



Le Sueur County, MN

Thursday, February 9, 2017

Regular session

Item 2

LYRA / Theis Packet

Staff Contact: Kathy Brockway or Michelle Mettler

STAFF REPORT

GENERAL INFORMATION

APPLICANT: LYRA COMMUNITY SOLAR GARDENS, LLC
LANDOWNER: LARRY & SOLVEIG THEIS

911 ADDRESS: New off State Hwy 13

PROJECT DESCRIPTION: Allow grading, excavating, and filling of approximately 23,379 cubic yards of material in a Special Protection "SP" District on a Natural Environment Lake, Quiram's Slough in order to change the elevation of the parcel and construct 6 retention basins. Property is located in the SW 1/4 SW 1/4, Section 10, Waterville Township.

ZONING ORDINANCE SECTIONS: Section 13.1, Section 18.

GOALS & POLICIES:

Goal 3: Improve water quality in Le Sueur County.

Policy: The County will undertake actions to help protect groundwater as well as surface water features.

SITE INFORMATION

LOCATION: SW 1/4 SW 1/4 Section 10, Waterville Township

ZONING & PURPOSE: Special Protection, Shoreland District

The intent of the **Special Protection (SP) District** is to guide the wise development and utilization of shorelands of public waters for the preservation of water quality, natural characteristics, economic values and the general health, safety and welfare of all public waters in the unincorporated areas of the County. Further, the purpose of this district is to manage areas unsuitable for development due to wet soils, steep slopes or large areas of exposed bedrock; and to manage areas of unique natural and biological characteristics in accordance with compatible uses.

GENERAL SITE DESCRIPTION: Rural, Shoreland

ACCESS: New off State Highway 13-MN DOT Approval

LAKE: Quiram's Slough, Natural Environment Lake

Natural Environment Lake - Lakes that usually have less than one hundred fifty (150) total acres, less than sixty (60) acres per mile of shoreline, and less than three (3) dwellings per mile of shoreline. They may have some winterkill of fish; may have shallow, swampy shoreline; and are less than fifteen (15) feet deep.

EXISTING LAND USE WITHIN ¼ MILE:

North: Ag land	South: Ag Land/Cemetery
West: Ag land/Wetland	East: Shoreland/Ag Land

TOWNSHIP BOARD NOTIFICATION

The applicants contacted Judy Hering, Waterville Township Board member December 16-18, 2015 (phone letter) January 19, 2016 phone.

NATURAL RESOURCES INFORMATION

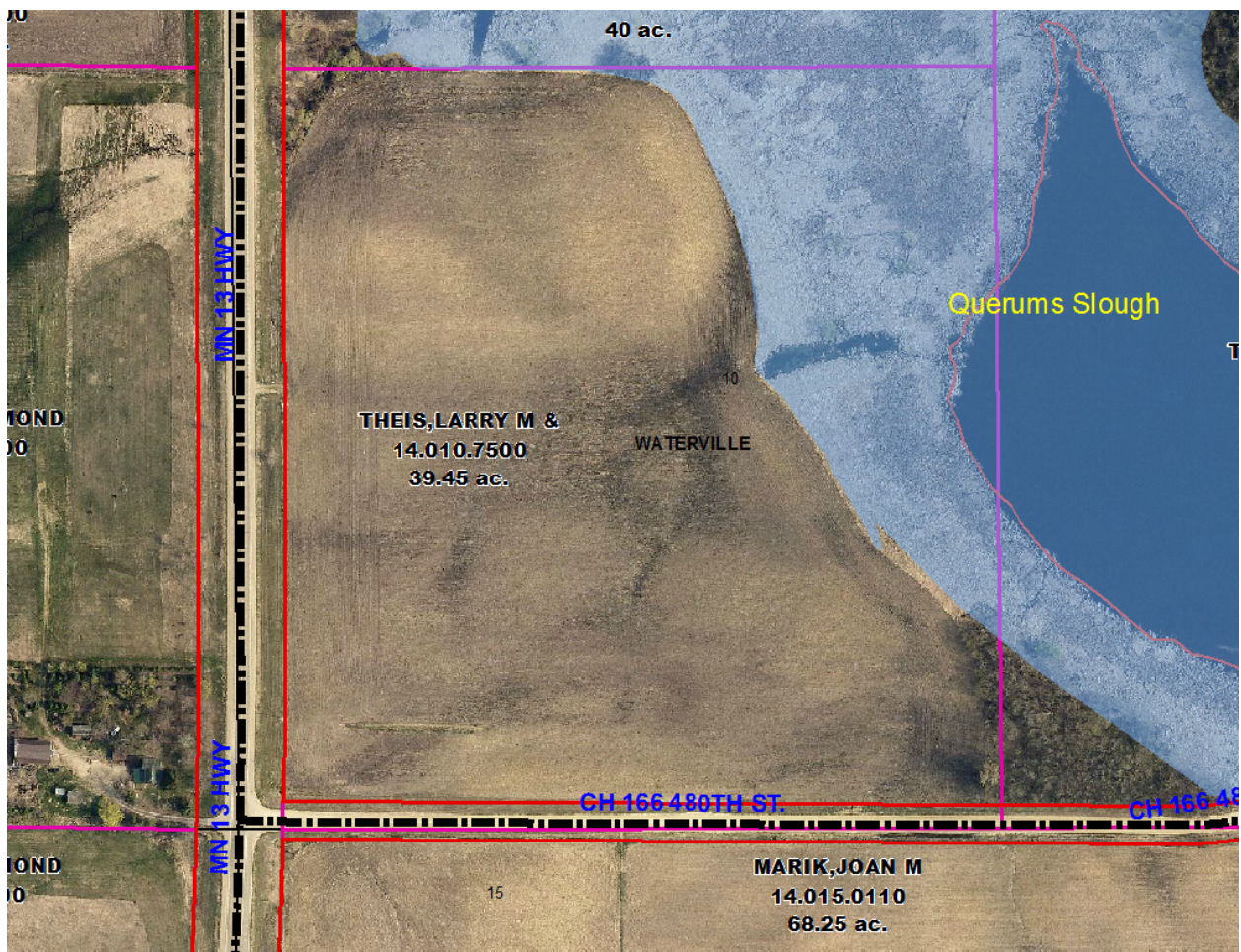
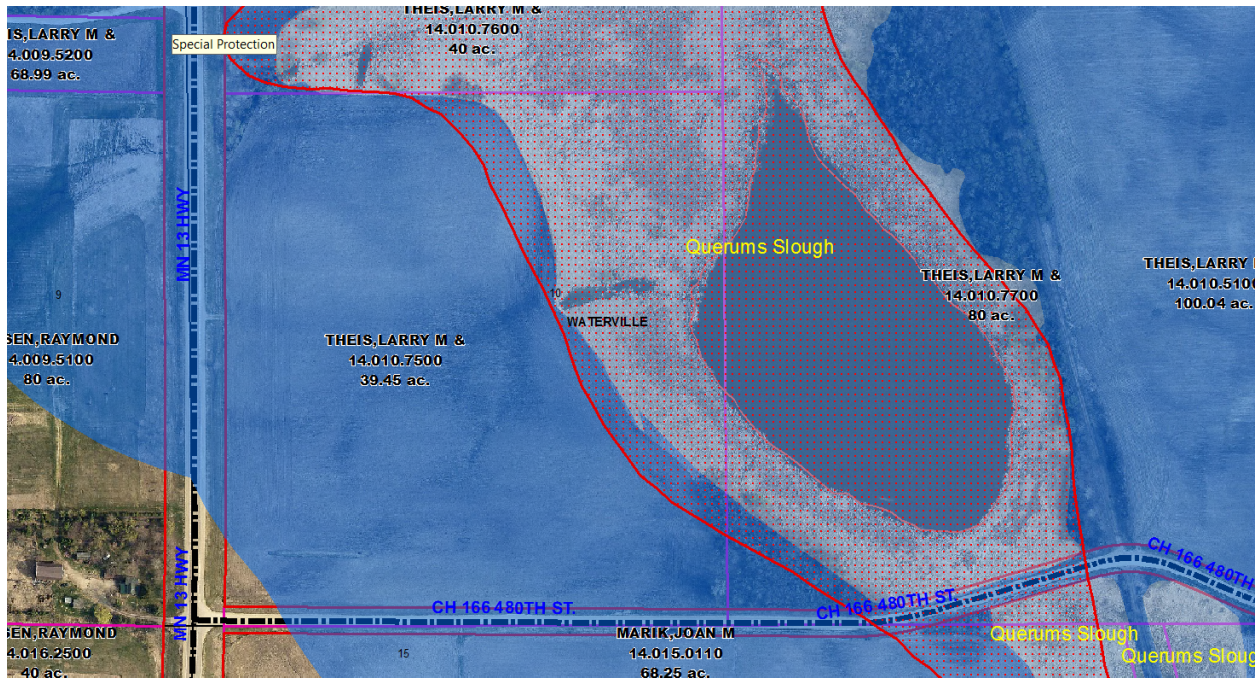
SHORELAND: The proposal is located within the Shoreland District.

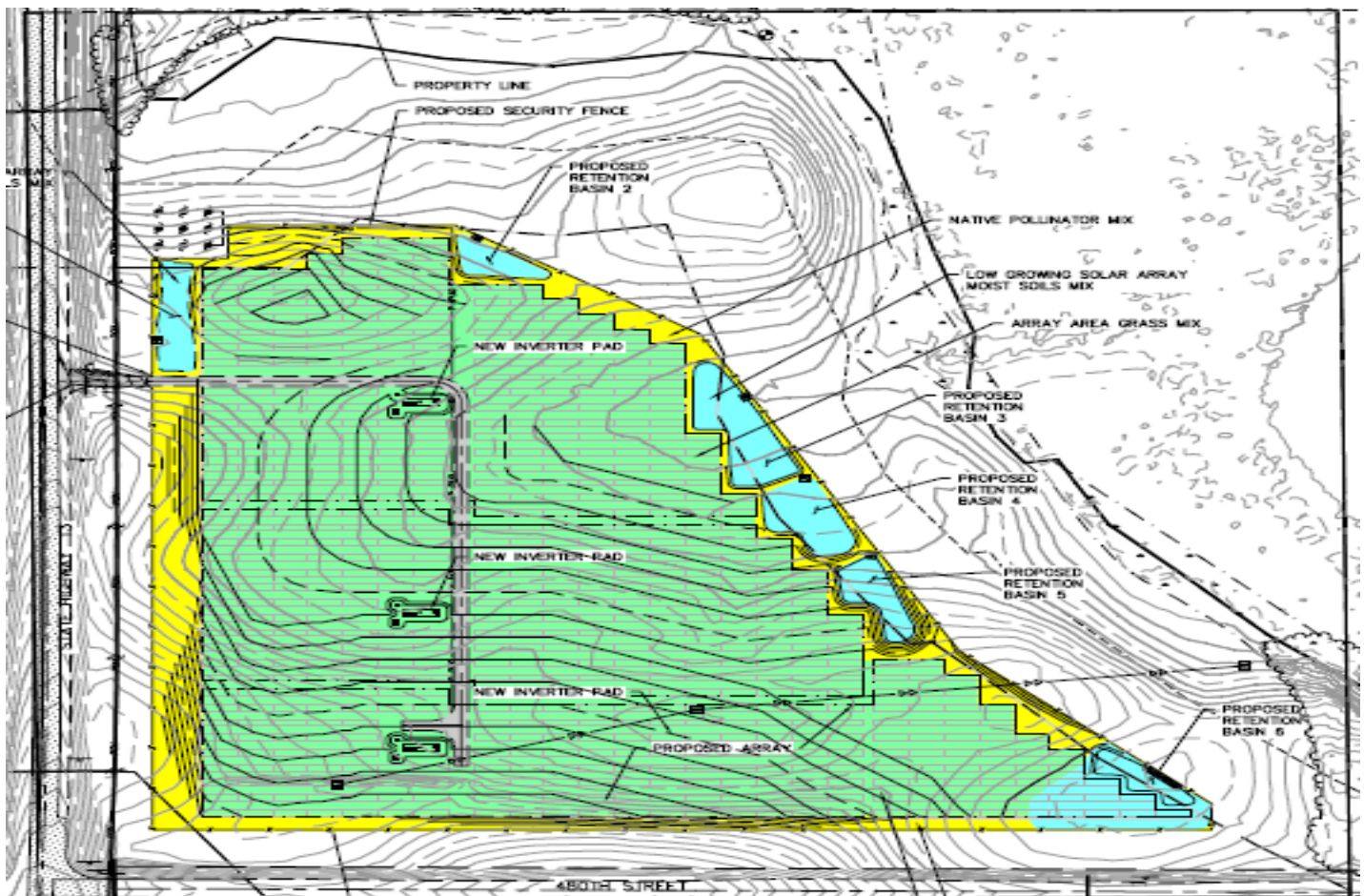
WETLANDS: According to the National Wetlands Inventory, Type 3 wetlands located in the quarter-quarter section where the project is proposed.

ATTACHMENTS

Application/Letter LSC Resource Specialist/Surveys.

AERIAL PHOTO/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:

1. Relationship to County plans.
2. The geographical area involved.
3. Whether such use will negatively affect surrounding properties in the area in which it is proposed.
4. The character of the surrounding area.
5. The demonstrated need for such use.
6. 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.
7. Whether such use would inherently lead to or encourage disturbing influences in the neighborhood.
8. Whether stored equipment or materials would be screened and whether there would be continuous operation within the visible range of surrounding residences.
9. Abatement of Environmental Hazards as regulated in this Ordinance
10. 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.
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.

Lyra Community Solar Gardens, LLC
Application for Grading, Excavating, and Filling Conditional Use Permit

Applicant:
Lyra Community Solar Gardens, LLC

Application Prepared by Geronimo Energy on behalf of Lyra Community Solar Gardens, LLC, a wholly owned subsidiary of BHE Solar, LLC.

Application fee: \$750.00

Filling fee: \$46.00



January 9, 2017

Kathy Brockway
Le Sueur County Environmental Services
515 South Maple Ave
Le Center, MN 56057

Dear Kathy Brockway,

Lyra Community Solar Gardens, LLC (“The Project” or “Lyra CSG”) respectfully submits this application to Le Sueur County’s Board of Commissioners for a Conditional Use Permit (CUP) Application for Grading, Excavating, and Filling, as required under the Le Sueur County Zoning Ordinance. Lyra CSG respectfully requests that the County Board of Commissioners issues a CUP for the Project to move 23,379 cubic yards of material in the Special Protection District, outside of the shore impact zone. Lyra CSG has completed the County’s CUP Application for Grading, Excavating, and Filling and provided the necessary attachments to support the application: Legal Descriptions (Appendix A), Notification Letter to Waterville Township (Appendix B), Certificate of Insurance (Appendix C), MnDOT Access Permit Application (Appendix D), Supporting Memorandum from Westwood Professional Services (Appendix E), Issue for Construction Site Plans (Appendix F), and Storm Water Pollution Prevention Plan Submittal (Appendix G).

Further, Lyra CSG is providing responses to Ordinance requirements of Section 18-3, Subsection C.

- 1. Plans shall be submitted by the applicant and/or landowner as indicated in the following table for review by the Department. The Department may request review by the SWCD.**
Appendix F.
- 2. Erosion control measures shall be required. Erosion and siltation of the surrounding area shall be prohibited.**
Appendix F and Appendix G.
- 3. The proposed grading, excavating or filling activities shall occur within one (1) year of permit issuance.**
Lyra CSG intends to start proposed grading, excavating, or filling shortly after receiving it’s CUP.
- 4. The permit shall specify what operations are to occur in the permitted area and what general types of equipment may be used in the operation.**
Appendix E and Appendix F.



5. **A National Pollution Discharge Elimination System (NPDES) permit shall be obtained if the land disturbance is greater than one (1) acre.**

Lyra CSG will obtain the necessary NPDES permit.

6. **Refer to the following table for permitting requirements for grading, excavating or filling activities in each zoning district.**

Lyra CSG has referred to the table for permitting requirements, and is applying for a CUP because the Project is in Special Protection District and moving more than 50 cubic yards of material.

The Project's Application for Grading, Excavating, and Filling complies with Le Sueur County's CUP process and the Zoning Ordinance. Lyra Community Solar Gardens, LLC respectfully requests that the Board of Commissioners approve the Project's Conditional Use Permit for Grading, Excavating, and Filling.

Sincerely,

A handwritten signature in black ink, appearing to read "Patrick Smith".

Patrick Smith
Senior Director, Environmental Planning
patrick@geronimoenergy.com
952-641-4042

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 LYRA COMMUNITY SOLAR GARDENS, LLC
Mailing Address 7050 Edinborough Way Ste. # 725
City Edina State MN Zip 55435
Phone # 952-988-9000 Phone # _____

II. Landowner:

Name Larry & Solveig Thier
Mailing Address 3412 Westridge Drive
City Shakopee State MN Zip 55379
Property Address _____
City _____ State _____ Zip _____
Phone # _____ Phone # _____

III. Parcel Information:

Parcel Number 14.010.7500 Parcel Acreage 39.45 (ranky records)
Attach Full Legal Description (NOT abbreviated description from tax statement) 37.6 (ADA survey)
Township Waterville (T109N, R23W) Section 10
Subdivision _____ Lot _____ Block _____

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

Waterville Township notified on 1/4/2017 with letter via mail
(Township Name) (Date)
Board Member Judy Hering, Kim Lloyd, Francis Cummins,
Alan G. Chike, & Darwyn Slechta regarding the proposed use.
(Name)

* on 1/3/2017 called to speak w/ Judy Hering was told her & husband were leaving for Hawaii for 2 months & to notify other township members with letter. JS total
as stated
on 1/5/2017

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.

☐ **Non-Shoreland**

- ☐ Within Bluff Impact Zone
☐ Within Bluff

Cubic yards of material movement: _____
Cubic yards of material movement: _____
Cubic yards of material movement: _____

TOTAL cubic yards of material movement: _____

☒ **Shoreland- Outside Shore Impact Zone**

- ☐ Within Shore Impact Zone
☐ Within Bluff Impact Zone
☐ Within Bluff

Cubic yards of material movement: 23,379 cubic yards
Cubic yards of material movement: _____
Cubic yards of material movement: _____
Cubic yards of material movement: _____

TOTAL cubic yards of material movement: _____

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

VIII. Description of Request: see attached memorandum

- 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: _____
2. ADVERSE IMPACT ON SURROUNDING AREAS: _____
3. STORMWATER RUNOFF: _____
4. DOES ANY PART OF THE PROJECT EXTEND BELOW OHWL: _____
5. WETLAND IMPACT: _____
6. SLOPE STABILITY: _____
7. CERTIFICATE OF INSURANCE: _____
8. MEET ALL APPLICABLE COUNTY STATE & FEDERAL REGULATIONS:
(For example additional licensing and/or permitting) _____

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

- **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: *attached in the*

- 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 Districts)
 - 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** *NA*
- ☒ 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.

NSF

Applicant signature

1-9-2017

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.

Solweig Gustaf

Property Owner signature

1-6-17

Date

Larry Stein

16 17

OFFICE USE ONLY

Request: GRADING, EXCAVATING & FILLING

☐ **Non-Shoreland**

- ☐
- Within Bluff Impact Zone
-
- ☐
- Within Bluff

Cubic yards of material movement: _____
Cubic yards of material movement: _____
Cubic yards of material movement: _____**TOTAL cubic yards of material movement:** _____☐ **Shoreland - Outside Shore Impact Zone**

- ☐
- Within Shore Impact Zone
-
- ☐
- Within Bluff Impact Zone
-
- ☐
- Within Bluff

Cubic yards of material movement: _____
Cubic yards of material movement: _____
Cubic yards of material movement: _____
Cubic yards of material movement: _____**TOTAL cubic yards of material movement:** _____

Pre-App Date _____	Lake Classification _____	Feedlot	500'	1000'	N
Meeting Date _____	Lake _____	Wetland Type	1-2	3-8	N
60 Day _____	FEMA Panel # 27079C0 _____	Water courses		Y	N
Zoning District _____	Flood Zone _____	Bluff		Y	N
<input type="checkbox"/> Request Description	<input type="checkbox"/> Access Approval	<input type="checkbox"/> Septic	Comp Insp / Design		
<input type="checkbox"/> Site Plan	<input type="checkbox"/> Erosion Control Plan	<input type="checkbox"/> Meeting	Reg / ATF / Spec		
<input type="checkbox"/> Full Legal	<input type="checkbox"/>	<input type="checkbox"/> Fee	\$ _____		
<input type="checkbox"/> Ordinance	<input type="checkbox"/> Other _____	<input type="checkbox"/> Penalty	\$ _____		

☐ Application Complete _____
Planning & Zoning Department Signature _____ Date _____ Permit # _____

Appendix A
Legal Description

LYRA COMMUNITY SOLAR GARDENS

DESCRIPTION OF PROPERTY

Tax Parcel Identification No.: 14.010.7500

The SW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 10, Township 109, Range 23, Le Sueur County, Minnesota.

The Premises contains approximately 39.45 acres.

Appendix B
Township Notification Letter



January 4, 2017

Judy Hering
48144 151st Ave
Waterville, MN 56096

Reference: Grading Conditional Use Permit for Solar Project Development

Dear Judy Hering,

We are writing to inform you of a grading conditional use permit (CUP) application for Lyra Community Solar Gardens, LLC (Lyra CSG or the Project), located in Waterville Township near the city of Waterville. The Project sent a notification letter to the township in December 2015 as an introduction to the Project and notification that the Project was applying for a CUP.

In July 2016, Lyra CSG obtained its CUP for the Project, and associated components. However, per Le Sueur County Planning and Zoning the Project must also apply for a grading CUP. The grading CUP application will be submitted prior to the January 10th, 2017 deadline, in order to make the Planning Commission's February Agenda. We welcome your participation in this hearing and can be contacted with questions using the information below.

We look forward to working with you and your community.

Sincerely,

Kara Bakke
Junior Permitting Specialist
kara@geronimoenergy.com
952-358-5664

Appendix C
Certificate of Insurance



May 3, 2016

Le Sueur County
Attn: Kathy Brockway
88 South Park Avenue
Le Center, MN 56057

RE: Evidence of Coverage – Lyra Community Solar Garden Project
BHE Renewables, LLC

Dear Ms. Brockway:

One of Berkshire Hathaway Energy entities has been requested to supply you with evidence of insurance coverage. Enclosed is our certificate of liability insurance. This is to advise that in addition, Berkshire Hathaway Energy and its subsidiaries have a self-insured retention that is in excess of the limits of coverage you are requesting.

Accordingly, we trust that Berkshire Hathaway Energy's financial strength will suffice to provide you the assurance needed with any agreement BHE Renewables, LLC has with you. Should you have any questions concerning insurance information required, please contact the undersigned.

Sincerely,

A handwritten signature in blue ink, appearing to read "Aaron Henrichs".

Aaron Henrichs
Supervisor, Corporate Insurance
Direct Phone (515) 281-2416

Encl.



CERTIFICATE of SELF-INSURANCE / FINANCIAL RESPONSIBILITY

ISSUED BY: **BHE RENEWABLES, LLC**
Attn: Risk & Insurance Management
666 Grand Avenue, P.O. Box 657
Des Moines, Iowa 50306
515-281-2416

This statement is to certify that **BHE RENEWABLES, LLC**, a Berkshire Hathaway Energy Company entity that maintains financial resources available to pay losses, either fully self-insured, or through a combination of self-insured and commercially insured funds, in amounts not less than stated as follows:

<u>Type of Coverage or Self-Insured Peril</u>	<u>Amount</u>
<i>GENERAL LIABILITY</i> Premises & Operations Products & Completed Operations Contractual Liability	Not less than \$1,000,000/occurrence
<i>AUTOMOBILE LIABILITY</i> Any vehicle owned or operated by BHE Renewables, LLC	Not less than \$1,000,000/occurrence
<i>PROPERTY</i>	Value of insured property
<i>EMPLOYERS LIABILITY</i>	Not less than \$1,000,000/occurrence
<i>WORKERS COMPENSATION</i> Program of self-insurance or commercially insured funds for all states in which we conduct business	Statutory

This certification shall remain valid and reliable unless specifically rescinded in writing by the undersigned or other qualified representative of **BHE RENEWABLES, LLC**. Further, this certification is for the sole information of the certificate holder depicted below and no other. This is informational only, and confers no rights upon the certificate holder nor any specific obligation upon the issuer.

CERTIFICATE HOLDER: **Le Sueur County**
Attn: Kathy Brockway
88 South Park Avenue
Le Center, MN 56057

A handwritten signature in blue ink, appearing to read "A. Henrichs", with a stylized flourish at the end.

By: Aaron Henrichs – Supervisor, Corporate Insurance

Date: May 3, 2016

Appendix D
MnDOT Access Permit Application

**MINNESOTA DEPARTMENT OF TRANSPORTATION
APPLICATION FOR ACCESS (DRIVEWAY) PERMIT**

Document Management System # _____
District _____ Permit # _____
C.S. _____ T.H. _____
R.P. _____
(THIS SECTION FOR MnDOT OFFICE USE ONLY.)

**ATTACH A SKETCH OF THE PROPOSED WORK AREA AND RELATION TO TRUNK HIGHWAY.
SUBMIT TO DISTRICT OFFICE OF MINNESOTA DEPARTMENT OF TRANSPORTATION.**

APPLICANT <u>Lyra Community Solar Gardens LLC</u>	TELEPHONE <u>952-988-9000</u>	ADDRESS (Street, City, State, Zip) <u>7450 Edenborough Way Ste 725, Edina, MN 55435</u>
PROPERTY OWNER <u>Larry & Solveig Thors</u>	TELEPHONE <u>952-445-7249</u>	ADDRESS (Street, City, State, Zip) <u>3912 Westbridge Drive, Shakopee, MN 55379</u>
LOCATION OF PROPOSED WORK (City/Township) (County) (Distance) (N-S-E-W) SPECIFIC ROAD INTERSECTION OR LANDMARK <u>Highway 13 in Waterville Township, Le Sueur .14 Miles North of 480th Street</u>		

WILL THIS ACCESS BE WITHIN TRIBAL LANDS? ☐ Yes ☒ No IF YES, WHICH ONE?

