



Le Sueur County, MN

Thursday, April 14, 2016

Regular session

Item 1

Le Sun LLC(applicant) Patrick Gregor (owner)

Staff Contact: Kathy Brockway or Michelle Mettler

STAFF REPORT

GENERAL INFORMATION

APPLICANT: Le Sun LLC **OWNER:** Patrick Gregor

911 ADDRESS: New Off Hwy 60

PROJECT DESCRIPTION: Grading, excavating, and filling of approximately **49,227 cubic yards** of material for the purposes of site preparation for a solar garden construction in an Agriculture "A" District.

ZONING ORDINANCE SECTIONS: Sections 8, 18

AG DISTRICT PURPOSE: The Agriculture (A) District is established for areas where agriculture uses are seen as the best and highest long term use of the land. The land itself needs to be preserved for primarily agricultural activities. These areas should avoid existing cities, residential zones and subdivisions. They should be large contiguous land areas with mostly prime soils. Rezoning should only be considered on the zone's borders in order to maintain the Zoning integrity of the District. Dwellings that are allowed should be on the edges of the open farmland where possible or utilize existing abandoned farm sites. The total number of Dwellings shall not exceed sixteen (16) per section of land with the exception of Transfer of Development Right and lots of record. Transfer of development rights may be utilized to exceed the permitted housing density of one dwelling per quarter-quarter section (40 acres), provided that the density does not exceed four dwellings per quarter-quarter section in the receiving quarter-quarter section. Lots of Record, shall be exempt from density standards.

SITE INFORMATION

LOCATION: 76.08 acre parcel in the Southeast 1/4 and Government Lot 6, Section 26, Waterville Township.

ZONING: Agriculture "A" District

GENERAL SITE DESCRIPTION: AG LAND

ACCESS: New off Hwy 60-pending MN DOT approval

EXISTING LAND USE WITHIN ¼ MILE:

North: Wooded (State Park), City Limits, Business, Single Family Dwelling
East: Ag Land, Cemetery

South: Ag land, Cemetery, Scattered residential
West: City of Elysian, Business

TOWNSHIP BOARD NOTIFICATION

The applicants contacted Al Gehrke, Waterville Township Board member on March 11, 2016.

NATURAL RESOURCES INFORMATION

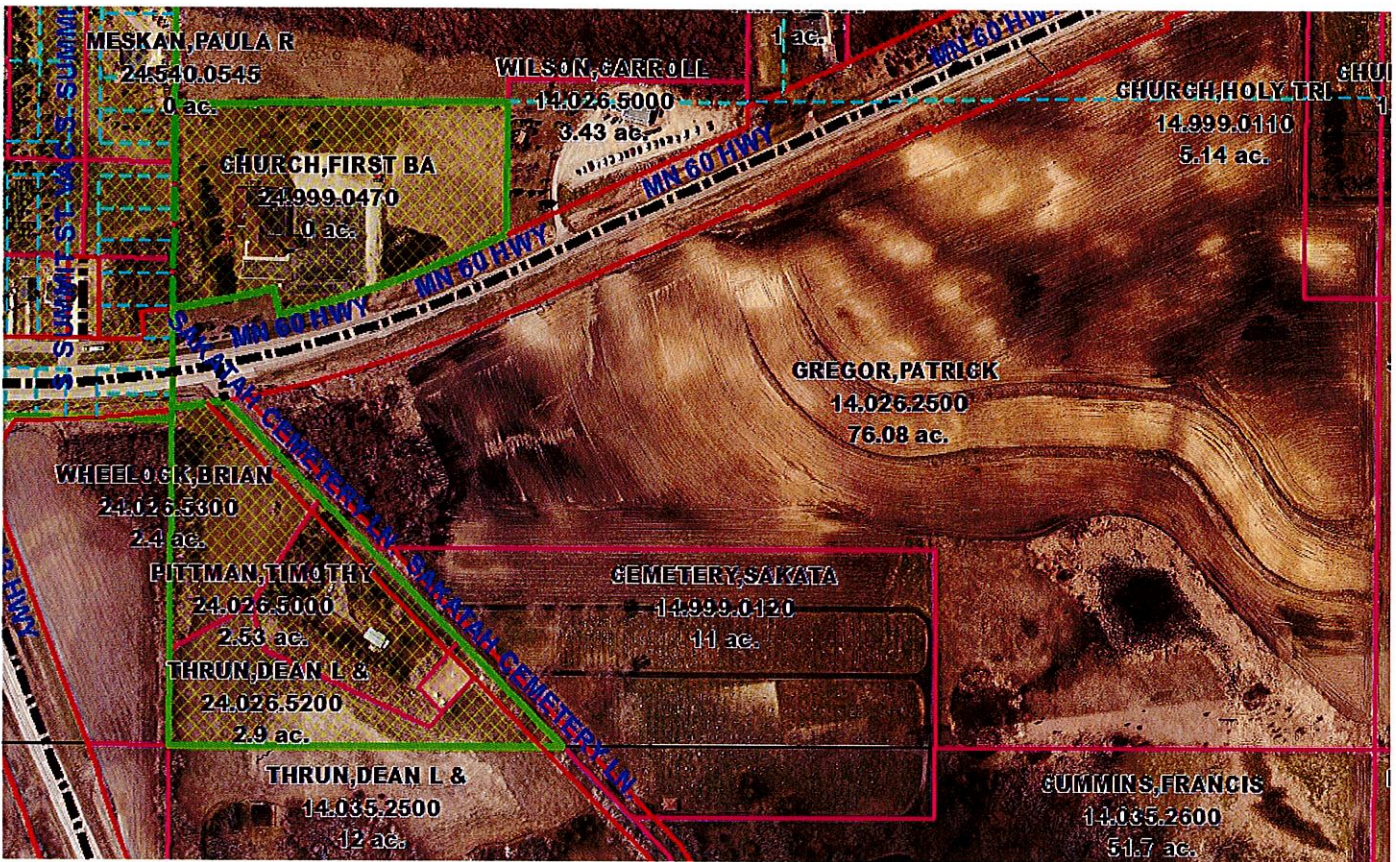
SHORELAND: The proposal is not located within the Shoreland District.

WETLANDS: According to the National Wetlands Inventory, Type 3 wetlands located in the quarter-quarter section where the project is proposed.

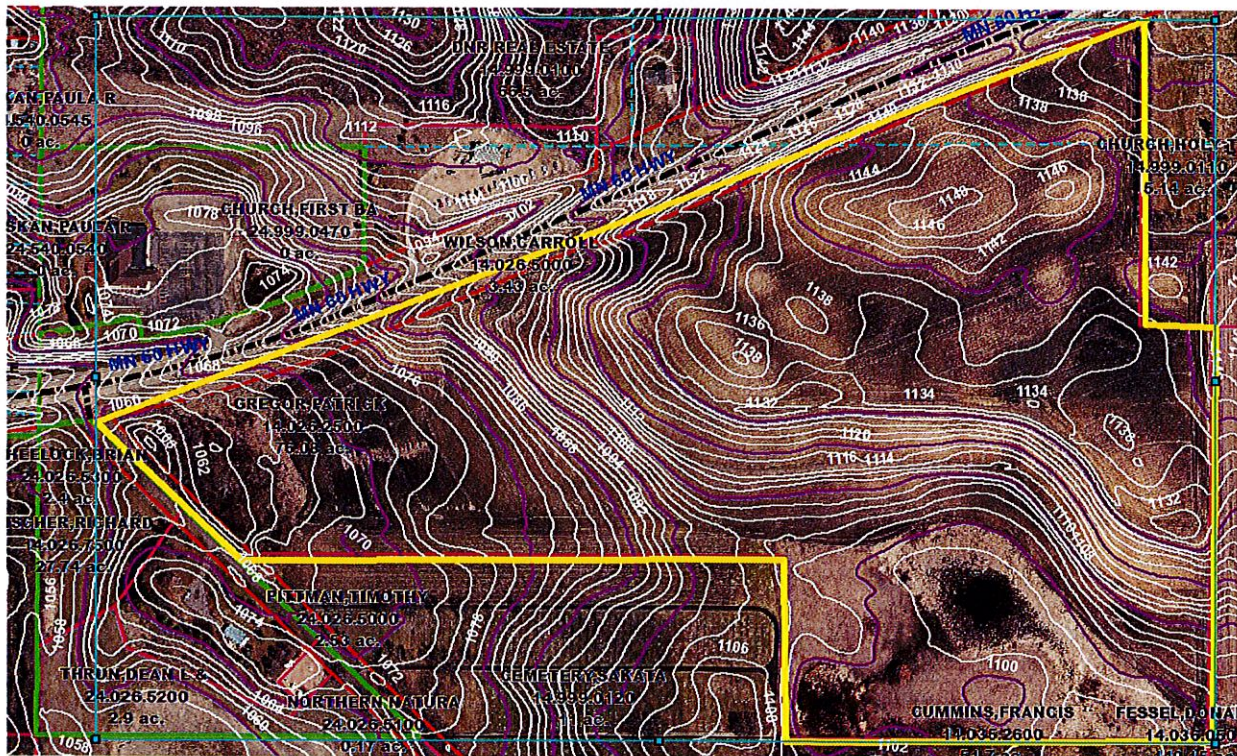
ATTACHMENTS

Application, Narrative, Site Plans, Wetland Delineation Report, MNDOT Access Application, Erosion Control Plan, Restoration Plan, Hydrology Study, Stormwater Pollution Prevention Plan.

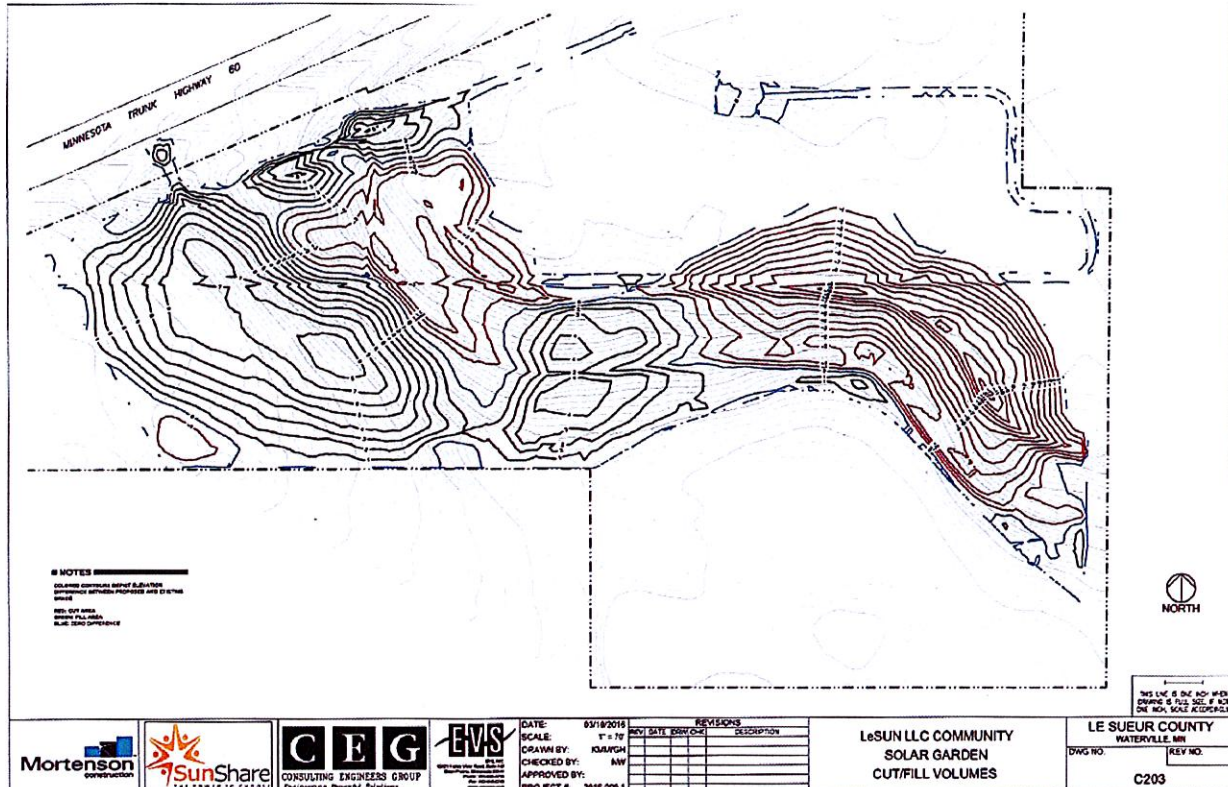
AERIALS



AERIAL WITH 2' CONTOURS



SITE PLAN



PLANNING AND ZONING COMMISSION CONSIDERATIONS

The Planning Commission and staff shall consider possible adverse effects of the proposed conditional use and what additional requirements may be necessary to reduce such adverse effects. Its judgment shall be based upon the following factors to include, but not limited to:

- Relationship to County plans.
- The geographical area involved.
- Whether such use will negatively affect surrounding properties in the area in which it is proposed.
- The character of the surrounding area.
- The demonstrated need for such use.
- Whether the proposed use would cause odors, dust, flies, vermin, smoke, gas, noise, or vibration or would impose hazards to life or property in the neighborhood.
- Whether such use would inherently lead to or encourage disturbing influences in the neighborhood.
- Whether stored equipment or materials would be screened and whether there would be continuous operation within the visible range of surrounding residences.
- Abatement of Environmental Hazards as regulated in this Ordinance
- Other factors impacting the public health, safety and welfare.

CONDITIONS

The Planning Commission shall recommend such conditions relating to the granting of said Conditional Use Permit, as they deem necessary to carry out the intent and purpose of this Ordinance or recommend that the request be denied. Such recommendation shall be in writing. The conditions may include, but are not limited to the following:

1. Increasing the required lot size or yard dimension.
2. Limiting the height, size, or location of the structures.
3. Controlling the location, size, and number of vehicle access points.
4. Increasing the street width.
5. Increasing the number of required off-street parking space.
6. Limiting the number, size, location, or lighting of signs.
7. Requiring diking, **fencing**, screening, **landscaping** or other facilities to protect adjacent or nearby property.
 - *the project proposes natural groundcover beneath the solar arrays, the applicant must maintain this area and remove all noxious weeds on a regular basis.*
8. Designating sites for open space.

PLANNING AND ZONING COMMISSION FINDINGS

Based on the information submitted by the applicant, contained in this report, and as required by the Le Sueur County Zoning Ordinance, the following findings have been developed for this request:

(Please circle one for each item: Agree, Disagree, Not Applicable.)

1. *The conditional use will not be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor substantially diminishes and impairs property values within the immediate vicinity.*
2. *The establishment of the conditional use will not impede the normal and orderly development and improvement of surrounding vacant property for uses predominant in the area.*
3. *Adequate utilities, access roads, drainage and other facilities have been or are being provided.*
4. *Adequate measures have been or will be taken to provide sufficient off-street parking and loading space to serve the proposed use.*
5. *Adequate measures have been or will be taken to prevent and control offensive odor, fumes, dust, noise and vibration, so that none of these will constitute a nuisance, and to control lighted signs and other lights in such a manner that no disturbance to neighboring properties will result.*
6. *Is the Conditional Use Permit consistent with and supported by the statement of purposes, policies, goals and objectives in the Ordinance?*
7. *Is the Conditional Use Permit consistent with the Comprehensive Land Use Plan?*

Recommend (circle one) approval / denial / table / of Conditional Use Permit.

Conditional Use Permit Application

March 11, 2016

Le Sueur County
Planning Commission Request
Attention: Kathy Brockway, Department Head
88 South Park Avenue
Le Center, MN 56057

Dear Kathy,

Attached you will find a Conditional Use Application-Grading, Excavating & Filling for a Conditional Use Permit (CUP) to perform the earthwork required to construct and operate a Community Solar Garden within Le Sueur County. The request is being made by LeSun LLC.

LeSun LLC plans to develop and construct an up to 5 mega-watt (MW) Community Solar Garden. The site encompasses approximately 50 acres and is currently used for agricultural purposes. On December 15, 2015, Le Sueur County Board of Commissioners approved LeSun's application for a CUP to establish up to a 5 MWac Solar Farm. The total cubic yards of material movement during construction will be greater than 1000 cubic yards and is a conditional use.

In 2013, Xcel Energy was directed by the State of Minnesota to obtain 1.5% of its energy from solar by the year 2020. The development and operation of this Community Solar Garden will aid Xcel Energy in complying with this requirement. LeSun LLC is planning an up to 5 MW garden that will allow Xcel ratepayers, businesses, government entities and schools in Le Sueur County and surrounding areas to choose solar power and save money on their electricity bill.

Exhibits to Application:

- Exhibit A: Conditional Use Application, Grading, Excavating & Filling
- Exhibit B: Description of Request
- Exhibit C: Site Plan (Grading)
- Exhibit D: Full Legal Description, ALTA and Topography Survey
- Exhibit E: Access Approval
- Exhibit F: Erosion Control Plan
- Exhibit G: Restoration Plan
- Exhibit H: Stormwater Pollution Prevention Plan
- Exhibit I: Hydrology Study
- Exhibit J: Geotechnical Report
- Exhibit K: Wetland-Notice of Decisions

LeSun LLC trusts this correspondence and enclosures explain our application and address the requirements of Le Sueur County. Should you have any questions regarding

SunShare, LLC
609 South 10th Street, Ste 210, Minneapolis, MN 55404

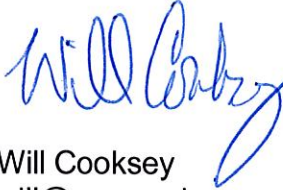
ON
FILE

Conditional Use Permit Application

the attached application for a Conditional Use Permit, please feel free to contact Will Cooksey at (312) 480-8014.

LeSun LLC appreciates the assistance that we have received from you and your staff and we look forward to working with you to better serve Le Sueur County and its residents. Thank you in advance for your consideration of this matter.

Sincerely,



Will Cooksey
will@mysunshare.com
312-480-8014

SunShare, LLC
609 South 10th Street, Minneapolis, MN 55404

Exhibit A: Le Sueur County Application Form

SunShare, LLC
609 South 10th Street, Minneapolis, MN 55404

Le Sueur County

Conditional Use Application-Grading, Excavating & Filling

Activities that involve topographic alterations in all districts shall conform to the standards in Section 18 of the Le Sueur County Zoning Ordinance. Activities within a shoreland district shall conform to the standards in Section 13 of the Le Sueur County Zoning Ordinance.

In addition any activities in any type wetland shall be evaluated in accordance with the Wetland Conservation Act (WCA) regulations, as administered by the Le Sueur County Soil & Water Conservation District (SWCD).

