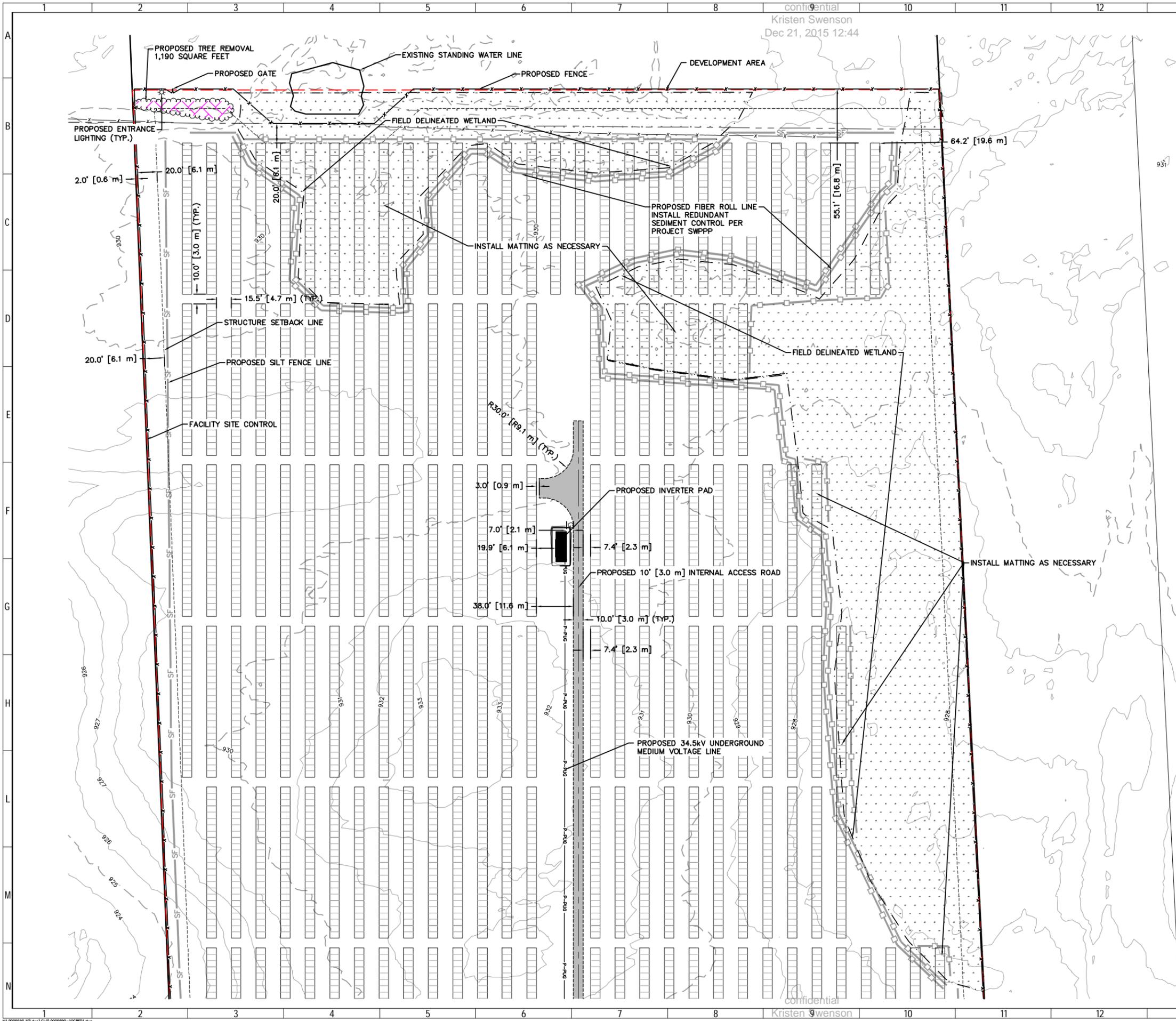


- LEGEND:**
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 - DEVELOPMENT AREA
 - PROPOSED SOLAR ARRAY
 - PROPOSED PROJECT ACCESS ROAD
 - PROPOSED INTERNAL ROAD
 - PROPOSED INVERTER PAD
 - PROPOSED FENCE LINE
 - EXISTING 5' CONTOURS
 - EXISTING 1' CONTOURS
 - EXISTING RIGHT OF WAY LINE
 - EASEMENT LINES
 - EXISTING OVERHEAD POWER
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 - PROPOSED FARMER ACCESS AREA
 - PROPOSED STRUCTURE SETBACK LINE
 - FIELD DELINEATED WETLAND



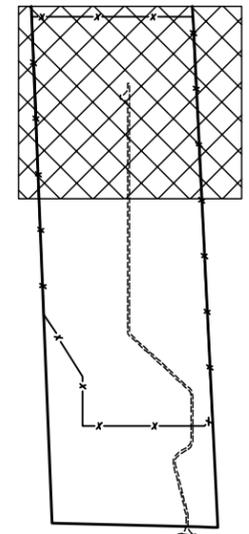
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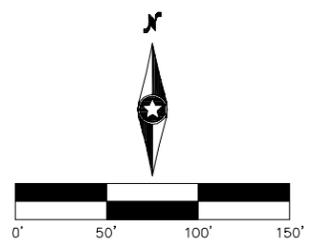
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 - PROPOSED LAYDOWN AREA
 - PROPOSED GRADING LIMIT LINE
 - PROPOSED ENTRANCE LIGHTING
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 - FIELD DELINEATED WETLAND
 - PROPOSED TREE REMOVAL AREA

Key Map



GENERAL NOTES:

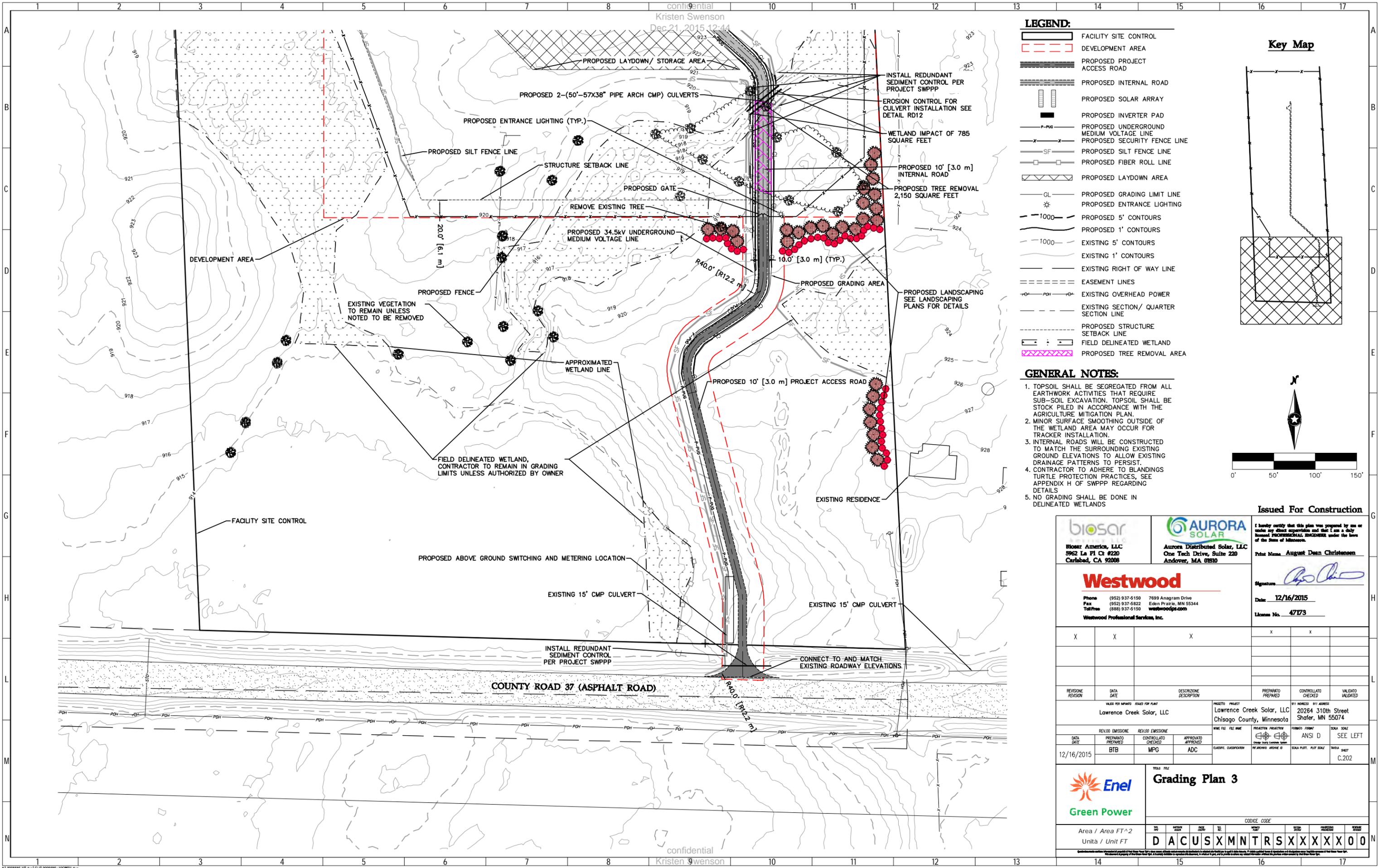
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2. MINOR SURFACE SMOOTHING OUTSIDE OF THE WETLAND AREA MAY OCCUR FOR TRACKER INSTALLATION.
3. INTERNAL ROADS WILL BE CONSTRUCTED TO MATCH THE SURROUNDING EXISTING GROUND ELEVATIONS TO ALLOW EXISTING DRAINAGE PATTERNS TO PERSIST.
4. CONTRACTOR TO ADHERE TO BLANDINGS TURTLE PROTECTION PRACTICES, SEE APPENDIX H OF SWPPP REGARDING DETAILS.
5. NO GRADING SHALL BE DONE IN DELINEATED WETLANDS



Issued For Construction

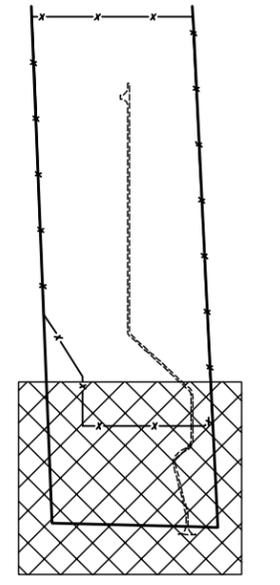
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Kristen Swenson
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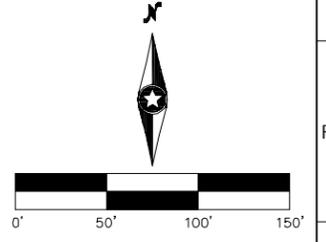
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 - EXISTING SECTION/ QUARTER SECTION LINE
 - PROPOSED STRUCTURE SETBACK LINE
 - FIELD DELINEATED WETLAND
 - PROPOSED TREE REMOVAL AREA