PURPOSE OF DRIVEWAY <input type="checkbox"/> Temporary <input type="checkbox"/> Field Entrance <input type="checkbox"/> Residential <input type="checkbox"/> Proposed Public Street <input checked="" type="checkbox"/> Commercial (Specify Type)	REQUESTED ENTRANCE WIDTH <u>20</u> Feet	PROPERTY IS IN <input type="checkbox"/> Platted Area <input checked="" type="checkbox"/> Unplatted Area	ZONING FOR PROPERTY IS <u>Ag / special protection</u>
---	---	---	--

IS BUILDING TO BE CONSTRUCTED <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (Specify Type) <u>Solar Farm</u>	WILL BUILDING BE <input checked="" type="checkbox"/> Temporary <input type="checkbox"/> Permanent	NUMBER OF PRESENT DRIVEWAYS TO PROPERTY <u>1</u>
--	---	---

EXACT LOCATION OF PRESENT DRIVEWAY(S) <u>47857 State Highway 13, 44° 15' 22.36" N, 93° 35' 7.29" W</u>	EXACT LOCATION OF PROPOSED DRIVEWAY(S) <u>47857 State Highway 13, 44° 15' 22.36" N, 93° 35' 7.29" W</u>
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LEGAL DESCRIPTION OF PROPERTY
SW 1/4 of SW 1/4 of Section 10, Township 109, Range 23, Le Sueur County, Minnesota

WORK TO START ON OR AFTER <u>March 1, 2017</u>	WORK TO BE COMPLETED BY <u>December 31, 2017</u>
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APPLICANT'S ACCEPTANCE, WAIVER AND INDEMNIFICATION

The undersigned applicant hereby agrees to comply with applicable statutes, rules, and all the standard conditions and special provisions of this permit. The applicant understands and agrees that no work in connection with this application will be started until the application has been approved and the permit issued.

The applicant also understands that this permit may also be subject to the approval of local road authorities having joint supervision over said street or highway, and may be subject to applicant's compliance with the rules and regulations of the Minnesota Environmental Quality Board and/or any other affected governmental agencies.

The applicant is aware of circumstances or hazards that may arise while performing the work associated with this application that could result in injury, loss, damage or death, and the applicant assumes the risk of such circumstances, dangers or hazards, whether reasonably foreseeable or not.

The undersigned applicant expressly agrees that except for negligent acts of the State, its agents and employees, the applicant or his/her agents or contractor shall assume all liability for, and save the State, its agents and employees, harmless from any and all claims for damages, actions or causes of action arising out of the work to be done in connection with this application and permit.

NAME AND TITLE <u>Nathan Franzen, Vice President, Development</u>	EMAIL ADDRESS <u>nathan@geronimoenergy.com</u>
DATE <u>1/6/2017</u>	SIGNATURE <u>NBF</u>

DO NOT WRITE BELOW THIS LINE

PERMIT NOT VALID UNLESS BEARING SIGNATURE AND NUMBER

AUTHORIZATION OF PERMIT

In consideration of the applicant's agreement to comply in all respects with the applicable laws and the conditions of the Commissioner of Transportation pertaining to this permit, permission is hereby granted for the work to be performed as described in the above application, said work to be performed in accordance with the following standard conditions and special provisions:

SEE ATTACHED STANDARD CONDITIONS AND SPECIAL PROVISIONS

Date All Work To Be Completed By _____	Authorized MnDOT Signature _____	Date of Authorized Signature _____
DISTRIBUTION Original to Area Maintenance Engineer Applicant Subarea Supervisor Roadway Regulations Supervisor	DEPOSIT REQUIREMENTS <input type="checkbox"/> No Deposit Required <input type="checkbox"/> Deposit Required in the Amount of \$ _____ Date Deposit Received _____ <i>Deposit to be returned upon satisfactory completion of all work</i>	DEPOSIT TYPE Cashier's Check # _____ Certified Check # _____ Money Order # _____ Bond # _____
DATE WORK COMPLETED _____ (The date when the work is completed must be reported to the MnDOT District Permits Office)		

From: Schoeb, Steve (DOT)
To: [Kara C. Bakke](#)
Subject: RE: Permit #7A-A-2016-69966--Lyra Community Solar Gardens
Date: Friday, January 6, 2017 8:55:16 AM
Attachments: [image001.png](#)

No problem, I should get it back to you next week.

From: Kara C. Bakke [mailto:kara@geronimoenergy.com]
Sent: Friday, January 06, 2017 8:52 AM
To: Schoeb, Steve (DOT) <steve.schoeb@state.mn.us>
Cc: Patrick Smith <patrick@geronimoenergy.com>
Subject: RE: Permit #7A-A-2016-69966--Lyra Community Solar Gardens

Thank you, Steve. Attached is the updated access form for Lyra Community Solar Gardens, LLC. Information stayed the same, but the dates changed. Additionally, I attached the IFC site plans for the Project.

I appreciate your responsiveness and assistance with this. Please let me know if you need anything further, or clarification on anything to process the application.

Best,

Kara

From: Schoeb, Steve (DOT) [mailto:steve.schoeb@state.mn.us]
Sent: Friday, January 6, 2017 7:06 AM
To: Kara C. Bakke <kara@geronimoenergy.com>
Cc: Patrick Smith <patrick@geronimoenergy.com>
Subject: RE: Permit #7A-A-2016-69966--Lyra Community Solar Gardens

Please fill out a new application for the 2017 year.
I will attach the original to it along with the submittles.

From: Kara C. Bakke [mailto:kara@geronimoenergy.com]
Sent: Thursday, January 05, 2017 4:44 PM
To: Schoeb, Steve (DOT) <steve.schoeb@state.mn.us>
Cc: Patrick Smith <patrick@geronimoenergy.com>
Subject: Permit #7A-A-2016-69966--Lyra Community Solar Gardens

Hi Steve,

I left a voicemail regarding the permit and project noted above. I also attached the permit for convenience. Unfortunately the timeline on work did not go as originally planned, and we are

seeking an extension on the permit. Is this something that I could receive by EOB on 1/6/2017, or perhaps in writing the goodwill that the extension will come? I am compiling an additional CUP application for the site on a rather tight timeline and any help would be greatly appreciated.

Thank you kindly,

Kara

Kara Bakke

Junior Permitting Specialist

7650 Edinborough Way, Suite 725

Edina, MN 55435

Main: 952.988.9000

Direct: 952.358.5664

[Geronimo Energy](#)



Appendix E
Westwood Professional Services' Memorandum



6900 E. Greenway Parkway, Suite 250
Scottsdale, AZ 85254
Main: (480) 743-6558
Fax: (480) 378-0025
westwoodps.com
(888) 527-5150

MEMORANDUM

Date: January 9, 2017

Re: Lyra Community Solar Gardens Conditional Use Permit
File: N:\0007452.02\docs\Permits\Conditional Use Permit Memo

To: Will Nowak, PE , M+W

From: Michele Guy, PE, Westwood Professional Services

This memo serves to document which portions of a Le Sueur County Conditional Use Permit are represented in the Civil Construction Plans produced by Westwood Professional Services for the Lyra Community Solar Gardens project in Le Sueur County, Minnesota.

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

Special Protection Shoreland District material movement is 23,379 cubic yards and does not include the onsite road. There will be 14,028 CY of cut. The majority of this material will be used as fill on the site. The remainder will be spread evenly over the entire site. Below is a tabular breakdown of where the source of the cut is and where it is being placed.

#	Cut Source	Fill Location
1	Retention Basins	Center of Site and Inverter Pads
2	South Part of Site Inside Fence	Center of Site and Inverter Pads
3	North Part of Site Inside Fence	Center of Site and Inverter Pads

VIII. Description of Request

- a. Install racking for solar photovoltaic (PV) modules and modules themselves, power conversion systems, and electrical equipment to deliver 3 megawatts (MW) of electrical power at peak production to the existing electrical grid. Site will be surrounded by 6' security fence with a single 24' access gate, and accessed by an aggregate base road, 14' in width, connecting to State Highway 13, via an existing entrance (to be expanded) approximately 755 feet North of the intersection of State Highway 13 and 480th Street.
- b. Impacts

1. Environmental impact due to grading improvements: - Site grading and drainage improvements have been designed to accept and release flow through the site consistent with historical drainage patterns, per local drainage regulations. Site grading and drainage improvements should have no adverse impacts to the environment or areas surrounding the site.
2. Impacts on the surrounding areas from grading and drainage improvements: - Site grading and drainage improvements have been designed to accept and release flow through the site consistent with historical drainage patterns, per local drainage regulations. Site grading and drainage improvements should have no adverse impacts to the environment or areas surrounding the site.
3. Stormwater Runoff: Six retention basins with a total capacity of 15,187 cubic feet are scattered along the downstream portions of the site.
4. No part of the site extends below the Ordinary High Water Level (OHWL).
5. No wetlands are impacted.
6. Slope stability: No slopes exceed the maximum allowable slope as stipulated in the Geotechnical Report.
7. COI: By others.
8. To the best of our knowledge, the development meets all applicable county, state, and federal regulations.

IX. Site Plan

- a. Based on the parcel size, an existing and proposed topography with 5-foot contour intervals is required. Existing and proposed topography with 1-foot contour intervals is provided.
- b. Location of grading, excavating, and/or filling sites is onsite per sheet C-102 and sheets C-200 to C-202 of the Civil Construction Plans.
- c. Fill material is obtained onsite from cut material. No material is exported from the site.
- d. Tree inventory by others. Within the project fenced boundary there were no visible trees. The trees in the northwest corner of the site and southeast corner of the site are not impacted by the proposed project improvements.
- e. North point (arrow) provided on applicable sheets of the Civil Construction Plans.
- f. Property lines are depicted on applicable sheets of the Civil Construction Plans.
- g. Road rights-of-way are provided on applicable sheets of the Civil Construction Plans.
- h. A landscape plan is provided on sheet C-500 of the Civil Construction Plans.
- i. Lake – N/A

- j. River – N/A
- k. Wetland limits are depicted on applicable sheets of the Civil Construction Plans.
- l. Stream – N/A
- m. There are no existing above-ground buildings.
- n. Proposed structures are depicted on applicable sheets of the Civil Construction Plans.
- o. The dimensions of the lot are provided by survey coordinates on the corners of the property, as depicted on sheet C-101 of the Civil Construction Plans.
- p. Six ponds for storm water retention with a total capacity of 15,187 cubic feet are scattered along the downstream portions of the site.
- q. Septic system – N/A
- r. Well – N/A as far as we know.
- s. Access to the site is provided by an internal access road with a width of 14 feet and estimated total area of 1,692 square yards (0.35 acres).
- t. Easements are depicted on applicable sheets of the Civil Construction Plans.
- u. Drainage is controlled through the construction of six retention basins with a total capacity of 15,187 cubic feet, which are scattered along the downstream portions of the site.

X. Restoration Plan

- a. Sheet C-500 of the Civil Construction Plans describes reseeding and restoration efforts to be conducted on the site.
- b. Tree replacement plan: If applicable, by others.

XI. Attachments

- a. Description of Request provided above for consideration.
- b. Site Plan. Civil Engineering Drawing Set.
- c. Legal Description By others.
- d. Access Approval By others.
- e. Township Notification By others.
- f. Septis System Compliance Inspection – N/A or By others.
- g. Sheets C-300 and C-301 of the Civil Construction Plans describe the Erosion Control Plan for the site.
- h. Restoration Plan: Included in Civil Engineering Drawing Set.
- i. A Stormwater Pollution Prevention Plan was completed January 6, 2017.

Appendix F
Issue for Construction Site Plans

Appendix G
Storm Water Pollution Prevention Plan

STORM WATER POLLUTION PREVENTION PLAN

Lyra Community Solar Garden

Le Sueur County, Minnesota

January 2016



Prepared For:

Lyra Community Solar Garden, LLC
1850 N. Central, Ste. 1025
Phoenix, AZ 85004

Storm Water Pollution Prevention Plan (SWPPP) Narrative

Lyra Community Solar Garden

Le Sueur County, Minnesota

NPDES Permit Identification #: C000

Prepared for:

Lyra Community Solar Garden, LLC
1850 N. Central, Ste. 1025
Phoenix, AZ 85004

Prepared by:

Westwood Professional Services, Inc.
7699 Anagram Drive
Eden Prairie, MN 55344
(952) 937-5150

Project Number: 0007452.02

January 6, 2016

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ATTACHMENTS

Attachment A: MN R100001 Construction General Permit
Attachment B: Permitting Documentation (NOI, Permit Card, Permit Letters, Blank NOT/MOD)
Attachment C: Soil Maps
Attachment D: Pre and Post Drainage Maps, Impaired / Special Water Maps
Attachment E: Site Plans, Erosion and Sediment Control Plans, Details
Attachment F: Training Documentation
Attachment G: Inspection and Maintenance Forms
Attachment H: Environmental and Cultural Assessments

1.0 INTRODUCTION AND PURPOSE

This SWPPP is prepared in accordance with the National Pollutant Discharge Elimination System (NPDES) regulations as established by the Clean Water Act and guided by the State of Minnesota. The Minnesota Pollution Control Agency's Construction General Permit MN R100001 (Expiration date: August 1, 2018) provides the frame work of requirements for compliance to discharge stormwater from a construction site.

This SWPPP is for implementation by the Owner and Operator, as listed in Section 5.1 of this SWPPP, at the Lyra Community Solar Garden site, with the project location as defined in Section 4.0 of this SWPPP. This report shall be on the site at all times during construction.

The following are outlined in this site specific SWPPP:

- Control measures for storm water pollution prevention during each phase of construction
- Control measures for storm water pollution prevention after construction
- Sources of storm water and non-storm water pollution
- Inspection and maintenance procedures

2.0 SWPPP DESIGNER STATEMENT AND SIGNATURE

"I hereby certify this plan and attachments were prepared by me or under my direct supervision. I am a properly trained individual as required in Section III.F of the MN R100001 Construction General Permit, to prepare, amend, and update a SWPPP".



12/19/2016

Aaron Mlynek, CPESC, U of MN Design of
SWPPP

Date

3.0 SWPPP AMENDMENTS

This plan and the attachments must be amended to include additional requirements or modified requirements which take place during construction if one or more of the following occur:

1. There is a change in design, construction, operation, maintenance, weather or seasonal conditions that significantly impacts the discharge of pollutants from the site to surface or groundwater.
2. Inspections or investigations by the site owner, operator, Environmental Protection Agency, Minnesota Pollution Control Agency officials indicate this plan is not effective in eliminating or significantly minimizing the discharge of pollutants.
3. This SWPPP is not achieving the general objectives of minimizing pollutants in stormwater discharges or if this plan is not consistent with the MN R100001 Construction General Permit.
4. If the MPCA notifies the Owner and / or Operator (i.e. permittees) that additional requirements are needed, requirements are not being met for TMDL or other water quality standards, or that the SWPPP did not incorporate the necessary requirements.

3.1 SWPPP Amendment Log

The following table should be completed as necessary during construction to document changes and amendments to this document. Place the Amendment Number next to all application changes, redlines and information in the document to reference back to the changes summarized below. If an additional sheet is necessary attach the additional sheet to the SWPPP.

Table 1: Amendment Log

Amend #	Date	Reason, location and brief description of change or amendment	Requested by:	Prepared by:

4.0 SITE INFORMATION

4.1 Site Location and Vicinity Map

The Lyra Community Solar Garden site is located in Le Sueur County, Minnesota. The nearest intersection is Township Road T-13 and 480th Street. The nearest city, Waterville, is located approximately 2 miles to the south. The site is bordered upon the north by agricultural land, upon the south by 480th Street, the west by Township Road T-13 and the east by 151st Avenue. The vicinity map is included in Attachment D.

Table 2: Project Location

Section	Township	Range
10	109N	23W
Latitude and Longitude Points (Decimal)		
Latitude	44.2556	
Longitude	-93.5836	

4.2 Existing Conditions

The slope and terrain of the site generally consists of flat agricultural land. The site currently has stormwater runoff flowing via overland flow and existing drain tile to the east. The site area discharges to an unnamed wetland located to the east of the site.

4.2.1 Non-vegetative Cover

Prior to construction, impervious surfaces on site include paved roadways.

4.2.2 Vegetative Cover

Prior to construction, pervious surfaces on site include agricultural row crops.

4.2.3 Land Use

Prior to construction the site area was primarily used for the growth of agricultural row crops. A Phase 1 Environmental assessment was conducted by Tetra Tech, Inc. with a report dated 03/30/2016. In the report there were not recognized environmental conditions found. See Attachment H for the full report.

4.3 Soil Names and Types

The soils present on site include Dundas silt loam, Lerdal clay loam, Kilkenny clay loam, Mazaska silty clay loam, Hamel loam, and Klossner muck. These soils belong to hydrologic soil groups C/D and D. Soils belonging to hydrologic soil group C/D have moderately high runoff potential when unsaturated and high runoff potential when saturated. Soils belonging to hydrologic soil group D have high runoff potential when wet. See soil map in Attachment C for additional information.

4.3.1 Soil Erosivity

Table 3: Soil K Factors and Erosivity Hazards

Soil Name / Type	K Factor	Erosivity Hazard				Reason(s) for Erosivity Rating
		Slight	Moderate	Severe	Very Severe	
Dundas silt loam (0-2%)	0.37	X				

Lerdal clay loam (2-6%)	0.24	X				
Kilkenny clay loam (2-6%)	0.32	X				
Kilkenny clay loam (6-10%)	0.32	X				
Mazaska silty clay loam	0.28	X				
Hamel loam (0-2%)	0.24	X				
Klossner muck (0-1%)	0.32	X				

4.3.2 Soil Particle Size**Table 4: Soil Particle Sizes**

Soil Type	% Sand	% Clay	% Silt	% Site Area
Dundas silt loam (0-2%)	25.0	20.0	55.0	0.1
Lerdal clay loam (2-6%)	33.6	29.5	36.9	6.2
Kilkenny clay loam (2-6%)	33.0	30.0	37.0	22.4
Kilkenny clay loam (6-10%)	33.0	30.0	37.0	17.7
Mazaska silty clay loam	18.7	33.5	47.8	42.2
Hamel loam (0-2%)	40.0	23.0	37.0	6.9
Klossner muck (0-1%)	14.0	33.0	53.0	4.4

5.0 PROJECT INFORMATION

5.1 Owner and Operator Information

Owner Information	Operator Information
Lyra Community Solar Garden, LLC	M + W Energy, Inc.
Richard Weech; Senior VP and Chief Financial Gardens, LLC	Jonmark Pierce
1850 N. Central, Ste. 1025, Phoenix, AZ 85004	21 Fadem Rd., Springfield, NJ 07081
602-271-5653; npoteet@bherenewables.com	480-370-8181; Jonmark.Pierce@mwgroup.net

5.1.1 Owner Responsibilities

The owner responsibilities include:

- Development of a SWPPP prior to submittal of the Notice of Intent (NOI).
- Submittal of a complete and accurate NOI.
- Compliance with all terms and conditions of the Construction General Permit.
- Submittal of the SWPPP for sites greater than 50 acres disturbed and discharging to special or impaired waters within 1 mile of the discharge point.
- Keeping the permit up to date (partial, whole, contractor, builders, etc.)
- Submittal of the Notice of Termination (NOT) within 30 days of meeting requirement of final stabilization.
- Identify who has long term operation and maintenance responsibility of the permanent stormwater controls.
- Develop a chain of responsibility with the operators to ensure NPDES and SWPPP compliance
- Identification of trained personnel to oversee the SWPPP and conduct inspections.
- Identification of trained personnel to develop a SWPPP.
- Identification of trained personnel to install and maintain best management practices.

5.1.2 Operator Responsibilities

The operator responsibilities include:

- Completion of an accurate NOI with the Owner.
- Compliance with CGP sections and parts II.B, II.C, III.B-F, IV, V, and any applicable construction activity requirements in Appendix A, Part C jointly with the Owner. See the CGP in Attachment A of this document.
- Keeping the permit up to date with the Owner (partial, whole, contractor, builders, etc.)

5.2 Project Type and Proposed Conditions

5.2.1 Non-vegetative Cover

The non-vegetative cover in the proposed conditions will include an access road, solar panels, and electrical equipment.

5.2.2 Vegetative Cover

The proposed vegetative cover will include non-native grasses and clover.

5.2.3 Land Use

The proposed land use will include the installation of 11 acres of solar panels and corresponding access roads, inverters, and a substation.

5.3 Pre and Post Project Estimates

Table 5: Project Area Estimates

Project Area	Disturbed Area	Existing Impervious Area	Post Construction Impervious Area
14.80 Acres	14.80 Acres	0 Acres	5.27 Acres

If post construction impervious is greater than existing impervious areas by more than one acre; see Section 8 for permanent stormwater treatment information.

5.4 Construction Activity Description

The development of this site will include the removal of existing agricultural row crops, root zones, and topsoil. The site will then be developed with 11 acres of solar panels and corresponding access roads, inverters, and a substation.

5.5 Project Activity Schedule

Table 6: Project Schedule

Activity	Start Date	End Date
Overall Project	02/01/2016	12/01/2017
Mass Grading	02/01/2016	06/01/2017
Access Roads	02/01/2016	06/01/2017
PV Array	03/01/2016	12/01/2017
Laydown Area	02/01/2016	06/01/2017

5.6 Project Phasing

The project will consist of one phase of grading and one phase of utility in sequence to start.

5.7 Project Contacts and Chain of Responsibility**Table 7: Project Contacts**

Company	Name or Position	Responsibility	Contact Number
Lyra Community Solar Garden, LLC	Richard Weech	Project Owner	602-271-5653
M + W Energy, Inc.	Jonmark Pierce	Operator (Contractor)	480-370-8181
		Mass Grading	
		Access Roads	
		PV Array	
		Laydown Area	
		Routine SWPPP Inspections	
Westwood Professional Services, Inc.	Aaron Mlynek	SWPPP development	952-697-5710
		Permanent Vegetation	
		BMP installation	

6.0 ADDITIONAL SITE OR PROJECT CONSIDERATIONS

6.1 Chemical Treatments

At the time of SWPPP completion the use of chemical additives or polymers for purposes of sediment flocculation are not anticipated for this project. If flocculants are necessary based upon weather conditions, inspection results or construction methods: the table below should be updated by the inspector for documentation.

Table 8: Flocculation Plan Summary (Not Applicable)

Flocculation Chemical	Application Location	Primary Soil Types	Settling BMPs Used	Application Method	Receiving Water	Mfr Dosing Rate

6.2 Documentation of Infeasibility

The project is able to address MN R100001 Part III.C and III.D. There is no need for documentation of infeasibility for this project.

6.3 Environmental Review Document

The following environmental review document(s) have been reviewed and NPDES / SWPPP related items have been incorporated into this plan: Phase 1 Environmental Site Assessment, Wetland Delineation Survey and Natural Resources Inventory, and Cultural Resources Assessment and Pedestrian Survey. See Attachment H of this SWPPP for further information.

6.4 Karst Areas

The project area contains carbonate bedrock, but is covered by over 100 feet of sediment. The project will protect surface and ground water quality in the karst area by the use of liners in the basis to minimize or prevent infiltration of treated stormwater. Temporary sediment basins and traps will be lined as necessary to avoid infiltration of water. Additionally, no infiltration basins within 1,000 feet up-gradient or 100 feet down gradient of active karst features will be planned or implemented.

6.5 Calcareous Fens

The project area does not discharge to any known calcareous fens as found on the Construction Stormwater Special Water Search, Minnesota Pollution Control Agency website: <http://pca-gis02.pca.state.mn.us/CSW/index.html> (accessed 12/19/2016); therefore no additional or different measures are necessary for protection of calcareous fens.

7.0 RECEIVING WATERS

The table below summarizes the immediate receiving waters from the site. Where necessary the receiving waters has been designated immediate (for the first surface water receiving drainage from the site) and ultimate (for the surface water receiving runoff from site after the immediate receiving waters). The receiving waters listed are located within a mile, and receive water from the site discharge location(s).

The project site drains via overland flow and existing drain tile into an unnamed wetland to the east of the site. Refer to Attachment D for drainage maps.

Table 9: Receiving Waters

Name of Waterbody	Immediate (I) or Ultimate (U)	Type (wetland, lake, stream, ditch)	Impaired? Y/N	Special? Y/N
Unnamed Wetland	I	wetland	N	N

7.1 Impaired Waters

There are no impaired waterbodies which receiving stormwater discharge within 1 mile of the site disturbed area according to the Construction Stormwater Special Water Search, Minnesota Pollution Control Agency website: <http://pca-gis02.pca.state.mn.us/CSW/index.html> (accessed 12/16/2016).

7.2 Special Waters

There are no special waterbodies which receiving stormwater discharge within 1 mile of the site disturbed area according to the Construction Stormwater Special Water Search, Minnesota Pollution Control Agency website: <http://pca-gis02.pca.state.mn.us/CSW/index.html> (accessed 12/19/2016).

8.0 STORMWATER MANAGEMENT

8.1 Temporary Practices

Temporary construction sedimentation basins will be necessary where greater than 10 acres of disturbed area discharges to a common point. One sediment basin is currently proposed for the site based on the disturbed area and general drainage patterns.

8.1.1 Calculations

Table 10: Temporary Sediment Basin Calculations

Basin #	Storm Frequency	Rainfall Amount	Runoff Area	Runoff Volume	Capacity Needed
1	2 yr. / 24 hr.	2.86"	12.3 Acres	2.93 ac ft.	1.85 ac ft.

8.2 Permanent Practices

To comply with the permit's post-construction requirements, practices must be designed to infiltrate 1.0 inch of runoff from new impervious surfaces, primarily gravel access roads. Also, the MPCA has provided guidance on managing stormwater runoff from the solar panels themselves. In developing the site, a minimalist approach to stormwater management is proposed. Runoff generated from the solar panels flows to the edge of the panels and drips onto the existing pervious surface below; runoff is allowed to disperse and infiltrate below the panels across the site. 4.9 acres of solar panel surface area are proposed on the site as well as 0.37 acres of gravel access roads (5.27 total developed acres). The remaining 25.53 acres will be restored to a prairie condition as well as the 4.9 acres below the solar panels for a total prairie restoration of 30.43 acres.