I. Applicant:

Name LeSun LLC
Mailing Address 609 S 10th Street
City Minneapolis State MN Zip 55404
Phone # 651.314.4119 Phone # 312.480.8014

II. Landowner:

Name Patrick Gregor
Mailing Address 40102 120th Street
City Waseca State MN Zip 56903

Property Address 14437 State Hwy 60 (approximate address)
City Waterville State MN Zip 56096
Phone # _____ Phone # _____

III. Parcel Information:

Parcel Number 14.026.250 Parcel Acreage 76
Attach Full Legal Description (**NOT** abbreviated description from tax statement)
Township 109 Section 26
Subdivision _____ Lot _____ Block _____

IV. Township Notification: Township must be notified of proposed use prior to application.

Waterville Township notified on 3/11/2016
(Township Name) (Date)
Board Member Alan Gehrke regarding the proposed use.
(Name)

V. Quantities and Submittal Formats:

- One (1) reproducible 8.5" x 11" copy of the request and all other supporting documents.
- Twenty Three (23) copies must be submitted, if any documents are in color, an aerial, or larger than 8.5" x 11" in size.
- Electronic version of any supporting documents *if available*.
- Additional copies may be requested as deemed necessary by the Department.
- Application must be made in person** by the applicant and/or landowner no later than 12 P.M. on the date of application deadline.
- Appointment is necessary.**
- Applications will not be accepted by mail.**

VI. Fees: Must be paid at the time of application.

Conditional Use Permit \$ 750 After-The-Fact fee is doubled.
Filing Fee \$ 46

Additional Fees:

Special Meeting \$ 2,000
After-The-Fact Penalty \$ 1,500 OR 10% of improvement, whichever is greater

VII. Type of Request: Grading, Excavating or Filling.

<input checked="" type="checkbox"/> Non-Shoreland	Cubic yards of material movement:	49,227
<input type="checkbox"/> Within Bluff Impact Zone	Cubic yards of material movement:	N/A
<input type="checkbox"/> Within Bluff	Cubic yards of material movement:	N/A
TOTAL cubic yards of material movement:		
<input type="checkbox"/> Shoreland- Outside Shore Impact Zone	Cubic yards of material movement:	N/A
<input type="checkbox"/> Within Shore Impact Zone	Cubic yards of material movement:	N/A
<input type="checkbox"/> Within Bluff Impact Zone	Cubic yards of material movement:	N/A
<input type="checkbox"/> Within Bluff	Cubic yards of material movement:	N/A
TOTAL cubic yards of material movement:		N/A

☒ Assurance security shall be required for projects that are >1500 cubic yards.

VIII. Description of Request:

- a. A full description of request with detailed information including what operations are to occur and what general types of equipment may be used in the operation must be attached.
- b. Complete the following in relationship to the proposed Conditional Use Permit.
1. ENVIRONMENTAL IMPACT: There will be no negative impact to the environment.
 2. ADVERSE IMPACT ON SURROUNDING AREAS: There will no adverse impact on surrounding areas.
 3. STORMWATER RUNOFF: The project contributes to a reduction in rate of runoff.
 4. DOES ANY PART OF THE PROJECT EXTEND BELOW OHWL: No
 5. WETLAND IMPACT: There will be no impact to the wetlands. Please see attached.
 6. SLOPE STABILITY: Seed, mulch and fiber logs will be used to stabilize the slopes.
 7. CERTIFICATE OF INSURANCE: Please see attached.
 8. MEET ALL APPLICABLE COUNTY STATE & FEDERAL REGULATIONS: The project will meet all applicable rules, laws and regulations.
(For example additional licensing and/or permitting)

IX. Site Plan: Shall include but not limited to the following:

- **Parcels < 5 AC =** 2-foot contours depicting existing and proposed topography.
 - **Parcels 5-20 AC =** 5-foot contours depicting existing and proposed topography.
 - **Parcels >20 AC =** 10-foot contours depicting existing and proposed topography.
 - Location of grading, excavating, and/or filling sites.
 - Location of areas for obtaining fill or disposing of excavated materials.
 - Tree inventory of all trees, indicating trees to be cut or removed.
(Caliper of 6 inches or greater measured 4.5 feet from ground level).
 - North point
 - Lake
 - Existing Structures
 - Septic system
 - Setbacks
 - River
 - Proposed Structures
 - Well
 - Property Lines
 - Wetland
 - Lot Dimensions
 - Access (size & location)
 - Road Right-Of-Way
 - Stream
 - Ponds
 - Easements
 - Landscape, screening and buffering
 - Drainage
- Site plan & As-Built must be completed by a surveyor or professional engineer.**

X. Restoration Plan: Shall include but not limited to the following:

- Areas of restoration shall include the application of a minimum of 4 inches of topsoil or similar material that will support plant growth. *(Must be included in cubic yards calculation of material.)*
- Reseeded areas indicated with type of vegetation. *(Shall meet minimum standards by the SWCD))*
- Tree replacement plan. *(Areas located within the Bluff Impact Zone, Bluff, Shoreland & Conservancy Distircts)*
 - Root zone of existing trees shall be preserved and protected during development.
 - Replace one tree for every tree that is removed.
 - Replacement trees shall have a minimum caliper of 2 inches at 4.5 feet from ground level.

XI. Attachments: Shall include but not limited to:

- ☒ a. **Description of Request**-See Part VIII for full details and requirements.
- ☒ b. **Site Plan**-See Part IX for full details and requirements.
- ☒ c. **Full Legal Description**-Not abbreviated description from tax statement.
- ☒ d. **Access approval**-Attach approval in writing from proper road authority.
- ☒ e. **Township Notification**-See Part IV for details and requirements.
- ☒ f. **Septic System Compliance Inspection**
- ☒ g. **Erosion Control Plan**-Attach completed and signed plan including map.
- ☒ h. **Restoration Plan**-See Part X for full details and requirements.
- ☒ i. **Approved Stormwater Pollution Prevention Plan**
-Must meet NPDES requirements and prepared by a licensed professional engineer.

XII. Procedure:

The Planning & Zoning Commission shall hold a public hearing on the proposed Conditional Use Permit at a scheduled Planning and Zoning Commission meeting.

The Planning and Zoning Commission is an advisory board to the County Board of Commissioners and will make a recommendation to the County Board.

The Department shall report the findings and recommendations of the Planning Commission to the County Board for final decision.

Action by the County Board shall be a majority vote of its members.


The Department shall notify the applicant and/or landowner in writing of the County Board decision.

A certified copy of the Conditional Use Permit shall be filed with the Le Sueur County Recorder by the Department.


XIII. Signatures:

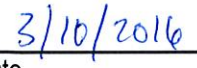
I hereby certify with my signature that all data contained herein as well as all supporting data are true and correct to the best of my knowledge.


Applicant signature Property Owner Signature


Date

I hereby certify with my signature that all data contained herein as well as all supporting data are true and correct to the best of my knowledge.


Property Owner signature Director, Land & Legal
Applicant SunShare, LLC


Date

**Exhibit B: Conditional Use Application Requirements – VII.
Description of Request**

SunShare, LLC
609 South 10th Street, Minneapolis, MN 55404

VIII. Description of Request:

- a. A full description of request with detailed information including what operations are to occur and what general types of equipment may be used in the operation:

General Description of Project

The construction project is a proposed photovoltaic electricity generation solar facility. It will include solar panels mounted on steel piles, inverter stations and access roads throughout the site. The site will also include a fence along the site perimeter.

Size of Construction Project

The property is 76 acres.

The total disturbed area is expected to be 20.09 acres

The maximum area to be disturbed at one time is 20.09 acres

Equipment Description

The above described project will require general earth moving equipment for grading operations including dozers, scrapers, loaders, etc. Tracked pile drivers will be used to install steel pile. Excavators and trenchers will be used to bury electrical lines. Off road type fork lifts will be used to move material and small equipment around the site.

- b. Complete the following in relationship to the proposed Conditional Use Permit:

1. ENVIRONMENTAL IMPACT:

Environmental Conditions

WSB & Associates, Inc. (WSB) was retained by SunShare, LLC to conduct a Phase I Environmental Site Assessment (ESA) of the proposed LeSun Solar Garden consisting of the proposed project area. WSB completed the Phase I ESA on November 23, 2015. The Phase I ESA revealed no RECs, historical recognized environmental conditions, or controlled recognized environmental conditions associated with the property. Therefore, the potential to encounter contamination during construction at the project area is low at this time.

Wildlife Resources Conservation Areas

There are no designated wildlife resources conservation areas located within the project area.

Wildlife Resources

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Conditional Use Permit Application

The project is not anticipated to negatively affect wildlife. The majority of the project area is currently agricultural land use, and habitat diversity is low in areas of row crops and hay fields. The potential wetland areas appear to be dominated by Reed canary grass (*Phalaris arundinacea*), a non-native species of grass, along the fringes, but may include more diverse plant species within other areas, such as the open water and forested areas of the wetlands. Wildlife present would be accustomed to frequent disturbances by the nearby highway and agricultural activities. There are some deciduous trees in the west corner of the property, mostly near the wetlands which may provide a perch for song birds and birds of prey. This small patch of forest could likely provide habitat for common species such as Whitetail deer, Wild turkey, Coyote, Owls, Striped skunk, Eastern cottontail rabbit, various song birds and birds of prey, and the potentially bats, among other species. The project is not anticipated to negatively impact the wildlife.

Endangered / Protected Species

Data were obtained from both the DNR and the FWS regarding state and federally threatened or endangered species. The potential for rare species occurrences near the project area exists, but impacts to these species as a result of the project, is unlikely.

Federal and State-Listed Species

A data request was submitted to the DNR for review of the DNR's Natural Heritage Information System. The DNR "does not believe the proposed project will adversely affect any known occurrences of rare features" (DNR NHIS Review, Correspondence #ERDB 20160078, Sept. 11, 2015).

2. ADVERSE IMPACT ON SURROUNDING AREAS:

The project will not adversely impact the surrounding area. Within the one mile radius of the project area, existing land use varies including residential and commercial development associated with the City of Waterville, cropland, wetlands, woodland, open fields/prairie, State and County highways, City Parks, cemeteries, powerline ROW (north), a natural gas pipeline surface access facility (west), and Sakatah Lake State Park. Residences exist northwest of the site, as well as a few rural residences just south of the project area. The project will not adversely impact the surrounding area.

3. STORMWATER RUNOFF:

The construction of the solar garden including the associated grading and site preparation, will cause the rate of stormwater runoff to decrease from current conditions.

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Conditional Use Permit Application

Existing Conditions

The existing project property is approximately 76 acres of agricultural land, most of which is currently used for annual row crops. Other than the crops, there is no other significant vegetation on the property. There are three delineated wetlands located on the site that are all of Type 1 PEMA designation. Two wetlands are located on the south portion of the project and one is located on the west portion. A portion of the project drains north to the Minnesota Trunk Highway 60 ditch. The majority of the site drains to the existing wetlands located in the south and west portion of the project site. The site has a network of drain tiles that connect to the north and the south drainage ditches.

The existing project area is 100% pervious. A geotechnical investigation has been performed and shows existing soils to B/C type soils having SCS curve numbers of 80. Groundwater was encountered at depths ranging from 13.5 to 17 feet below ground surface.

Proposed Development

The proposed development consists of 5 MW AC of total solar capacity. Solar modules are mounted on racking attached to steel piles driven directly into the ground. There are multiple centrally located concrete equipment pads for inverters and transformers. The project will have road access from Minnesota Trunk Highway 60. Onsite access roads are aggregate and are distributed throughout the site to provide access to the equipment pads. Grading throughout the site is done to accommodate racking and to promote effective drainage. Ground cover below the solar modules will be a short/medium height natural prairie type grass throughout the site.

Stormwater Design Approach

The proposed project will replace 1.38 acres of existing crop land with impervious gravel roads and concrete pads. In addition, 8.92 acres of impervious solar modules will be constructed, but will not replace existing vegetation since they are elevated on driven steel piles. These additional impervious surfaces will generate an increase in stormwater runoff rate and volume, which will be mitigated to mimic undeveloped conditions.

Design Assumptions

- The MPCA has determined that 50% of the solar panel area should be treated as impervious in calculating post construction volume reduction.
- Trenches/berms will be constructed perpendicular to the ground slope.
- Existing soils identified as HSG Type B/C
- NRCS Curve Number for HSG Type B/C soils with straight row crops is 80
- NRCS curve number for gravel roads and inverter pads is 99

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Conditional Use Permit Application

- Seasonal high groundwater elevation is well below the elevation of any stormwater management area onsite.

Volume Reduction

To achieve the required post construction volume reduction, shallow stormwater surface trenches will be used. The required volume reduction will be accomplished through the use of a series of shallow trenches/berms. Each trench will be approximately 12 inches wide and 6 inches deep and will be dug perpendicular to the ground slope. The material generated from digging these trenches will be placed adjacent to the trench, down gradient, creating a berm to further increase the storage volume (see Figure 1 below). Trenches are located throughout the site in locations where the slope is perpendicular to the solar module rows so that the trenches can be constructed parallel to the rows. See Appendix 'A' for Proposed Drainage Exhibit showing the location of the surface trenches.

Rate Control

To achieve post construction rate control, the approach will be to take advantage of a change in land use from annually rotated crop land to permanently vegetated grass ground cover over a majority of the site. The existing site condition of straight row crops in Hydric Soil Group B/C has a NRCS Curve Number (CN) of 80. When converted to a fully vegetated meadow condition, the same soil has a CN of 62. By adding the impervious gravel and concrete areas, plus accounting for the elevated solar module contributing a small amount of flow concentration, the composite curve number has been determined to be 5% higher than the vegetated meadow condition (65). The reduction in overall CN from 80 to 65 is shown to reduce the rate of stormwater runoff sufficient to satisfy the above stated requirements.

4. **DOES ANY PART OF THE PROJECT EXTEND BELOW OHWL:** No.

5. **WETLAND IMPACT:**

Potential impacts to the existing wetlands will be avoided by providing a 75 foot buffer and with project planning.

On October 8, 2015, a field investigation was performed to evaluate and verify the existence and boundary of any wetlands located within the study area, specifically in the review sites identified during the off-site aerial photo review. Three wetlands were found to exist within the study area. The following is a brief description of the wetlands identified along with a brief description of its type and observations made in determining the upper wetland limits.

Wetland 1 (W1).

Wetland 1 is in the south portion of the property, near the southern edge of that portion. This area was investigated in the aerial photo review as Site 3. This area

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609 South 10th Street, Minneapolis, MN 55404

Conditional Use Permit Application

is listed on the National Wetlands Inventory (NWI), as a palustrine emergent temporarily flooded (PEMIC) wetland, having the characteristics of a Type 1 Seasonally Flooded Basin.

Wetland 2 (W2),

Wetland 2 is in the south portion of the property, near the southern edge of that portion, and east of Wetland I. This area was investigated in the aerial photo review as Site 4.

This area is listed on the NWI, as a PEMIA and PEMIC wetland, having the characteristics of a Type 1 Seasonally Flooded Basin.

Wetland 3 (W3),

Wetland 3 is within the wooded area on the west side of the southern portion of the parcel. This area was not investigated in the aerial photo review because it is wooded. This area is listed on the NWI, as a PEMIA and PF6IA wetland, having the characteristics of a Type I Seasonally Flooded Basin.

Potential impacts to the existing wetlands will be avoided by providing a 75 foot buffer and with project planning.

The Le Sueur SWCD, the Local Government Unit, issued a Notice of Decision on November 12, 2015, approving the wetland boundaries as depicted in the Wetland Type and Boundary Application report, dated October 20, 2015, performed and submitted by Bolton Menk on behalf of LeSun LLC.

The Le Sueur SWCD issued a No Loss Determination on March 8, 2016.

6. SLOPE STABILITY:

Temporary Stability:

Any stockpiles that occur or any ground that is has not been permanently graded but work has temporarily ceased shall be temporarily stabilized by seeding, erosion control blankets or another qualified stabilization method. They must be stabilized within 7 days of work ceasing.

Temporary stabilization methods will be inspected weekly and after rainfall events and repaired if necessary.

Permanent Stability:

The site will be permanently stabilized by planting vegetative grass.

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Conditional Use Permit Application

The entire site, with the exception of gravel roads and electrical equipment pads, will be planted uniformly with perennial vegetative grass. The land use will be converted from annually rotated crop land to permanently vegetated grass cover. Site will be considered stabilized once it has reached 70% density of its expected final growth. The entire site will be flattened to slopes no larger than 10% and water will be allowed to sheet flow across the permanent vegetation in a manner that mimics existing flow paths.

Permanent vegetation will be inspected once per month to ensure uniform seeding and growth and re-seeded if necessary.

Final Stabilization:

The site will be permanently stabilized by the methods described above. In order to achieve Final Stabilization, the following must occur:

- All soil disturbing activities at the site have been completed and all soils are stabilized by a uniform perennial vegetative cover with a density of 70% of its expected final growth
- The permanent stormwater management system is constructed, meets all requirements and is operating.
- All temporary synthetic and structural BMPs must be removed
-

RESTORATION

Topsoil

Provide an average of 4 inches of topsoil to meet indicated finished grade. After graded areas have been brought to indicated finished grade, incorporate fertilizers, pH adjusters, and/or soil conditioners in soil a minimum depth of 4 inches by disking, harrowing, tilling, or other approved method. Remove debris and stones larger than 6 inch. Protect topsoil from damage or compaction by vehicular or pedestrian traffic. Quantity required = 17,650 cy.

Permanent seeding

At the completion of earth disturbing activities, all disturbed portions of the site shall be permanently seeded. Seeding execution shall be in compliance with MNDOT specification section 2575. Permanent seed mix shall be as follows:

Permanent seed shall be a native prairie grass capable of sustainment in partial sun and shade consistent with the conditions encountered. Mature height of grass shall be between 12" - 30".

Quantity required = 32.8 acres.

Seeding dates

Do not seed later than September 1st. Areas that need to be seeded after this date will be dormant seeding in late October or early November.

SunShare, LLC
609 South 10th Street, Minneapolis, MN 55404

Conditional Use Permit Application

8. **MEET ALL APPLICABLE COUNTY STATE & FEDERAL REGULATIONS:**

The project will meet all applicable rules, laws and regulations.

Le Sueur County Zoning Ordinance, Section 18, Subdivision 3b. Standards

1. The proposed CUP will cause no substantial or negative environmental impact. Le Sueur County's Erosion Control Standards will be complied with in all regards.
2. The proposed CUP will cause no substantial or adverse impact on surrounding properties.
3. The proposed CUP will cause no grading, excavating or filling activities within a shoreland district.
4. The proposed CUP will cause no grading, excavating or filling activities in any wetland.

SunShare, LLC
609 South 10th Street, Minneapolis, MN 55404

Exhibit E: Access Approval

SunShare, LLC
609 South 10th Street, Minneapolis, MN 55404

RE: MNDOT Access Request - Email 2 of 2

1 message

Condon, Terry (DOT) <terry.condon@state.mn.us>
To: Will Cooksey <will@mysunshare.com>

Thu, Mar 10, 2016 at 2:01 PM

Will,

MnDOT has currently reviewed and approved the new access to Trunk Highway (T.H.) 60. As we spoke, the access shall be placed on the south side of T.H. 60 across from the existing small car dealership entrance. However, the permit shall stipulate the existing access to this parcel (small distance to the south of the proposed) must also be removed.

The required Application for Miscellaneous Work on Trunk Highway Right of Way Permit can be found here:

<http://www.dot.state.mn.us/utility/forms.html>

Please fill the Permit out, sign and date it, and revise your Plan sheets showing the new Access Location. As we spoke on the phone, a \$1,000.00 deposit made payable to "The Commissioner of Transportation" also needs to be sent. Please send all the aforementioned data to the address listed below.

If you have any further questions, always feel free to reply, or give me a call.

Sincerely,

Terry L. Condon | Roadway Regulations Supervisor

MnDOT District 6 | 1010 21st Ave. NW | Owatonna, MN | 55060-1005

ph: 507.446.5505 | c: 507.456.5347 | f: 507.455.5848

E-mail: terry.condon@state.mn.us



We all have a stake in **A+B**

Exhibit F: Erosion Control Plan

SunShare, LLC
609 South 10th Street, Minneapolis, MN 55404

LE SUEUR COUNTY ENVIRONMENTAL SERVICES
88 SOUTH PARK AVE.
LE CENTER, MINNESOTA 56057-1620
(507) 357-2251
FAX (507) 357-8541

Erosion and Sediment Control Plan

Goal: To control erosion and prevent sediment and other pollutants from entering the lakes, streams, wetlands, and storm drain systems during construction.