Key Map



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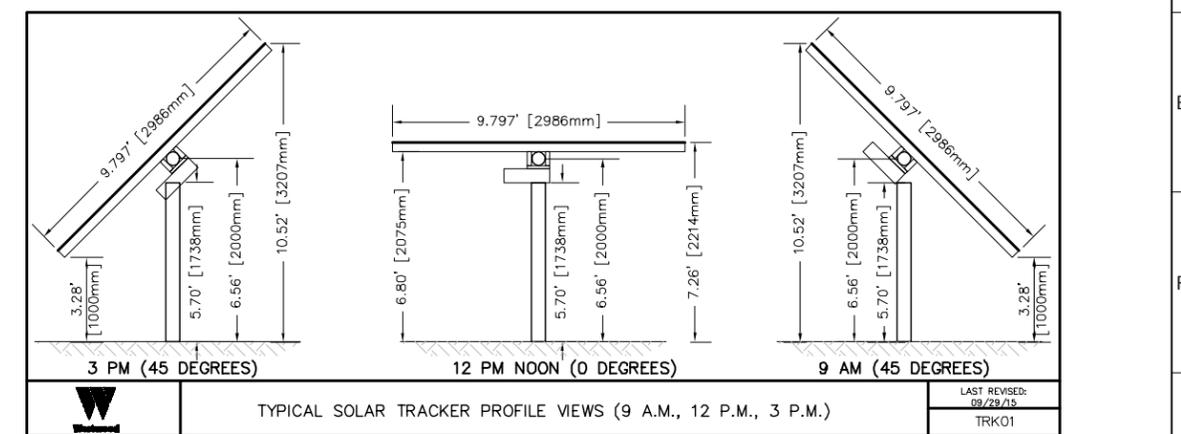
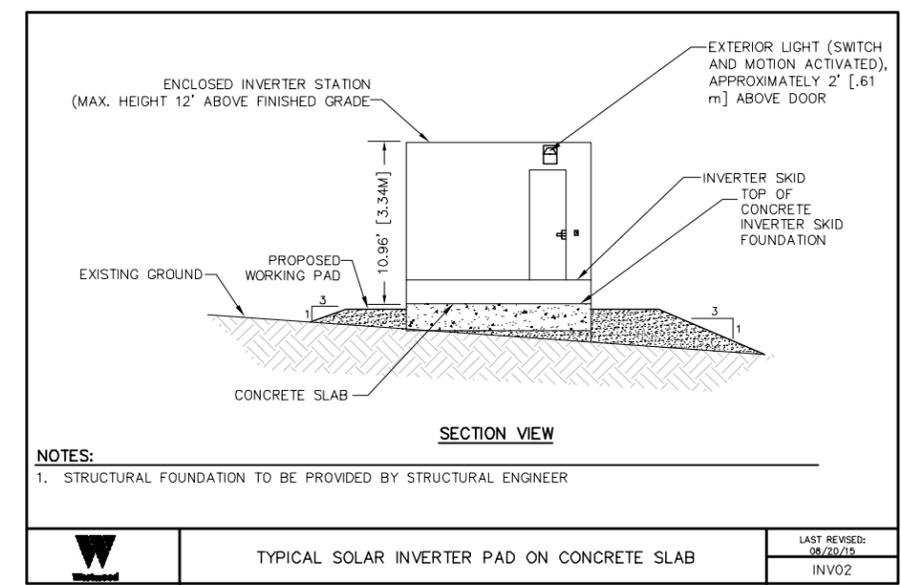
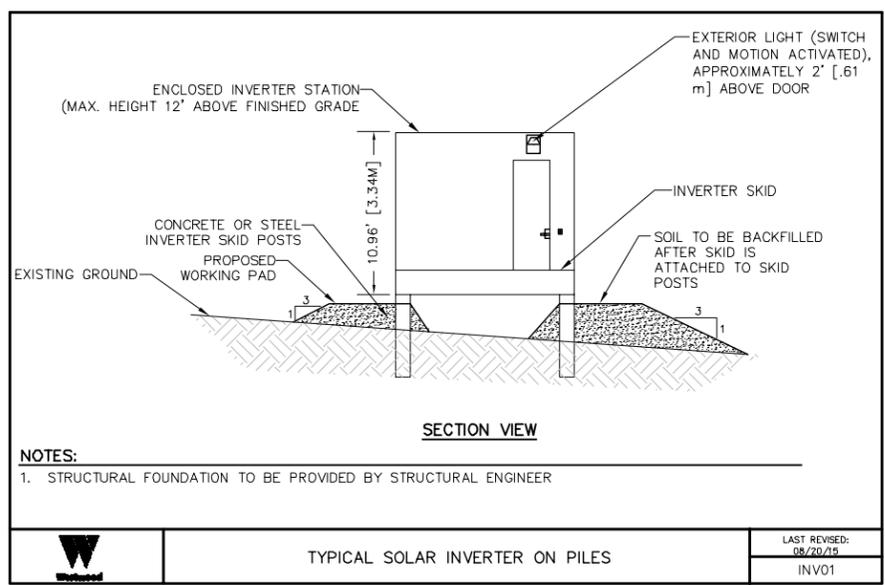
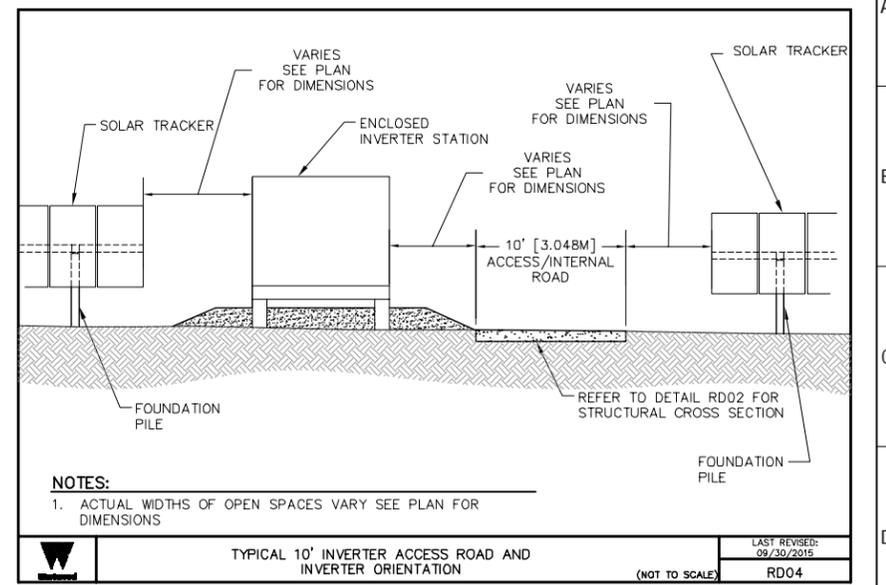
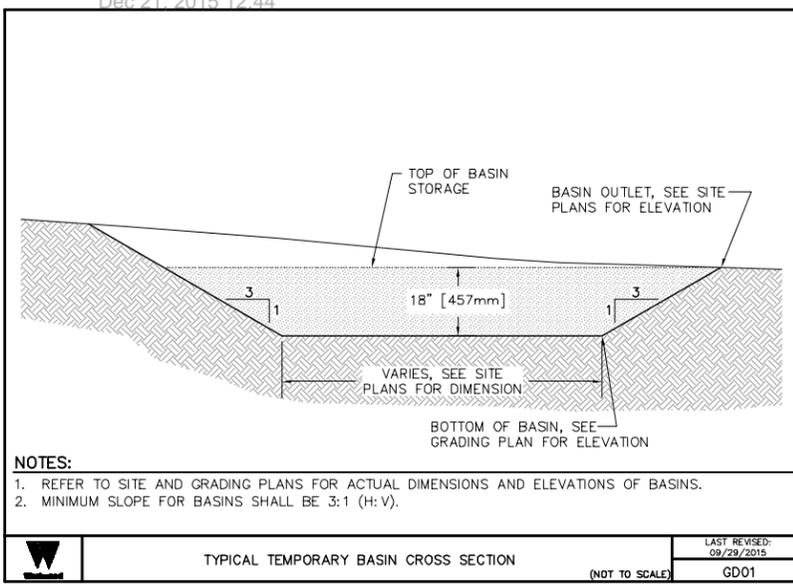
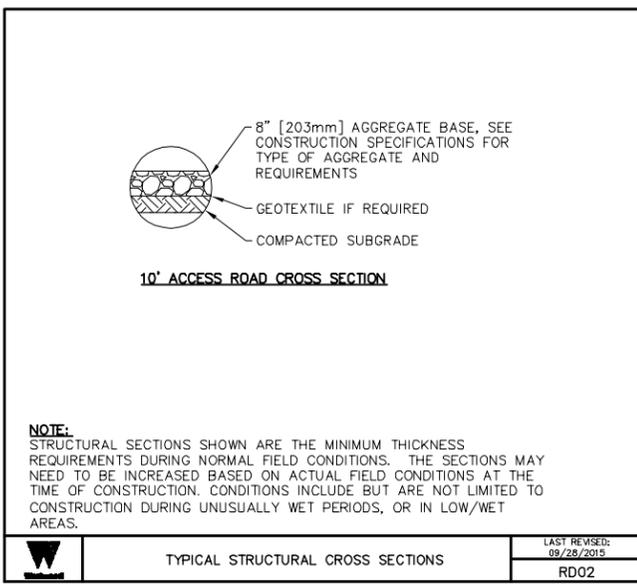
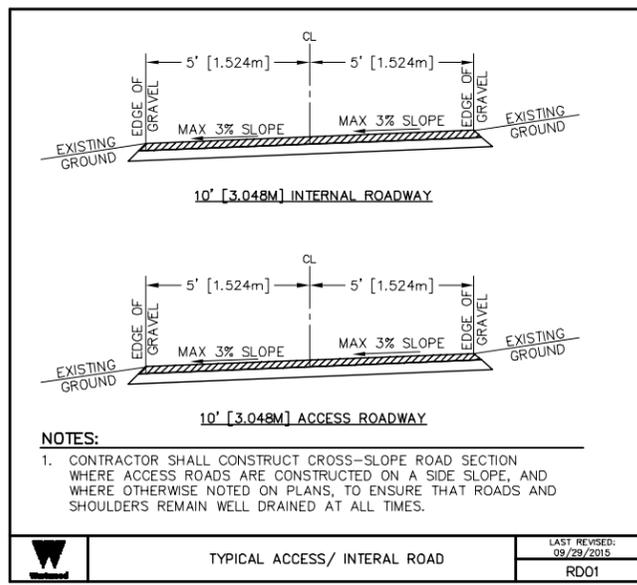
1. TOPSOIL SHALL BE SEGREGATED FROM ALL EARTHWORK ACTIVITIES THAT REQUIRE SUB-SOIL EXCAVATION. TOPSOIL SHALL BE STOCK PILED IN ACCORDANCE WITH THE AGRICULTURE MITIGATION PLAN.
2. MINOR SURFACE SMOOTHING OUTSIDE OF THE WETLAND AREA MAY OCCUR FOR TRACKER INSTALLATION.
3. INTERNAL ROADS WILL BE CONSTRUCTED TO MATCH THE SURROUNDING EXISTING GROUND ELEVATIONS TO ALLOW EXISTING DRAINAGE PATTERNS TO PERSIST.
4. CONTRACTOR TO ADHERE TO BLANDINGS TURTLE PROTECTION PRACTICES, SEE APPENDIX H OF SWPPP REGARDING DETAILS.
5. NO GRADING SHALL BE DONE IN DELINEATED WETLANDS.