8.2.1 Calculations

As described in the Minnesota Stormwater Manual, better site design techniques have been incorporated to ensure a site where all impervious surfaces are fully disconnected and routed over prairie prior to leaving the site (https://stormwater.pca.state.mn.us/index.php/Better_site_design). The MPCA has developed a spreadsheet tool to calculate the volume of stormwater that must be treated on site from solar installations. The results of this show that most of the site is meeting the requirement based on the solar panels being allowed to sheet flow over the previous ground. Small basins are also provided to make up the remainder of the volume required and they exceed the required volume. The infiltration requirement summary is as follows:

Water quality volume (from MPCA calculator)	8,946	ft ³
Access road & inverters	16,316	ft ²
1 inch off road/inverter impervious	1,360	ft ³
Total water quality volume required	10,306	ft ³
Total water quality volume provided	TBD in final design	ft ³

Pretreatment is provided throughout the site by fully vegetative landcover that will be utilized as buffer. Runoff from access roads will not be channelized prior to discharge to the infiltration areas but allowed to freely sheet flow across the vegetated site. For more details, see the Westwood Stormwater Report in Attachment E.

8.2.2 Long Term Operation and Maintenance Plan Contact

Long term operation and maintenance of the permanent stormwater facilities may include, but not limited to: trash pickup, mowing, vegetation management, and / or intervals of sediment cleanout. The following person, company or entity is responsible for the long term operation and maintenance of the permanent stormwater facilities for the project.

Entity or Organization:	<u>Lyra Community Solar Garden, LLC</u>
Contact Name:	<u>Richard Weech</u>
Street address:	<u>1850 N. Central, Ste. 1025</u>
City, state, zip:	<u>Phoenix, AZ, 85004</u>
Phone number:	<u>602-271-5653</u>

9.0 TEMPORARY BEST MANAGEMENT PRACTICES

9.1 Soil Management

After clearing and grubbing, the grading contractor will strip and stockpile topsoil material for reapplication on all future permanent pervious surface areas. During development, grading and utility construction the subsoils will be compacted as necessary for construction using typical excavation techniques. During final grade, reapplication of 4 to 6 inches of top soil will be done by a wide-pad dozer and other equipment to minimize compaction of the top soil material.

9.2 Natural Buffers and No Disturbance Areas

Natural Buffers

An undisturbed 50 foot buffer zone will be preserved for the unnamed wetland along the northern portion of the site. The use of linear sediment controls will be installed upgrade to provide sediment control and delineate the 50 foot buffer. Refer to the site erosion and sediment control plan for the location of the buffer. The following activities are prohibited to take place within the buffer area:

- Placement of stockpiles
- Vegetation disturbance
- Placement of construction material
- Storage of gas, oils, other potential pollutant material

No Disturbance Areas

See engineering plans for applicable no disturbance limits.

9.3 Erosion Prevention Practices

The following controls are anticipated to minimize soil loss from the construction site area. The controls should help to minimize soil from being transported from water and wind as well as aide in establishment of temporary and permanent vegetation. Prior to grading and during clearing and grubbing, the areas of vegetation preservation, buffers and other areas of no disturbance should be flagged, staked or otherwise delineated.

Timing for disturbed areas and slopes

Temporary erosion prevention practices should be initiated immediately after construction activity disturbing soil in an area is temporarily or permanently ceased for a period of 14 days. The application of temporary erosion control management practices should be completed prior to the 14th day of temporarily or permanently ceasing construction activity in an area of the project.

Timing for waterways, ditches and swales

If the project involves work in Department of Natural Resource Public Waters "work in water restrictions", involving specific fish spawning time frames, all exposed soil areas within 200 linear feet of the water's edge and drain to the waters, must complete the temporary stabilization within 24 hours of temporarily or permanently ceasing construction activity during the restriction period.

Unless the temporary or permanent drainage ditch or swale is part of a designed sediment retention system, all areas within 200 linear feet of the property edge or from the point of discharge need to be stabilized within 24 hours of temporarily or permanently ceasing construction activity in that portion of the ditch or swale.

Table 11: Erosion Controls

Potential BMPs	Construction Phase or Activity				Application Notes	
	Mass Grading	Access Roads	PV Array	Restoration		
Construction Phasing	X	X	X	X	Minimize soil disturbance, as feasible, per phase. Stake/flag areas that are to be left undisturbed.	
Buffer Strips	X	X	X	X	See Section 9.2 and 7.2 for more info.	
Straw / Hay Mulch	X		X	X	Apply at 2 tons / acre. Disc anchor to soil	
Erosion Control Blanket		X	X	X	Application for steeper slopes and areas of concentrated flow. Install per manufacturer's recommendations.	
Temporary Seed Mix (22-111)	X	X	X	X	Application Rate = 30.50 lbs/ac	Prepare soil prior to seeding. Broadcast and rake seed into soil prior to mulch or blanket.
Permanent Seed Mix (25-131)	X	X	X	X	Application Rate = 220.00 lbs/ac	

22-111 Two-year Stabilization

Common Name	Scientific Name	Rate (lb/ac)	Rate (kg/ha)	% of Mix (by weight)	Seeds/ sq ft
slender wheatgrass	<i>Elymus trachycaulus</i>	9.00	10.09	29.50%	22.80
Perennial Ryegrass	<i>Lolium perenne</i>	4.50	5.04	14.76%	22.42
	Grasses Subtotal	13.50	15.13	44.26%	45.22
Alfalfa	<i>Medicago sativa</i>	8.50	9.53	27.86%	44.25
Red Clover	<i>Trifolium pratense</i>	8.50	9.53	27.88%	53.13
	Forbs Subtotal	17.00	19.05	55.74%	97.38
	Total	30.50	34.19	100.00%	142.60
Purpose:	One to two year soil stabilization with non-native species				
Planting Area:	Statewide				
Combine all components when blending this mix.					

25-131 Low Maintenance Turf

Common Name	Scientific Name	Rate (lb/ac)	Rate (kg/ha)	% of Mix (by weight)	Seeds/ sq ft
red fescue	<i>Festuca rubra</i>	64.00	71.73	29.09%	667.00
Chewing's Fescue	<i>Festuca rubra ssp. commutata</i>	44.00	49.32	20.00%	458.60
Low Maintenance Kentucky bluegrass	<i>Poa pratensis Low Maintenance</i>	36.00	40.35	16.36%	1148.70
Hard fescue	<i>Festuca trachyphylla</i>	30.00	33.63	13.64%	389.10
Sheep Fescue	<i>Festuca ovina</i>	25.00	28.02	11.37%	304.22
Perennial Ryegrass	<i>Lolium perenne</i>	21.00	23.54	9.54%	104.60
	Total	220.00	246.59	100.00%	3072.22
Purpose:	Salt, shade and drought tolerant turfgrass. Requires less frequent mowing and less fertilization than conventional turfgrass.				
Planting Area:	Statewide				
Combine all components when blending this mix.					

9.4 Sediment Control Practices

The following controls are anticipated to minimize sediment discharge, capture sediment in suspension and minimize sedimentation offsite.

Table 12: Sediment Controls

Potential BMPs	Construction Phase or Activity				Application Notes
	Mass Grading	Access Roads	PV Array	Restoration	
Silt fence	X	X	X	X	Machine sliced install w/ steel/wood posts at 6' spacing. Install perimeter sf prior to grading
Fiber rolls	X	X	X	X	Install on contour, minimum of 6" roll, wood or straw fiber. Secure with 2" posts every 2' on center.
Stockpile	X	X	X		Stockpile location to be determined in the field.
Mulch log	X	X	X	X	Install on contour and overlap with other logs at least 4".

9.5 Run-on and Runoff Controls

The following controls are anticipated to minimize scour, transport water across or down steep slopes or critical areas, divert clean water, and / or provide temporary conveyances to maintain drainage.

Table 13: Run-on and Runoff Controls

Potential BMPs	Construction Phase or Activity				Application Notes
	Mass Grading	Access Roads	PV Array	Restoration	
Riprap Apron		X	X	X	See detail in plans. Install within 24 hours of connection to surface waters.
Culvert Protection	X	X	X		See details in plan set. Install within 24 hours of installation of culverts.
Temporary basins and Coir Fiber Baffle		X	X		See engineering plans for details.

9.6 Tracking Controls

The following controls are anticipated to minimize or prevent sediment track-out from construction site exits to paved surfaces or to retrieve material tracked onto paved surfaces to minimize or prevent the material from being washed into surface waters or storm water inlets.

Table 14: Tracking Controls

Potential BMPs	Construction Phase or Activity				Application Notes
	Mass Grading	Access Roads	PV Array	Restoration	
Rock Construction Entrance		X			See detail in plans. Install at all site exits prior to grading. Maintain for duration of project.
Gravel or Aggregate Road Base		X			See detail and notes in plans.
Street Scraping	X	X			Scrape large clumps/amounts of material with soft tracked or wheeled equipment prior to sweeping.
Street Sweeping	X	X			Sweep paved surfaces within 24 hours of discovery.

9.7 Dewatering and Basin Draining Practices

Dewatering Accumulated Water (via pump, trench, temporary ditch or grade cuts)

Dewatering of turbid water (water that is visibly cloudy or brown in color) should be discharged via pump and hose or overland flow to a temporary sediment basin for pretreatment. The use of riprap apron (energy dissipation) should be used for the discharge location. If riprap is not used, an alternative form of energy dissipation should be used to prevent scour and re-suspension of soil at the discharge point of the hose. If discharge to a temporary sediment basin is not feasible, the use of dewatering dumpsters, dewatering bags or other prefabricated product should be used. The use of rock checks, erosion control blanket and sumps or traps may be considered for overland flow. After the use of BMPs, the water could be discharged through a vegetated buffer and energy dissipation. The discharge of water from the site should be visibly clear in appearance.

The discharge of accumulated water should not:

- Contain oil, grease, a sheen, odor, or concrete washout;
- Adversely impact adjacent properties with water or sediment;
- Adversely impact waters of the state;
- Cause erosion of slopes and channels;
- Cause nuisance conditions ;
- Contribute to inundation of wetlands which negatively impact the wetlands.

9.8 Estimated Quantity Tabulation

The following table is an estimation of best management quantities anticipated for the project.

Table 15: Estimated Quantities

BMP	Quantity	Unit	Notes
Silt fence	3,485	LF	
Fiber rolls	3,485	LF	
Erosion Control Blanket	0.08	AC	
Mulch log	3,485	LF	
Soil / Mulch berm	TBD		TBD in field.
Stockpile	0.13	AC	
Buffer Strips	50	LF	
Straw / Hay Mulch	15	AC	
Temporary Seed Mix (22-111)	460	LB	
Permanent Seed Mix (25-131)	3,300	LB	
Rip Rap Apron	0.15	AF	
Coir Fiber Baffle	20	Each	
Rock Construction Entrance	0.05	AF	
Gravel or Aggregate Road Base	0.2	AF	

10.0 POLLUTION PREVENTION MANAGEMENT

10.1 Storage, Handling and Disposal of Construction Materials

Storage and Handling

- All products shall be kept in their original container, with original labels still attached, unless the container is not re-sealable.
- Hazardous materials shall be returned to the hazardous material storage area at the end of each day.
- An effort should be made to store only enough products to do the required job.
- The contractor shall provide tanks or barrels to collect liquid byproducts that pose a pollution hazard.
- The pollutants shall be removed from the site on a weekly basis and disposed of in accordance with federal, state and local regulations.
- All spills shall be cleaned up immediately after discovery, in accordance with the manufacture's recommended methods.
- Hazardous materials shall be properly stored to prevent vandalism or unauthorized access.
- Containment units shall be installed in accordance with federal, state, and local regulations.
- No hazardous material shall be stored within 200 feet of an identified critical area.
- If building materials, chemicals, or general refuse is being used, stored, disposed of, or otherwise managed inappropriately, the contractor shall correct such defects within 24 hours of detection or notification.

Disposal (Dumpsters)

- Locate dumpsters away from watercourses, streams, creeks and other surface waters or conveyances.
- Site inspector shall regularly observe for and report excess litter and solid waste and request pickup and retrieval of wastes.
- Wastes, litter, debris shall be deposited into dumpsters in a central location and / or in various satellite locations where work is active.
- Dumpsters should be supplied by and regularly maintained, emptied and removed by a waste management company.

10.2 Fueling and Maintenance of Equipment and Vehicles; Spill Response

- Routine maintenance of vehicles shall occur in staging areas only if necessary.
- Maintenance of equipment and vehicles should be avoided and done off site where feasible.
- If fueling is done by mobile tank and dispenser, the transfer of fuel should be done under close supervision and there should be drip pans and spill containment and cleanup materials readily available.
- If fueling is done via temporary tank: the tank should be stored within a bermed area and away from surface waters.
- Spill Kits with absorbent materials shall be available on site for use in cleaning up small spills.
- In the event of a spill or discharge of hazardous material of reportable quantity, contact the Minnesota Pollution Control Agency Emergency Response Team, Duty Officer at 1-800-422-0798 and the National Response Center within 24 hours of the spill at 800-424-8802.

Table 16: Reportable Spill Quantities

Material	Reportable Spill Quantities
Petroleum Material	5 Gallons
PCB Oil	1 Pound
Other Material	Quantity that causes odor, color, sheen, foam, or other obvious indicator of pollutants.

10.3 Vehicle and Equipment Washing

If necessary, the contractor shall develop a designated wash area with basin containment to prevent the untreated water from discharging from the site to surface waters. BMPs include: temporary basins, inspecting the vehicles and equipment for leaks prior to washing and prohibiting washing activity until discovered leaks are repaired and maintenance is completed of the equipment or vehicle. The area shall be noted on the site plan. The water shall be contained and pumped from the site into a truck for proper disposal at a waste water facility. No engine degreasing shall be done on site.

10.4 Concrete Washout and Other WashoutMobile Concrete or Mortar Mixers

The following BMPs should be considered with the use of mortar or concrete mixers:

- Store bags of concrete and mortar in dry storage.
- Position mixers 100 feet from the nearest watercourse or conveyance.
- If mixers must be positioned closer than 100 feet from a conveyance and temporary berm shall be installed to prevent runoff from the mixer from flowing into the conveyance.
- Use Tarpaulins or plastic sheeting as a liner to prevent concrete or mortar from contacting the soil.
- Use buckets to contain washout / rinse water when cleaning the mobile mixer.
- Dump buckets of washout water in a designated concrete washout area.

Concrete Washout

The following BMPs and considerations should be implemented for concrete washout areas:

- Washout water from the tools, equipment and the chutes of concrete trucks, mobile mixers or other containers with concrete material must be contained and not allowed to be discharged into waters of the state or drain onto adjacent properties.
- The washout area should be a defined area with signage notifying the contractors of the location and use.
- The washout area should be a sufficient size to contain the expected washout material. 10'x10'x3' area should suffice for most activities.
- Multiple washout areas may be needed. Locations of the washouts should be noted on the construction plans by the contractor.
- When noting the location of the concrete washout areas, include the date of install, date of last maintenance and date of removal.
- The use of thick poly sheeting should be used to prevent contamination of the soil and prevent infiltration of the washout material.

Once the material is hardened it can be disposed of in a dumpster. If the material is water or not hardened, the material should be vacuumed and hauled off site to be properly disposed of or recycled at a facility. Some sites will not need the separate washout area if a truck chute washout is available from the concrete supplier.

Truck Chute Washout

Truck washout facility: where available all trucks with self-contained washout and water recycle systems must be used for every truck chute, tool and equipment rinse and washout. The truck should be positioned in a flat area away from inlets and surface waters where feasible.

10.5 Portable Sanitary Facilities

- Locate facilities away from watercourses, streams, creeks and other surface waters or conveyances.
- Facilities should be placed upgrate from perimeter sediment controls and not on paved or other impervious surfaces.
- Secure facilities to the soil with stakes or tether to other non-movable structure to prevent tipping from wind or other factors.
- Schedule routine and regular cleanout and maintenance of facility from a reliable company.

11.0 INSPECTION AND MAINTENANCE

Construction activity and all support activities must be inspected (using the inspection form found in Attachment G or an alternative form) within the parameters of the schedule below. The inspector shall be a person trained and familiar with the requirements of this SWPPP and the MPCA MN R100001 Permit. This person is delegated by the owner and listed in Section 5.7 and 12.0.

Scope of inspections* should include:

- Date and time of inspections
- Inspector name
- Findings of the inspection
- Locations of corrective actions needed
- Corrective actions taken (date / time / who)
- Date and amount of rainfall**
- Observed discharges Locations
- Describe discharge with color, odor, floating, settled, solids, foam, oil sheen)
- Photograph discharges
- Amendments from inspections need to be completed within 7 days (see SWPPP section 3.1)

*All inspections should be documented within 24 hours after completing the field inspection and available in paper or electronic form on site.

**Rainfall amounts should be taken from an onsite rain gauge. If a rain gauge is not feasible, the rain fall data should be observed from the following website:

<http://forecast.weather.gov/MapClick.php?lat=44.218846415000485&lon=-93.56799753699966#.WFIZvFMrLmE>

11.1 Inspection Schedule

Table 17: Inspection Schedule

If the site is:	Then an inspection is needed:	Notes and Information
Active	Once every 7 calendar days and within 24 hours of a rainfall ≥ 0.5 ".	A rain gauge should be used or rain data should be taken from the link listed above.
Inactive and stabilized areas	Once every 30 calendar days	Allowed in areas where work is completed and vegetation is established. Other/active areas must follow above.
Inactive with final stabilization	Once every month; for 12 months (not including frozen conditions)	Once 12 months of inactivity and stabilized conditions is past, inspections can be ceased until site activity resumes.
Subject to Winter/Frozen Conditions	Not Applicable / Not Needed if no construction activity is occurring.	Inspections are not needed for inactive sites where snow cover or frozen conditions exist for an extended period of time. The inspection must continue within 24 hours after runoff occurs from the site or within 24 hours of resuming construction.

11.2 Maintenance Schedule**Table 18: Maintenance Schedule**

BMP	Observed Condition for Maintenance	Maintenance Interval
All non-functional BMPs	Sediment overtopping, under water, scoured ends, undermined, destroyed, non- functional as designed. etc	Maintenance or replacement should be done by end of the next business day after discovery or notification, or as soon as field conditions allow.
Perimeter Sediment Control (silt fence, fiber logs, berms, etc.)	½ full of sediment, flattened to ½ height, driven over, undermined, scoured, moved for access etc.	Within 24 hours of discovery or notice or as field conditions allow.
Inlet protection BMPs, conveyances, surface waters	Sediment deposition, sediment deltas and accumulation of sediment material.	Removal/cleanout of accumulated sediment and deltas to be removed within 7 days. Stabilize as needed if soils are exposed during removal/cleanout.
Temp sed basins and traps; permanent sediment basins	Sediment deposition and accumulation to ½ of the storage volume.	Cleanout, remove accumulated sediment material within 72 hours of observation, or as field conditions allow access.
Site exit locations, rock exit pads, other anti-tracking practices	Accumulated sediment in rock or other anti-tracking BMP, tracking of sediment from the site onto paved surfaces	Top dress rock, maintain rock exit or other anti-tracking controls, scrap paved surfaces, sweep paved surfaces within 24 hours of discovery.
Paved surfaces; adjacent streets	Tracked sediment and soil material from the site hauling or access	Sweep within 24 hours of discovery; additional and/or more frequent sweeping may be needed to maintain public safety or prevent washing from forecasted rains.

12.0 TRAINING REQUIREMENTS AND DOCUMENTATION

The table below summarizes the personnel involved with the project and the related necessary training commensurate with their tasks. Training documentation can be found in Attachment F.

Table 19: Training Summary

Project Role / Task	Name	Training Course/Entity	Expiration Date
SWPPP Preparer	Aaron Mlynek	CPESC, U of MN Design of SWPPP	CPESC: 12/31/2014 U of MN: 2016
Site Inspector / SWPPP Amendments			
Alternate Inspector			
BMP Installer and Maintenance Provider			

13.0 FINAL STABILIZATION

Final stabilization is achieved for the project when permanent erosion control BMPs are applied to the site. The permanent erosion control BMPs may be a combination of vegetative and no vegetative cover types. Additional requirements to achieving final stabilization include:

- All soil disturbing activity is completed
- Permanent stormwater treatment system (if required) is constructed and accumulated sediment has been removed from construction activity.
- All temporary, synthetic BMPs have been removed from the site.
- Individual lots are temporarily covered, down gradient sediment perimeter control installed and home owner fact sheet distributed to home owner is completed if landscape and sod is not applied yet.
- In agricultural areas (as applicable), the construction activity area has been restored to the preconstruction agricultural use.
- The vegetative cover for the site is at a density, with a uniform perennial cover of 70% of the expected final growth density.

13.1 Vegetative Cover / Permanent Erosion Control

The planned permanent erosion control vegetative cover BMPs for this site include non-native grasses and clover.

13.2 Non-vegetative Cover / Permanent Erosion Control

The planned permanent erosion control non-vegetative cover BMPs for this site include an access road, solar panels, infiltration basins, rip rap at discharge points, and electrical equipment.

14.0 NOTICE OF TERMINATION

The project permit may be terminated in one of the following scenarios:

1. All construction activity is complete, temporary synthetic BMPs are removed, accumulated sediment from construction is removed, and final stabilization is completed with vegetative and / or non-vegetative cover. The Notice of Termination form from the PCA should be completed within 30 days of meeting the conditions above. Upon midnight of the post marked date, the permit coverage is terminated unless otherwise notified by the MPCA. OR;
2. Within 30 days of selling or otherwise legally transferring ownership of the site in its entirety (including street sweeping and stormwater infrastructure) from the original owner to another party taking responsibility of ownership. The termination is effective upon midnight of the submission date of the NOT. If a portion of the site is transferred (i.e. outlots, lots / blocks) that portion of the site is terminated from the original permit coverage at midnight of the of the submission date. OR;
3. Permit coverage can be terminated if all the following are met:
 - a. Construction activity as ceased for 90 days; and
 - b. At least 90% of the area of the originally proposed activity has been completed and permanently established with vegetation or non-vegetative cover; and
 - c. Where construction activity is not complete, permanent cover has been established; and;
 - d. The site is compliant with permit sections IV.G.2, IV.G.3 and where applicable, IV.G.4 or IV.G.5.
4. Where the project obtained permit coverage but never started construction activity due to cancellation or other reasons. Documentation should be sent to the PCA with the NOT form and is subject to PCA approval.

15.0 RECORD RETENTION

During construction: this report, amendments and attachments, inspections, and maintenance records should be kept on site during normal business hours. The records should be kept by the owner or operator listed on the permit application. The records should be in a mailbox, in a vehicle or in an on-site office trailer or model home.

Post Construction / Notice of Termination (NOT): the site owner must retain all the following records for a period of at least three years after the submittal of the NOT.

- The final SWPPP with all field notes / amendments;
- Other stormwater related permits in addition to the NPDES permit from PCA;
- Inspection and maintenance records;
- All permanent operation and maintenance agreements; and
- All required calculations for design of the temporary and permanent stormwater management systems.

LYRA COMMUNITY
SOLAR GARDEN, LLC
PID No. 14.010.7500
LE SUEUR COUNTY
Civil Construction Plans

SHEET LIST TABLE			
DWG. NO.	SHEET TITLE	REV	DATE
C-100	COVER SHEET	B	12/28/16
C-101	EXISTING CONDITION	B	12/28/16
C-102	OVERALL SITE AND GRADING PLAN	B	12/28/16
C-200	CIVIL SITE AND GRADING PLAN SHEET	B	12/28/16
C-201	CIVIL SITE AND GRADING PLAN SHEET	B	12/28/16
C-202	CIVIL SITE AND GRADING PLAN SHEET	B	12/28/16
C-203	CONSTRUCTION NOTES	B	12/28/16
C-204	CONSTRUCTION NOTES	B	12/28/16
C-205	CONSTRUCTION DETAILS	B	12/28/16
C-300	EROSION CONTROL PLAN	B	12/28/16
C-301	EROSION CONTROL DETAILS	B	12/28/16
C-400	FENCING PLAN	B	12/28/16
C-401	FENCING DETAILS	B	12/28/16
C-402	FENCING DETAILS	B	12/28/16
C-500	LANDSCAPE PLAN	B	12/28/16

CONTROL POINTS (CP)				
POINT NO.	NORTHING	EASTING	ELEVATION	
1	123713.950	381540.585	1076.715	1/2" REBAR SET
2	121928.667	381491.153	1095.174	1/2" REBAR SET
3	121982.429	382879.433	1077.451	1/2" REBAR SET
4	123274.558	382249.386	1060.665	1/2" REBAR SET

PROJECT LOCATION (APPROXIMATE CENTER OF SITE)

LATITUDE = 44°15'20.27"N
LONGITUDE = 93°35'0.78"W

PROJECT COORDINATE SYSTEM

BEARINGS & DIMENSIONS ARE BASED ON
1983NAD (2007 ADJ.) LE SUEUR COUNTY COORDINATES IN US SURVEY FEET.