Property Owner: Pat Gregor _____ **PID:** 14.026.250
Mailing Address: 40102 120th Street _____
Property Address: 14437 State Hwy 60 (approximate Address) _____
Phone:(507)521-5525 _____ **Mobile/Cell:**() _____

Responsible party for Implementation/Inspection: Jesse Royer – Mortenson Construction _____
Address: 700 Meadow Lane North, Minneapolis MN _____
Phone: 612-260-2105 _____ **Mobile/Cell:** 651-925-7718 _____

Erosion & Sediment Control Measures

1. Maintain existing vegetation whenever possible and minimize the area of disturbance. Retain and protect trees to enhance future landscaping efforts and to reduce raindrop impact. (Vegetation is the best and most cost-effective erosion control practice). [Sheet C001- Erosion Control Note #9.](#)
2. Install all erosion and sediment control practices prior to any soil disturbing activities, when applicable. [Sheet C001- Erosion Control Note #16.](#)
3. Phase construction activities to minimize the areas disturbed at one time. This will also allow completed areas to be stabilized and re-vegetated before disturbing adjacent sites. [SWPPP Section 2.4.](#)
4. Maintain and protect all natural waterways. Retain at least a 20-foot wide strip of natural vegetation along all waterways to filter out sediment and other pollutants. [Providing a 75' wetland buffer.](#)
5. Minimize the use of impermeable surfaces such as roofs, driveways, parking lots and roads. The Environmental Resources staff must approve all storm water runoff plans. [Stormwater Narrative & SWPPP.](#)
6. Use rock rip-rap at both the outlet and inlet ends of culverts to prevent scour erosion. [Sheet C301.](#)
7. Limit construction equipment to designated areas to control soil compaction. [SWPPP Section 4.8.](#)
8. Install silt fence on the down-slope perimeter of all disturbed areas according to the attached installation instructions. Sensitive areas such as wetlands, drainage swales and shoreland areas should also be protected with silt fence. [See detail 1 on sheet C603.](#)
9. Install straw bale checks or rock check dams in areas of concentrated flow. [Straw Bales are proposed at the culvert, possible are of concentrated flow \(see sheets C301 & C302\).](#)
10. Cover any stockpiled topsoil with plastic or other impervious covering. Use stockpiled topsoil as earthen berms to serve as temporary sediment basins. [Sheet C001- Erosion Control Note #21.](#)
[Temporary sediment basins are not anticipated.](#)

11. Mulch all disturbed areas at the rate of one 50-pound bale of straw per 500 square feet. On slopes 4:1 or steeper use the following erosion control blankets that have been pinned to the slope according to the manufacturer's instructions:

2:1 slopes or steeper	Straw/Coconut Blanket or High Velocity Wood Blanket
3:1 slopes or steeper	Wood or Straw Blanket with net on both sides
4:1 slopes or steeper	Wood or Straw Mulch blanket with net on one side
Flat areas	Straw Mulch w/disc anchoring

12. Seed all disturbed areas within seven days of final grading and temporary seed/mulch all areas that will be left inactive for more than seven days. Do not seed later than September 1st. Areas that need to be seeded after this date should be dormant seeded in late October or early November. See the attached instruction sheet for recommended mixtures and rates. The use of native plant materials, including trees and shrubs, is encouraged. Native species will provide good vegetative cover that is adapted to our soils and climate.
13. Apply fertilizer according to soil test recommendations.
14. Install water bars on access roads to prevent concentrated water from flowing down the road and eroding gravel.
15. Attach a site map showing the location of all erosion control practices, property lines, roads, lakes, watercourses, wetlands, on-site systems and building locations.

Note: To reduce mud transported onto paved roads, a rock construction entrance may be required. This will require a six-inch layer of 1-2 inch diameter washed rock a minimum of 50 feet in length.

Inspection and Maintenance

16. Inspect the construction site every 7 days and within 24 hours after every rain event to ensure the practices are working properly (i.e. silt fences, water bars).
17. Clean out the silt fences when they are 1/3 full of sediment or replace with functional silt fences within 24 hours.
18. Clean out sediment basins on a regular basis to maintain capacity.

I agree to install, inspect and maintain the above practices to accomplish the goal of preventing erosion.



(Property Owner)



(Date)

(Person Responsible for Implementation)

(Date)

If you have any questions, please contact Environmental Services, at 507-357-8538.

11. Mulch all disturbed areas at the rate of one 50-pound bale of straw per 500 square feet. On slopes 4:1 or steeper use the following erosion control blankets that have been pinned to the slope according to the manufacturer's instructions: [See sheets C301 & C302](#). Add notes to sheets C301 & C302???

2:1 slopes or steeper	Straw/Coconut Blanket or High Velocity Wood Blanket
3:1 slopes or steeper	Wood or Straw Blanket with net on both sides
4:1 slopes or steeper	Wood or Straw Mulch blanket with net on one side
Flat areas	Straw Mulch w/disc anchoring

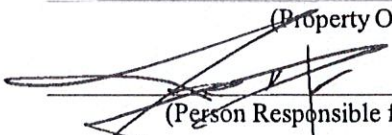
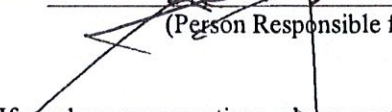
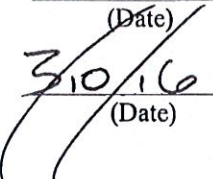
12. Seed all disturbed areas within seven days of final grading and temporary seed/mulch all areas that will be left inactive for more than seven days. Do not seed later than September 1st. Areas that need to be seeded after this date should be dormant seeded in late October or early November. See the attached instruction sheet for recommended mixtures and rates. The use of native plant materials, including trees and shrubs, is encouraged. Native species will provide good vegetative cover that is adapted to our soils and climate. SWPPP Section 4.15 & [Sheet C001- Vegetative Establishment Specification notes](#).
13. Apply fertilizer according to soil test recommendations. [SWPPP Section 5.7](#).
14. Install water bars on access roads to prevent concentrated water from flowing down the road and eroding gravel. [The roads will be graded with a cross slope to prevent water from flowing down the roads \(see detail 1 on sheet C601\)](#).
15. Attach a site map showing the location of all erosion control practices, property lines, roads, lakes, watercourses, wetlands, on-site systems and building locations. [See Erosion Control Plans \(sheets C301 & C302\)](#).

Note: To reduce mud transported onto paved roads, a rock construction entrance may be required. This will require a six-inch layer of 1-2 inch diameter washed rock a minimum of 50 feet in length. [See detail 3 on sheet C603](#).

Inspection and Maintenance

16. Inspect the construction site every 7 days and within 24 hours after every rain event to ensure the practices are working properly (i.e. silt fences, water bars). [SWPPP Section 6.1](#).
17. Clean out the silt fences when they are 1/3 full of sediment or replace with functional silt fences within 24 hours. [SWPPP Section 4.2](#).
18. Clean out sediment basins on a regular basis to maintain capacity. [N/A](#).

I agree to install, inspect and maintain the above practices to accomplish the goal of preventing erosion.

 (Property Owner)	 (Person Responsible for Implementation)	 (Date) 3/10/16 (Date)
---	--	--

If you have any questions, please contact Environmental Services, at 507-357-8538.

Exhibit G: Restoration Plan

SunShare, LLC
609 South 10th Street, Minneapolis, MN 55404

Conditional Use Permit Application

RESTORATION

Topsoil

Provide an average of 4 inches of topsoil to meet indicated finished grade. After graded areas have been brought to indicated finished grade, incorporate fertilizers, ph adjusters, and/or soil conditioners in soil a minimum depth of 4 inches by disking, harrowing, tilling, or other approved method. Remove debris and stones larger than 6 inch. Protect topsoil from damage or compaction by vehicular or pedestrian traffic. Quantity required = 17,650 cy.

Permanent seeding

At the completion of earth disturbing activities, all disturbed portions of the site shall be permanently seeded. Seeding execution shall be in compliance with MNDOT specification section 2575. Permanent seed mix shall be as follows:

Permanent seed shall be a native prairie grass capable of sustainment in partial sun and shade consistent with the conditions encountered. Mature height of grass shall be between 12" - 30".

Quantity required = 32.8 acres.

Seeding dates

Do not seed later than September 1st. Areas that need to be seeded after this date will be dormant seeding in late October or early November.

SunShare, LLC
609 South 10th Street, Minneapolis, MN 55404

Conditional Use Permit Application

7. CERTIFICATE OF INSURANCE: -ON FILE

SunShare, LLC
609 South 10th Street, Minneapolis, MN 55404

EROSION CONTROL NOTES

1. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME. WHERE A CONFLICT EXISTS BETWEEN LOCAL JURISDICTIONAL STANDARD SPECIFICATIONS AND EVS INC. STANDARD SPECIFICATIONS, THE MORE STRINGENT SPECIFICATION SHALL APPLY.
2. FAILURE TO COMPLY WITH ANY PROVISIONS OF THE STORM WATER POLLUTION CONTROL PLAN, RESULTING IN ENFORCEMENT MEASURES BY LE SUEUR COUNTY OR THE MINNESOTA POLLUTION CONTROL AGENCY, ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. FINES OR CORRECTIVE ACTIONS REQUIRED TO BE TAKEN WILL BE PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
3. THE DESIGN SHOWN IS BASED UPON THE ENGINEER'S UNDERSTANDING OF THE EXISTING CONDITIONS. IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS WITHOUT EXCEPTION, THEY SHALL HAVE MADE, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR REVIEW. SEE ALTA SURVEY SHEETS.
4. THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS COMPRISED OF THIS DRAWING (EROSION & SEDIMENTATION CONTROL PLAN-ESC PLAN), THE STANDARD DETAILS, THE PLAN NARRATIVE, ATTACHMENTS INCLUDED IN THE STORMWATER COMPLIANCE BINDER, PLUS THE PERMIT AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS.
5. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE SWPPP AND THE STATE OF MINNESOTA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS. THE SWPPP AND ALL OTHER RELATED DOCUMENTS MUST BE KEPT AT THE SITE DURING CONSTRUCTION.
6. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES (BMP'S) AS REQUIRED BY THE SWPPP & PERMITS. THE CONTRACTOR SHALL OVERSEE THE INSPECTION & MAINTENANCE OF THE BMP'S AND EROSION PREVENTION FROM BEGINNING OF CONSTRUCTION UNTIL CONSTRUCTION IS COMPLETED. IS APPROVED BY ALL AUTHORITIES, THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA BY EITHER THE OWNER OR OPERATOR AS APPROVED ON PERMIT. ADDITIONAL BMP'S SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST TO OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
7. BMP'S AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.
8. ESC PLAN MUST CLEARLY DELINEATE ALL STATE WATERS. PERMITS FOR ANY CONSTRUCTION ACTIVITY IMPACTING STATE WATERS OR REGULATED WETLANDS MUST BE MAINTAINED ON SITE AT ALL TIMES.
9. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY DELINEATED (E.G. WITH FLAGS, STAKES, SIGNS, SILT FENCE, ETC.) ON THE DEVELOPMENT SITE BEFORE WORK BEGINS.
10. GENERAL CONTRACTOR SHALL DENOTE ON PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
11. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) MUST BE LIMITED TO A DEFINED AREA OF THE SITE AND SHALL BE CONTAINED AND PROPERLY TREATED OR DISPOSED. NO ENGINE DEGREASING IS ALLOWED ON SITE.
12. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
13. DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
14. SOLID WASTE: COLLECTED SEDIMENT, ASPHALT & CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION & DEMOLITION DEBRIS & OTHER WASTES MUST BE DISPOSED OF PROPERLY & MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS.
15. HAZARDOUS MATERIALS: OIL, GASOLINE, PAINT & ANY HAZARDOUS SUBSTANCES MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT, TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE & DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH MPCA REGULATIONS.
16. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THIS PLAN, AND IN THE SWPPP, SHALL BE INITIATED AS SOON AS PRACTICABLE AND PRIOR TO ANY SITEWORK.
17. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS STOPPED SHALL BE TEMPORARILY SEEDED. SEE TEMPORARY SEED MIXTURE SPECIFICATION ON THIS SHEET.
18. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE PERMANENTLY SEEDED. THESE AREAS SHALL BE SEEDED ACCORDING TO THE SEQUENCING DESCRIBED IN THE SWPPP. SEE PERMANENT TEMPORARY SEED MIXTURE SPECIFICATION ON THIS SHEET.
19. CONTRACTORS OR SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING SEDIMENT FROM CONVEYANCES & FROM TEMPORARY SEDIMENTATION BASINS THAT ARE TO BE USED AS PERMANENT WATER QUALITY MANAGEMENT BASINS. SEDIMENT MUST BE STABILIZED TO PREVENT IT FROM BEING WASHED BACK INTO THE BASIN, CONVEYANCES, OR DRAINAGEWAYS DISCHARGING OFF-SITE OR TO SURFACE WATERS. THE CLEANOUT OF PERMANENT BASINS MUST BE SUFFICIENT TO RETURN THE BASIN TO DESIGN CAPACITY.
20. ON-SITE & OFF-SITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BMP'S. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS.
21. TEMPORARY SOIL STOCKPILES MUST HAVE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS & CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB & GUTTER SYSTEMS OR CONDUITS & DITCHES.
22. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
23. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, CHECK DAMS, INLET PROTECTION DEVICES, ETC.) TO PREVENT EROSION.

DEMOLITION NOTES

1. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. CONTRACTOR ASSUMES ALL LIABILITY FOR DAMAGES TO EXISTING UTILITIES OR TO THE PROJECT, OCCASIONED BY HIS FAILURE TO LOCATE, PRESERVE, AND PROTECT EXISTING UTILITIES.
2. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT EXISTING SITE OR UTILITY ELEMENTS NOT INTENDED FOR DEMOLITION OR REMOVAL.
3. MATERIAL AND ITEMS SHOWN TO BE REMOVED AS PART OF THIS PROJECT SHALL BE DISPOSED OF OR RECYCLED AT LICENSED DISPOSAL OR RECYCLING FACILITIES COMPLYING WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
4. BACKFILL ALL DEPRESSIONS AND TRENCHES FROM DEMOLITION ACCORDING TO TRENCH BACKFILL REQUIREMENTS.

GENERAL NOTES

1. PROPOSED SOLAR LAYOUT FOR THIS PROJECT IS PROVIDED BY OTHERS.
2. ALTA AND TOPOGRAPHIC SURVEY ARE PROVIDED BY OTHERS.
3. SEE SURVEY NOTES BELOW FOR INFORMATION PERTAINING TO THE TOPOGRAPHIC SURVEY AND THE ALTA SURVEY PREPARED FOR THIS PROJECT.
4. CONTRACTOR SHALL FIELD VERIFY SURVEY CONTROL AND DESIGN COORDINATES PRIOR TO STARTING CONSTRUCTION.
5. CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO EXISTING AND NEW FACILITIES RESULTING FROM CONSTRUCTION ACTIVITIES.
6. CONTOURS SHOWN ARE TO FINISHED GRADE OR TOP OF AGGREGATE.
7. CONTRACTOR IS RESPONSIBLE FOR SITE DRAINAGE DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES SHALL NOT ALTER NATURAL DRAINAGE PATTERNS OTHER THAN WHAT IS SHOWN ON THE PLANS, OR IN WAYS THAT WOULD CAUSE DAMAGE TO EXISTING FACILITIES OR NEIGHBORING PROPERTIES.
8. ELECTRONIC FILES OF THESE CONSTRUCTION DRAWINGS ARE AVAILABLE UPON REQUEST BUT ARE TO BE USED AT THE CONTRACTORS RISK. PLAN DRAWINGS SHOULD BE USED TO VERIFY ELECTRONIC DATA. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
9. DRAIN TILE ROUTES, PIPE SIZES, AND MATERIALS SHOWN ARE BASED ON A SKETCH PROVIDED TO THE ENGINEER. ROUTING IS APPROXIMATE AND DEPTH OF BURIAL IS NOT KNOWN. CONTRACTOR IS TO FIELD VERIFY DRAIN TILE LOCATIONS AND DEPTH OF BURIAL. IF THE PROPOSED WORK WILL IMPACT THE IN PLACE DRAIN TILES, LOCATION AND DEPTH INFORMATION SHOULD BE PROVIDED TO THE ENGINEER IN ORDER TO PROPOSE A RESOLUTION.

SURVEY COORDINATE NOTES

SURVEY COORDINATE SYSTEM: NOT PROVIDED

VEGETATION ESTABLISHMENT SPECIFICATION

TEMPORARY SEEDING
IN COMPLIANCE WITH THE SWPPP DOCUMENT, DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS STOPPED SHALL BE SEEDED. SEEDING EXECUTION SHALL BE IN COMPLIANCE WITH MNDOT SPECIFICATION SECTION 2575. TEMPORARY SEED MIX SHALL BE AS FOLLOWS:

TEMPORARY SEED MIX SHALL BE FLEX GUARD FIBER REINFORCED MATRIX, MANUFACTURED BY MAT, INC. INSTALLATION SHALL BE IN COMPLIANCE WITH MANUFACTURERS SPECIFICATION.

PERMANENT SEEDING
AT THE COMPLETION OF EARTH DISTURBING ACTIVITIES, ALL DISTURBED PORTIONS OF THE SITE SHALL BE PERMANENTLY SEEDED. SEEDING EXECUTION SHALL BE IN COMPLIANCE WITH MNDOT SPECIFICATION SECTION 2575. PERMANENT SEED MIX SHALL BE AS FOLLOWS:

PERMANENT SEED SHALL BE A NATIVE PRAIRIE GRASS CAPABLE OF SUSTAINMENT IN PARTIAL SUN AND SHADE CONSISTENT WITH THE CONDITIONS ENCOUNTERED. MATURE HEIGHT OF GRASS SHALL BE BETWEEN 12" - 30".

TOPSOIL
PROVIDE AN AVERAGE OF 4 INCHES OF TOPSOIL TO MEET INDICATED FINISHED GRADE. AFTER GRADED AREAS HAVE BEEN BROUGHT TO INDICATED FINISHED GRADE, INCORPORATE FERTILIZERS, pH ADJUSTERS, AND/OR SOIL CONDITIONERS IN SOIL A MINIMUM DEPTH OF 4 INCHES BY DISKING, HARROWING, TILLING, OR OTHER APPROVED METHOD. REMOVE DEBRIS AND STONES LARGER THAN 6 INCH. PROTECT TOPSOIL FROM DAMAGE OR COMPACTION BY VEHICULAR OR PEDESTRIAN TRAFFIC.

SEEDING DATES
DO NOT SEED LATER THAN SEPTEMBER 1ST. AREAS THAT NEED TO BE SEEDED AFTER THIS DATE SHOULD BE DORMANT SEEDING IN LATE OCTOBER OR EARLY NOVEMBER.

CIVIL QUANTITIES

Civil/Structural Works				
Pay Item	Total Quantity	Unit	Description	Quantity Note
Access Roads	4,286	ft	Access Roads (14' wide)	Linear feet of road (includes hammerheads)
Aggregate	1,377	cy	Main Roads (7")	63,743 sf x 7"/12 x 1/27 = cy
Fence	6,010	ft	8' tall fence	Perimeter of site
Gates	1	ea	20' wide double swing gate	
Seeding Quantities	32.8	ac	Entire site area to be seeded (except gravel areas)	Assumed seeding limits: area inside site fence
Geotextile Fabric	63,743	sy	Non-woven Tensar BX 1200	Area of access roads
Grading Area	20.08	acres	Area to be cut/fill graded	
Common Ex. (Cut)	49,257	cy	Total Pay Cut For Project	Compact volume
Common Borrow (Fill)	49,257	cy	Total Fill Requirement for Project	Compact volume
Topsoil Strip	16,277	cy	6" Topsoil Strip (Included in Common Ex.)	6" x graded area = 6/12 x 678,932 x 1/27 = cy
Subgrade Cut	32,980	cy	Cut Remaining	Common Ex. - Topsoil Strip

EARTHWORK NOTES

- SITE PREPARATION**
1. STRIP AND REMOVE TOPSOIL, VEGETATION, AND OTHER DELETERIOUS ORGANIC MATERIAL FROM PROPOSED EQUIPMENT PADS, ROADWAYS, AND AREAS TO RECEIVE FILL. STOCKPILE TOPSOIL AND IMMEDIATELY STABILIZE UNTIL RE-SPREAD FOR USE TO RE-VEGETATE DISTURBED AREAS AFTER GRADING OPERATIONS ARE COMPLETE.
2. SUBGRADE PREPARATION FOR EQUIPMENT PADS, SPREAD FOOTINGS, AND ROADWAYS IS AS FOLLOWS:
- 2.1. SCARIFY TO A MINIMUM DEPTH OF 12 INCHES
- 2.2. MOISTURE CONDITION SOILS TO BETWEEN 1% BELOW AND 3% ABOVE OPTIMUM MOISTURE CONTENT
- 2.3. COMPACT TO A MINIMUM OF 95% OF STANDARD PROCTOR MAXIMUM DENSITY. EXCAVATION SHALL EXTEND 5' BEYOND EXTENTS OF IMPROVEMENTS FOR PADS OR FOOTINGS.
- 2.4. PROOF ROLL WITH FULLY LOADED DUMP TRUCK OR OTHER SIMILARLY WEIGHTED PNEUMATIC TIRED EQUIPMENT.
- 2.5. UNSTABLE AREAS IDENTIFIED DURING PROOF ROLL SHOULD BE EXCAVATED A MINIMUM OF 12 INCHES AND RE-STABILIZED.
3. SUBGRADE PREPARATION FOR NON-STRUCTURAL FILL AREAS SHALL CONSIST OF COMPACTION TO 90% OF STANDARD PROCTOR MAXIMUM DENSITY.