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 Biosar America, LLC 5962 La Pl Ct #220 Carlsbad, CA 92008	 Aurora Distributed Solar, LLC One Tech Drive, Suite 220 Andover, MA 01810	I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly licensed PROFESSIONAL ENGINEER under the laws of the State of Minnesota. Print Name: August Dean Christensen Signature: Date: 12/16/2015 License No.: 47173			
 Phone (952) 937-5150 7699 Anagram Drive Fax (952) 937-6822 Eden Prairie, MN 55344 Toll Free (888) 937-5150 westwoodps.com Westwood Professional Services, Inc.					
X	X	X	X	X	
REVISION	DATE	DESCRIPTION	PREPARED	CONTROLLED	VALIDATED
VALUED PER IMPACT ASSESSED FOR PLAN Lawrence Creek Solar, LLC			PROJECT PREPARED Lawrence Creek Solar, LLC Chisago County, Minnesota		
REVISED EMISSIONS CONTROLLED CHECKED APPROVED			PROJECT PREPARED PROJECTED SCALE ANSI D SEE LEFT		
DATE	PREPARED	CONTROLLED	APPROVED	CLASSIFICATION	SCALE
12/16/2015	BTB	MPG	ADC		C.202
		Grading Plan 3			
Area / Area FT^2 Units / Unit FT		CODICE CODE D A C U S X M N T R S X X X X X 0 0			

confidential
Kristen Swenson
Dec 21, 2015 12:44



TYPICAL SOLAR INVERTER ON PILES

LAST REVISED: 08/20/15
INV01

TYPICAL SOLAR INVERTER PAD ON CONCRETE SLAB

LAST REVISED: 08/20/15
INV02

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Westwood Professional Services, Inc.
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Fax: (952) 937-5822
Tel/Fax: (888) 937-5150, westwoodps.com

AURORA SOLAR
Aurora Distributed Solar, LLC
One Tech Drive, Suite 220, Andover, MA 01810