HORIZONTAL/VERTICAL DATUM

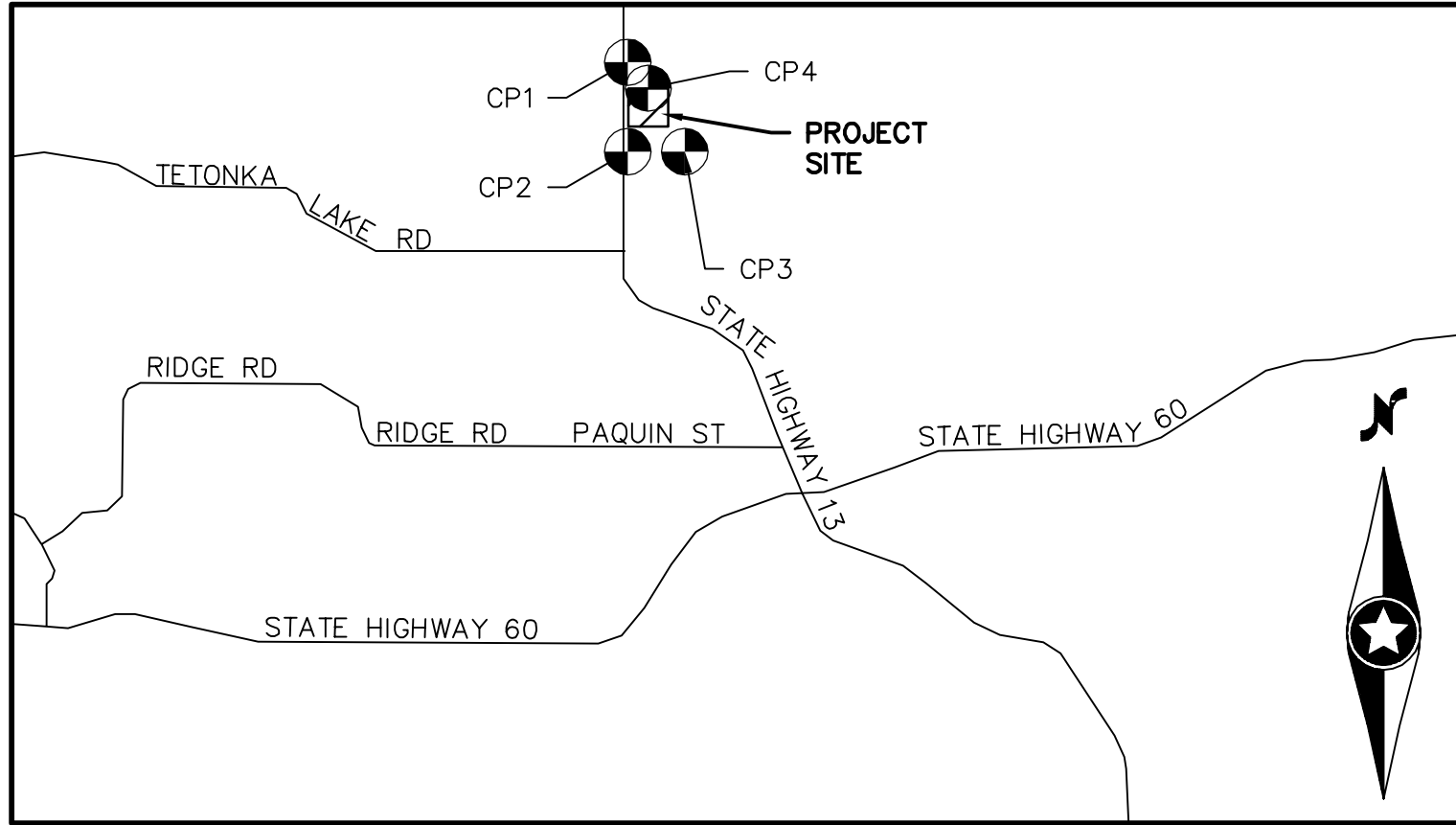
THE HORIZONTAL DATUM IS 1983 NAD(2007) LE SUEUR COUNTY COORDINATES
(THIS IS THE BEARING ASSUMPTION) IN US SURVEY FEET AND THE VERTICAL
DATUM IS 1988 NAVD IN US SURVEY FEET.

PROJECT BENCHMARK

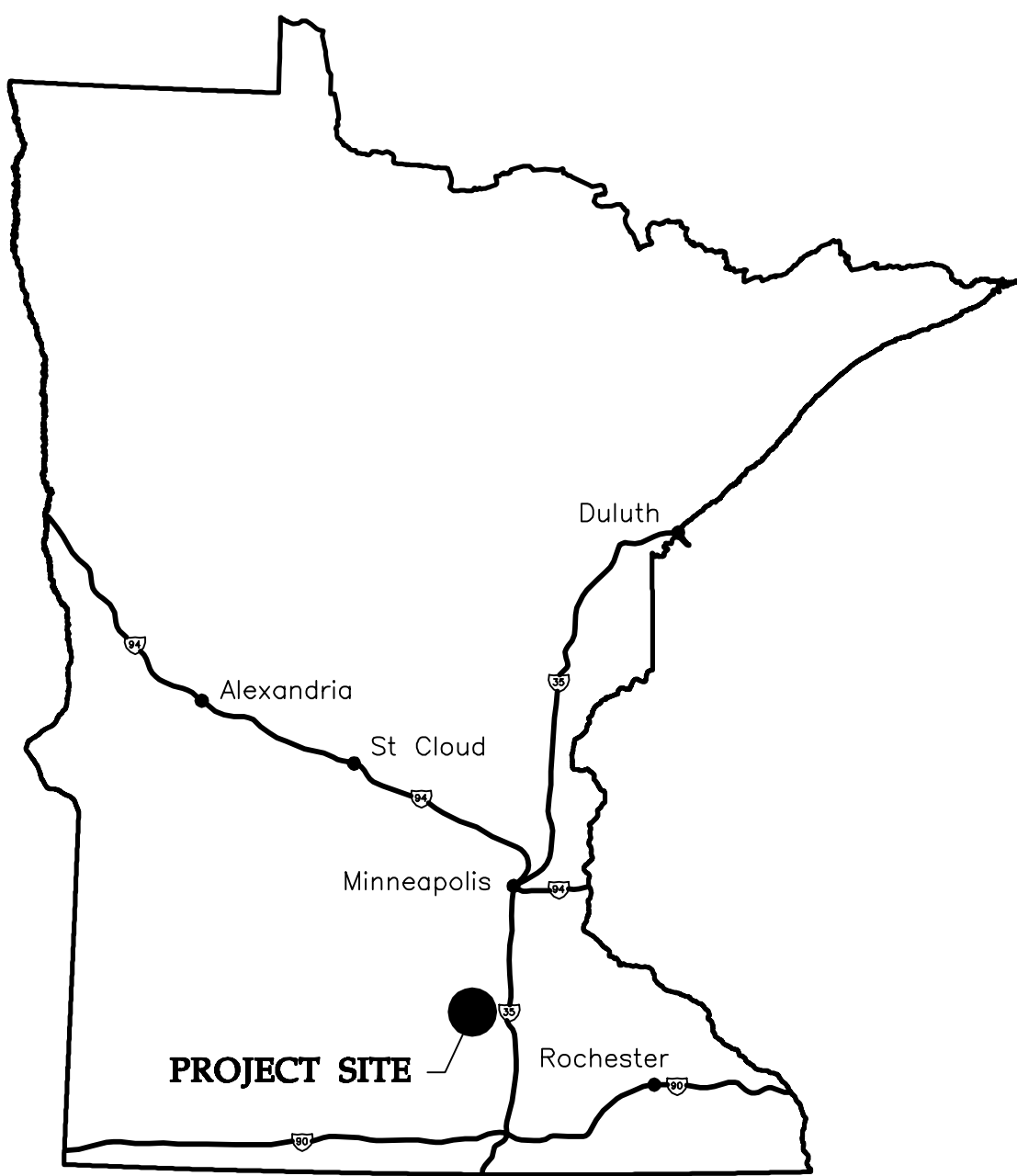
ELEVATION = 1089.00 (MNDOT NAME IS WATERVILLE C)
2.3 MILES NORTHEAST OF WATERVILLE, 2.6 MILES NORTHWEST ALONG TRUNK
HIGHWAY 13 FROM THE JUNCTION OF TRUNK HIGHWAY 13 AND TRUNK
HIGHWAY 60 IN WATERVILLE, TO TRUNK HIGHWAY 13 MILEPOINT 45.1, THEN
0.35 MILE WEST ON COUNTY ROAD 12, THEN 0.80 MILE NORTH ON COUNTY
ROAD 5, 30.0 FEET EAST OF COUNTY ROAD 5, 22.0 FEET SOUTH OF STREET
SIGN, 15.0 FEET SOUTH OF FIELD ENTRANCE, 0.8 FOOT WEST OF WITNESS
POST.

LE SUEUR COUNTY

CONDITIONS OF PERMIT#: XX-XX.



VICINITY MAP
NTS



STATE MAP
NTS

PROJECT OWNER/DEVELOPER

LYRA COMMUNITY SOLAR GARDEN 1, LLC
LYRA COMMUNITY SOLAR GARDEN 2, LLC
LYRA COMMUNITY SOLAR GARDEN 3, LLC

EPC CONTRACTOR

M+W ENERGY, INC.
A COMPANY OF THE M & W GROUP
21 FADEM ROAD
SPRINGFIELD, NJ 07081
CONTACT: WILL NOWAK, P.E.
PHONE: (480) 468-8284

PROJECT CIVIL ENGINEER

WESTWOOD PROFESSIONAL SERVICES, INC.
6909 E. GREENWAY PKWY., SUITE 250
SCOTTSDALE, AZ 85254
CONTACT: CLINT BILLS, P.E. (ARIZONA)
PHONE: (480) 840-7710
MOBILE: (480) 721-2022

GEOTECHNICAL ENGINEER

TERRACON
13400 15TH AVENUE NORTH
MINNEAPOLIS, MN 55441
CONTACT: LISA BREUER, P.E.
PHONE: (763) 489-3100

LEGEND & ABBREVIATIONS

---	EX. BOUNDARY LINE
---	EX. SECTION LINE
---	EX. RIGHT-OF-WAY LINE
---	EX. EASEMENT LINE
---	EX. PARCEL LINE
---	EX. NATURAL WATER COURSE
---	EX. FENCE LINE
---	EX. OVERHEAD POWERLINE
---	EX. UNDERGROUND POWELINE
---	EX. UNDERGROUND TELEPHONE LINE
---	EX. GAS LINE
---	EX. INDEX CONTOUR LINE
---	EX. INTERVAL CONTOUR LINE
---	EX. PAVED ROAD
---	EX. GRAVEL ROAD
---	EX. COUNTY TILE LINE
---	EX. PRIVATE TILE LINE
---	SETBACK LINE
---	PROPOSED ROAD CENTERLINE
---	PROPOSED UNDERGROUND POWER LINE
---	PROPOSED FENCE LINE
---	PROPOSED INDEX CONTOUR LINE
---	PROPOSED INTERVAL CONTOUR LINE
---	PROPOSED GRADING LIMITS LINE
---	PROPOSED TEMPORARY AB
---	PROPOSED ACCESS ROAD
---	PROPOSED SILT FENCE
---	PROPOSED ROCK ENTRANCE
---	FOUND MOUNUMENT
---	EX. POWER POLE
---	EX. TELEPHONE BOX
---	EX. ELECTRIC BOX
---	EX. POST
---	EX. SIGN
---	EXISTING
---	R.O.W. RIGHT-OF-WAY
---	S/B SETBACK
---	TYP TYPICAL
---	TS TOP OF SLAB
---	HW HIGH WATER
---	EOF EMERGENCY OVERFLOW
---	UON UNLESS OTHERWISE NOTED
---	PCS POWER CONVERSION SYSTEM

ESTIMATED EARTHWORK QUANTITIES*

ONSITE:
CUT = 14,028 CY
FILL = 9,351 CY
IMPORT = 290 CY (AGGREGATE BASE FOR ROADWAYS)

*EARTHWORK QUANTITIES ARE RAW QUANTITIES AND HAVE NOT BEEN ADJUSTED
FOR SHRINKAGE OR SWELL.
**QUANTITIES ARE FOR ESTIMATING ONLY. ENGINEER MAKES NO GUARANTEE OF
ACCURACY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALCULATE QUANTITIES.
***EXCESS CUT WILL BE SPREAD EVENLY OVER THE SITE.

ESTIMATED FENCING QUANTITIES

6' FENCE: 3,468 LF
24' GATE: 1 EA

ESTIMATED ROADWAY QUANTITIES

AB: 1,692 SY

TOTAL PROJECT AREA

15.5 ACRES

DISTURBED AREA SUMMARY

PV ARRAY=	11.10 AC
ACCESS ROAD=	0.35 AC
GRADED AREA/ DISTURBED SOILS OUTSIDE OF ARRAY	3.36 AC
TOTAL	14.8 AC



M+W Energy, Inc.

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Westwood

Phone (480) 747-6558 6909 East Greenway Parkway, Suite 250
Fax (480) 376-8025 Scottsdale, AZ 85254
westwoodps.com
Westwood Professional Services, Inc.

PE Seal:
Professional Engineer
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.

Signature: Matthew Philin Gaarder
Typed or Printed Name: Matthew Philin Gaarder
Date: 12/28/2016 License Number: 52215

DRAWING ISSUE

☐ Preliminary ☒ Construction
☐ Customer Approval ☐ As-built
☐ Permitting ☐ Other

REVISIONS

Rev	By	App	Description	Date
A			50% SUBMITTAL	12/14/2016
B			ISSUED FOR PERMIT	12/28/2016

Issued for Construction

Project Name:
Lyra Community
Solar Garden, LLC

Site Address:
Le Sueur County, Minnesota

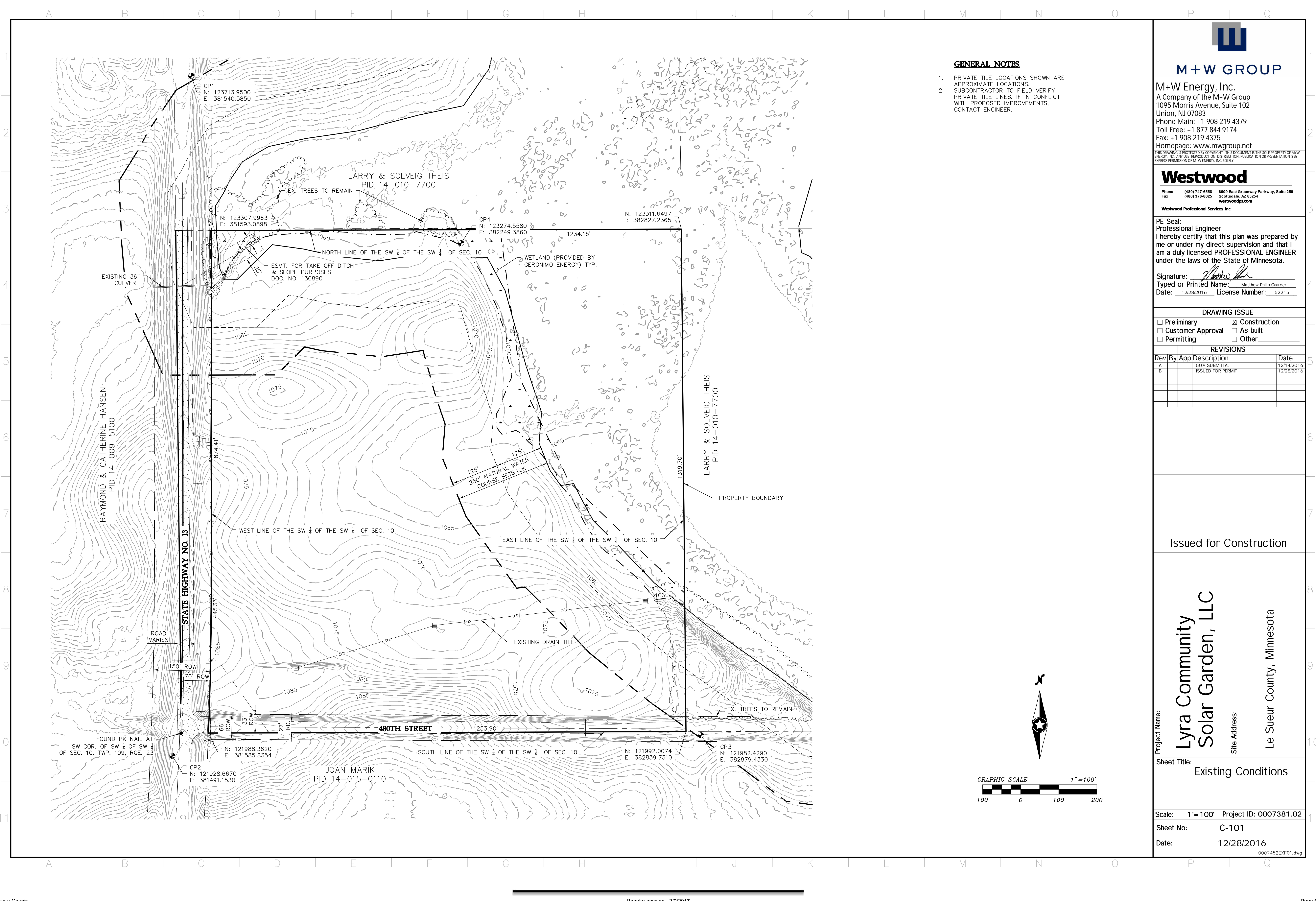
Sheet Title:
Cover Sheet

Scale: NTS Project ID: 0007381.02

Sheet No: C-100

Date: 12/28/2016

0007452cVF01.dwg



GENERAL NOTES

- 1. PRIVATE TILE LOCATIONS SHOWN ARE APPROXIMATE LOCATIONS. SUBCONTRACTOR TO FIELD VERIFY PRIVATE TILE LINES. IF IN CONFLICT WITH PROPOSED IMPROVEMENTS, CONTACT ENGINEER.
- 2.



M+W GROUP

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PE Seal:
Professional Engineer
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.

Signature: *Matthew Philin Gaarder*
Typed or Printed Name: Matthew Philin Gaarder
Date: 12/28/2016 License Number: 52215

DRAWING ISSUE

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| <input type="checkbox"/> Preliminary | <input checked="" type="checkbox"/> Construction |
| <input type="checkbox"/> Customer Approval | <input type="checkbox"/> As-built |
| <input type="checkbox"/> Permitting | <input type="checkbox"/> Other |

REVISIONS

Rev	By	App	Description	Date
A			50% SUBMITTAL	12/14/2016
B			ISSUED FOR PERMIT	12/28/2016

Issued for Construction

Project Name:
Lyra Community Solar Garden, LLC

Site Address:
Le Sueur County, Minnesota

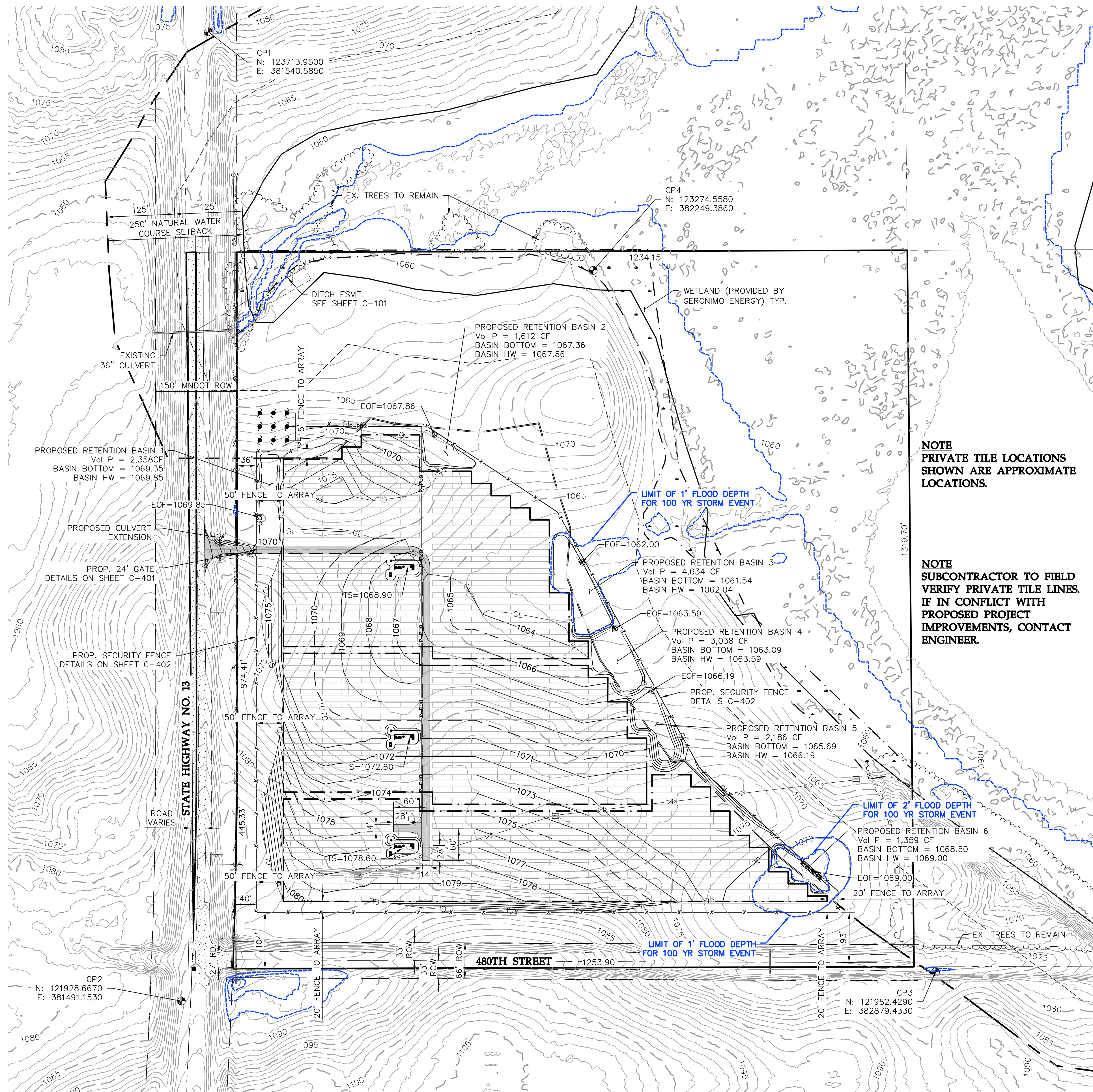
Sheet Title:
Existing Conditions

Scale: 1"=100' Project ID: 0007381.02

Sheet No: C-101

Date: 12/28/2016

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GENERAL NOTES:

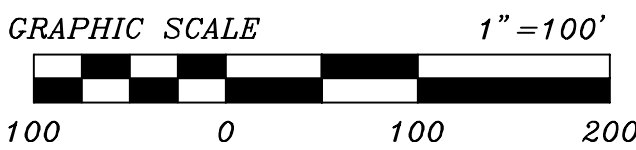
1. TOPSOIL SHALL BE SEGREGATED FROM ALL EARTHWORK ACTIVITIES THAT REQUIRE SUB-SOIL EXCAVATION. TOPSOIL SHALL BE STOCK PILED IN ACCORDANCE WITH THE AGRICULTURE MITIGATION PLAN.
2. INTERNAL ROADS WILL BE CONSTRUCTED TO MATCH THE SURROUNDING EXISTING GROUND ELEVATIONS TO ALLOW EXISTING DRAINAGE PATTERNS TO PERSIST.
3. ALL EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO ANY UPSLOPE GROUND DISTURBANCE COMMENCING.

SPECIAL NOTES:

WESTWOOD PROFESSIONAL SERVICES DESIGN TEAM DID NOT PERFORM ANY DESIGN, LOCATING, SIZING OR SET ANY ELEVATIONS FOR PILES ON THE LYRA COMMUNITY SOLAR GARDEN PROJECT.

NOTE
PRIVATE TILE LOCATIONS
SHOWN ARE APPROXIMATE
LOCATIONS.

NOTE
SUBCONTRACTOR TO FIELD
VERIFY PRIVATE TILE LINES.
IF IN CONFLICT WITH
PROPOSED PROJECT
IMPROVEMENTS, CONTACT
ENGINEER.



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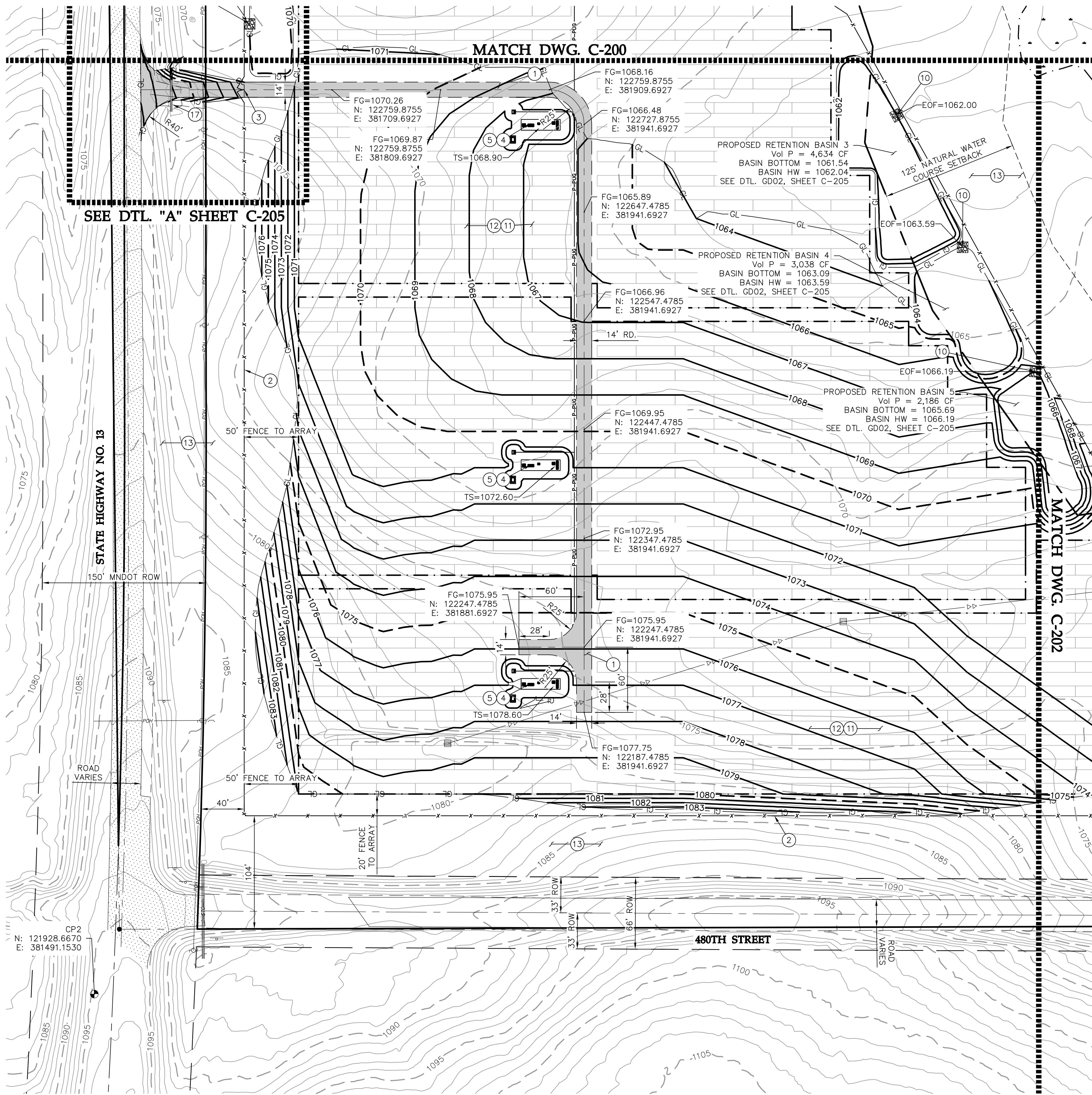
Sheet Title:
Overall Site and
Grading Plan

Scale: 1" = 100' Project ID: 0007381.02

Sheet No: C-102

Date: 12/28/2016

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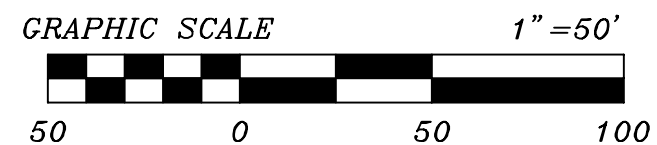


CONSTRUCTION NOTES

- PROPOSED ACCESS ROAD PER DETAILS RD01 AND RD02 ON DWG. C-204.
- PROPOSED CHAIN LINK FENCE - SEE FENCING ON DWGS. C-400 - C-402.
- PROPOSED 24' WIDE CHAIN LINK GATE WITH EMERGENCY ACCESS KEY BOX PER MSFC 2007 506.1 - SEE FENCING ON DWGS. C-400 - C-402.
- PROPOSED PCS - SEE SEPARATE ELECTRICAL PLANS.
- PROPOSED ELECTRICAL EQUIPMENT LOCATION. FOUNDATION DESIGN BY WESTWOOD. SEE SEPARATE STRUCTURAL PLANS.
- NOT USED
- PROPOSED ELECTRICAL EQUIPMENT AND POLES. - SEE SEPARATE ELECTRICAL PLANS. PERMITTED WEATHER STATION - SEE SEPARATE ELECTRICAL PLANS.
- PROPOSED XCEL COMMUNICATION EQUIPMENT - SEE SEPARATE ELECTRICAL PLANS. PERMITTED CONSTRUCT EMERGENCY OVERFLOW RIP-RAP PER DETAIL GD02 ON SHEET C-204.
- PREPARE SITE PER CONSTRUCTION NOTES ON DWG. C-202.
- PROPOSED REVEGETATION - SEE LANDSCAPE PLANS SHEETS C-500.
- NO GRADING OUTSIDE OF FENCE U.O.N. EXISTING VEGETATION TO REMAIN.
- NOT USED
- NOT USED
- TEMPORARY CONSTRUCTION ROAD & LAYDOWN AREA. TEMPORARY CONSTRUCTION & LAYDOWN AREA TO BE REMOVED UPON COMPLETION OF CONSTRUCTION ACTIVITIES. SEE RD03 ON SHEET C-204 FOR TEMPORARY FACILITY SURFACE SECTION.
- PROPOSED 21" CMP CULVERT EXTENSION. SEE DTL. GD04, SHEET C-204 FOR DETAILS.