FILL PLACEMENT

1. ENGINEERED FILL - SOILS CLASSIFIED AS GW, GM, SW, SM, SC, ML, AND CL BY THE USCS ARE ACCEPTABLE FOR USE AS STRUCTURAL FILL. MOST ON-SITE SOILS ARE EXPECTED TO BE SUITABLE FOR USE AS ENGINEERED FILL.
2. SELECT GRANULAR FILL - GRANULAR, WELL GRADED MATERIAL WITH NO ORGANICS, A MAXIMUM PARTICLE SIZE OF 2 INCHES, AND LESS THAN 12 PERCENT PASSING THE U.S. No. 200 SEIVE.
3. FILL SHALL BE MOISTENED TO BETWEEN 1 PERCENT BELOW AND 3 PERCENT ABOVE OPTIMUM MOISTURE CONTENT.
4. FILL SHALL BE PLACED IN LIFTS OF LESS THAN 9 INCHES LOOSE DEPTH AND COMPACTED TO AT LEAST 95% OF STANDARD PROCTOR MAXIMUM DENSITY IN STRUCTURAL AREAS AND 90% IN NON-STRUCTURAL AREAS.
5. TRENCH BACKFILL SHALL BE COMPACTED TO AT LEAST 85 PERCENT OF STANDARD PROCTOR MAXIMUM DENSITY, ACCEPT IN STRUCTURAL AREAS SHALL BE COMPACTED TO 95 PERCENT.

EARTHWORK BALANCE

THE INTENTION OF THE GRADING DESIGN IS TO BALANCE THE EARTHWORK ON SITE WITHOUT THE NEED FOR IMPORT OR EXPORT. THE CONTRACTOR SHALL FIELD ADJUST CUT AND FILL AS NECESSARY TO CREATE A BALANCED SITE WITHOUT NEGATIVELY IMPACTING DRAINAGE PATTERNS OR INCREASING MAXIMUM SLOPES.

AGGREGATES

1. AGGREGATE BASE AND COARSE AGGREGATE SHALL BE MOISTENED TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT AND COMPACTED. PROOF ROLL WITH FULLY LOADED DUMP TRUCK OR OTHER SIMILARLY WEIGHTED PNEUMATIC TIRED EQUIPMENT.

AGGREGATE GRADATION - SHALL COMPLY WITH THE GRADATION REQUIREMENTS OF TABLE 3138-3, CLASS 5, OF SECTION 3126 "AGGREGATE", OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

RIP RAP GRADATION - SHALL COMPLY WITH THE GRADATION REQUIREMENTS OF CLASS 3 RIP RAP, SECTION 3601 OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.

GEOGRID

TESTING REQUIREMENTS

DEFINITION

1. TESTING SHALL BE PERFORMED BY A DESIGNATED INDEPENDENT TESTING AGENCY.
2. PROOFROLLING TEST SHALL BE CONSIDERED ACCEPTABLE IF RUTTING IS NO GREATER THAN 1.5".
3. STANDARD PROCTOR DENSITY TESTS SHALL BE IN CONFORMANCE WITH ASTM D698.
4. SOIL DENSITY IN PLACE TESTING SHALL BE IN CONFORMANCE WITH ASTM D2922.
5. MOISTURE CONTENT TEST OF IN PLACE SOIL SHALL BE IN CONFORMANCE WITH ASTM D3017.

EXECUTION

1. COMPACTED SUBGRADE IN STRUCTURAL AREAS SHALL BE TESTED AS FOLLOWS:
- 1.1. ONE TEST PER 200 LF OF ROAD
- 1.2. ONE TEST PER ELECTRICAL EQUIPMENT PAD
2. FILL MATERIAL SHALL BE TESTED FOR GRAIN SIZE, SOIL CLASSIFICATION, PROCTOR TESTS, AND MOISTURE CONTENT AT A RATE OF ONE TEST PER 200 CY. FILL PLACEMENT SHALL BE TESTED FOR DENSITY ONCE PER 2 VERTICAL FEET FILL PLACED.
3. AGGREGATE BASE DENSITY SHALL BE PROOF ROLLED WITH FULLY LOADED DUMP TRUCK OR OTHER SIMILARLY WEIGHTED PNEUMATIC TIRED EQUIPMENT.

DRAWN BY: KMM/GH
CHECKED BY: NW
EVS PROJECT #: 2016-009.1



1-800-252-1166



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.

Kathryn M. Melody
Kathryn M. Melody
DATE: 03 / 16 / 2016
REGISTRATION NUMBER 21776

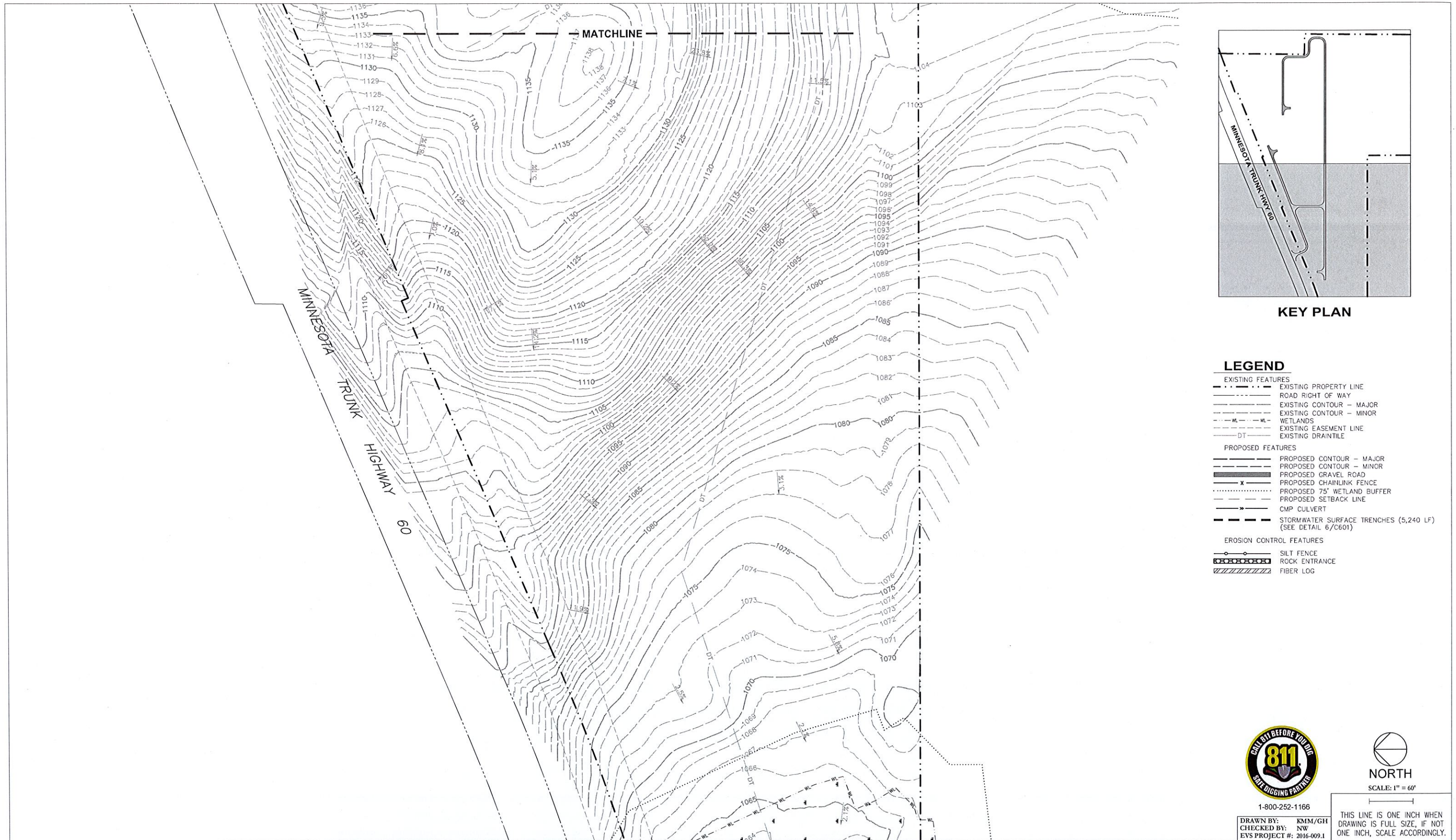
REVISIONS				
REV	DATE	DRW	CHK	DESCRIPTION

LeSUN LLC COMMUNITY
SOLAR GARDEN
NOTES & SPECIFICATIONS

LE SUEUR COUNTY
WATERVILLE, MN

DWG NO. REV NO.

C001



- LEGEND**
- EXISTING FEATURES**
- EXISTING PROPERTY LINE
 - ROAD RIGHT OF WAY
 - EXISTING CONTOUR - MAJOR
 - EXISTING CONTOUR - MINOR
 - WETLANDS
 - EXISTING EASEMENT LINE
 - EXISTING DRAINAGE
- PROPOSED FEATURES**
- PROPOSED CONTOUR - MAJOR
 - PROPOSED CONTOUR - MINOR
 - PROPOSED GRAVEL ROAD
 - PROPOSED CHAINLINK FENCE
 - PROPOSED 75' WETLAND BUFFER
 - PROPOSED SETBACK LINE
 - CMP CULVERT
 - STORMWATER SURFACE TRENCHES (5,240 LF) (SEE DETAIL 6/C601)
- EROSION CONTROL FEATURES**
- SILT FENCE
 - ROCK ENTRANCE
 - FIBER LOG



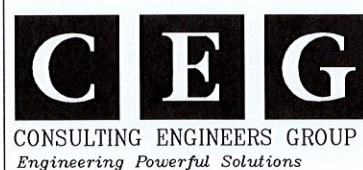
1-800-252-1166

DRAWN BY: KMM/GH
CHECKED BY: NW
EVS PROJECT #: 2016-009.1



SCALE: 1" = 60'

THIS LINE IS ONE INCH WHEN
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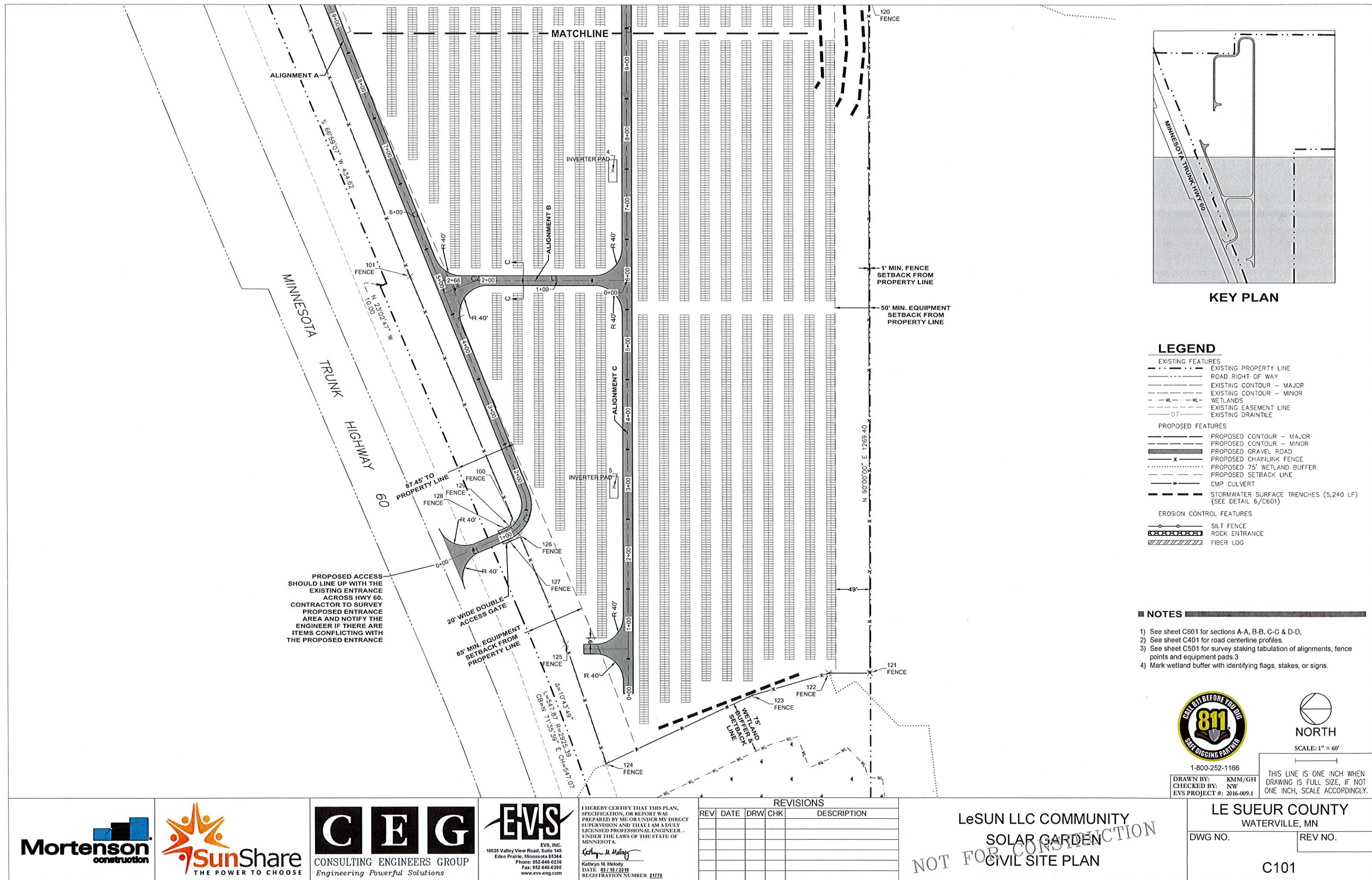
Kathryn M. Melody
Kathryn M. Melody
DATE: 03/16/2016
REGISTRATION NUMBER 21770

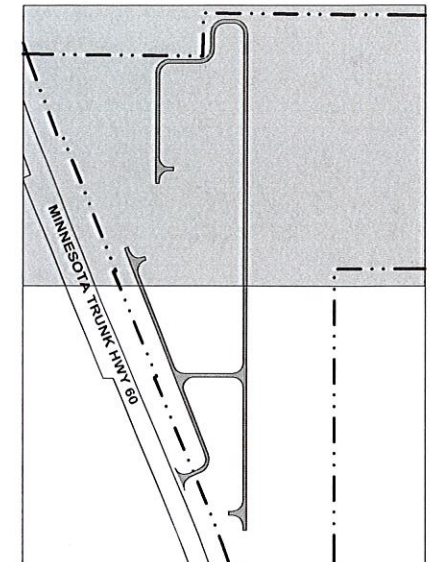
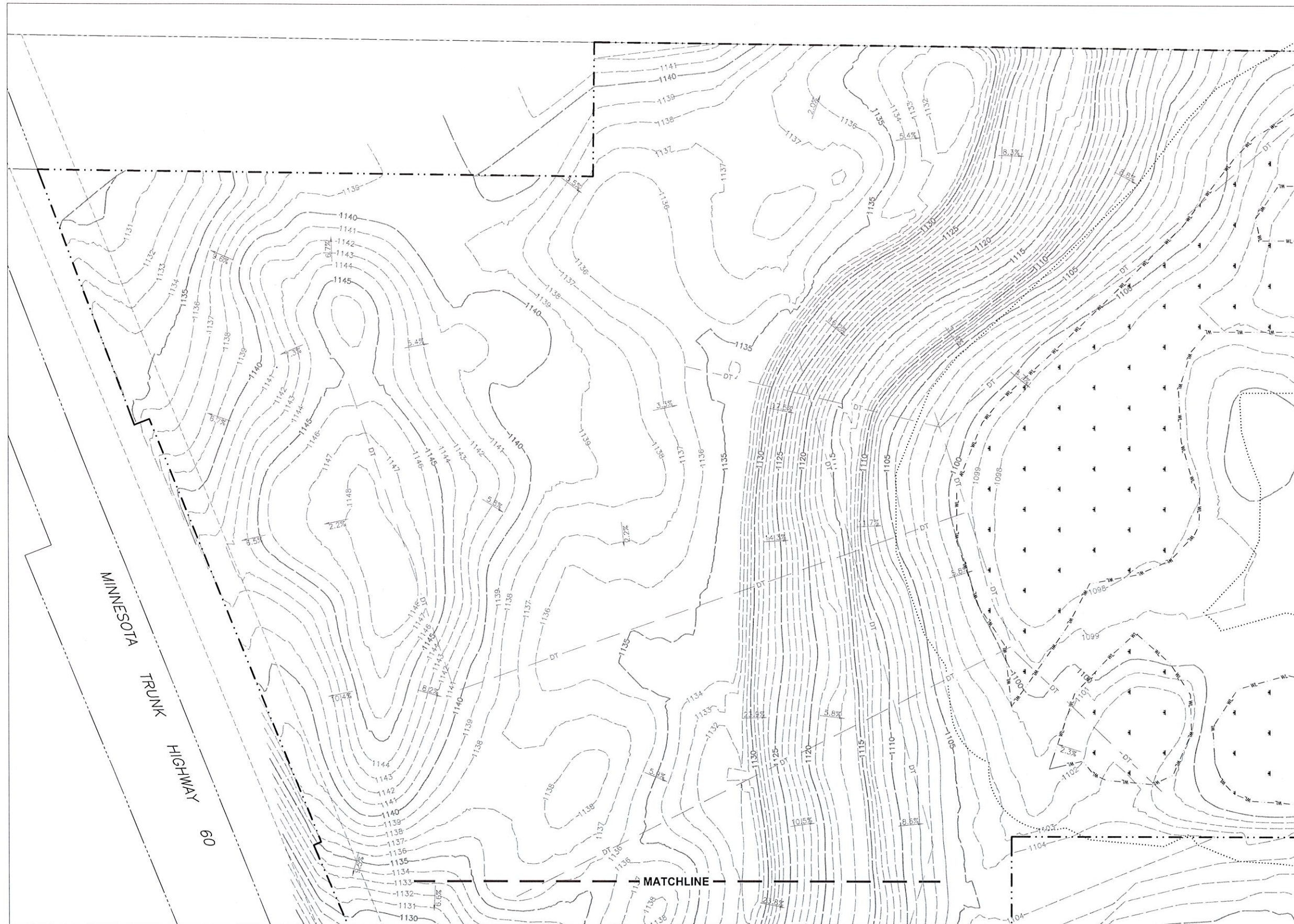
REVISIONS					
REV	DATE	DRW	CHK	DESCRIPTION	