bio-solar
Biosar America, LLC
5962 La Pl Ct #220, Carlsbad, CA 92008

Signature: August Dean Christensen
Date: 12/16/2015
License No.: 47173

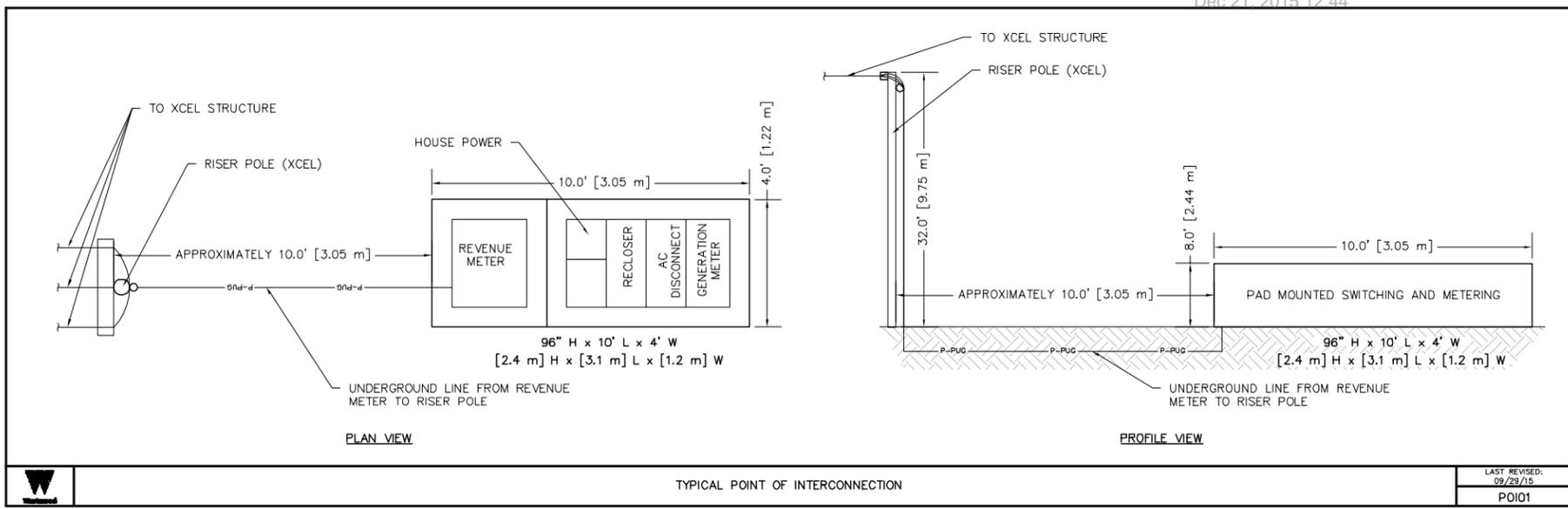
REVISION	DATE	DESCRIPTION	PREPARED	CHECKED	VALIDATED
1	12/16/2015	BTB	MPG	ADC	

Enel Green Power

Construction Details

Area / Area FT^2, Unita / Unit FT

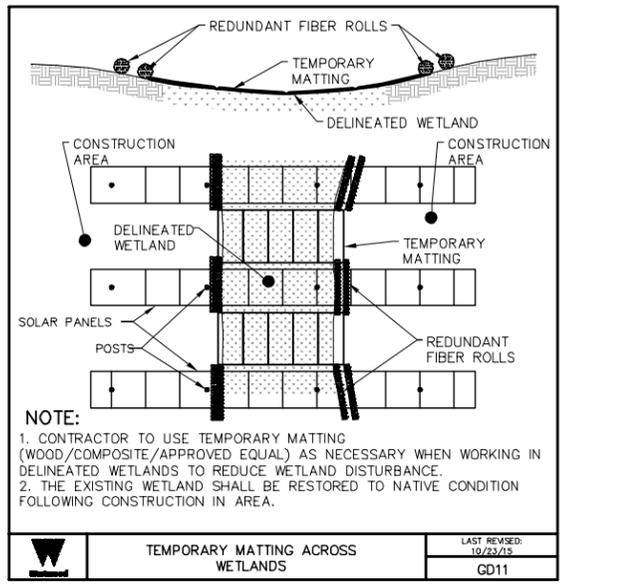
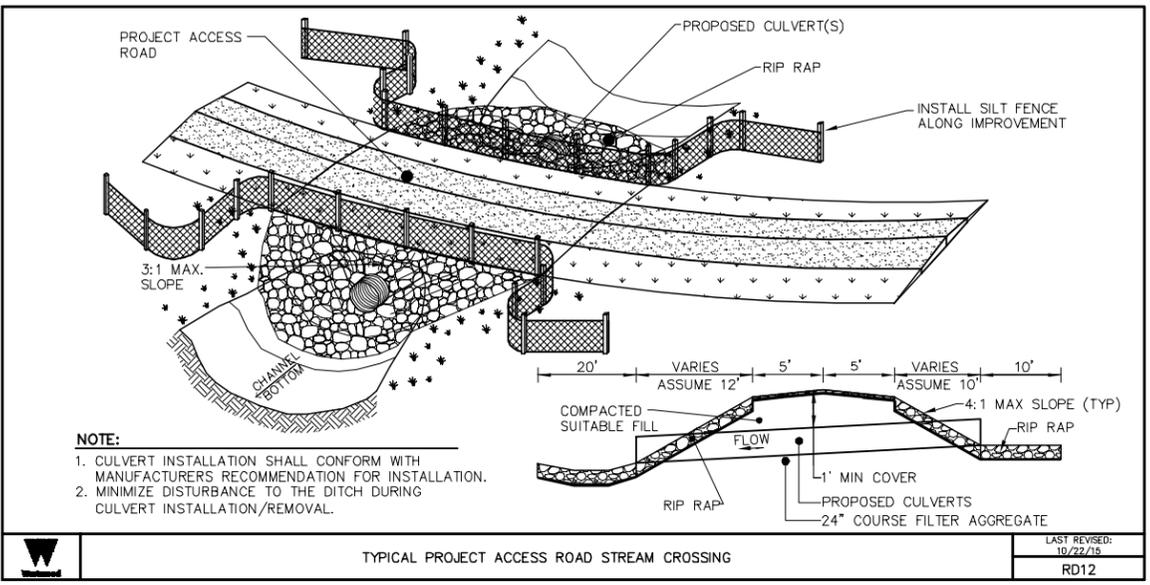
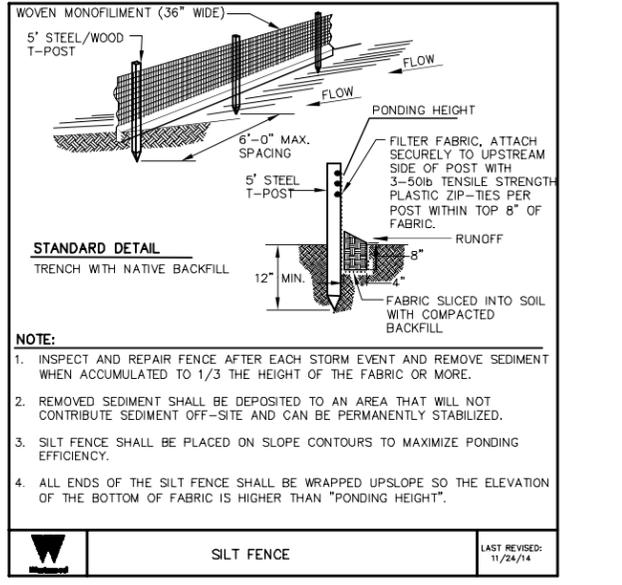
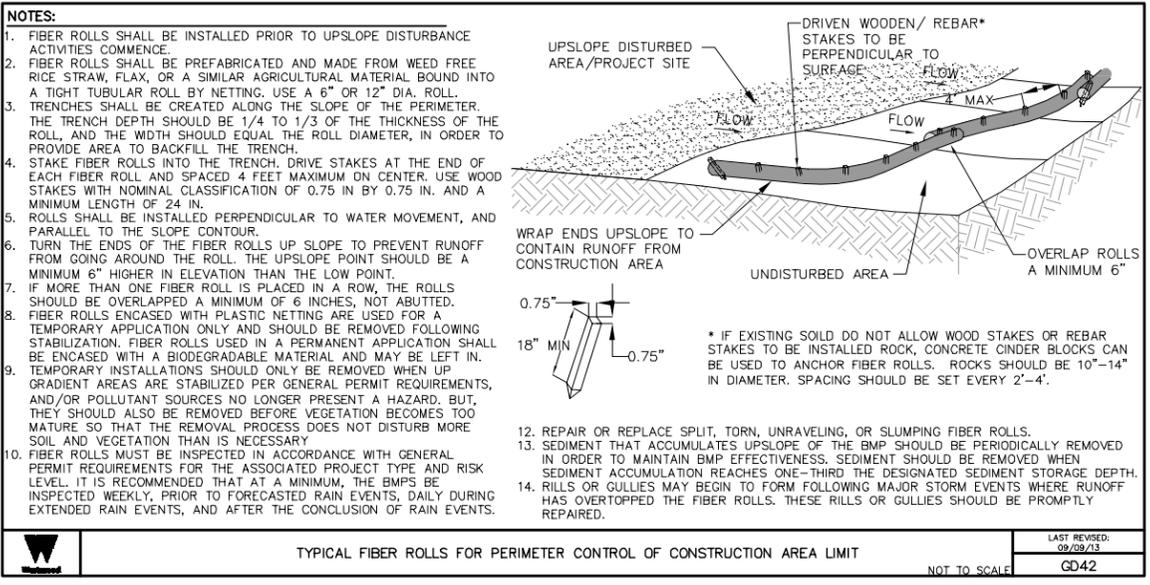
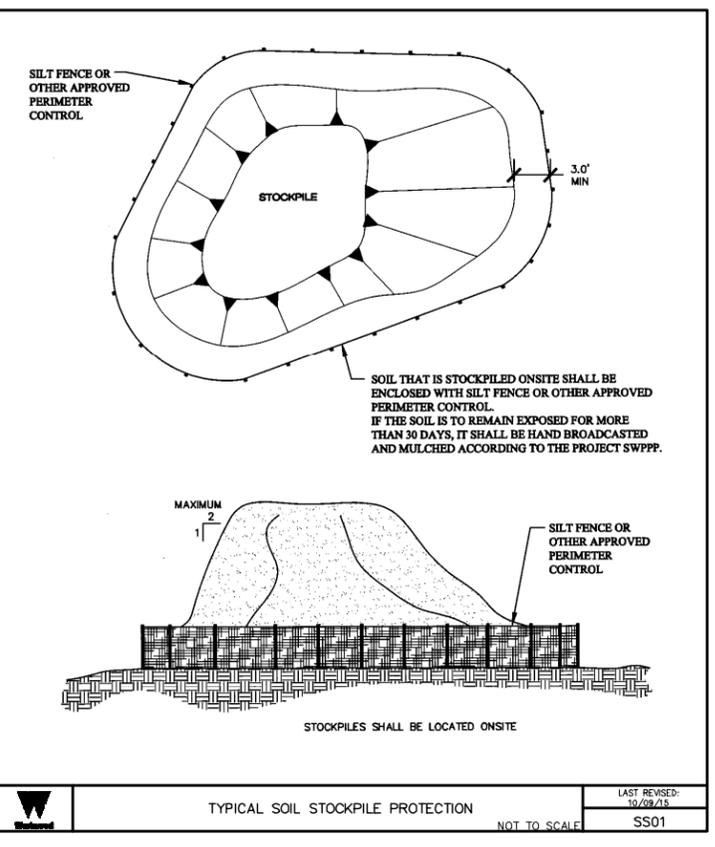
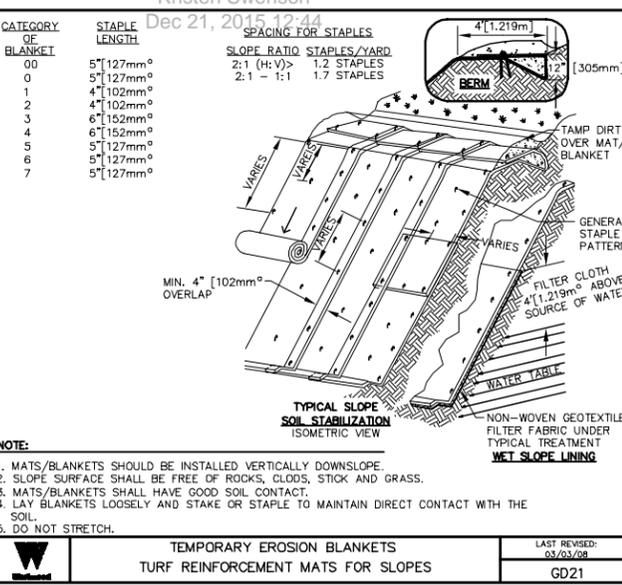
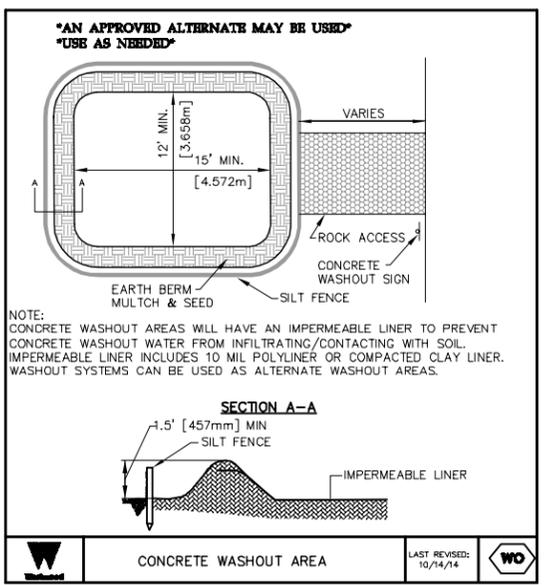
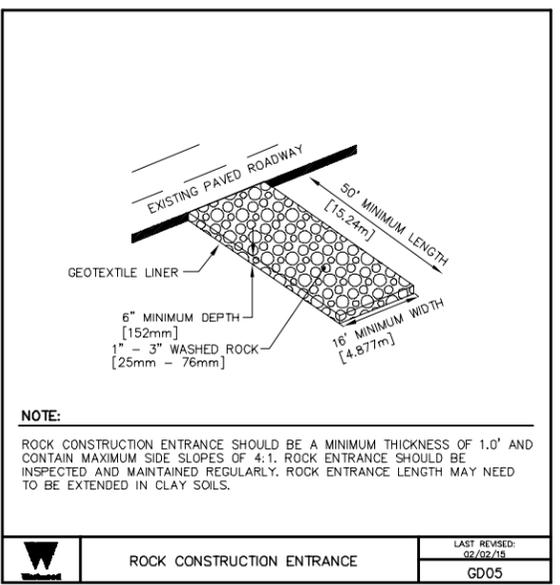
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 Biosar America, LLC 5962 La Pl Ct #220 Carlsbad, CA 92008		 Aurora Distributed Solar, LLC One Tech Drive, Suite 220 Andover, MA 01810		I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly licensed PROFESSIONAL ENGINEER under the laws of the State of Minnesota. Print Name: August Dean Christensen Signature: Date: 12/16/2015 License No. 47173	
 Phone (952) 937-5150 7699 Anagram Drive Fax (952) 937-5822 Eden Prairie, MN 55344 Toll Free (888) 937-5150 westwoodps.com Westwood Professional Services, Inc.					
X	X	X	X	X	X
REVISION	DATE	DESCRIPTION	PREPARED	CONTROLLED	VALIDATED
VALUED PER APPROVAL ISSUED FOR PLAN Lawrence Creek Solar, LLC			PROJECT Lawrence Creek Solar, LLC Chisago County, Minnesota	CITY ADDRESS 20264 310th Street Shafer, MN 55074	
DATA DATE	PREPARED	CONTROLLED	APPROVED	PROJECTION	SCALE
12/16/2015	BTB	MPG	ADC	ANSI D	SEE LEFT
 Green Power			Construction Details		
Area / Area FT^2 Unità / Unit FT			CODICE CODE D A C U S X M N T R S X X X X X 0 0		