GENERAL NOTES

- TOPSOIL SHALL BE SEGREGATED FROM ALL EARTHWORK ACTIVITIES THAT REQUIRE SUB-SOIL EXCAVATION.
- MINOR SURFACE SMOOTHING MAY OCCUR FOR RACKING INSTALLATIONS.
- INTERNAL ROADS WILL BE CONSTRUCTED TO MATCH THE SURROUNDING EXISTING GROUND ELEVATIONS TO ALLOW EXISTING DRAINAGE PATTERNS TO PERSIST.
- ALL EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO ANY UPSLOPE GROUND DISTURBANCE COMMENCING.
- PRIVATE TILE LOCATIONS SHOWN ARE APPROXIMATE LOCATIONS FROM CLIENT-PROVIDED HAND DRAWN MAPS. SUBCONTRACTOR TO PREPARE SITE PER SITE PREPARATION NOTES, SHEET C-202.
- THE ACCESS ROAD WAS NOT DESIGNED FOR CONSTRUCTION ACTIVITIES AND WILL NEED TO BE MAINTAINED DURING CONSTRUCTION AND FINALIZED UPON COMPLETION OF CONSTRUCTION. THIS MAY REQUIRE ADDITIONAL AB BE ADDED TO THE ROAD.



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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.

Signature: *Matthew Phelan*
Typed or Printed Name: Matthew Phelan
Date: 12/28/2016 License Number: 52215

DRAWING ISSUE

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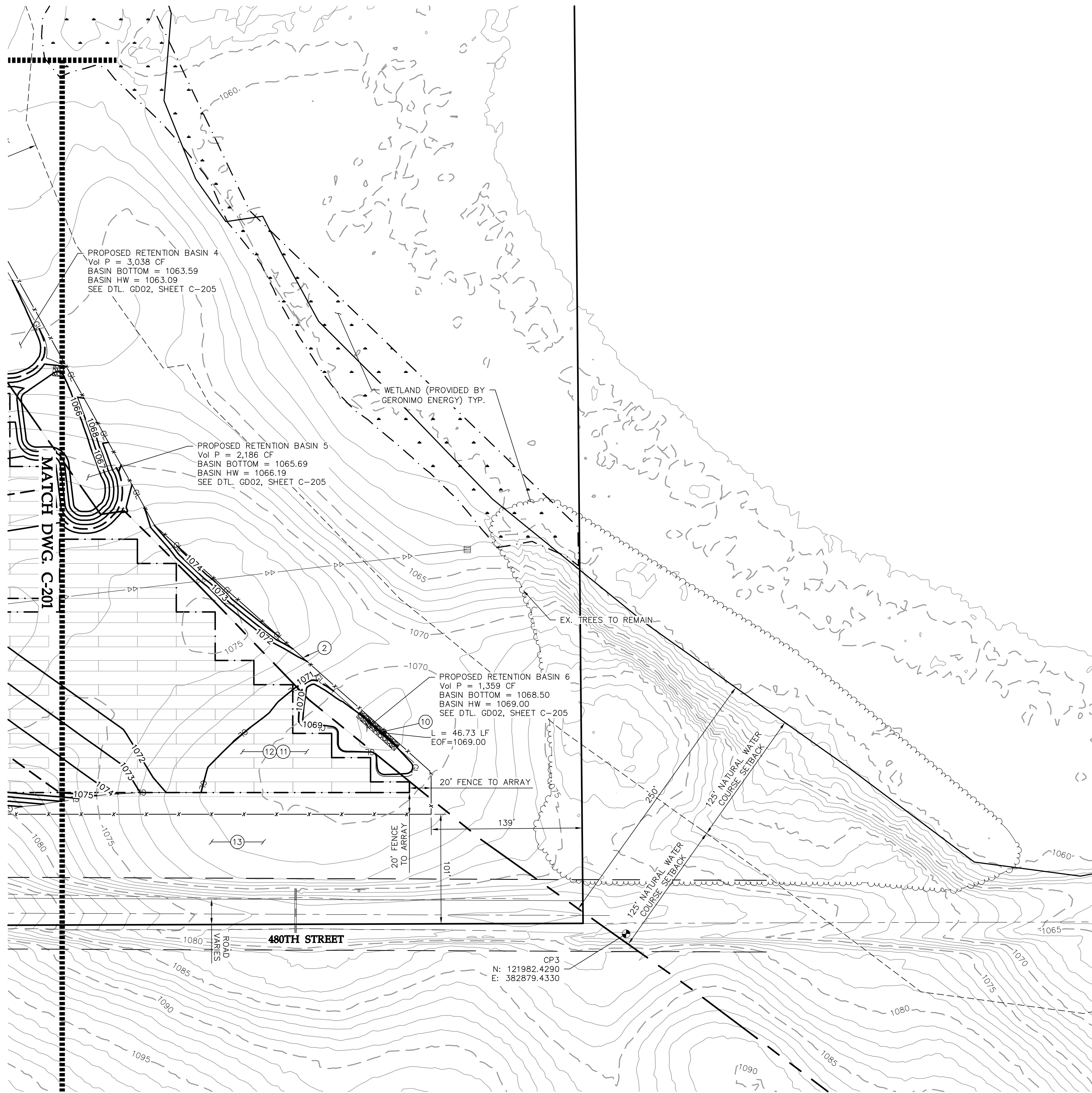
Sheet Title:
Civil Site and
Grading Plan Sheet

Scale: 1"=50' Project ID: 0007381.02

Sheet No: C-201

Date: 12/28/2016

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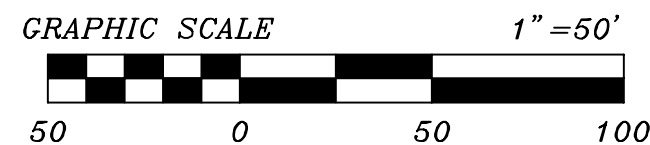


CONSTRUCTION NOTES

- PROPOSED ACCESS ROAD PER DETAILS RD01 AND RD02 ON DWG. C-204.
- PROPOSED CHAIN LINK FENCE - SEE FENCING ON DWGS. C-400 - C-402.
- PROPOSED 24' WIDE CHAIN LINK GATE WITH EMERGENCY ACCESS KEY BOX PER MSFC 2007 506.1 - SEE FENCING ON DWGS. C-400 - C-402.
- PROPOSED PCS - SEE SEPARATE ELECTRICAL PLANS.
- PROPOSED ELECTRICAL EQUIPMENT LOCATION. FOUNDATION DESIGN BY WESTWOOD. SEE SEPARATE STRUCTURAL PLANS.
- NOT USED
- PROPOSED ELECTRICAL EQUIPMENT AND POLES. - SEE SEPARATE ELECTRICAL PLANS. PERMITTED
- PROPOSED WEATHER STATION - SEE SEPARATE ELECTRICAL PLANS.
- PROPOSED XCEL COMMUNICATION EQUIPMENT - SEE SEPARATE ELECTRICAL PLANS. PERMITTED
- CONSTRUCT EMERGENCY OVERFLOW RIP-RAP PER DETAIL GD02 ON SHEET C-204.
- PREPARE SITE PER CONSTRUCTION NOTES ON DWG. C-202.
- PROPOSED REVEGETATION - SEE LANDSCAPE PLANS SHEETS C-500.
- NO GRADING OUTSIDE OF FENCE U.O.N. EXISTING VEGETATION TO REMAIN.
- NOT USED
- NOT USED
- TEMPORARY CONSTRUCTION ROAD & LAYDOWN AREA. TEMPORARY CONSTRUCTION & LAYDOWN AREA TO BE REMOVED UPON COMPLETION OF CONSTRUCTION ACTIVITIES. SEE RD03 ON SHEET C-204 FOR TEMPORARY FACILITY SURFACE SECTION.
- PROPOSED 21" CMP CULVERT EXTENSION. SEE DTL. GD04, SHEET C-204 FOR DETAILS.

GENERAL NOTES

- TOPSOIL SHALL BE SEGREGATED FROM ALL EARTHWORK ACTIVITIES THAT REQUIRE SUB-SOIL EXCAVATION.
- MINOR SURFACE SMOOTHING MAY OCCUR FOR RACKING INSTALLATIONS.
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- ALL EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO ANY UPSLOPE GROUND DISTURBANCE COMMENCING.
- PRIVATE TILE LOCATIONS SHOWN ARE APPROXIMATE LOCATIONS FROM CLIENT-PROVIDED HAND DRAWN MAPS. SUBCONTRACTOR TO PREPARE SITE PER SITE PREPARATION NOTES, SHEET C-202.
- THE ACCESS ROAD WAS NOT DESIGNED FOR CONSTRUCTION ACTIVITIES AND WILL NEED TO BE MAINTAINED DURING CONSTRUCTION AND FINALIZED UPON COMPLETION OF CONSTRUCTION. THIS MAY REQUIRE ADDITIONAL AB BE ADDED TO THE ROAD.



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Typed or Printed Name: Matthew Philip Gaarder
Date: 12/28/2016 License Number: 52215

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Project Name:
**Lyra Community
Solar Garden, LLC**

Site Address:
Le Sueur County, Minnesota

Sheet Title:
**Civil Site and
Grading Plan Sheet**

Scale: 1" = 50' Project ID: 0007381.02

Sheet No: C-202

Date: 12/28/2016

0007452cPF01.dwg

CIVIL CONSTRUCTION NOTES

INTERNAL/ACCESS ROAD DESIGN PARAMETERS

- 1. THE ROAD HAS BEEN DESIGNED TO ACCOMMODATE LIGHT DUTY TRUCKS FOR LOW VOLUME USE IN NORMAL OPERATING CONDITIONS. THE ROAD DESIGN SPECIFIED IS NOT INTENDED FOR ALL WEATHER USE FOR HEAVY DUTY, HIGH VOLUME, CONSTRUCTION LOADS.
- 2. ROAD MAINTENANCE CAN BE EXPECTED DURING CONSTRUCTION AND OVER THE LIFE OF THE PERMANENT FACILITY.
- 3. ROAD SECTION AND SPECIFICATION SHOWN ON THE PLANS WERE PREPARED BY WESTWOOD PROFESSIONAL SERVICES BASED ON GEOTECHNICAL RECOMMENDATIONS FROM ENGINEERING (TERRACON).

PRODUCTS

- 1. INTERNAL/ACCESS ROAD AND INVERTER SKID WALKWAY AGGREGATE SHALL CONSIST OF CRUSHED CLASS 5 AGGREGATE BASE MEETING MNDOT SPEC 3138 AND THE GRADATION PROVIDED IN TABLE 1 ON C-204.
- 2. CULVERTS: SEE PLAN FOR DRAINAGE CULVERT LOCATIONS. ACCESS ROAD CULVERTS SHALL MEET THE MINIMUM SPECIFICATIONS SET FORTH BY THE MINNESOTA DEPARTMENT OF TRANSPORTATION AND/OR CHIPPEWA COUNTY. ALL CULVERTS SHALL BE HELICAL CORRUGATED 12 GAUGE OR APPROVED EQUAL AND MANUFACTURED OF CORRUGATED METAL PIPE.
- 3. GEOTEXTILE FABRIC SHALL BE TENSAR BX1200 OR APPROVED ALTERNATE.
- 4. EXCAVATED SOILS THROUGHOUT PROJECT SHALL BE UTILIZED AS FILL. SOILS SHALL BE CLEAN OF DEBRIS AND ORGANIC MATERIAL.

EXECUTION

- 1. **SITE PREPARATION**
 - A. THE CONTRACTOR SHALL BE REQUIRED TO CLEAR AND GRUB AREAS DESIGNATED ON THE PLANS REMOVING ALL TREES, STUMPS, BRUSH AND DEBRIS. ANY TREES OR BRUSH THAT ARE LOCATED WITHIN A WETLAND ARE ONLY ALLOWED TO BE TRIMMED. TREES AND BRUSH LOCATED OUTSIDE OF THE PROJECT DEVELOPMENT AREA SHALL NOT BE DISTURBED.
 - B. AREAS THAT ARE NOT TO BE CLEARED AND GRUBBED SHALL HAVE ANY EXISTING VEGETATION MOWED TO A MAXIMUM HEIGHT OF 3 INCHES.
 - C. THE CONTRACTOR SHALL PRESERVE OTHER EXISTING VEGETATION TO THE MAXIMUM EXTENT PRACTICABLE. ANY VEGETATION THAT IS REMOVED SHALL ONLY BE WITHIN THE PROJECT BOUNDARY. THE CONTRACTOR IS TO REMOVE ONLY THAT VEGETATION WHICH SHALL BE DESIGNATED BY THE OWNERS REPRESENTATIVE FOR REMOVAL, AND SHALL EXERCISE EXTREME CARE AROUND EXISTING VEGETATION TO BE SAVED. CONSTRUCTION FENCING MAY BE INSTALLED TO PROTECT AREAS THAT ARE NOT TO BE DISTURBED.
 - D. NO BURNING OF DEBRIS IS ALLOWED WITHOUT THE NECESSARY PERMITS FROM JURISDICTIONAL GOVERNING AUTHORITIES AND APPROVAL BY THE OWNER.
- 2. **FILL MATERIALS AND PLACEMENT**
 - A. PRIOR TO PLACEMENT OF FILL MATERIAL, EXISTING SURFACE SHALL BE CLEARED OF ALL VEGETATION, LOOSE MATERIALS, COMPACTED TO 90%, PER ASTM D698.
 - B. ALL FILL MATERIALS SHALL BE INORGANIC SOILS FREE OF VEGETATION, DEBRIS, AND FRAGMENTS LARGER THAN THREE (3) INCHES IN SIZE. PEA GRAVEL OR OTHER SIMILAR NON-CEMENTITIOUS, POORLY-GRADED MATERIALS SHALL NOT BE USED AS FILL OR BACKFILL WITHOUT THE PRIOR APPROVAL OF THE GEOTECHNICAL ENGINEER.
 - C. CLEAN ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS FILL MATERIAL FOR GENERAL SITE GRADING.THIS MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 8".
 - D. ANY IMPORTED SOILS MUST HAVE EXPANSION VALUES IN THE "VERY LOW" RANGE AS DEFINED BY ASTM D-4829, VERY LOW IS AN EXPANSION INDEX FROM 0 TO 20.

INTERNAL/ACCESS ROAD CONSTRUCTION AND SITE GRADING

- 1. **TOPSOIL MANAGEMENT**
 - A. TOPSOIL SHALL BE STRIPPED FROM ALL ROADWAY AREAS A MINIMUM OF 12". TOPSOIL SHALL BE STRIPPED THROUGH THE TOPSOIL DEPTH IN GRADING AREAS. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THESE DESIGNATED AREAS OR WHERE THE PROPOSED GRADE AND ELEVATIONS CHANGES ARE LESS THAN THE TOPSOIL DEPTH. APPROXIMATE TOPSOIL DEPTH PER GEOTECHNICAL REPORT=0.5'.
 - B. STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS SHALL BE STOCKPILED ON THE SITE IN THE LOCATION SHOWN ON THE PLANS OR AS APPROVED BY THE SITE MANAGER. STOCKPILES WITHIN THE SITE SHALL HAVE TEMPORARY EROSION AND SEDIMENT CONTROL APPLIED IN ACCORDANCE WITH THE PROJECT SWPPP OR USED TO REVEGETATE LANDSCAPED AREAS OR EXPOSED SLOPES AFTER COMPLETION OF GRADING OPERATIONS. IF IT IS NECESSARY TO DISPOSE OF ORGANIC MATERIALS ON-SITE THEY SHALL BE PLACED IN NON-STRUCTURAL AREAS.
- 2. **SITE GRADING**
 - A. SUBSEQUENT TO THE SURFACE CLEARING, GRUBBING AND TOPSOIL REMOVAL IN AREAS SHOWN ON THE PLANS, THE SUBSURFACE SOILS SHALL HAVE THE GRADES AND ELEVATIONS MODIFIED AS SHOWN ON THE PLANS. THE PROPOSED CONTOURS AND ELEVATIONS SHOWN ON THE PLANS ARE TO FINISHED GRADE.
 - B. SUBSURFACE SOILS SHALL BE MOISTURE CONDITIONED AND COMPACTED TO THE SPECIFICATIONS OF TABLE 3, SHEET C-204
 - C. ANY CUT MATERIAL THAT CANNOT BE USED FOR STRUCTURAL BACKFILL THROUGHOUT THE PROJECT SHALL BE USED IN FILL AREAS IDENTIFIED ON THE PLANS. THE FILL AREA SHALL HAVE TOPSOIL REMOVED AND MANAGED AS IDENTIFIED ABOVE IN "TOPSOIL MANAGEMENT".
 - D. CLEAN, ORGANIC FREE, ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS SUBGRADE MATERIAL FOR GENERAL SITE GRADING.
- 3. **SUBGRADE PREPARATION**
 - A. SUBSEQUENT TO THE SURFACE CLEARING, GRUBBING, TOPSOIL REMOVAL AND EMBANKMENT CONSTRUCTION, THE EXPOSED SUBGRADE SOILS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF TWELVE (12) INCHES, MOISTURE CONDITIONED AND COMPACTED TO THE SPECIFICATIONS OF TABLE 3 ON SHEET C-204. THE COMPACTED EXPOSED SUBGRADES SHALL BE PROOF ROLLED AND OBSERVED BY A GEOTECHNICAL ENGINEER TO DETERMINE IF SOFT SOILS EXIST. IF SOFT SOILS EXIST THEY SHALL BE SCARIFIED AND ALLOWED TO DRY, RECOMPACTED AND TESTED AGAIN, IF THEY CONTINUE TO REMAIN SOFT, THE SOFT SOILS SHALL BE REMOVED AND REPLACED WITH ONSITE FILL MATERIAL.
 - B. ROAD SUBGRADE PREPARATION SHALL EXTEND HORIZONTALLY AT LEAST TWO FEET BEYOND THE OUTSIDE EDGE OF THE DRIVABLE SURFACE. THE PURPOSE IS MITIGATE THE DAMAGE DONE BY A DELIVERY TRUCK PARKING OFF THE ROAD'S EDGE AND TURNING AROUND. THE MOISTURE CONTENT AND COMPACTION OF ROAD SUBGRADE SOILS SHALL BE MAINTAINED UNTIL AGGREGATE BASE PLACEMENT.
 - C. THE MOISTURE CONTENT AND COMPACTION OF ROAD SUBGRADE SOILS SHALL BE MAINTAINED UNTIL AGGREGATE BASE PLACEMENT.
 - D. CLEAN, ORGANIC FREE, ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS SUBGRADE MATERIAL FOR GENERAL SITE GRADING AND ROADWAY AREAS.
- 4. **AGGREGATE PLACEMENT**
 - A. INTERNAL/ACCESS ROADS - SUBSEQUENT TO THE SUBGRADE PREPARATION THE GEOTEXTILE FABRIC SHALL BE PLACED ABOVE THE SUBGRADE AND THE ROAD AGGREGATE BASE SHALL BE PLACED AND COMPACTED TO THE SPECIFICATIONS IDENTIFIED IN TABLE 3 ON SHEET C-204.
- 5. **TOPSOIL REDISTRIBUTION AND STABILIZATION**
 - A. FOLLOWING THE PLACEMENT OF THE AGGREGATE BASE AND APPROVAL OF THE TESTING, TOPSOIL SHALL BE DISTRIBUTED OVER THE EXPOSED DISTURBED AREAS, EXCLUDING THE AGGREGATE DRIVING SURFACE.
 - B. FOLLOWING SITE GRADING OPERATIONS, TOPSOIL CAN BE USED TO BRING THE GROUND ELEVATIONS UP TO THE DESIGNED FINISHED GRADE ELEVATIONS.
 - C. THE TOPSOIL SHALL HAVE TEMPORARY AND PERMANENT STABILIZATION MEASURES ESTABLISHED IN ACCORDANCE WITH THE PROJECT SWPPP.

CONSTRUCTION ROAD & LAYDOWN AREA

- 1. **PREPARATION**
 - A. THE LAYDOWN/STORAGE YARD SHALL CONSIST OF AN AGGREGATE BASE MATERIAL PER DETAIL RD03 ON SHEET C-205.
 - B. THE AGGREGATE BASE SHALL BE MOISTURE CONDITIONED AND COMPACTED TO THE SPECIFICATIONS OF TABLE 3 (NON-STRUCTURAL AREA).
 - C. FOLLOWING CONSTRUCTION AND REMOVAL OF PROJECT INVENTORY THE COMPACTED AGGREGATE BASE SHALL BE DECOMPACTED AND REMOVED. SUBGRADE SHALL BE DECOMPACTED PERMANENTLY STABILIZED IN ACCORDANCE WITH THE PROJECT SWPPP SPECIFICATIONS.

CONCRETE PAD CONSTRUCTION

- 1. **TOPSOIL MANAGEMENT**
 - A. TOPSOIL SHALL BE STRIPPED FROM ALL CONCRETE PAD AREAS THROUGH THE ROOT ZONE. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THESE DESIGNATED CLEARING AND GRUBBING AREAS. THE APPROXIMATE TOPSOIL DEPTH=0.5'.
 - B. STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS SHALL BE STOCKPILED ON THE SITE IN THE LOCATION SHOWN ON THE PLANS. STOCKPILES WITHIN THE SITE SHALL HAVE TEMPORARY EROSION AND SEDIMENT CONTROL APPLIED IN ACCORDANCE WITH THE PROJECT SWPPP OR USED TO REVEGETATE LANDSCAPED AREAS OR EXPOSED SLOPES AFTER COMPLETION OF GRADING OPERATIONS. IF IT IS NECESSARY TO DISPOSE OF ORGANIC MATERIALS ON-SITE THEY SHALL BE PLACED IN NON-STRUCTURAL AREAS.
- 2. **CONCRETE PAD EMBANKMENT**
 - A. EMBANKMENT CONSTRUCTION SHALL CONSIST OF THE PLACING OF SUITABLE FILL MATERIAL, AFTER TOPSOIL STRIPPING, ABOVE THE EXISTING GRADE WHERE THE CONCRETE PAD IS BUILT UP. GENERALLY, THE CONCRETE PAD EMBANKMENT SHALL HAVE COMPACTED SUPPORT SLOPES OF THREE FEET HORIZONTAL TO ONE FOOT VERTICAL.
 - B. THE MATERIAL FOR EMBANKMENT CONSTRUCTION SHALL BE GENERATED ON SITE BY THE CONTRACTOR FROM THE IDENTIFIED GRADING AREAS ON SITE. THIS MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 8".
 - C. ALL SLOPES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GRADING SHOWN ON THE PLANS.
 - D. EXPOSED SURFACES SHALL BE FREE OF MOUNDS AND DEPRESSIONS WHICH COULD PREVENT UNIFORM COMPACTION.
 - E. SEE TABLE 2 FOR TESTING REQUIREMENTS AND TABLE 3 FOR COMPACTION REQUIREMENTS.
- 3. **SUBGRADE PREPARATION**
 - A. SUBSEQUENT TO THE SURFACE CLEARING, GRUBBING AND TOPSOIL REMOVAL, THE EXPOSED SUBGRADE SOILS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF EIGHT (8) INCHES, MOISTURE CONDITIONED AND COMPACTED TO THE SPECIFICATIONS OF TABLE 3. IF SOFT SOILS EXIST THEY SHALL BE SCARIFIED AND ALLOWED TO DRY, RECOMPACTED AND TESTED AGAIN, IF THEY CONTINUE TO REMAIN SOFT THE SOFT SOILS SHALL BE REMOVED AND REPLACED WITH ONSITE FILL MATERIAL.
 - B. THE MOISTURE CONTENT AND COMPACTION OF CONCRETE PAD SUBGRADE SOILS SHALL BE MAINTAINED UNTIL PAVEMENT CONSTRUCTION.
 - C. CLEAN, ORGANIC FREE, ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS SUBGRADE MATERIAL FOR GENERAL SITE GRADING AND ROADWAY AREAS.
- 4. **SOIL STABILIZATION**
 - A. FOLLOWING THE CONSTRUCTION OF THE CONCRETE PAD, TOPSOIL SHALL BE DISTRIBUTED OVER THE EXPOSED DISTURBED AREAS FOR FINAL STABILIZATION.
 - B. THE TOPSOIL SHALL HAVE TEMPORARY AND PERMANENT STABILIZATION MEASURES ESTABLISHED IN ACCORDANCE WITH THE PROJECT SWPPP.