LeSUN LLC COMMUNITY
SOLAR GARDEN
EXISTING CONDITIONS PLAN

LE SUEUR COUNTY
WATERVILLE, MN

DWG NO.	REV NO.
	V101





KEY PLAN

LEGEND

- EXISTING FEATURES**
- EXISTING PROPERTY LINE
 - ROAD RIGHT OF WAY
 - EXISTING CONTOUR - MAJOR
 - EXISTING CONTOUR - MINOR
 - WETLANDS
 - EXISTING EASEMENT LINE
 - EXISTING DRAINAGE
- PROPOSED FEATURES**
- PROPOSED CONTOUR - MAJOR
 - PROPOSED CONTOUR - MINOR
 - PROPOSED GRAVEL ROAD
 - PROPOSED CHAINLINK FENCE
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- EROSION CONTROL FEATURES**
- SILT FENCE
 - ROCK ENTRANCE
 - FIBER LOG



1-800-252-1166

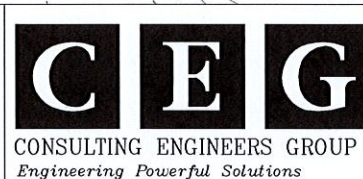
DRAWN BY: KMM/GH
CHECKED BY: NW
EVS PROJECT #: 2016-009.1



NORTH

SCALE: 1" = 60'

THIS LINE IS ONE INCH WHEN
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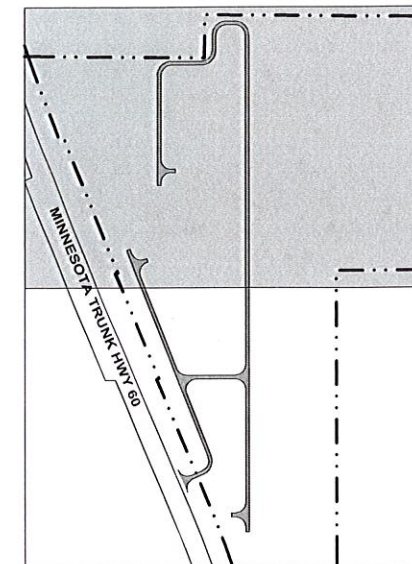
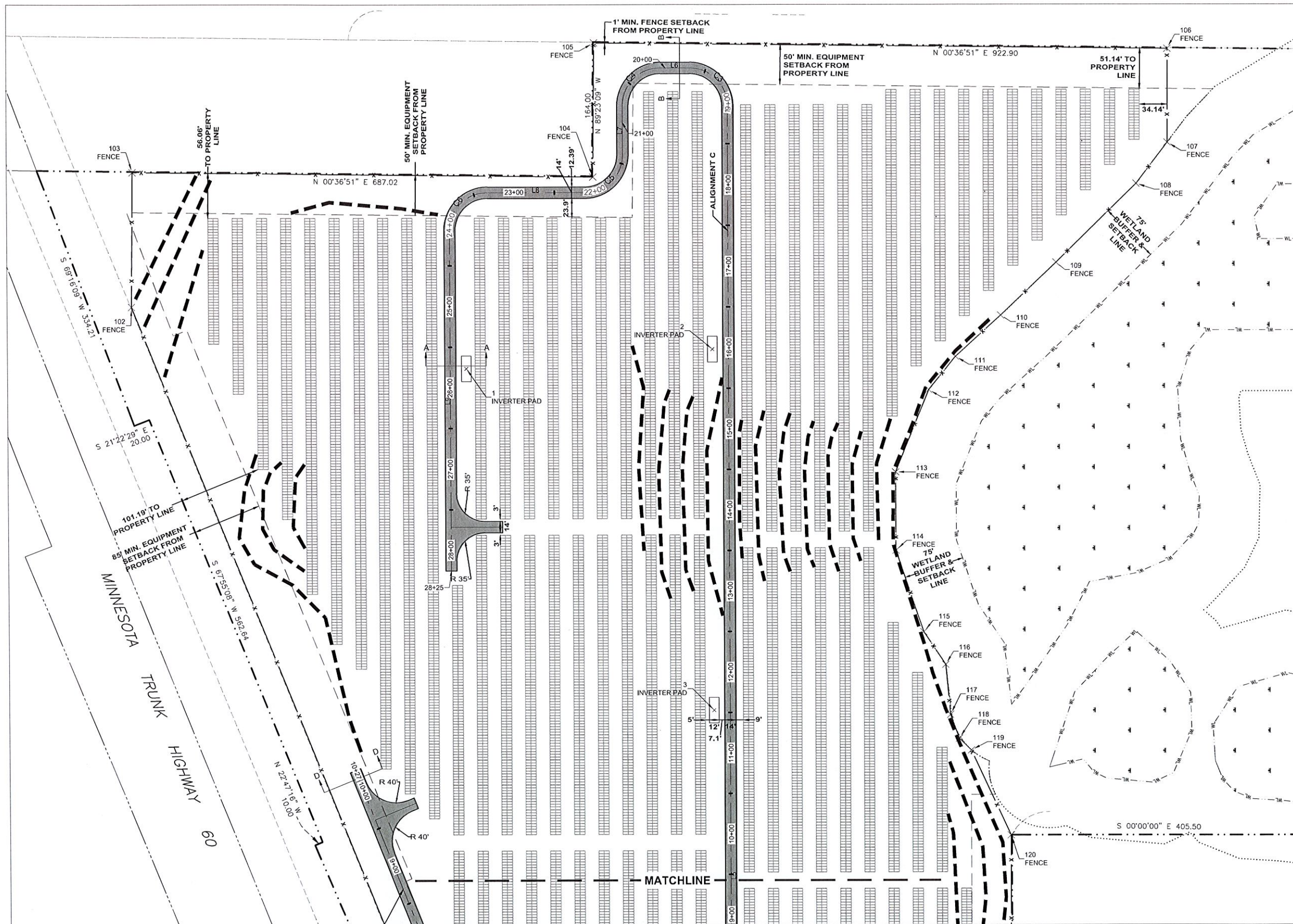


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SPECIFICATION, OR REPORT WAS
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SUPERVISION AND THAT I AM A DULY
LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF
MINNESOTA.
Kathryn M. Melody
Kathryn M. Melody
DATE: 03/18/2016
REGISTRATION NUMBER 21770

REVISIONS				
REV	DATE	DRW	CHK	DESCRIPTION

LeSUN LLC COMMUNITY
SOLAR GARDEN
EXISTING CONDITIONS PLAN

LE SUEUR COUNTY
WATERVILLE, MN
DWG NO. V102
REV NO.



KEY PLAN

LEGEND

- EXISTING FEATURES**
- EXISTING PROPERTY LINE
 - ROAD RIGHT OF WAY
 - EXISTING CONTOUR - MAJOR
 - EXISTING CONTOUR - MINOR
 - WETLANDS
 - EXISTING EASEMENT LINE
 - EXISTING DRAINAGE
- PROPOSED FEATURES**
- PROPOSED CONTOUR - MAJOR
 - PROPOSED CONTOUR - MINOR
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 - PROPOSED CHAINLINK FENCE
 - PROPOSED 75' WETLAND BUFFER
 - PROPOSED SETBACK LINE
 - CMP CULVERT
 - STORMWATER SURFACE TRENCHES (5,240 LF) (SEE DETAIL 6/C601)
- EROSION CONTROL FEATURES**
- SILT FENCE
 - ROCK ENTRANCE
 - FIBER LOG

NOTES

- See sheet C601 for sections A-A, B-B, C-C & D-D.
- See sheet C401 for road centerline profiles.
- See sheet C501 for survey staking tabulation of alignments, fence points and equipment pads.
- Mark wetland buffer with identifying flags, stakes, or signs.



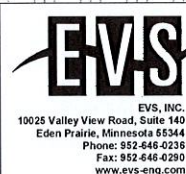
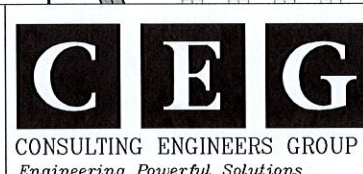
1-800-252-1166

DRAWN BY: KMM/GH
CHECKED BY: NW
EVS PROJECT #: 2016-009.1



NORTH
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Kathryn M. Melody
Kathryn M. Melody
DATE: 03/16/2016
REGISTRATION NUMBER: 21778

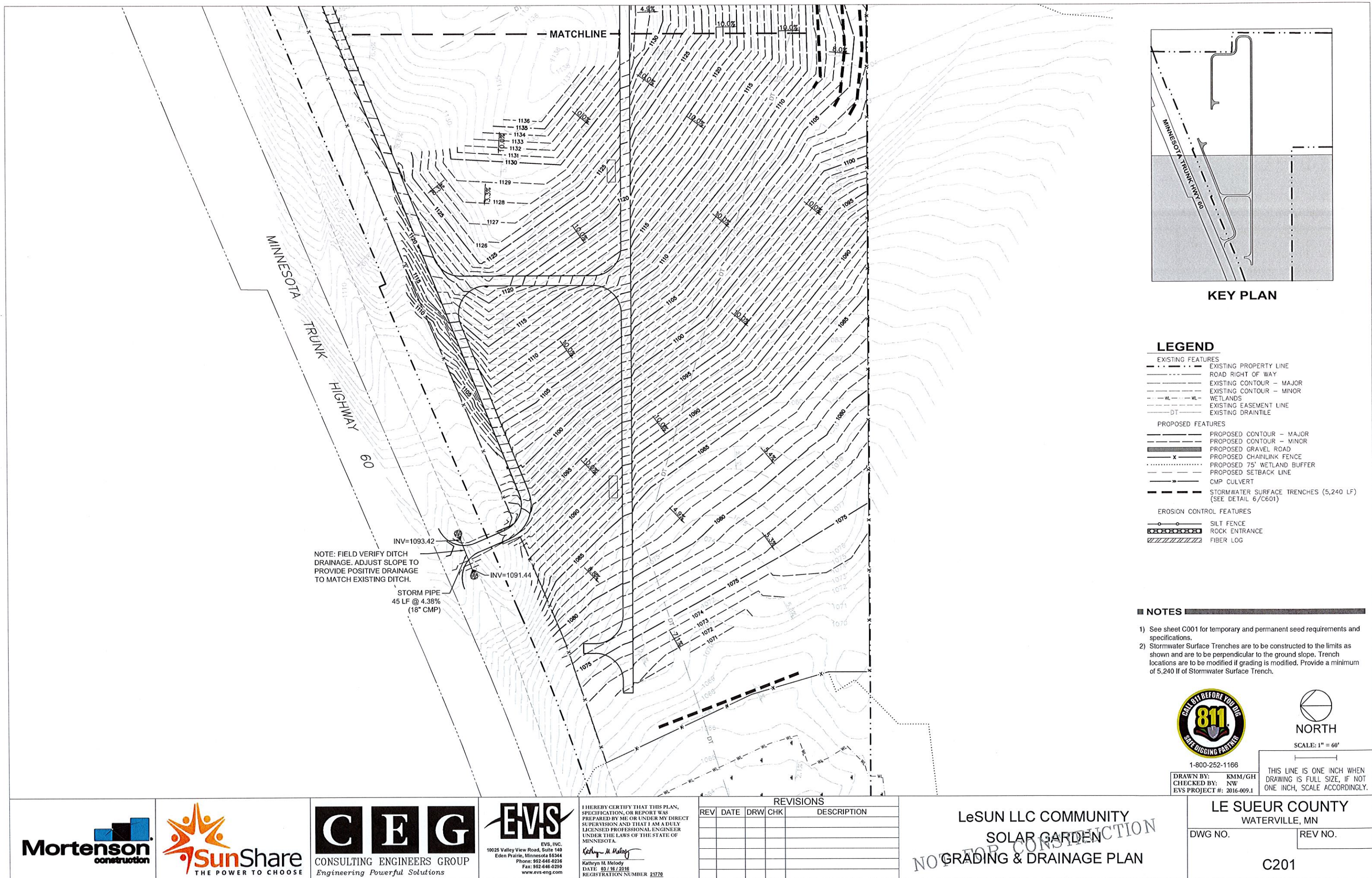
REVISIONS				
REV	DATE	DRW	CHK	DESCRIPTION

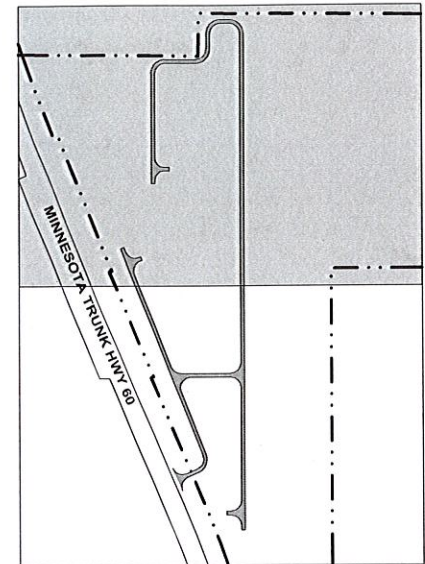
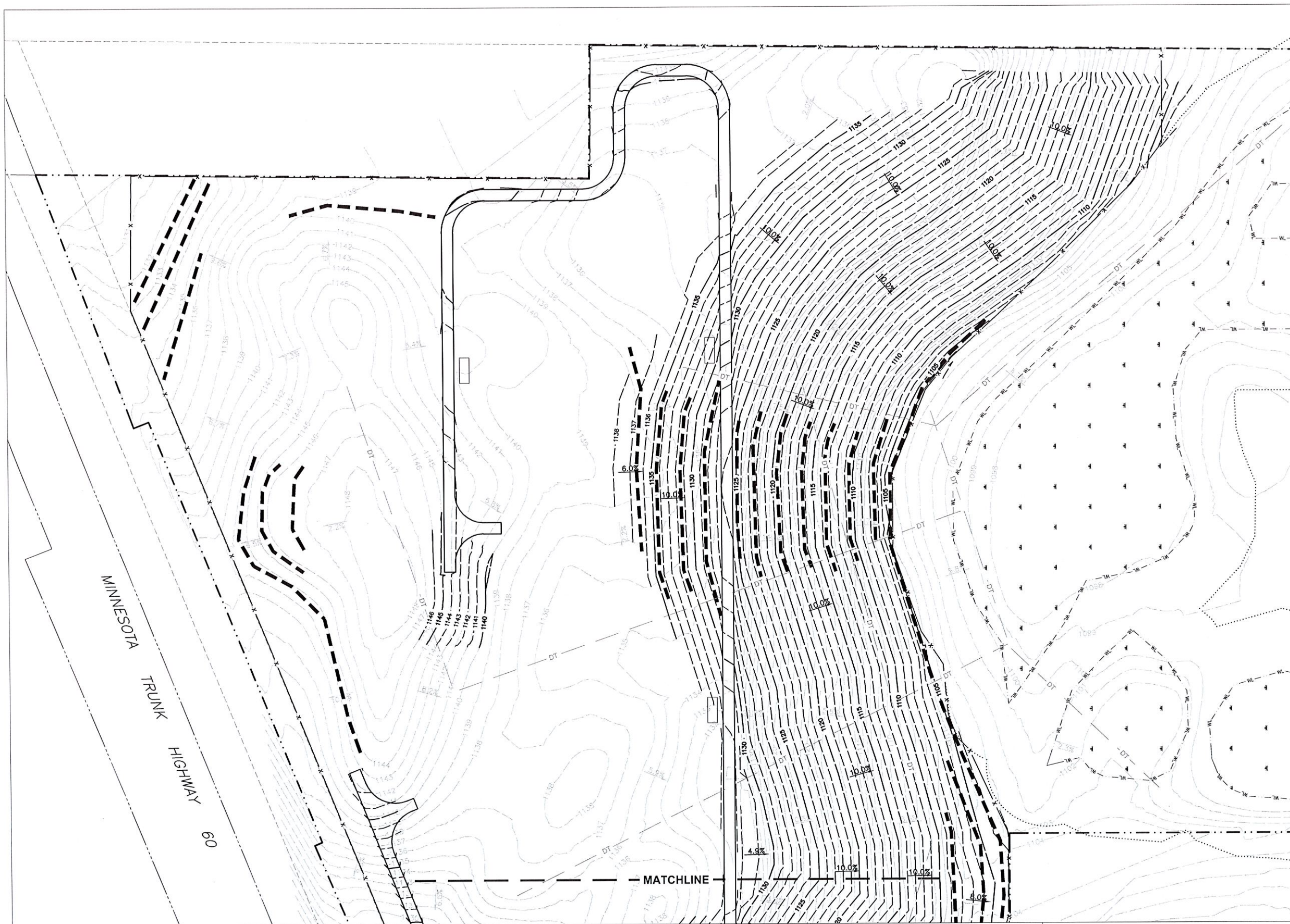
LeSUN LLC COMMUNITY
SOLAR GARDEN
CIVIL SITE PLAN

NOT FOR CONSTRUCTION

LE SUEUR COUNTY
WATERVILLE, MN

DWG NO. C102
REV NO.





KEY PLAN

LEGEND

- EXISTING FEATURES**
- EXISTING PROPERTY LINE
 - ROAD RIGHT OF WAY
 - EXISTING CONTOUR - MAJOR
 - EXISTING CONTOUR - MINOR
 - WETLANDS
 - EXISTING EASEMENT LINE
 - EXISTING DRAINILE
- PROPOSED FEATURES**
- PROPOSED CONTOUR - MAJOR
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 - PROPOSED GRAVEL ROAD
 - PROPOSED CHAINLINK FENCE
 - PROPOSED 75' WETLAND BUFFER
 - PROPOSED SETBACK LINE
 - CMP CULVERT
 - STORMWATER SURFACE TRENCHES (5,240 LF) (SEE DETAIL 6/C601)
- EROSION CONTROL FEATURES**
- SILT FENCE
 - ROCK ENTRANCE
 - FIBER LOG

NOTES

- See sheet C001 for temporary and permanent seed requirements and specifications.
- Stormwater Surface Trenches are to be constructed to the limits as shown and are to be perpendicular to the ground slope. Trench locations are to be modified if grading is modified. Provide a minimum of 5,240 lf of Stormwater Surface Trench.