Dec 21, 2015 12:44



Issued For Construction

biosar SERVICES, LLC
Biosar America, LLC
5962 La Pl Ct #220
Carlsbad, CA 92008

AURORA SOLAR
Aurora Distributed Solar, LLC
One Tech Drive, Suite 220
Andover, MA 01810

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly licensed PROFESSIONAL ENGINEER under the laws of the State of Minnesota.
Print Name: August Dean Christensen
Signature: *August Dean Christensen*
Date: 12/16/2015
License No.: 47173

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Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

REVISION	DATE	DESCRIPTION	PREPARED	CHECKED	VALIDATED

VALUED PER MPMNO ISSUED FOR PLAN

PROJECT: PROJECT
Lawrence Creek Solar, LLC
Chicago County, Minnesota

REVISED EMISSIONS

DATE	PREPARED	CONTROLLED	APPROVED
12/16/2015	BTB	MPG	ADC

PROJECT ADDRESS
20264 310th Street
Shafter, MN 55074

SCALE: ANSI D
SCALE: SEE LEFT

CLASSIFICATION: C.303

Enel Green Power

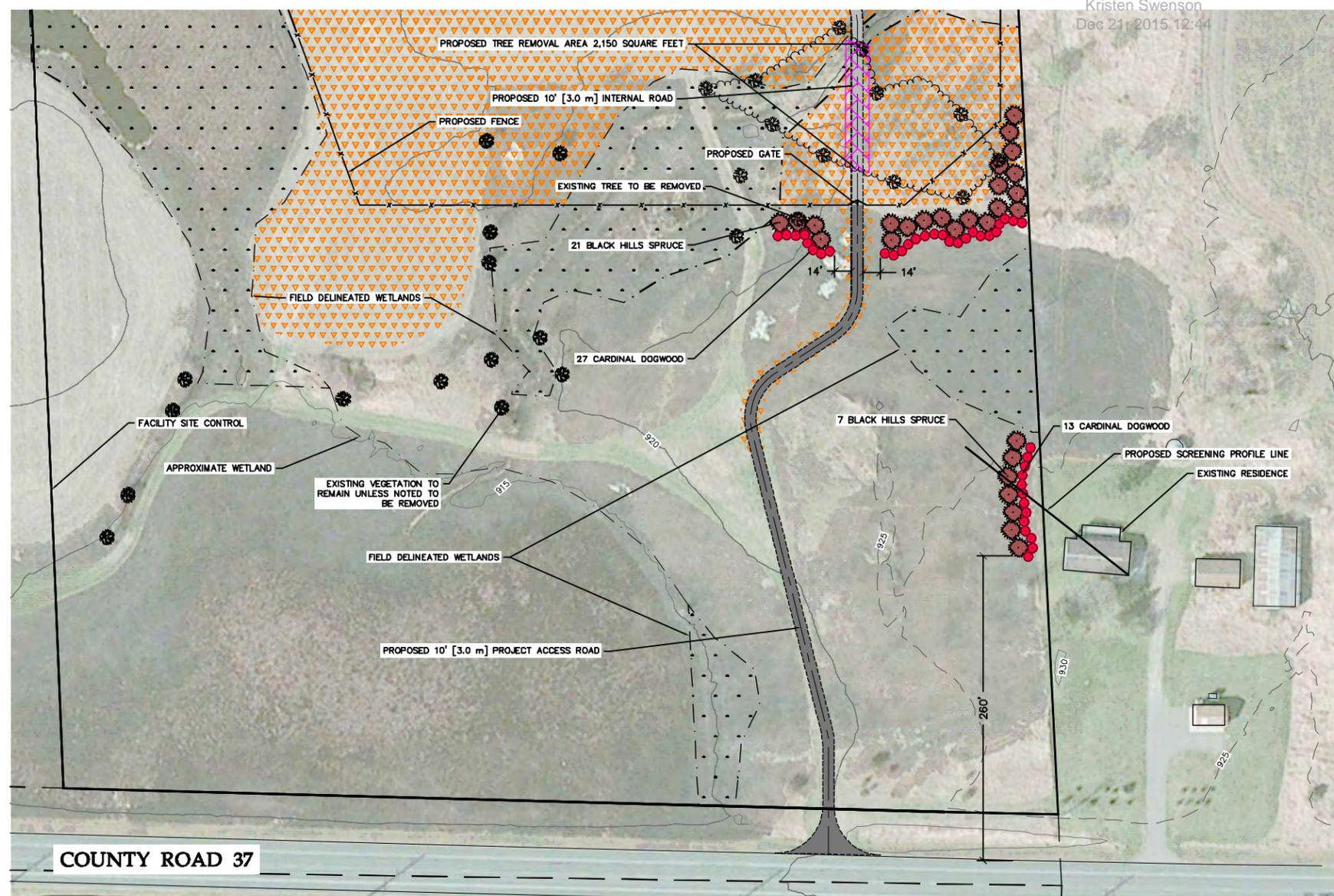
Erosion Control Details

Area / Area FT²
Unit / Unit FT

CODE: D A C U S X M N T R S X X X X X 0 0

Kristen Swenson

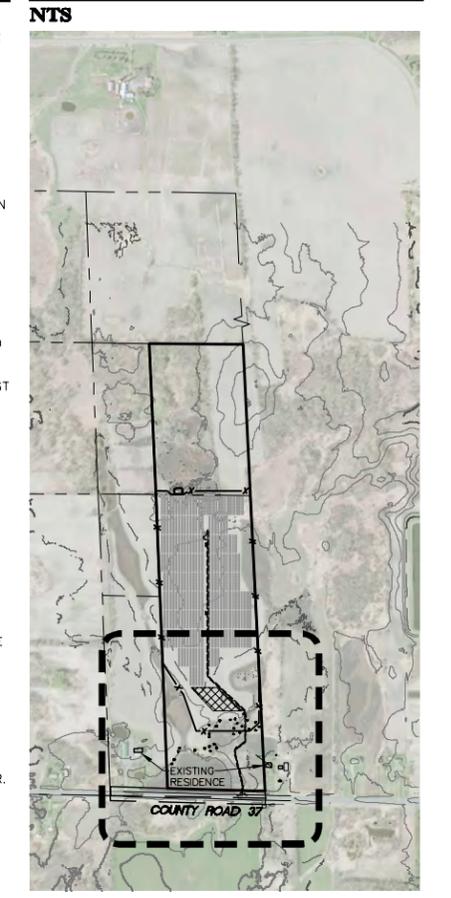
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Planting Notes