INVERTER SKID CONSTRUCTION

- 1. **TOPSOIL MANAGEMENT**
 - A. TOPSOIL SHALL BE STRIPPED FROM ALL FILL AREAS AND WALKWAY PATHS THROUGH THE ROOT ZONE. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THESE DESIGNATED AREAS. APPROXIMATE TOPSOIL DEPTH=0.5'.
 - B. STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS SHALL BE STOCKPILED ON THE SITE IN THE LOCATION SHOWN ON THE PLANS. STOCKPILES WITHIN THE SITE SHALL HAVE TEMPORARY EROSION AND SEDIMENT CONTROL APPLIED IN ACCORDANCE WITH THE PROJECT SWPPP OR USED TO REVEGETATE LANDSCAPED AREAS OR EXPOSED SLOPES AFTER COMPLETION OF GRADING OPERATIONS. IF IT IS NECESSARY TO DISPOSE OF ORGANIC MATERIALS ON-SITE THEY SHALL BE PLACED IN NON-STRUCTURAL AREAS.
- 2. **INVERTER SKID EMBANKMENT**
 - A. EMBANKMENT CONSTRUCTION SHALL CONSIST OF THE PLACING OF SUITABLE FILL MATERIAL, AFTER TOPSOIL STRIPPING, ABOVE THE EXISTING GRADE AS A WORKING PAD AROUND THE PERIMETER OF THE INVERTER SKID. GENERALLY, THE INVERTER SKID EMBANKMENT SHALL HAVE COMPACTED SUPPORT SLOPES OF THREE FEET HORIZONTAL TO ONE FOOT VERTICAL.
 - B. THE MATERIAL FOR EMBANKMENT CONSTRUCTION SHALL BE GENERATED ON SITE BY THE CONTRACTOR FROM THE IDENTIFIED GRADING AREAS ON SITE. THIS MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 10-12".
 - C. ALL SLOPES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GRADING SHOWN ON THE PLANS.
 - D. SUBSURFACE SOILS FOR WALKWAY PATH SHALL BE MOISTURE CONDITIONED AND COMPACTED
 - E. EXPOSED SURFACES SHALL BE FREE OF MOUNDS AND DEPRESSIONS WHICH COULD PREVENT UNIFORM COMPACTION.
 - F. SEE TABLE 2 FOR TESTING REQUIREMENTS AND TABLE 3 FOR COMPACTION REQUIREMENTS.
- 3. **SOIL STABILIZATION**
 - A. FOLLOWING THE CONSTRUCTION OF THE CONCRETE PAD, TOPSOIL SHALL BE DISTRIBUTED OVER THE EXPOSED DISTURBED AREAS FOR FINAL STABILIZATION.
 - B. THE TOPSOIL SHALL HAVE TEMPORARY AND PERMANENT STABILIZATION MEASURES ESTABLISHED IN ACCORDANCE WITH THE PROJECT SWPPP.

SURFACE SMOOTHING

- 1. **INTENT**
 - A. THE INTENT IS TO HAVE MINIMAL SURFACE SMOOTHING ON THE SITE.
- 2. **TOPSOIL MANAGEMENT**
 - A. TOPSOIL DOES NOT NEED TO BE STRIPPED FOR SURFACE SMOOTHING.
- 3. **GRADING**
 - A. GRADES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GRADING SHOWN ON THE PLANS.
- 4. **SOIL STABILIZATION**
 - D. THE EXPOSED TOPSOIL SHALL HAVE TEMPORARY AND PERMANENT STABILIZATION MEASURES ESTABLISHED IN ACCORDANCE WITH THE PROJECT SWPPP.



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Typed or Printed Name: Matthew Philip Gaarder
Date: 12/28/2016 License Number: 52215

DRAWING ISSUE

- ☐ Preliminary ☒ Construction
- ☐ Customer Approval ☐ As-built
- ☐ Permitting ☐ Other

REVISIONS

Rev	By	App	Description	Date
A			50% SUBMITTAL	12/14/2016
B			ISSUED FOR PERMIT	12/28/2016

Issued for Construction

Project Name: Lyra Community Solar Garden, LLC	Site Address: Le Sueur County, Minnesota
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Sheet Title:
Construction Notes


Scale: NTS Project ID: 0007381.02
Sheet No: C-203
Date: 12/28/2016

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Project Name: Lyra Community Solar Garden, LLC

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1. THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES AS PLANNED AND SPECIFIED FOLLOWING BEST MANAGEMENT PRACTICES AS OUTLINED BY THE MINNESOTA POLLUTION CONTROL AGENCY (MPCA) AND BEING IN CONFORMANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT. SEE THE PROJECT SITE PLANS AND ASSOCIATED STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR EROSION CONTROL AND RESTORATION LOCATIONS AND SPECIFICATIONS. UNLESS OTHERWISE NOTED OR MODIFIED IN THE SWPPP/HEREIN, ALL SECTIONS OF THE GENERAL CONDITIONS SHALL APPLY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SWPPP'S AVAILABILITY.
3. ALL FIBER ROLLS AND OTHER EROSION CONTROL FEATURES SHALL BE IN PLACE PRIOR TO ANY EXCAVATION/CONSTRUCTION AND SHALL BE MAINTAINED UNTIL A Viable TURF GRASS COVER HAS BEEN ESTABLISHED.
4. ALL DRAINAGE SWALES DISTURBED DURING CONSTRUCTION ACTIVITIES AND NOT COVERED BY ROAD SURFACING MATERIALS, SHALL BE STABILIZED IN ACCORDANCE WITH THE SWPPP PLAN.

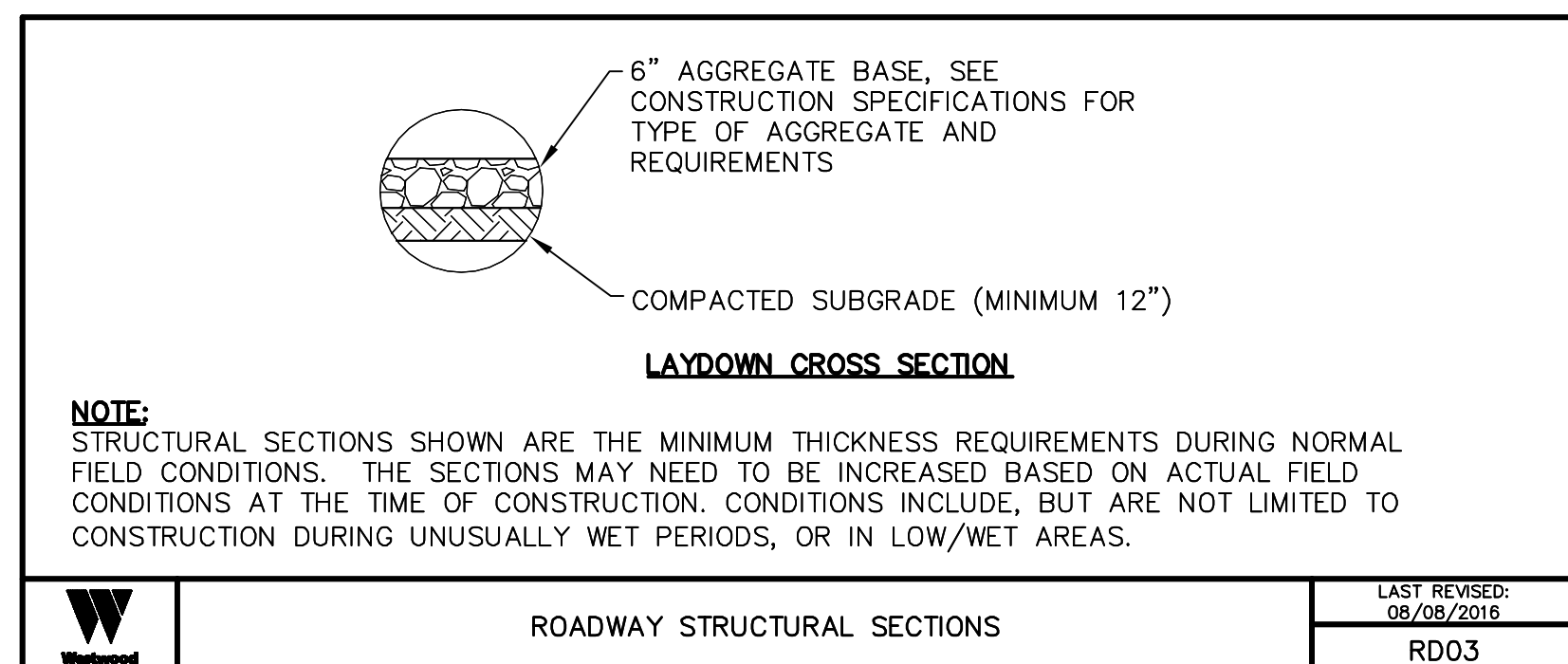
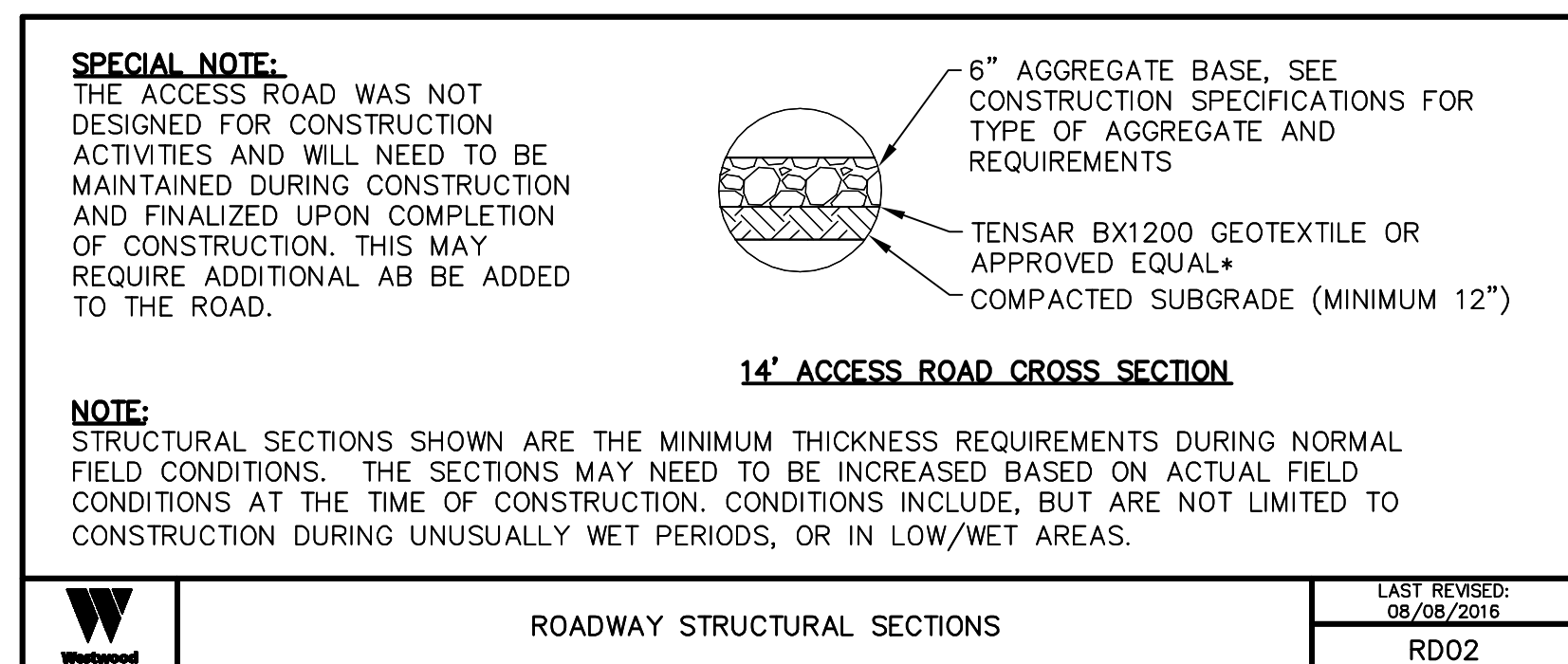
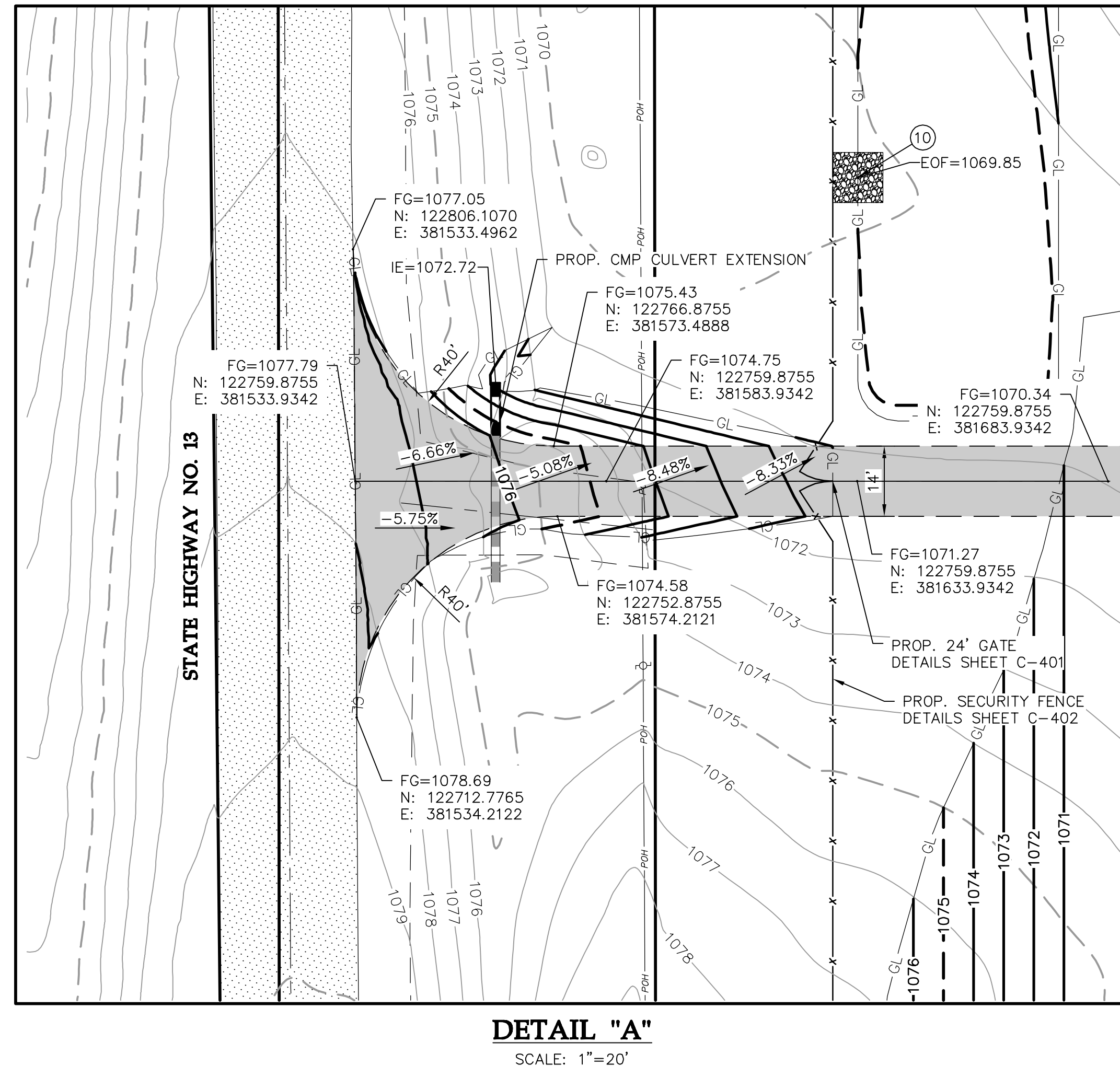
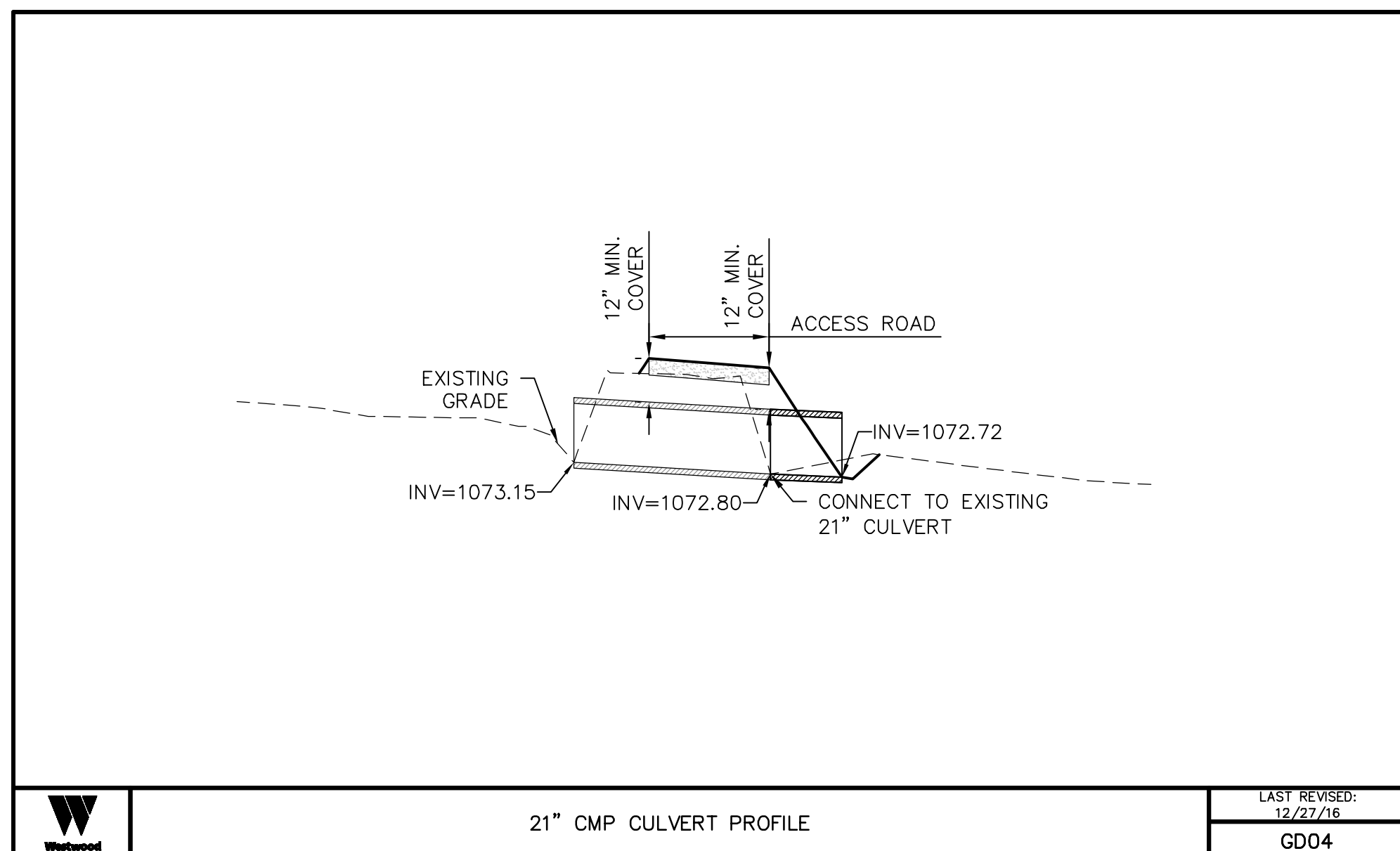
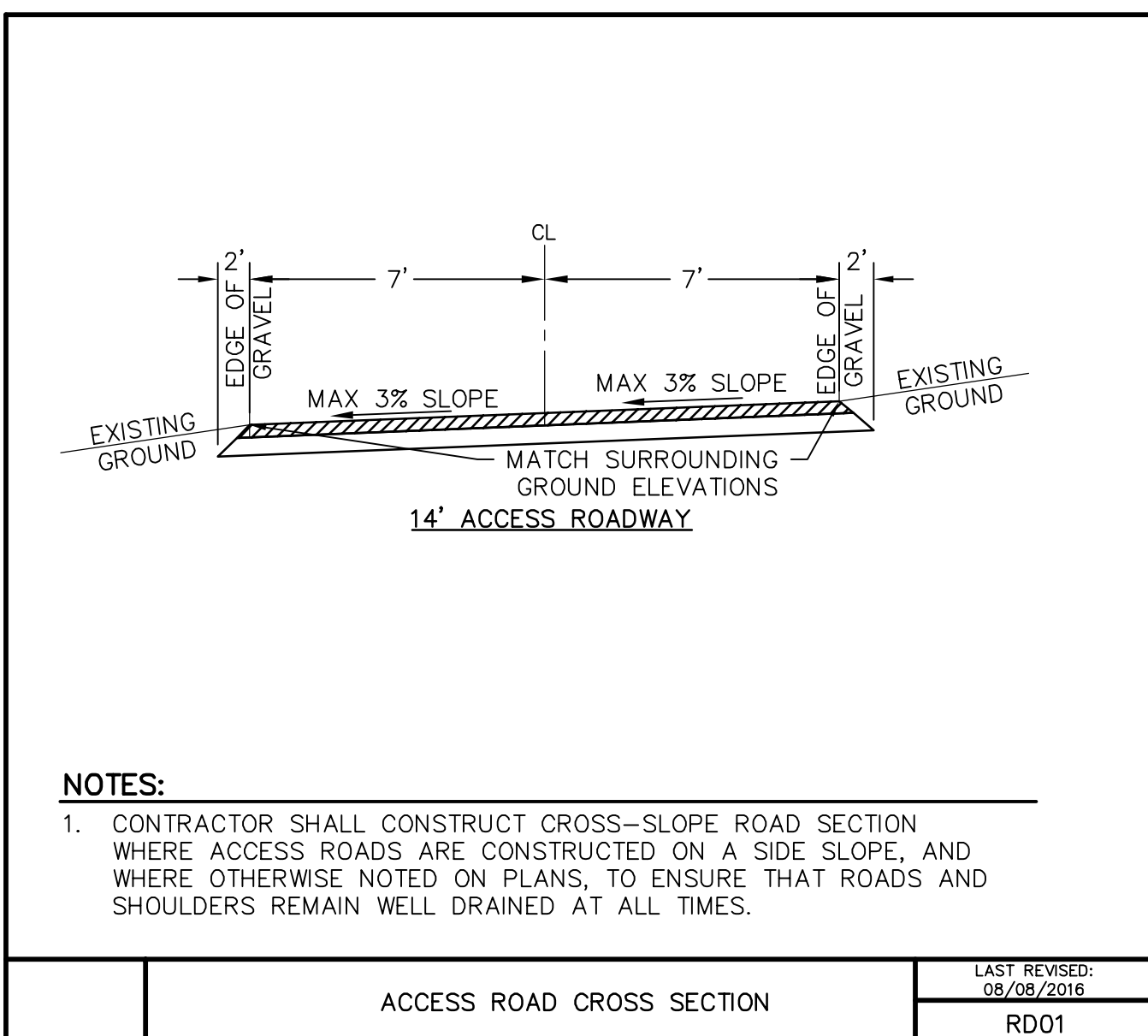
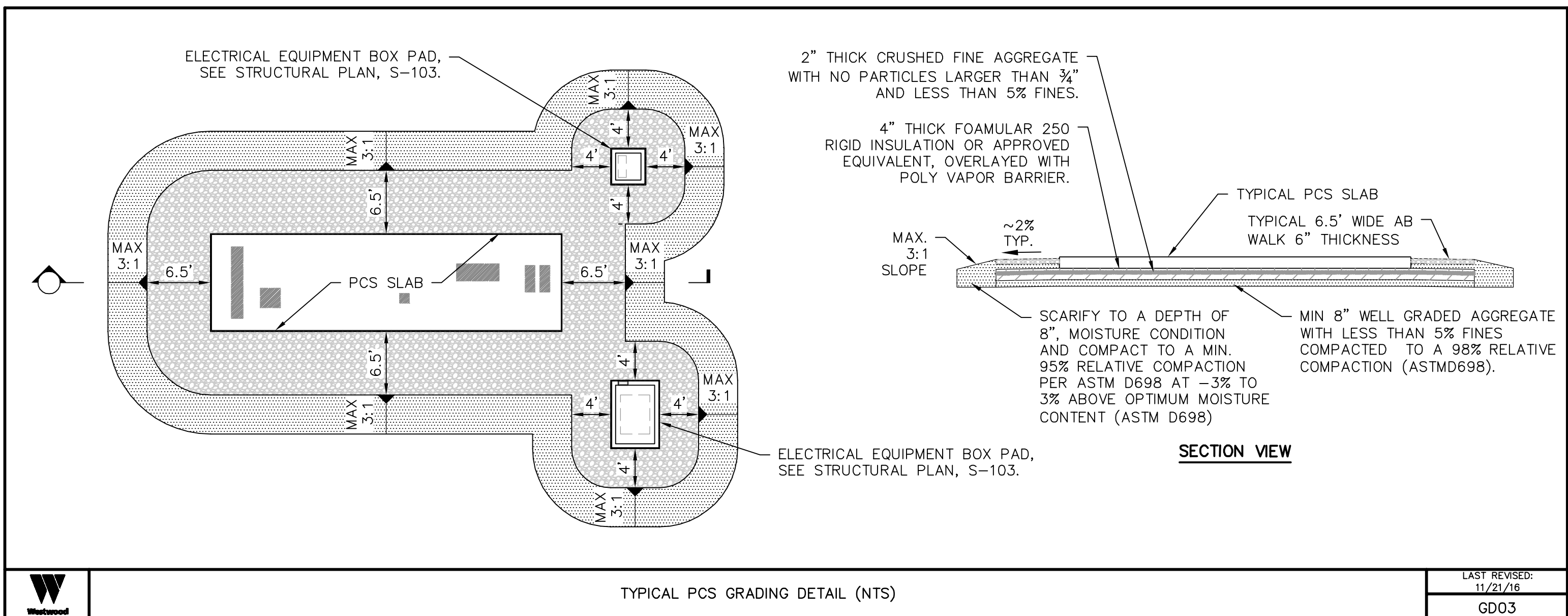
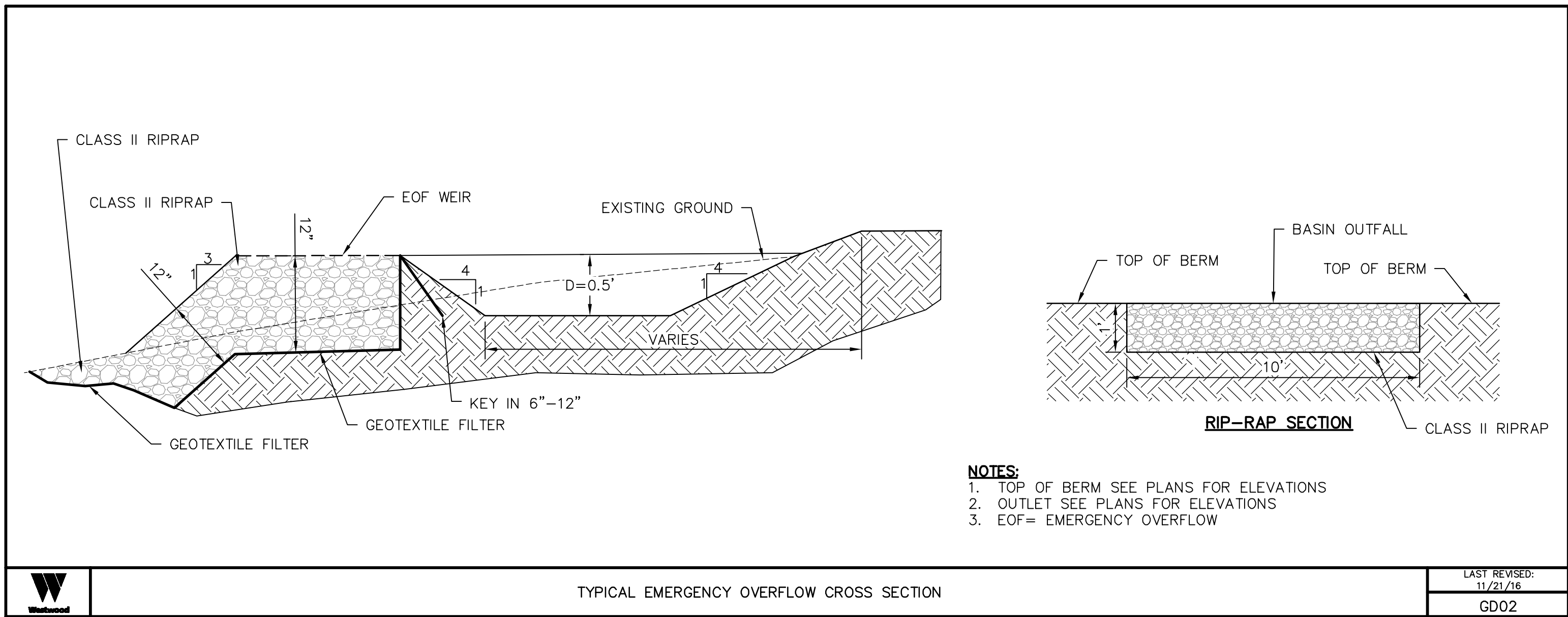
SIEVE SIZE	PERCENT PASSING
1"	(100)
3/4"	(90–100)
3/8"	(50–90)
#4	(35–80)
#10	(20–65)
#40	(10–35)
#200	(3.0–10.0)