1-800-252-1166

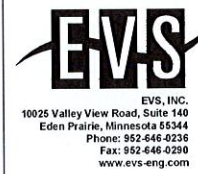
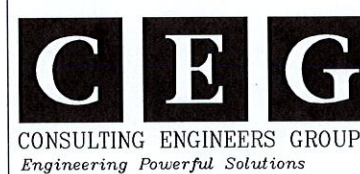
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CHECKED BY: NW
EVS PROJECT #: 2016-009.1



NORTH

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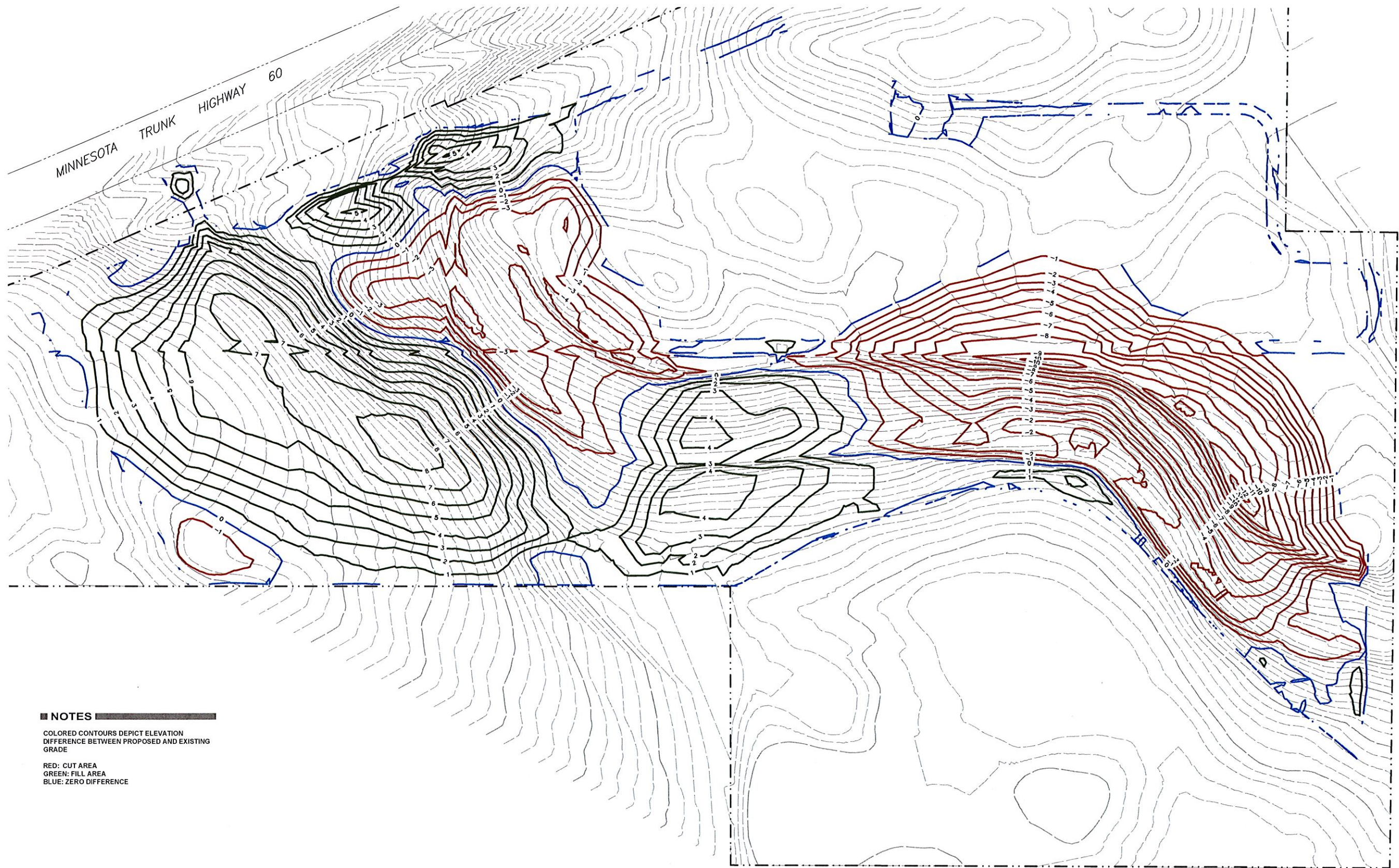
Kathryn M. Meloy
Kathryn M. Meloy
DATE: 03/16/2016
REGISTRATION NUMBER: 21720

REVISIONS					
REV	DATE	DRW	CHK	DESCRIPTION	

LeSUN LLC COMMUNITY
SOLAR GARDEN
GRADING & DRAINAGE PLAN

LE SUEUR COUNTY
WATERVILLE, MN

DWG NO. C202 REV NO.



NOTES

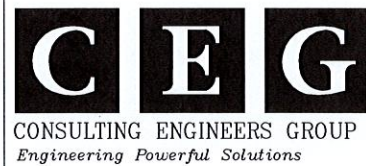
COLORED CONTOURS DEPICT ELEVATION
DIFFERENCE BETWEEN PROPOSED AND EXISTING
GRADE

RED: CUT AREA
GREEN: FILL AREA
BLUE: ZERO DIFFERENCE



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CHECKED BY: NW
EVS PROJECT #: 2016-009.1

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UNDER THE LAWS OF THE STATE OF
MINNESOTA.

Kathryn M. Melody
Kathryn M. Melody
DATE: 03/10/2016
REGISTRATION NUMBER 23770

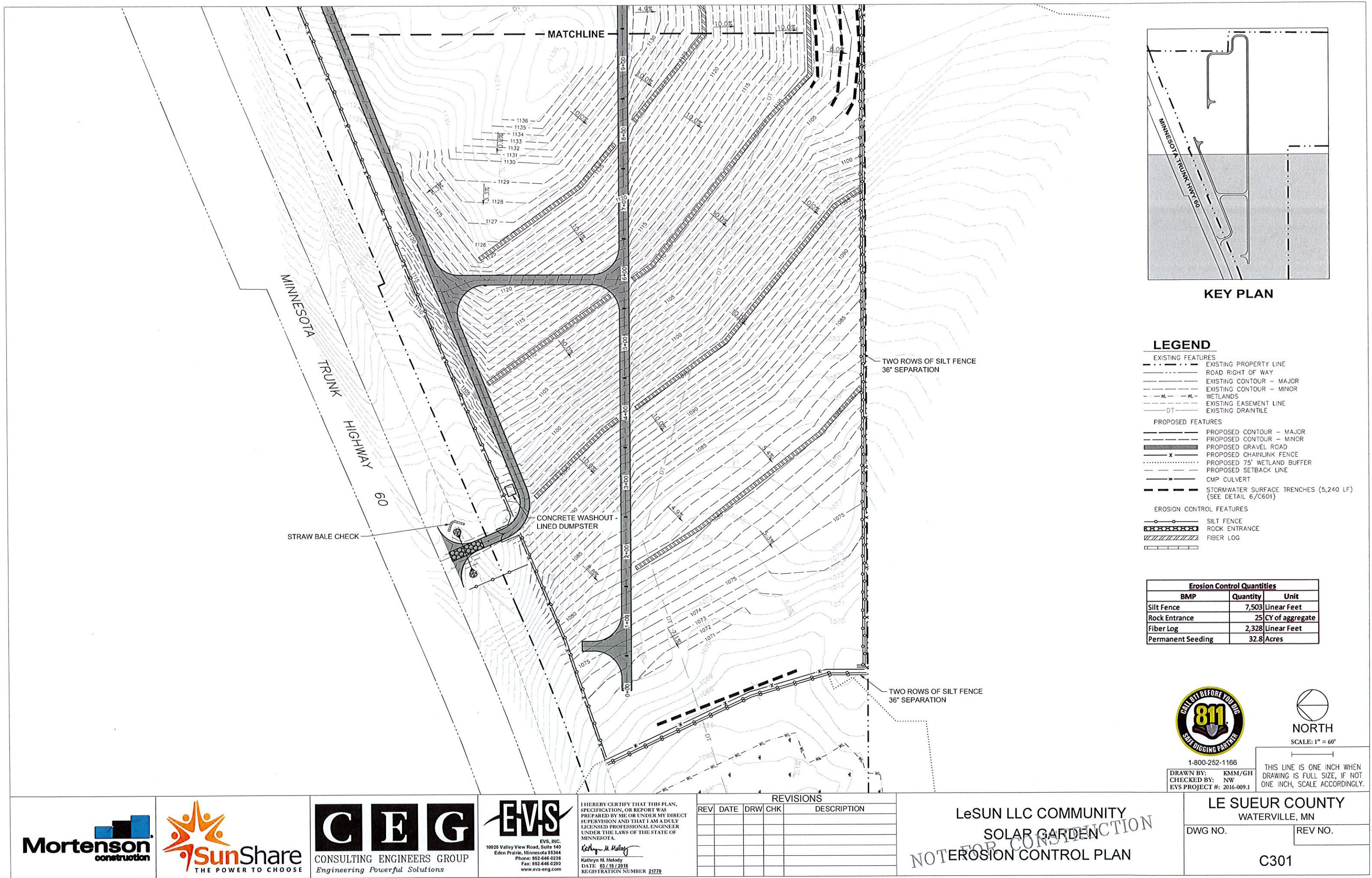
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REV	DATE	DRW	CHK	DESCRIPTION	

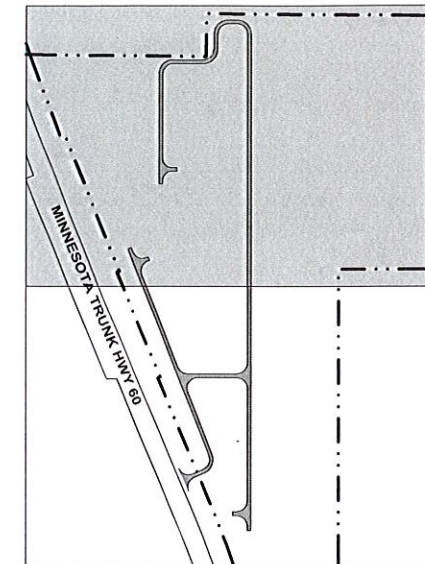
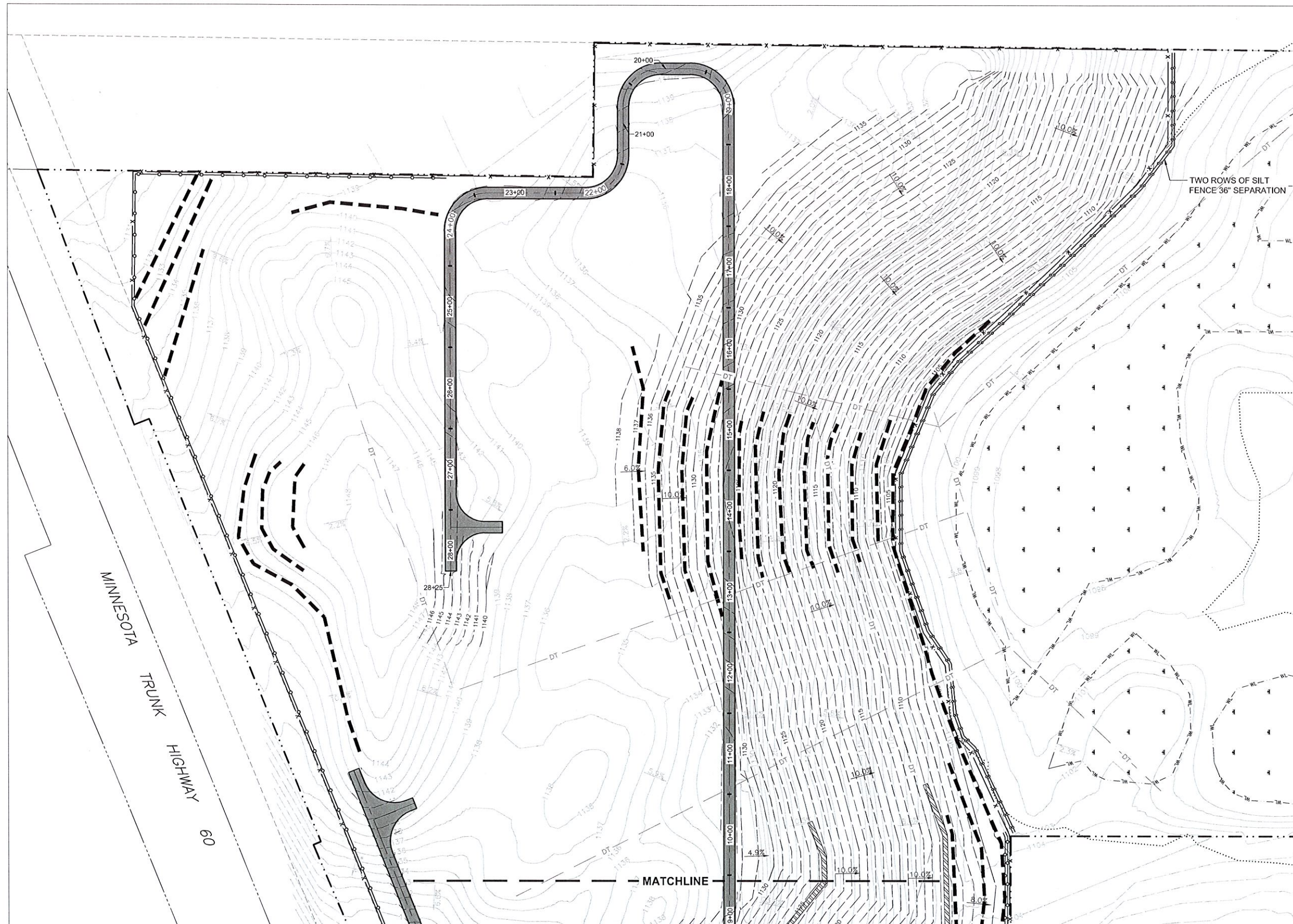
LeSUN LLC COMMUNITY
SOLAR GARDEN
NOT FOR CONSTRUCTION
CUT/FILL VOLUMES

LE SUEUR COUNTY
WATERVILLE, MN

DWG NO. C203

REV NO.





KEY PLAN

LEGEND

- EXISTING FEATURES**
- EXISTING PROPERTY LINE
 - ROAD RIGHT OF WAY
 - EXISTING CONTOUR - MAJOR
 - EXISTING CONTOUR - MINOR
 - WETLANDS
 - EXISTING EASEMENT LINE
 - EXISTING DRAINAGE
- PROPOSED FEATURES**
- PROPOSED CONTOUR - MAJOR
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 - PROPOSED 75' WETLAND BUFFER
 - PROPOSED SETBACK LINE
 - CMP CULVERT
 - STORMWATER SURFACE TRENCHES (5,240 LF) (SEE DETAIL 6/C601)
- EROSION CONTROL FEATURES**
- SILT FENCE
 - ROCK ENTRANCE
 - FIBER LOG



1-800-252-1166

DRAWN BY: KMM/GH
CHECKED BY: NW
EVS PROJECT #: 2016-009.1



NORTH
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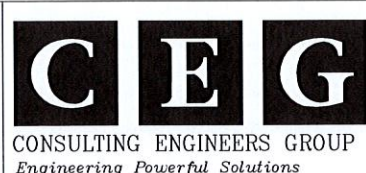
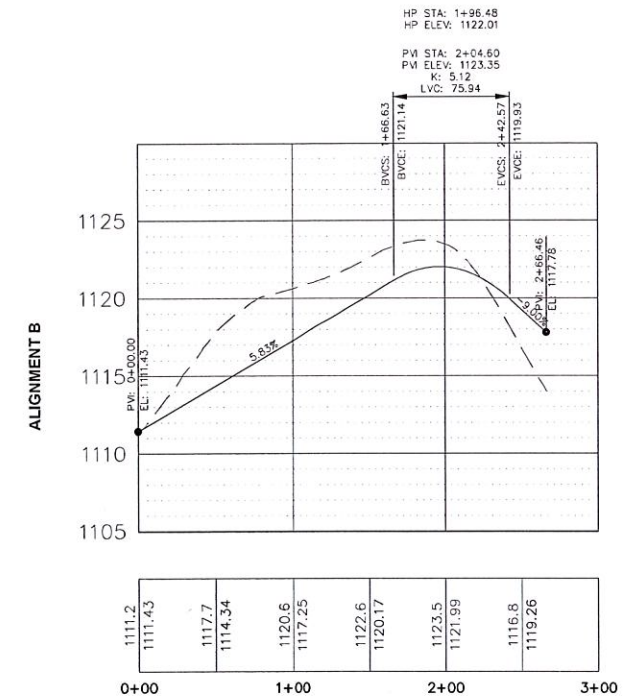
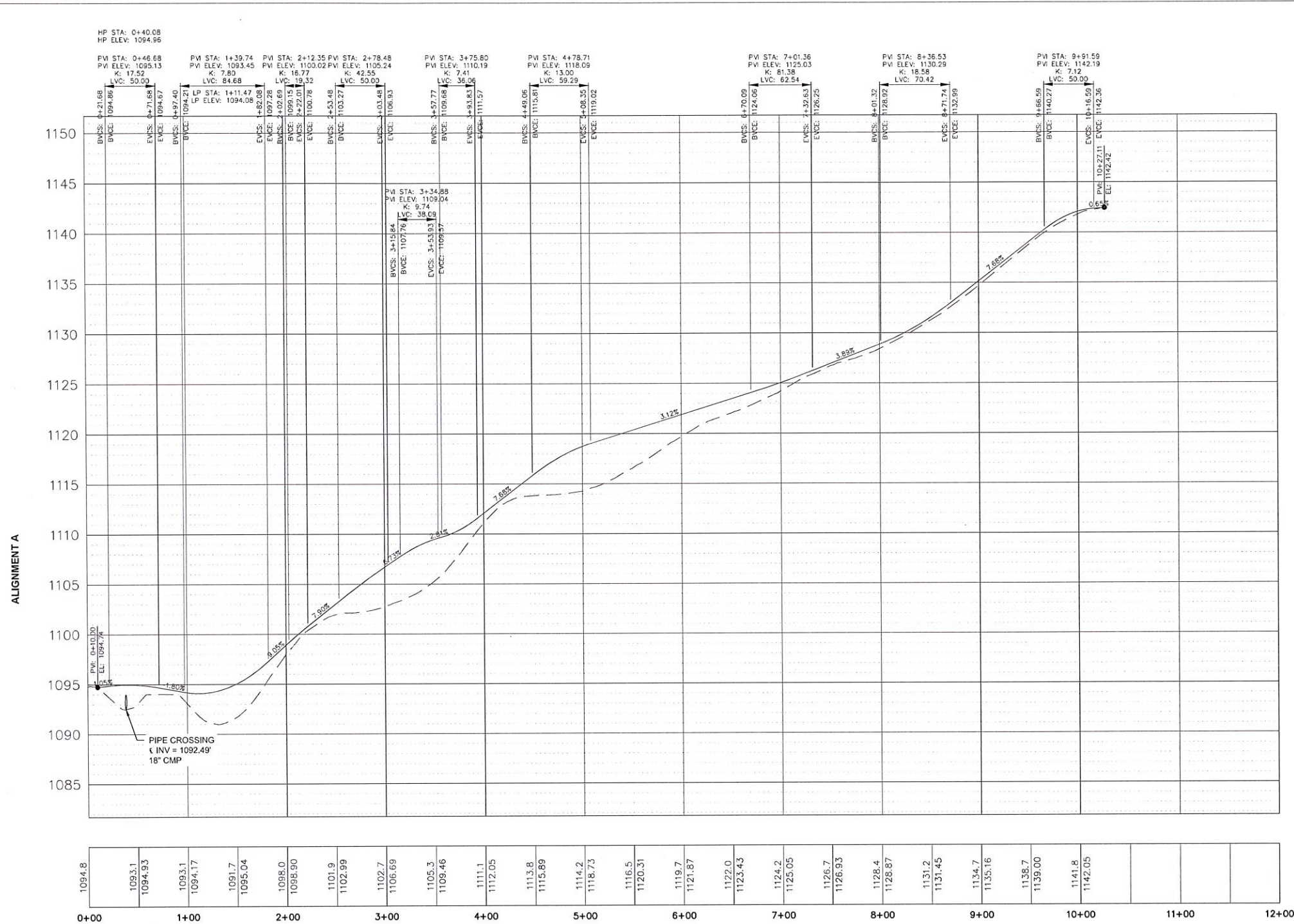


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Kathryn M. Melody
Kathryn M. Melody
DATE: 03/10/2016
REGISTRATION NUMBER: 21770

REVISIONS				
REV	DATE	DRW	CHK	DESCRIPTION

LeSUN LLC COMMUNITY
SOLAR GARDEN
NOT FOR CONSTRUCTION
EROSION CONTROL PLAN

LE SUEUR COUNTY
WATERVILLE, MN
DWG NO. C302
REV NO.