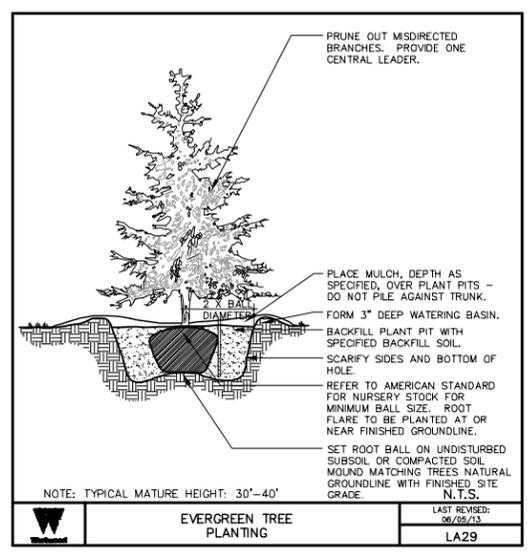
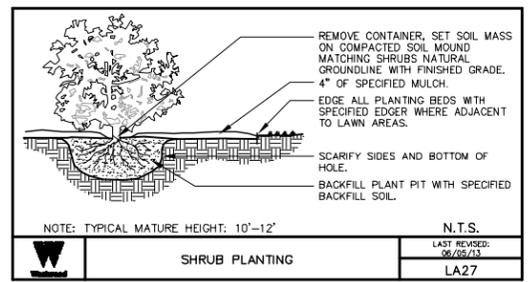
- CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 811 OR GOPHERSTATEONECALL.ORG TO VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY PLANTS OR LANDSCAPE MATERIAL.
- ACTUAL LOCATION OF PLANT MATERIAL IS SUBJECT TO FIELD AND SITE CONDITIONS.
- NO PLANTING WILL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
- ALL SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO SUBMISSION OF ANY BID AND/OR QUOTE BY THE LANDSCAPE CONTRACTOR.
- CONTRACTOR SHALL PROVIDE ONE YEAR GUARANTEE OF ALL PLANT MATERIALS. THE GUARANTEE BEGINS ON THE DATE OF THE LANDSCAPE ARCHITECT'S OR OWNER'S WRITTEN ACCEPTANCE OF THE INITIAL PLANTING. REPLACEMENT PLANT MATERIAL SHALL HAVE A ONE YEAR GUARANTEE COMMENCING UPON PLANTING.
- ALL PLANTS TO BE SPECIMEN GRADE, MINNESOTA-GROWN AND/OR HARDY. SPECIMEN GRADE SHALL ADHERE TO, BUT IS NOT LIMITED BY, THE FOLLOWING STANDARDS:
ALL PLANTS SHALL BE FREE FROM DISEASE, PESTS, WOUNDS, SCARS, ETC.
ALL PLANTS SHALL BE FREE FROM NOTICEABLE GAPS, HOLES, OR DEFORMITIES.
ALL PLANTS SHALL BE FREE FROM BROKEN OR DEAD BRANCHES.
ALL PLANTS SHALL HAVE HEAVY, HEALTHY BRANCHING AND LEAFING.
CONIFEROUS TREES SHALL HAVE AN ESTABLISHED MAIN LEADER AND A HEIGHT TO WIDTH RATIO OF NO LESS THAN 5:3.
- PLANTS TO MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2004 OR MOST CURRENT VERSION) REQUIREMENTS FOR SIZE AND TYPE SPECIFIED.
- PLANTS SHALL BE IMMEDIATELY PLANTED UPON ARRIVAL AT SITE. PROPERLY HEEL-IN MATERIALS IF NECESSARY; TEMPORARY ONLY.
- PRUNE PLANTS AS NECESSARY - PER STANDARD NURSERY PRACTICE AND TO CORRECT POOR BRANCHING OF PROPOSED TREES.
- BACKFILL SOIL AND TOPSOIL TO ADHERE TO MN/DOT STANDARD SPECIFICATION 3877 (SELECT TOPSOIL BORROW) AND TO BE NATIVE TOP SOIL FROM SITE FREE OF ROOTS, ROCKS LARGER THAN ONE INCH, SUBSOIL DEBRIS, AND LARGE WEEDS UNLESS SPECIFIED OTHERWISE. MINIMUM 4" DEPTH TOPSOIL REQUIRED FOR ALL SEEDING AREAS. MINIMUM 12" DEPTH BACKFILL TOPSOIL IS REQUIRED FOR TREE AND SHRUB PLANTINGS.
- PROVIDE MULCH FOR ALL TREE AND SHRUB PLANTINGS PER DETAIL. MULCH TO BE SHREDDED HARDWOOD AND FREE OF DELETERIOUS MATERIAL.
- EDGING TO BE SPADED EDGE, UNLESS OTHERWISE INDICATED. SPADED EDGE TO PROVIDE V-SHAPED DEPTH AND WIDTH TO CREATE SEPARATION BETWEEN MULCH AND GRASS. INDIVIDUAL TREES AND SHRUBS TO BE SPADED EDGE, UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL PROVIDE NECESSARY WATERING OF PLANT MATERIALS UNTIL THE PLANT IS FULLY ESTABLISHED. OWNER WILL NOT PROVIDE WATER FOR CONTRACTOR.
- REPAIR, REPLACE, OR PROVIDE SEED AS REQUIRED FOR ANY ROADWAY BOULEVARD AREAS ADJACENT TO THE SITE DISTURBED DURING CONSTRUCTION.
- REPAIR ALL DAMAGE TO PROPERTY FROM PLANTING OPERATIONS AT NO COST TO OWNER.

Overall Map Key



PROJECT GOAL:

- TO SCREEN RESIDENT EAST OF THE PROJECT BOUNDARY FROM THE SOLAR ARRAY.
- PROPOSED SCREENING TO BE PRESERVED FOR EFFECTIVE SCREENING

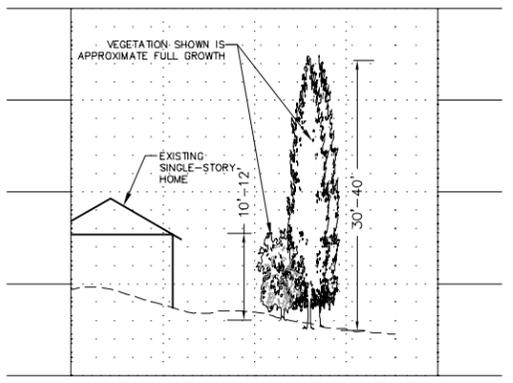


Plant Schedule

QTY.	COMMON/BOTANICAL NAME	SIZE	SPACING O.C.
40	Cardinal Dogwood / <i>Cornus sericea</i> 'Cardinal'	#5 CONT.	8'-0" O.C. TYP.
28	Black Hills Spruce / <i>Picea densata</i>	6' BB	14'-0" MIN. O.C. TYP.

NOTE: QUANTITIES ON PLAN SUPERSEDE LIST QUANTITIES IN THE EVENT OF A DISCREPANCY.

Proposed Screening Profile



NOTES:

- DOGWOOD SHRUBS TO BE PLANTED @ 8' O.C. IN FRONT OF PROPOSED EVERGREENS, AS SHOWN.



Issued For Construction

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly licensed PROFESSIONAL LANDSCAPE ARCHITECT under the laws of the State of Minnesota.

Print Name: August Dean Christensen
Signature:
Date: 12/16/2015
License No.: 47173

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Lawrence Creek Solar, LLC
20264 310th Street
Chisago County, Minnesota
Shafter, MN 55074

Enel Green Power

Landscape Plan

Area / Area FT²
Unit / Unit FT

D A C U S X M N T R S X X X X X 0 0