LOCATION	TEST	FREQUENCY
STRUCTURAL FILL	GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR	1 PER MAJOR SOIL TYPE
COMPACTED SUBGRADE	MOISTURE DENSITY TEST (NUCLEAR DENSITY)*	1 EVERY 100 LF OF ROAD
	PROOF--ROLL*	ENTIRE LENGTH
AGGREGATE BASE	MOISTURE DENSITY TEST (NUCLEAR DENSITY)*	1 EVERY 100 LF OF ROAD
	PROOF--ROLL*	ENTIRE LENGTH
	SIEVE ANALYSIS*	1 PER 2000 CY
MISCELLANEOUS FILL:	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 PER 2 FOOT VERTICAL LIFTS AND/OR 200 C.Y. OF MATERIAL
TRENCH BACKFILL:	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 EVERY 200 LF OF TRENCH, ALTERNATE TEST DEPTHS OF 18" AND AT GRADE

TABLE 3: COMPACTION AND MOISTURE CONTENT REQUIREMENTS

MATERIAL TYPE AND LOCATION	MINIMUM COMPACTION REQUIREMENT PER ASTM D698 (% OF MAXIMUM DRY DENSITY)	RANGE OF MOISTURE CONTENTS FOR COMPACTION (% OVER OPTIMUM)	
		MINIMUM	MAXIMUM
AGGREGATE BASE:	95	-1	+3
STRUCTURAL FILL:	95	-1	+3
SUBGRADE (BENEATH EQUIPMENT PADS, ROADWAYS, AND NATIVE MATERIAL)	95	-1	+3
SUBGRADE (BENEATH EQUIPMENT PADS, ROADWAYS, AND IMPORT NON-EXPANSIVE SOILS)	95	-1	+3
INVERTER PAD WALKWAY	95	-1	+3

A B C D E F G H I J K L M N O P Q



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☐ Customer Approval ☐ As-built
☐ Permitting ☐ Other

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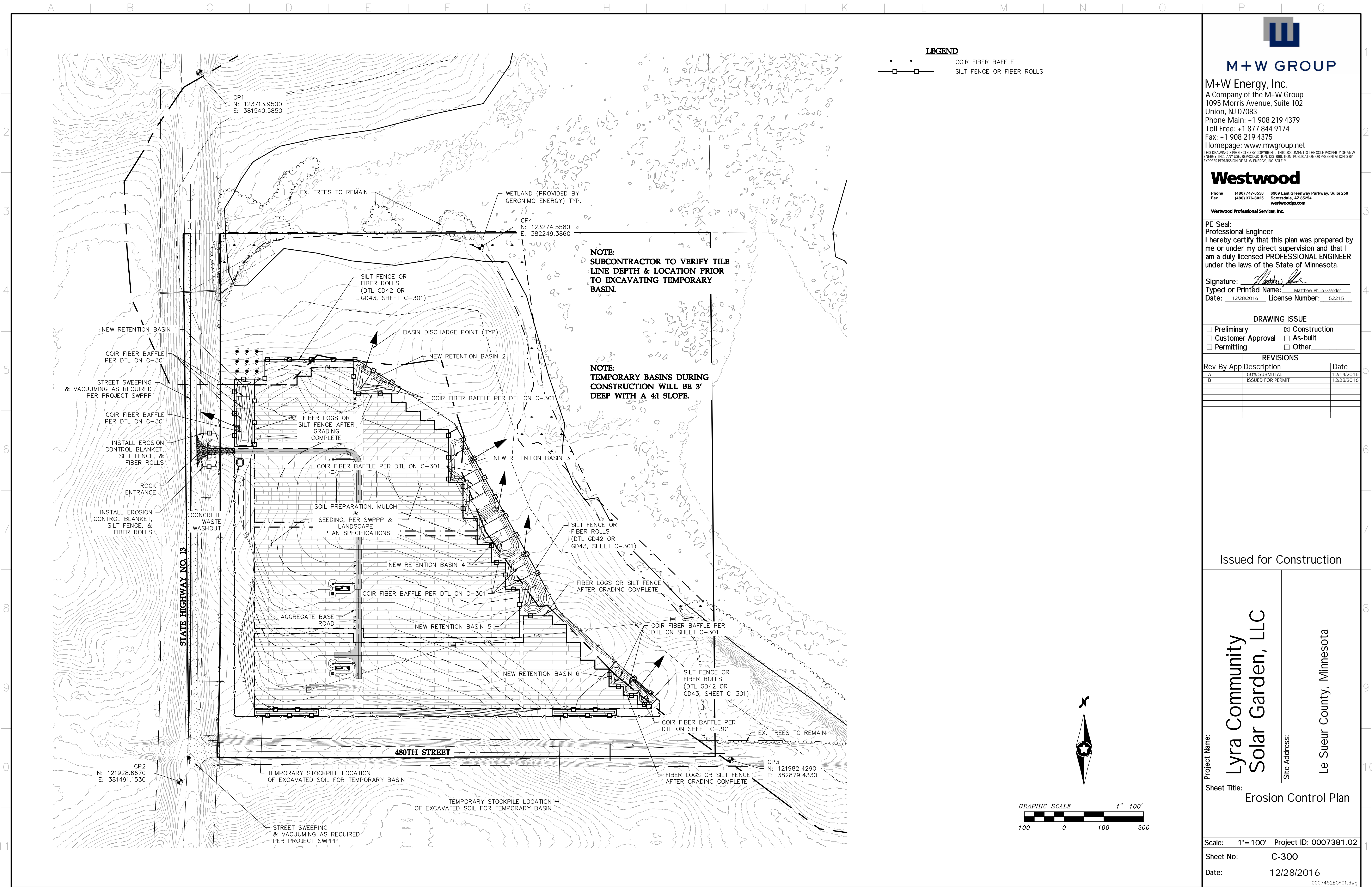
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Project Name: **Lyra Community Solar Garden, LLC**
Site Address: **Le Sueur County, Minnesota**

Sheet Title: **Construction Details**

Scale: NTS Project ID: 0007381.02
Sheet No: C-205
Date: 12/28/2016

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<input type="checkbox"/> Permitting	<input type="checkbox"/> Other

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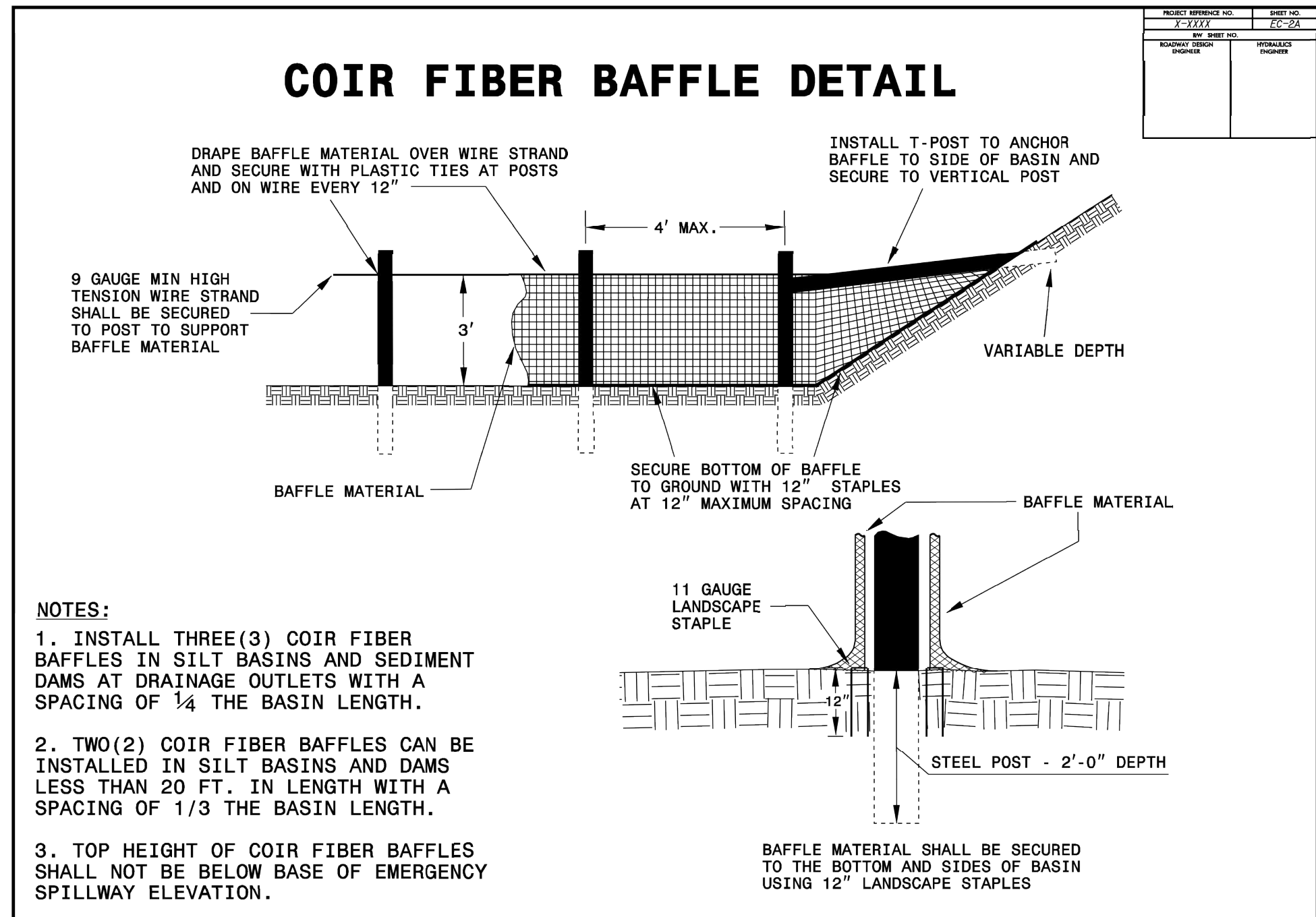
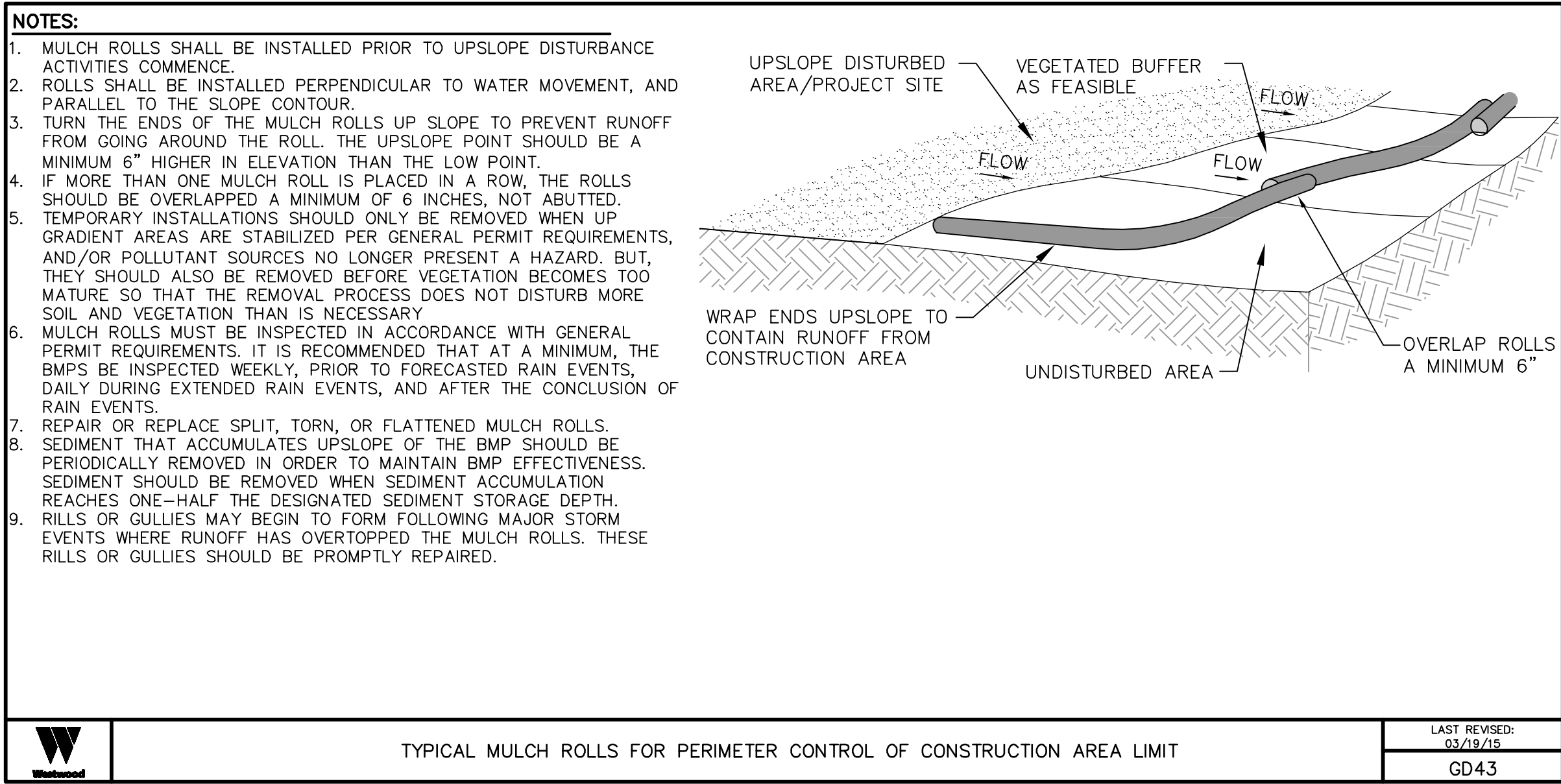
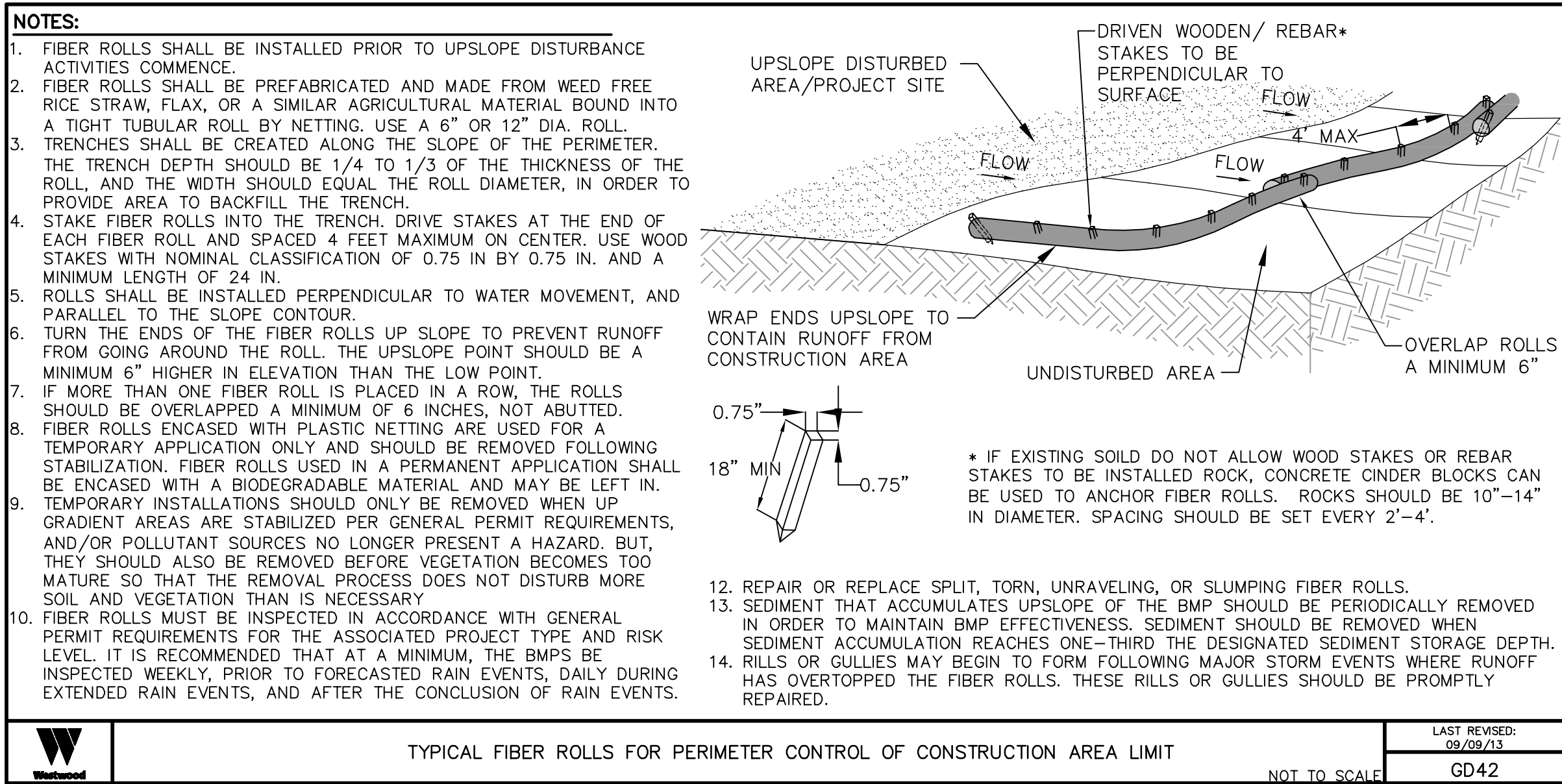
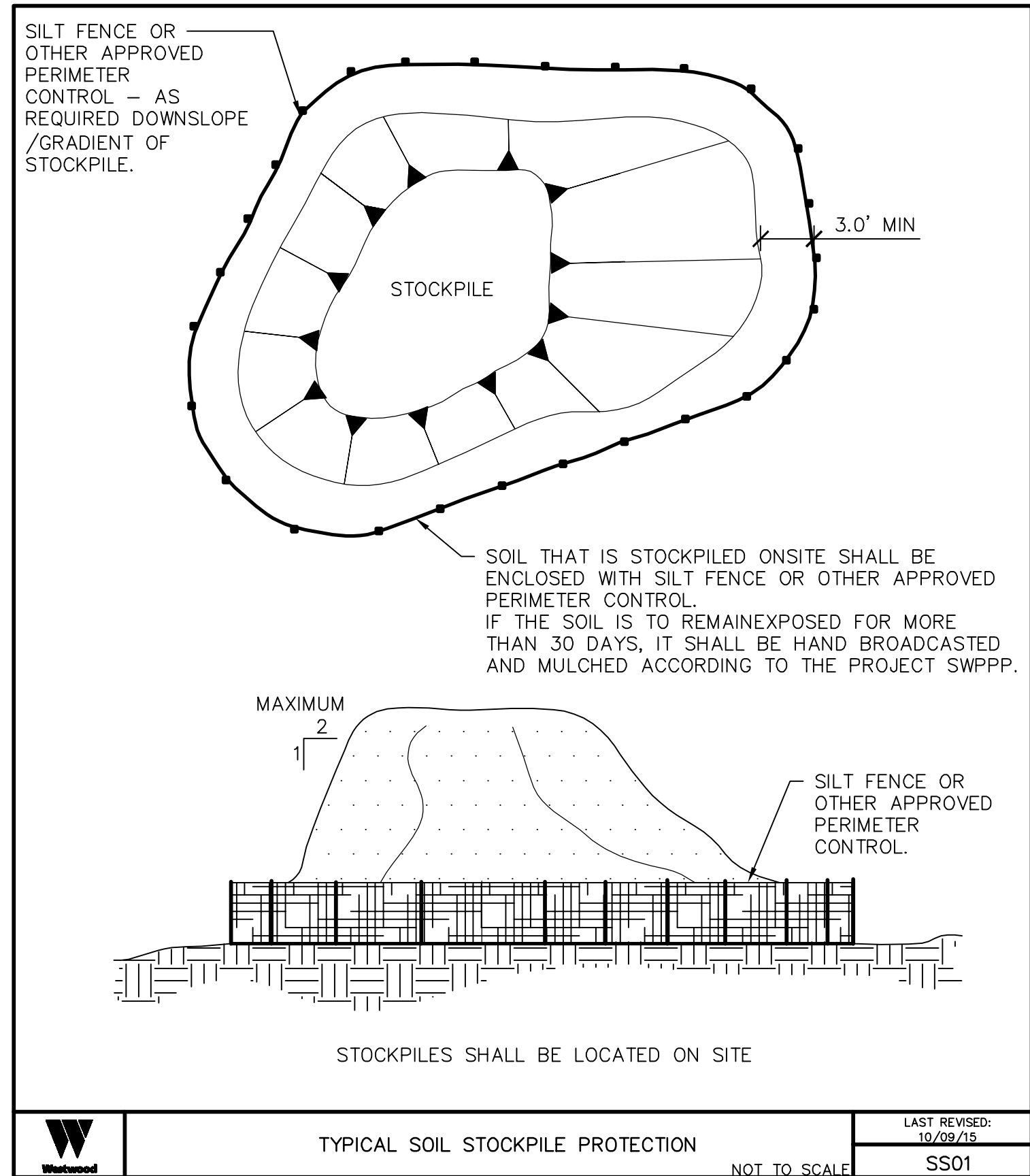
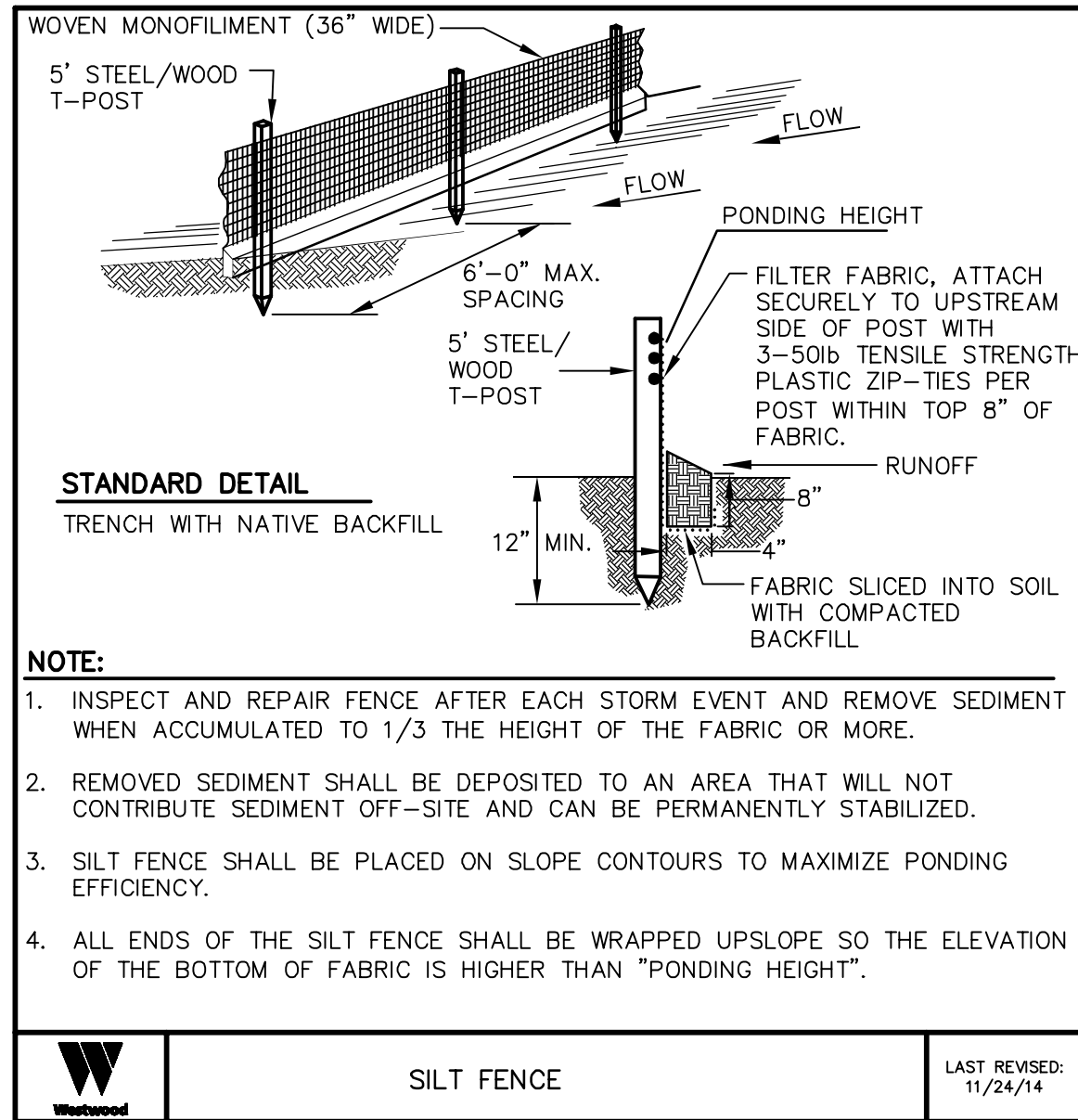
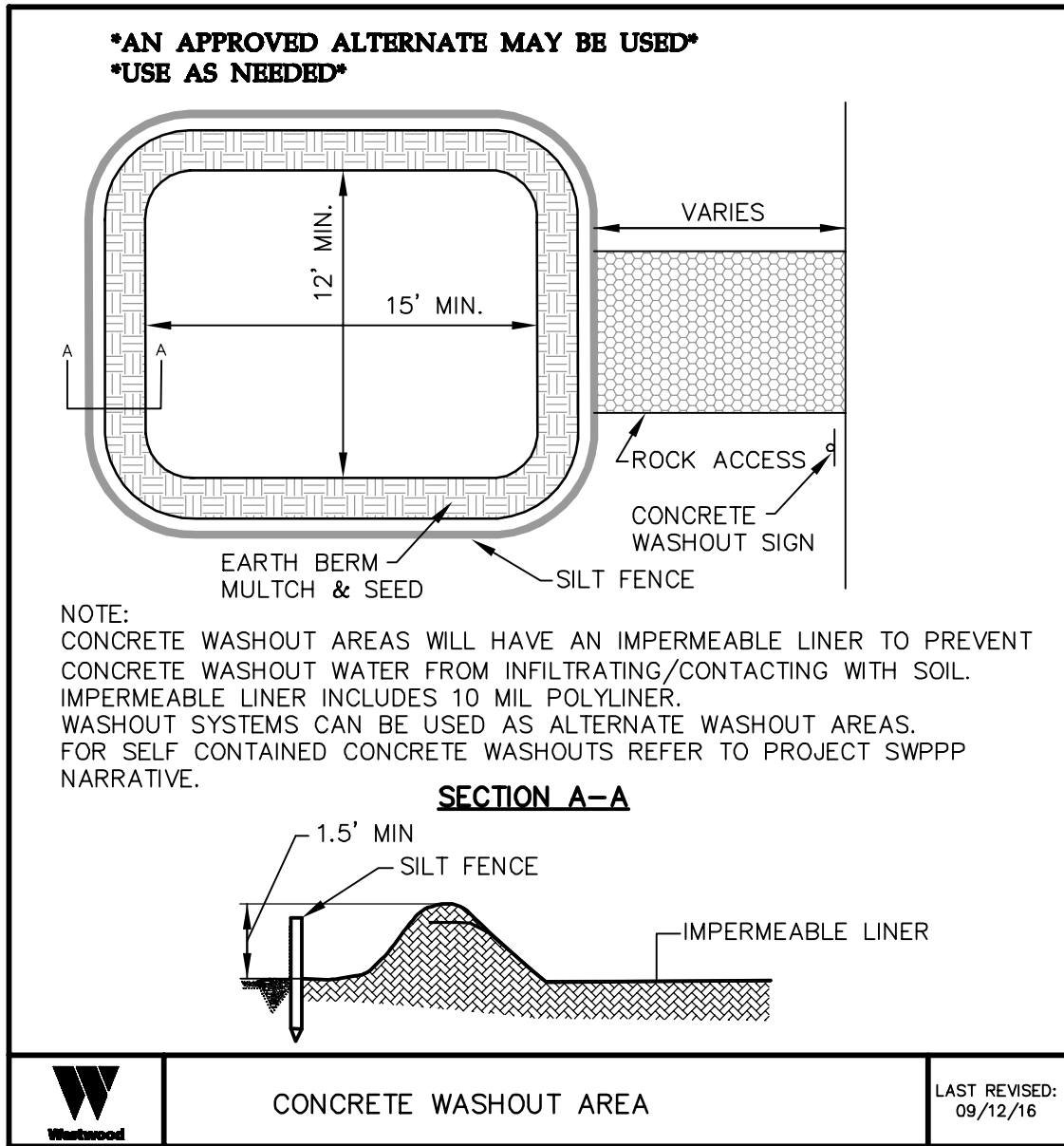
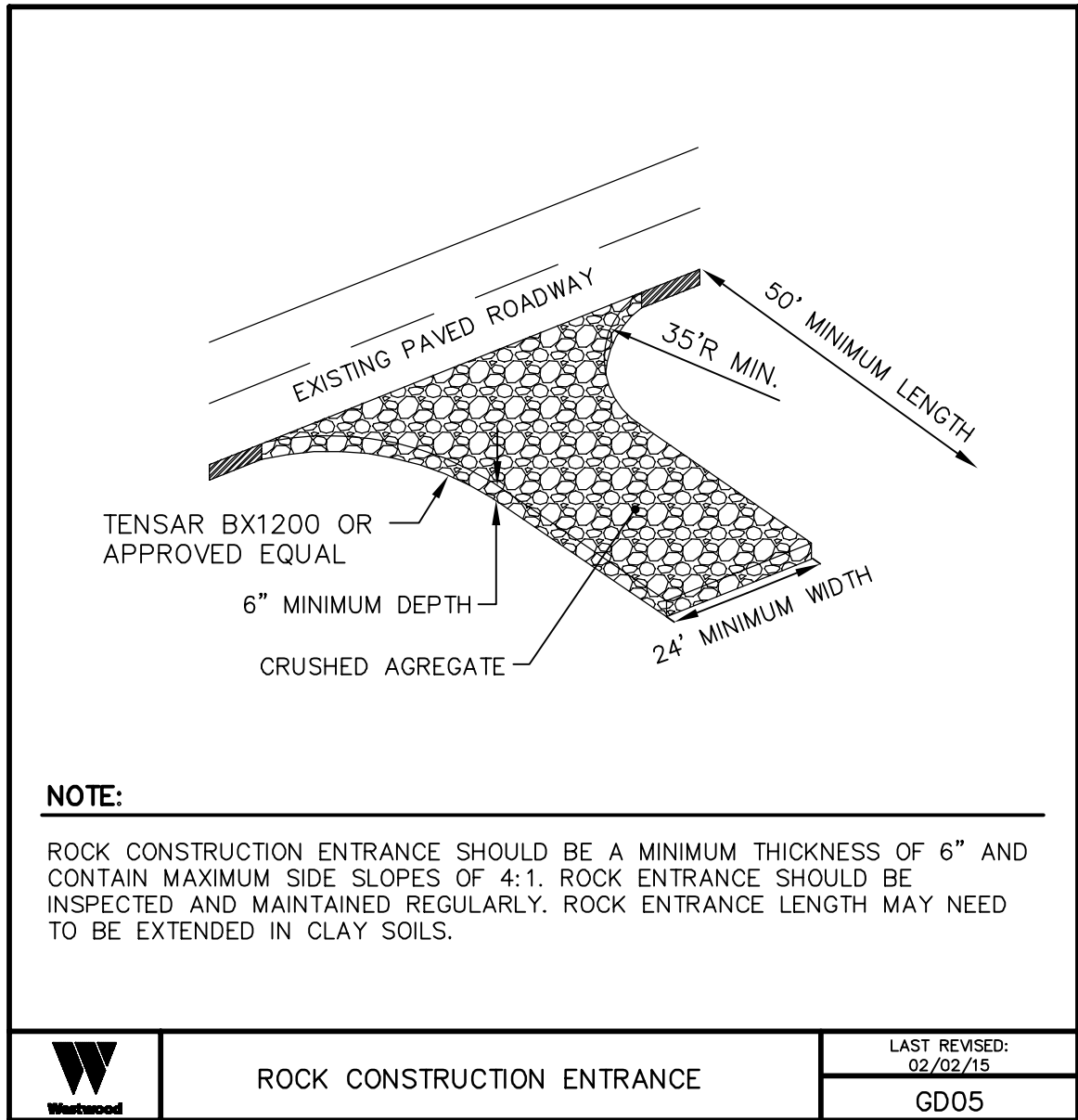
Project Name:
Lyra Community Solar Garden, LLC