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Kathryn M. Melody
 Kathryn M. Melody
 DATE: 03/19/2016
 REGISTRATION NUMBER 21770

REVISIONS				
REV	DATE	DRW	CHK	DESCRIPTION

LeSUN LLC COMMUNITY
 SOLAR GARDEN
 ROAD PROFILES

NOT FOR CONSTRUCTION

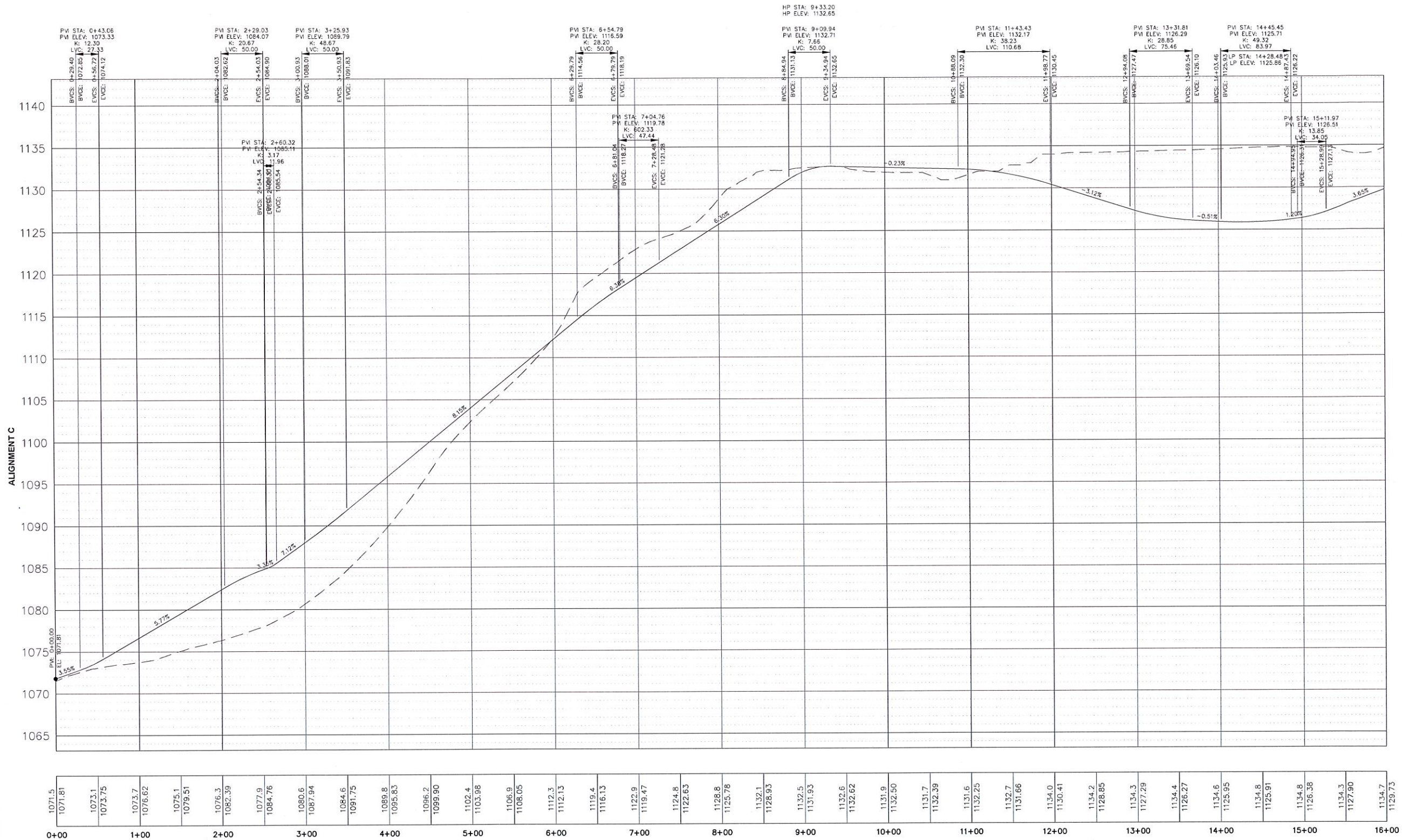
SCALE: 1" = 60'

DRAWN BY: KMM/GH
 CHECKED BY: NW
 EVS PROJECT #: 2016-009.1

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LE SUEUR COUNTY
 WATERVILLE, MN

DWG NO. C401
 REV NO.



SCALE: 1" = 60'

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 CHECKED BY: NW
 EVS PROJECT #: 2016-009.1

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CONSULTING ENGINEERS GROUP
 Engineering Powerful Solutions

EVS, INC.
 10025 Valley View Road, Suite 140
 Eden Prairie, Minnesota 55344
 Phone: 952-446-0238
 Fax: 952-446-0290
 www.evs-eng.com

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Kathryn M. Melody
 Kathryn M. Melody
 DATE: 03/16/2016
 REGISTRATION NUMBER: 21770

REVISIONS				
REV	DATE	DRW	CHK	DESCRIPTION

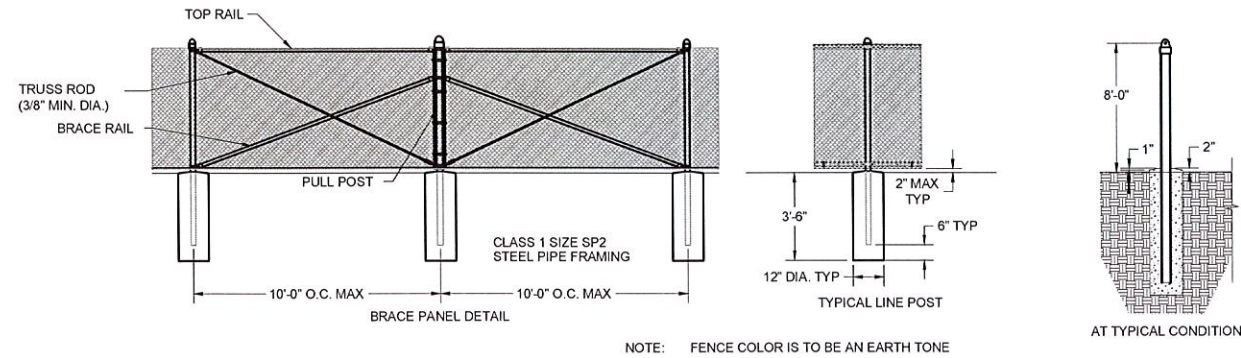
LeSUN LLC COMMUNITY
SOLAR GARDEN
ROAD PROFILES

NOT FOR CONSTRUCTION

LE SUEUR COUNTY
 WATERVILLE, MN

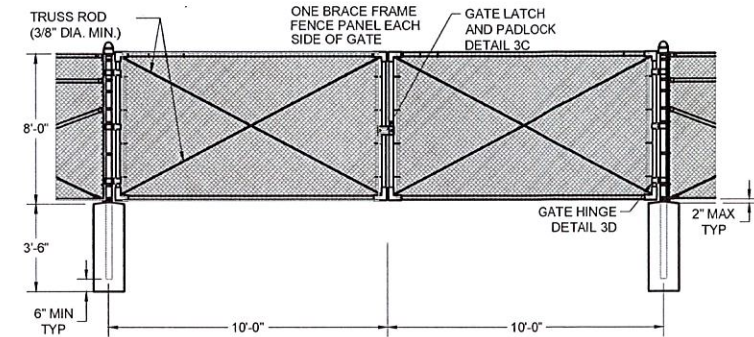
DWG NO. REV NO.

C402



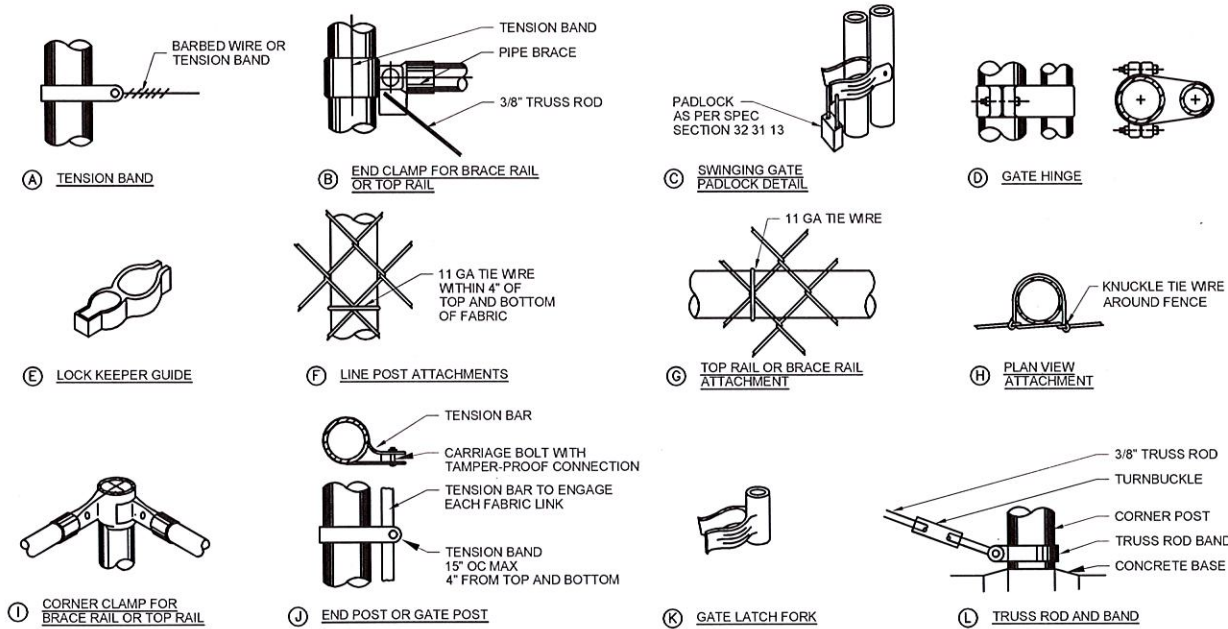
NOTES:

1. FENCE FABRIC SHALL BE NO MORE THAN 2\"/>

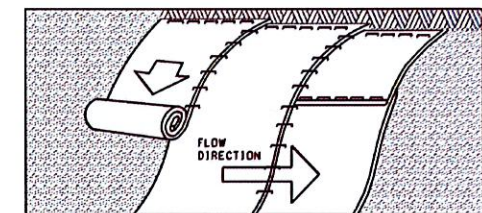


1 CHAIN LINK SECURITY FENCE
C602 NOT TO SCALE

2 20 FOOT WIDE DOUBLE ACCESS GATE
C602 NOT TO SCALE



STEEL POST SCHEDULE		
USE AND SECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)	
	FABRIC LESS THAN 72"	FABRIC 72" TO 96"
CORNER, END & PULL POSTS:		
TUBULAR - ROUND	2.375" O.D.	2.875" O.D.
TUBULAR - SQUARE	2.00" SQ.	2.80" SQ.
C-SECTION (ROLL-FORMED)	3.50" x 3.50"	3.50" x 3.50"
LINE POSTS:		
TUBULAR - ROUND	1.90" O.D.	2.375" O.D.
H-SECTION	2.25" x 1.70"	2.25" x 1.70"
C-SECTION (ROLL-FORMED)	1.875" x 1.625"	2.25" x 1.70"
TOP, BOTTOM & BRACE RAILS:		
TUBULAR - ROUND	1.66" O.D.	
TUBULAR - SQUARE	1.50" O.D.	
H-SECTION	1.625" x 1.50"	
C-SECTION (ROLL-FORMED)	1.625" x 1.25"	



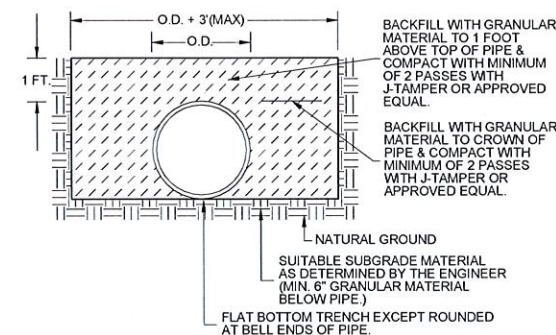
3 MISCELLANEOUS CHAIN LINK FENCE HARDWARE
C602 NOT TO SCALE

SLOPE INSTALLATION

NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE (OR CHANNEL) BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS DOWN (STARTING AT DOWNSTREAM PROCEEDING UPSTREAM) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH AN APPROXIMATE (MIN) 4" OVERLAP.
5. WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY A (MIN) 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
6. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
7. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

NOT TO SCALE
EROSION CONTROL BLANKET DETAIL
REVISED 101-01-09



4 PIPE BEDDING
C601 NOT TO SCALE

5 EROSION CONTROL BLANKET
C602 NOT TO SCALE

DRAWN BY: KMM/GH
CHECKED BY: NW
EVS PROJECT #: 2016-009.1



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Kathryn M. Melody
Kathryn M. Melody
DATE: 02/15/2016
REGISTRATION NUMBER 21770

REVISIONS				
REV	DATE	DRW	CHK	DESCRIPTION

LeSUN LLC COMMUNITY
SOLAR GARDEN
NOT FOR CONSTRUCTION
SITE DETAILS

LE SUEUR COUNTY
WATERVILLE, MN
DWG NO. C602
REV NO.

Alignment A							
Number	Line/Chord Direction	Length	Radius	Δ	PC (STA N E)	PT (STA N E)	PI (N E)
L1	S23° 14' 13.01"E	102.46			0+00.00	1+02.46	
C1		72.65	47.00	88.5627	1+02.46 107018.00 390153.08	1+75.11 106992.91 390213.72	106975.8835 390171.1614
L2	N68° 12' 01.32"E	852.00			1+75.11	10+27.11	

Alignment B							
Number	Line/Chord Direction	Length	Radius	Δ	PC (STA N E)	PT (STA N E)	PI (N E)
L3	N0° 00' 00.00"E	208.54			0+00.00	2+08.54	
C2		17.88	47.00	21.7996	2+08.54 107052.29 390516.99	2+26.42 107069.74 390513.63	107061.3404 390516.9927
L4	N21° 47' 58.68"W	40.03			2+26.42	2+66.46	

Alignment C							
Number	Line/Chord Direction	Length	Radius	Δ	PC (STA N E)	PT (STA N E)	PI (N E)
L5	N90° 00' 00.00"E	1896.55			0+00.00	18+96.55	
C3		72.26	46.00	90.0000	18+96.55 106843.75 391822.16	19+68.80 106889.75 391868.16	106843.7488 391868.1582
L6	N0° 00' 00.00"E	38.23			19+68.80	20+07.03	
C4		72.26	46.00	90.0000	20+07.03 106927.98 391868.16	20+79.29 106973.98 391822.16	106973.9763 391868.1582
L7	N90° 00' 00.00"W	60.16			20+79.29	21+39.45	
C5		72.26	46.00	90.0000	21+39.45 106973.98 391762.00	22+11.70 107019.98 391716.00	106973.9763 391715.9979
L8	N0° 00' 00.00"E	122.59			22+11.70	23+34.29	
C6		72.26	46.00	90.0000	23+34.29 107142.56 391716.00	24+06.54 107188.56 391670.00	107188.5613 391715.9979
L9	N90° 00' 00.00"W	418.94			24+06.54	28+25.48	

FENCELINE		
POINT NUMBER	NORTHING	EASTING
100	107007.55	390171.90
101	107156.04	390523.19
102	107583.01	391576.27
103	107581.25	391741.16
104	107010.81	391735.05
105	107009.06	391899.04
106	106300.71	391891.45
107	106300.71	391776.75
108	106339.09	391726.46
109	106438.10	391629.85
110	106506.72	391564.97
111	106562.61	391514.39
112	106595.99	391473.57
113	106637.34	391372.20
114	106637.34	391275.66
115	106603.30	391174.95
116	106576.31	391134.60
117	106570.35	391072.92
118	106559.68	391043.48
119	106544.75	391028.83
120	106495.85	390924.01
121	106495.85	389955.03
122	106555.00	389955.03
123	106665.81	389922.99
124	106875.83	389825.16
125	106933.54	389996.84
126	106999.76	390153.48
127	107014.11	390143.87
128	107021.89	390162.29
129	107014.08	390165.59

INVERTER PAD TABLE				
PAD NUMBER	NORTHING	EASTING	PROPOSED GRADE	PAD ELEVATION
PCU-1	107168.75	391500.08	1141.00	1141.83
PCU-2	106863.85	391523.73	1131.32	1132.15
PCU-3	106863.85	391078.63	1132.93	1133.76
PCU-4	106863.85	390673.17	1123.78	1124.61
PCU-5	106863.85	390221.47	1088.86	1089.69

- NOTES:
- ELEVATION IS TO SURFACE OF INVERTER PAD AND ASSUMES 10" DROP TO ADJACENT GRADE.
 - N/E POINT IS LOCATED AT CENTER OF INVERTER PAD.

1 ACCESS ROAD GEOMETRY
C501 NOT TO SCALE

2 CHAIN LINK FENCE - COORDINATES
C501 NOT TO SCALE

3 INVERTER PAD - COORDINATES & ELEVATION
C501 NOT TO SCALE



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.
Kathryn M. Melody
Kathryn M. Melody
DATE: 02/18/2016
REGISTRATION NUMBER 21779

REVISIONS					
REV	DATE	DRW	CHK	DESCRIPTION	

LeSUN LLC COMMUNITY
SOLAR GARDEN
DESIGN TABULATIONS

NOT FOR CONSTRUCTION

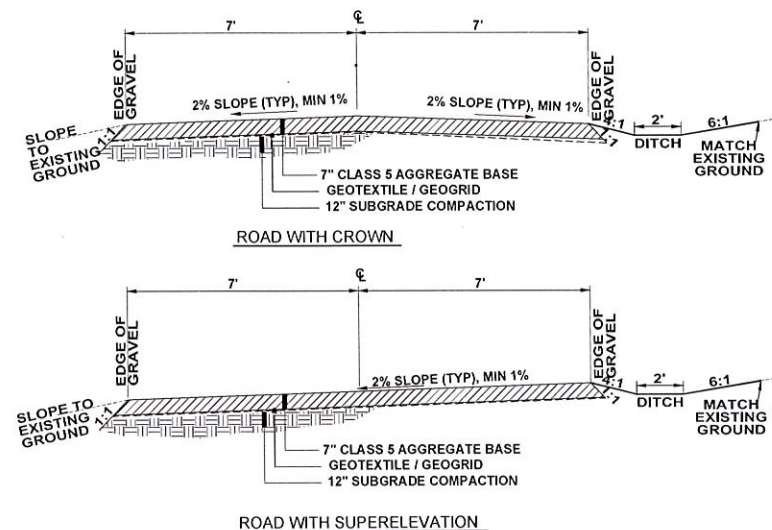
DRAWN BY: KMM/GH
CHECKED BY: NW
EVS PROJECT #: 2016-009.1

LE SUEUR COUNTY
WATERVILLE, MN

DWG NO.

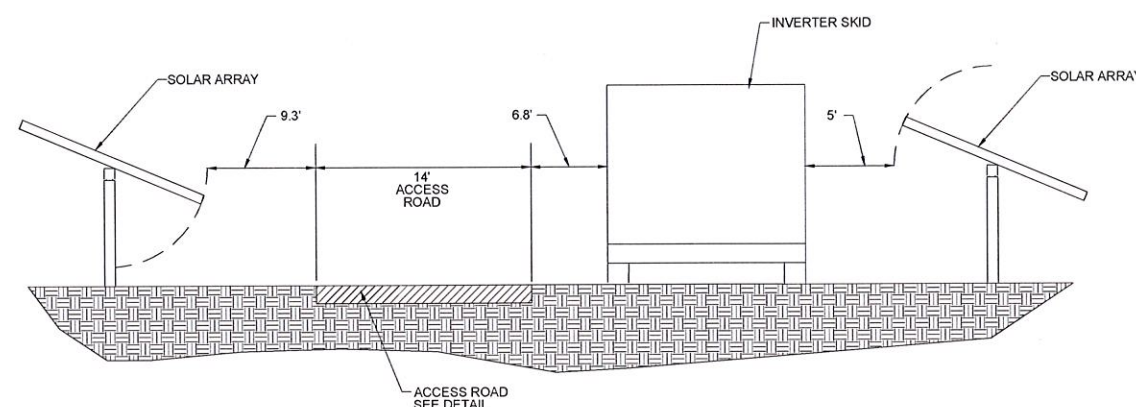
REV NO.

C501



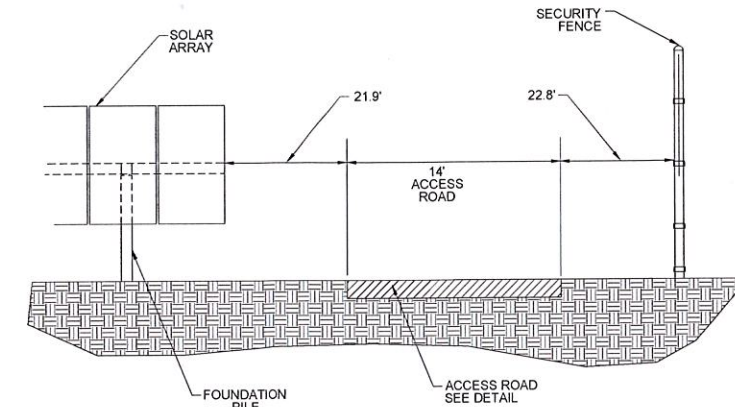
- NOTE:
1. CONSTRUCT DITCH AS SHOWN ABOVE ONLY WHERE INDICATED BY CONTOURS ON THE GRADING PLAN.
 2. IN THE ABSENCE OF A ROADSIDE DITCH, SLOPE FROM EDGE OF GRAVEL TO EXISTING GROUND @3:1
 3. 2% CROSS SLOPE IS TYPICAL, BUT CAN BE ADJUSTED DOWN TO MATCH EXISTING GROUND SLOPE IN ORDER TO PROMOTE CONTINUED SHEET DRAINAGE ACROSS ROAD. CROSS SLOPE SHALL NOT BE LESS THAN 1%.

1 TYPICAL SOLAR ACCESS ROAD
C601 NOT TO SCALE



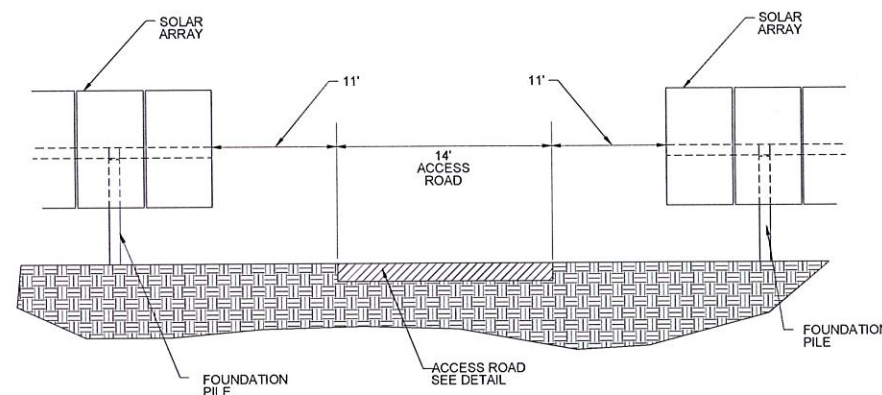
SECTION A-A

2 14' ACCESS ROAD AND SOLAR ARRAY ORIENTATION
C601 NOT TO SCALE



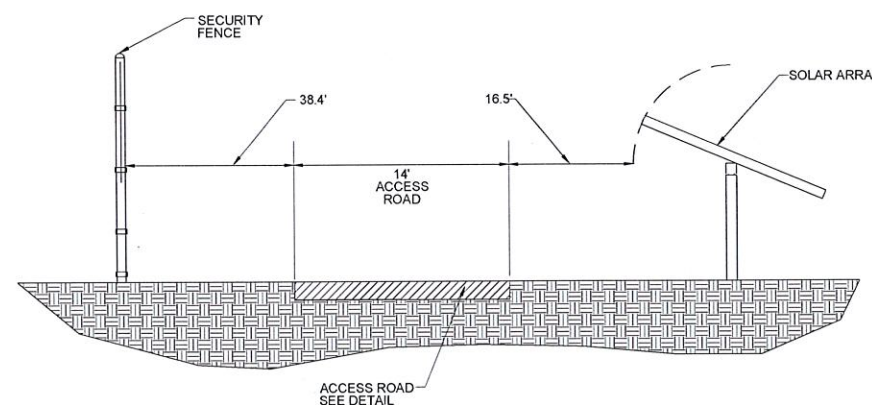
SECTION B-B

3 14' ACCESS ROAD AND SOLAR ARRAY ORIENTATION
C601 NOT TO SCALE



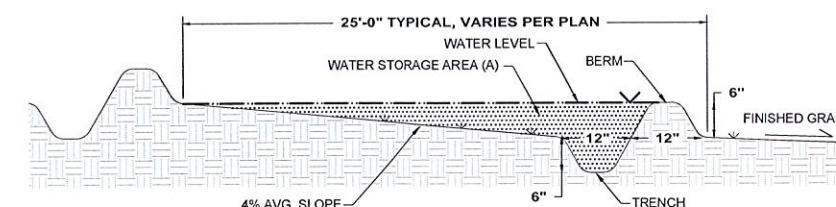
SECTION C-C

4 14' ACCESS ROAD AND SOLAR ARRAY ORIENTATION
C601 NOT TO SCALE



SECTION D-D

5 14' ACCESS ROAD AND SOLAR ARRAY ORIENTATION
C601 NOT TO SCALE



- NOTES:
1. SEE GRADING PLAN FOR TRENCH LOCATIONS.
 2. TRENCHES ARE TO BE DUG PERPENDICULAR TO FINISHED GROUND SLOPE.
 3. TERMINATE ENDS BY ROUTING BERM 90 DEGREES UP SLOPE AND USE 10' TAPER TO MEET ADJACENT GRADE.
 4. COMPACT BERM WITH PLATE TAMPER OR APPROVED EQUIVALENT. DO NOT COMPACT TRENCH BOTTOM OR ADJACENT FINISHED GRADE.
 5. TRENCH WIDTH AND DEPTH ARE APPROXIMATE AND CAN BE MODIFIED BASED ON AVAILABLE DISC DRAG, PLOW DRAG, OR TRENCHER USED. CROSS SECTIONAL AREA OF TRENCH/BERM SHALL BE EQUIVALENT TO THAT SHOWN AND IS TO BE VERIFIED BY THE ENGINEER PRIOR TO CONSTRUCTION.
 6. TRENCHES ARE TO BE PERIODICALLY MAINTAINED TO DESIGNED DEPTH AND WIDTH AS THEY ARE DISTURBED BY CONSTRUCTION TRAFFIC.
 7. UPON COMPLETION OF TRENCH CONSTRUCTION, STABILIZE WITH PERMANENT VEGETATION ACCORDING TO SEED SPECIFICATION ON C002.
 8. TRENCHES ARE TO REMAIN AS A PERMANENT STORMWATER FEATURE.

6 STORMWATER SURFACE TRENCHES
C601 NOT TO SCALE

DRAWN BY: KMM/GH
CHECKED BY: NW
EVS PROJECT #: 2016-009.1

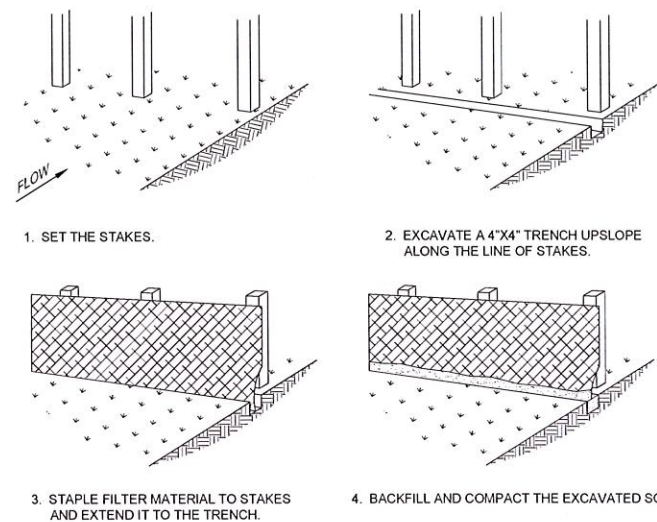


I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Kathryn M. Melody
Kathryn M. Melody
DATE: 03/15/2016
REGISTRATION NUMBER 21770

REVISIONS					DESCRIPTION
REV	DATE	DRW	CHK		

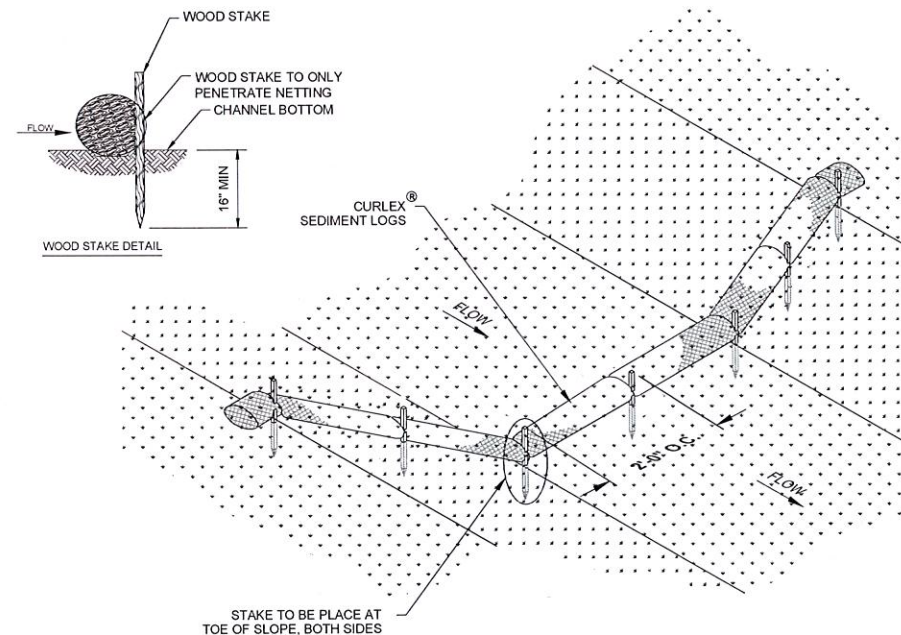
LeSUN LLC COMMUNITY
SOLAR GARDEN
SITE DETAILS
NOT FOR CONSTRUCTION

LE SUEUR COUNTY
WATERVILLE, MN
DWG NO. C601
REV NO.

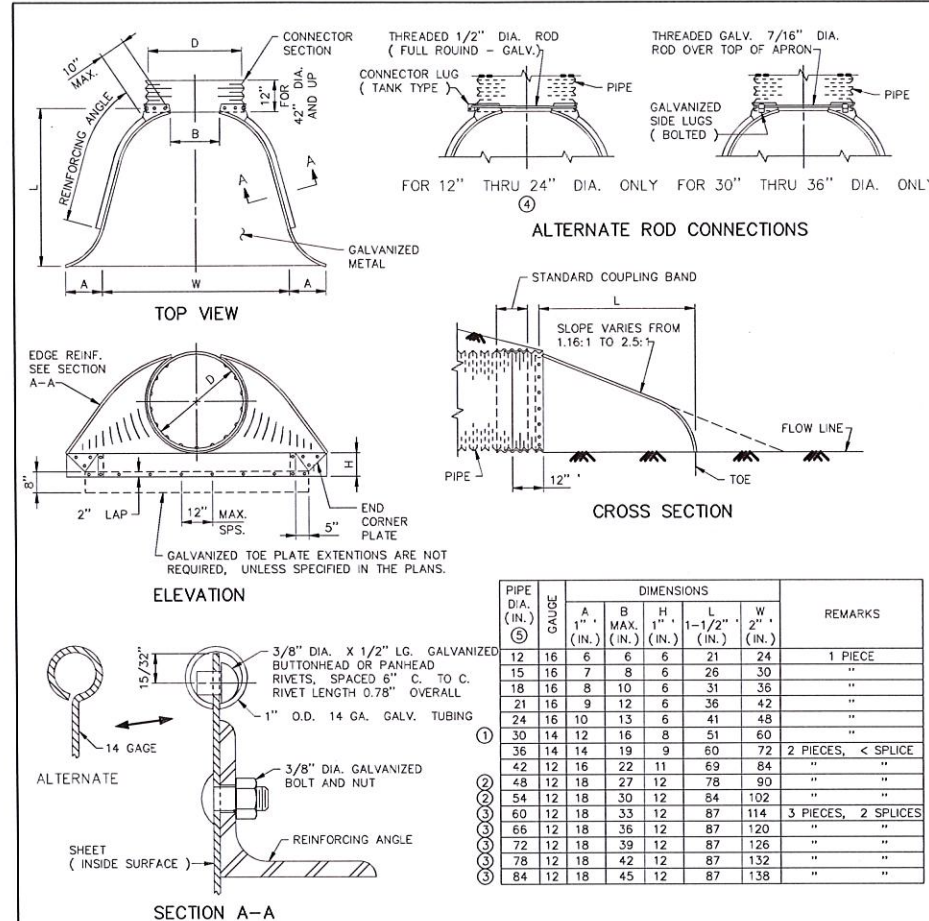


NOTES:
FABRIC AS PER MNDOT SPEC. 3886
8 FOOT NOMINAL SPACING BETWEEN WOOD STAKES.
15 FEET MINIMUM EMBEDMENT.
6 TO 8 INCHES OF FABRIC EXTEND INTO TRENCH.
2\"/>

1 SILT FENCE WOOD POST CONSTRUCTION
C603 NOT TO SCALE

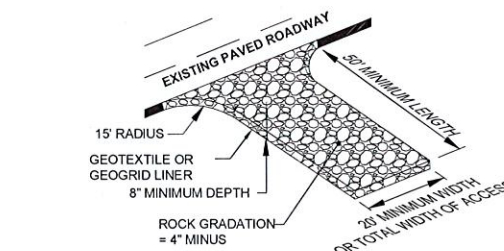


2 FIBER LOG SLOPE PROTECTION
C603 NOT TO SCALE



NOTES:
FOR OTHER APPROVED CONNECTIONS, SEE STANDARD PLATE 3124.
MULTIPLE PANEL BODIES SHALL HAVE 2\"/>

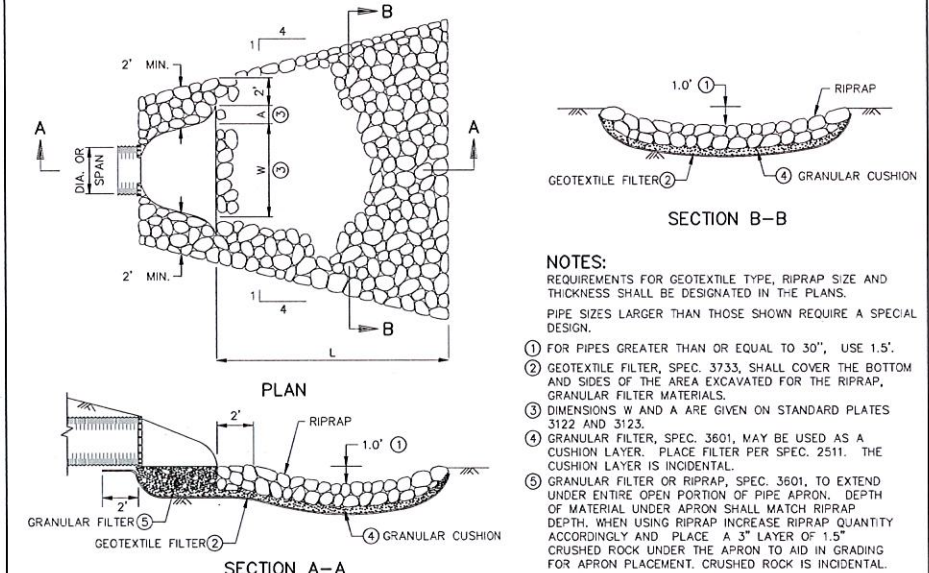
STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE 2501	STANDARD PLATE NO. 3123J
METAL APRON FOR C.S. PIPE	REVISED 5-3-99 A.K.J.	



3 STABILIZED ROCK CONSTRUCTION ENTRANCE
C603 NOT TO SCALE

TABLE OF QUANTITIES RIPRAP AT CSP OUTLETS									
DIA. OF ROUND PIPE (IN.)	L (FT.)	CLASS II d ₅₀ = 6"			CLASS III d ₅₀ = 9"			CLASS IV d ₅₀ = 12"	
		GEO- TEXTILE FILTER (SQ.YD.)	GRANUL UNDER APRON (CU.YD.)	12" DEPTH RIPRAP (CU.YD.)	GEO- TEXTILE FILTER (SQ.YD.)	GRANUL UNDER APRON (CU.YD.)	18" DEPTH RIPRAP (CU.YD.)	GEO- TEXTILE FILTER (SQ.YD.)	24" DEPTH RIPRAP (CU.YD.)
12	8	16.4	0.2	3.0	19.2	0.2	4.5	22.3	0.3
15	8	17.8	0.2	3.3	20.7	0.3	4.9	23.9	0.4
18	10	22.9	0.3	4.6	26.2	0.5	6.8	29.7	0.6
21	10	24.5	0.4	4.9	27.9	0.6	7.3	31.5	0.8
24	12	30.4	0.5	6.4	34.2	0.8	9.5	38.2	1.0
30	14	38.9	0.8	8.5	43.2	1.2	12.7	47.7	1.5
36	16	48.3	1.1	10.8	53.1	1.6	16.2	58.1	2.1
42	18	58.7	1.5	13.5	64.0	2.2	20.2	69.5	2.9
48	20	68.5	1.8	16.0	74.2	2.7	24.0	80.1	3.5

TABLE OF QUANTITIES RIPRAP AT CSP-A OUTLETS									
SPAN OF PIPE ARCH (IN.)	L (FT.)	CLASS II d ₅₀ = 6"			CLASS III d ₅₀ = 9"			CLASS IV d ₅₀ = 12"	
		GEO- TEXTILE FILTER (SQ.YD.)	GRANUL UNDER APRON (CU.YD.)	12" DEPTH RIPRAP (CU.YD.)	GEO- TEXTILE FILTER (SQ.YD.)	GRANUL UNDER APRON (CU.YD.)	18" DEPTH RIPRAP (CU.YD.)	GEO- TEXTILE FILTER (SQ.YD.)	24" DEPTH RIPRAP (CU.YD.)
17	8	18.7	0.2	3.1	20.1	0.3	4.7	23.2	0.3
21	10	21.9	0.3	4.5	25.1	0.4	6.7	28.6	0.5
24	10	23.5	0.3	4.9	26.8	0.5	7.4	30.4	0.6
28	12	29.2	0.4	6.4	32.9	0.6	9.6	36.8	0.8
35	14	36.8	0.6	8.5	41.0	0.9	12.8	45.4	1.2
42	16	46.5	0.9	11.2	51.1	1.3	16.8	56.0	1.7
49	18	55.5	1.1	13.8	60.6	1.7	20.7	66.0	2.2
57	20	66.6	1.5	17.0	72.2	2.3	25.7	78.0	3.0



APPROVED DECEMBER 9, 2013 STATE DESIGN ENGINEER	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION RIPRAP AT CSP OUTLETS	SPECIFICATION REFERENCE 3123 3122 3601 3733 2511	STANDARD PLATE NO. 3134D
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Kathryn M. Meloy
DATE: 03/16/2016
REGISTRATION NUMBER: 21778

REVISIONS				
REV	DATE	DRW	CHK	DESCRIPTION

LeSUN LLC COMMUNITY SOLAR GARDEN
NOT FOR CONSTRUCTION SITE DETAILS

LE SUEUR COUNTY
WATERVILLE, MN
DWG NO. C603
REV NO.