Site Address:
Le Sueur County, Minnesota

Sheet Title:
Erosion Control Plan

Scale: 1" = 100' Project ID: 0007381.02
Sheet No: C-300
Date: 12/28/2016

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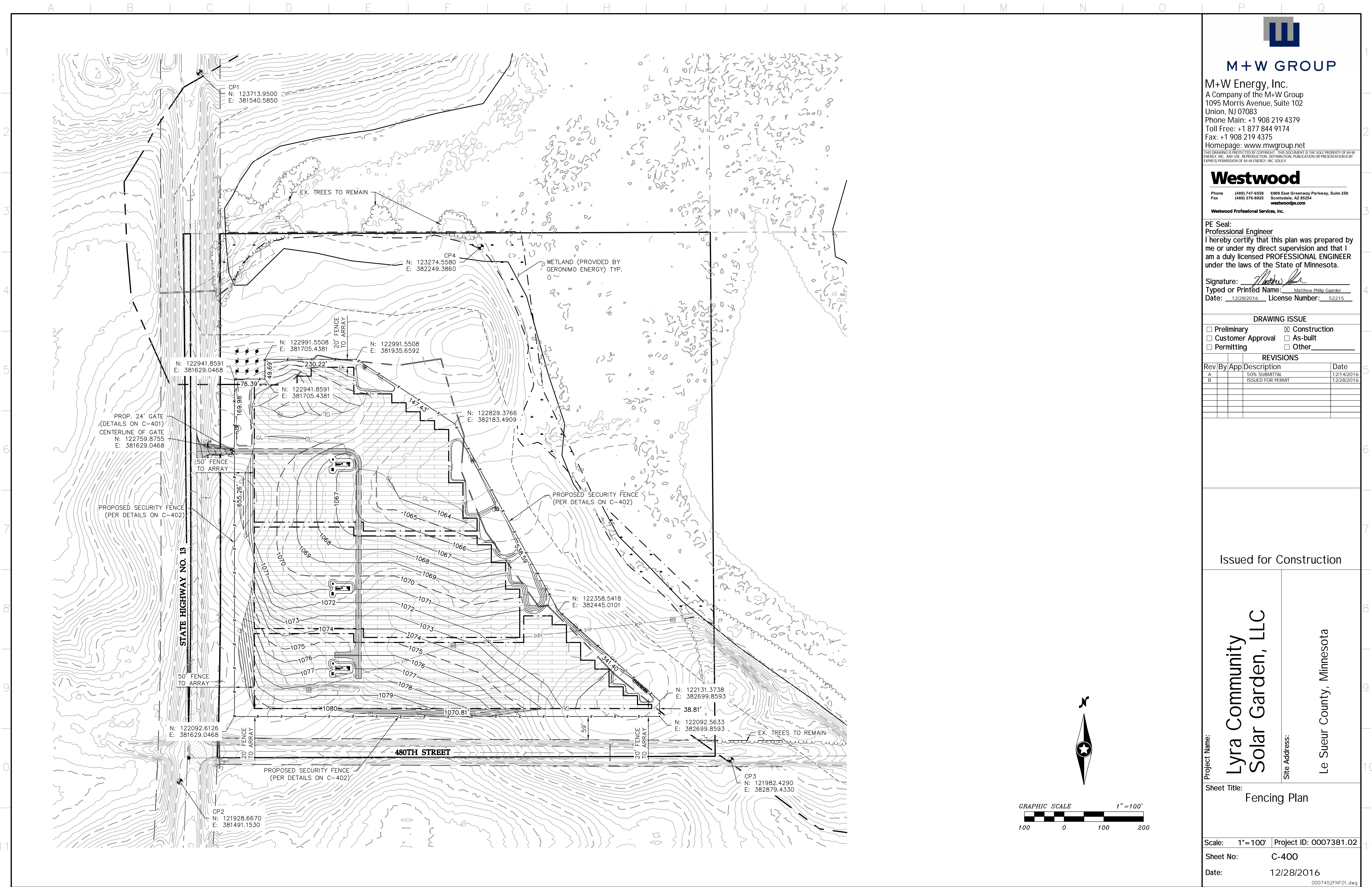
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Project Name: **Lyra Community Solar Garden, LLC**
Site Address: **Le Sueur County, Minnesota**

Sheet Title: **Erosion Control Details**

Scale: NTS Project ID: 0007381.02
Sheet No: C-301
Date: 12/28/2016

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Project Name:

Lyra Community Solar Garden, LLC

Site Address:

Le Sueur County, Minnesota

Sheet Title:

Fencing Plan

Scale: 1" = 100' Project ID: 0007381.02

Sheet No: C-400

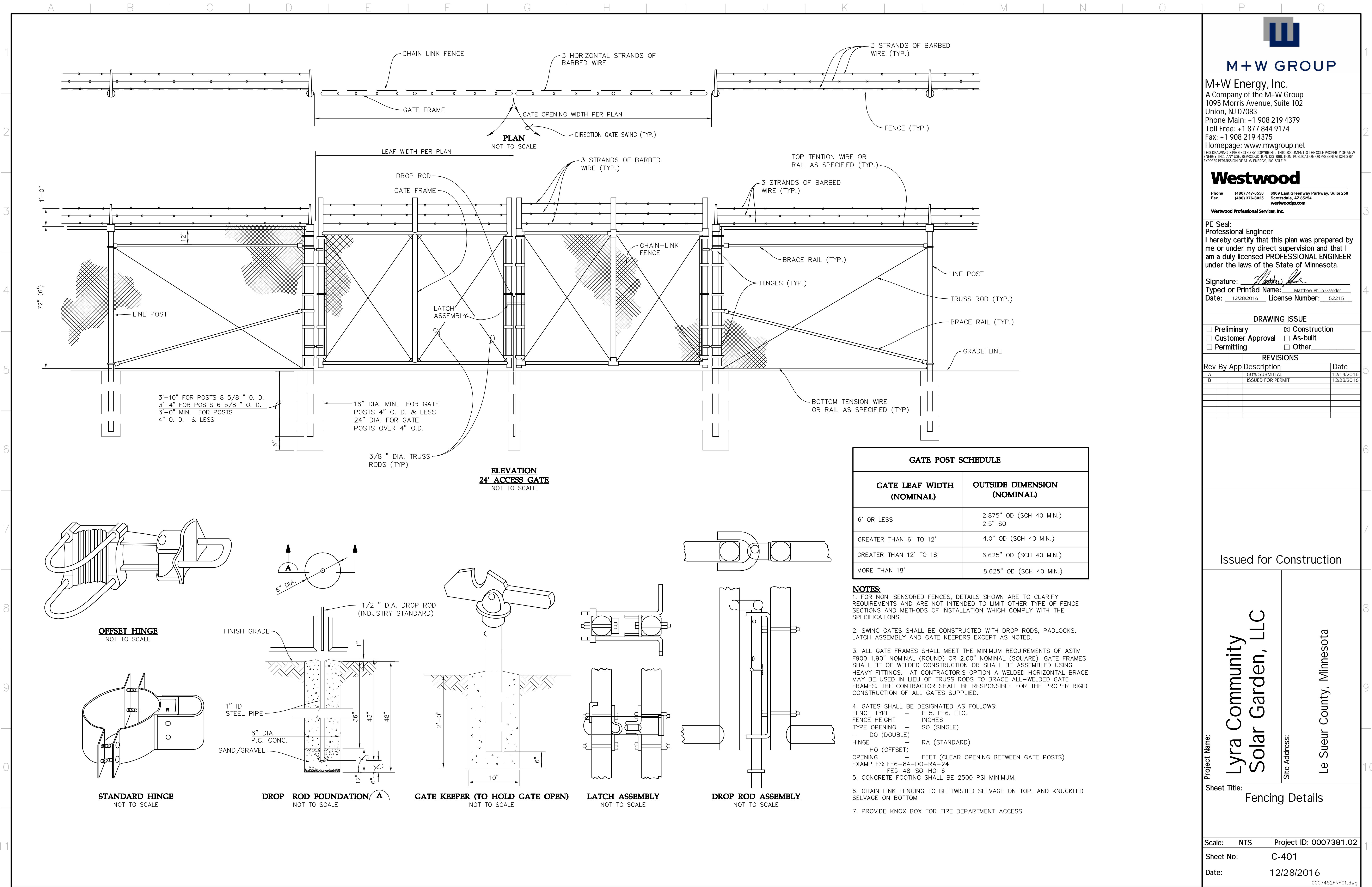
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Le Sueur County

Regular session - 2/9/2017

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Site Address: **Le Sueur County, Minnesota**

Sheet Title: **Fencing Details**

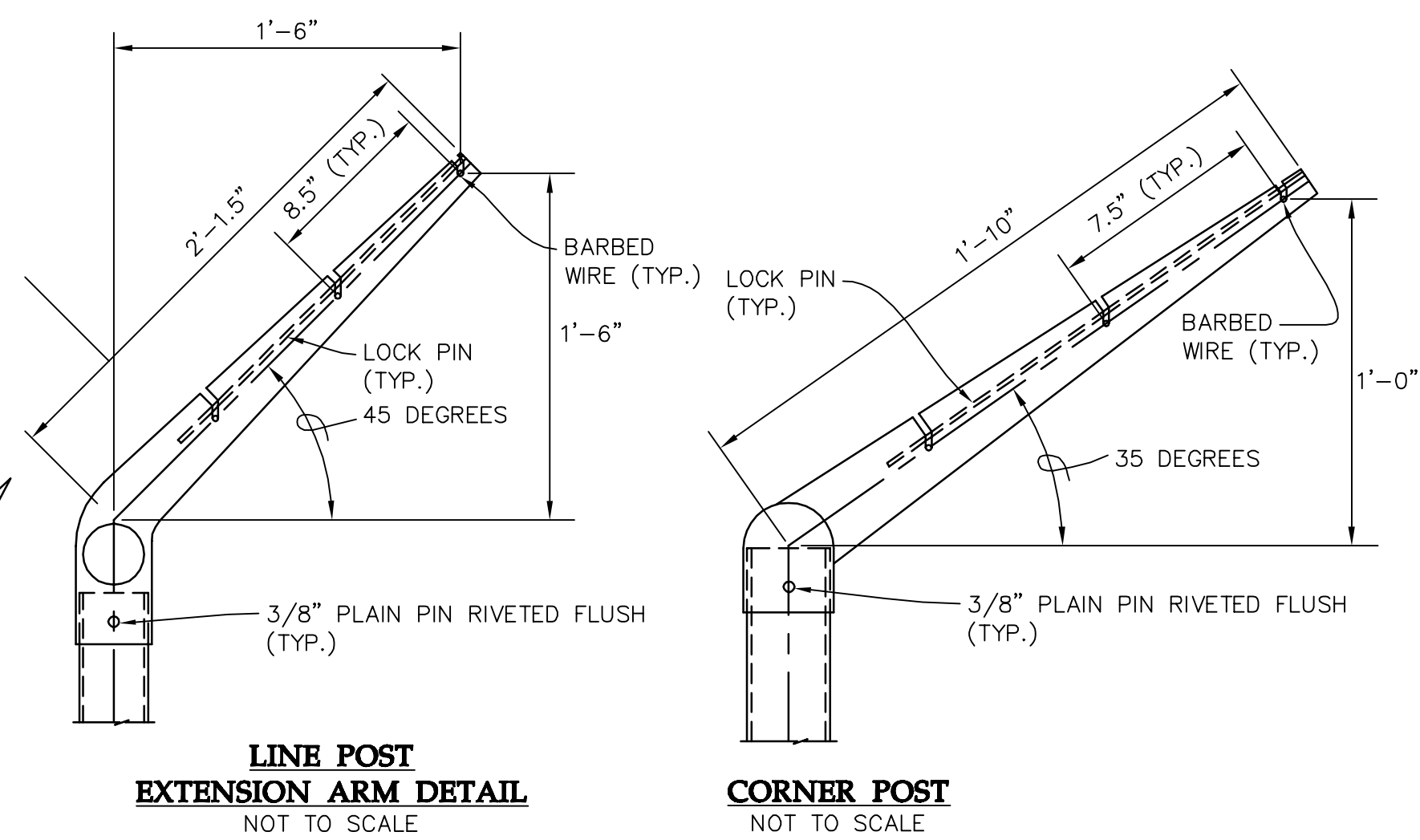
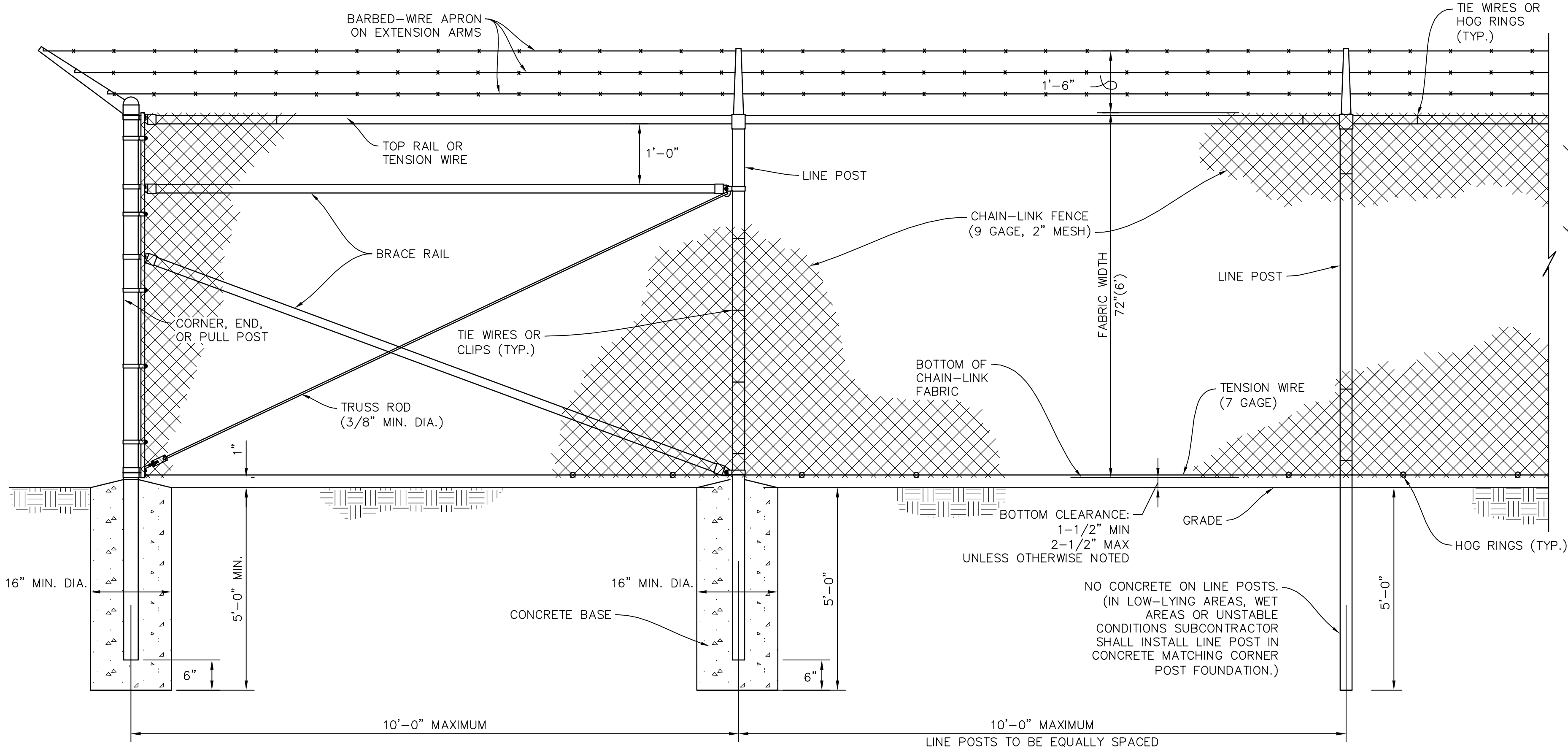
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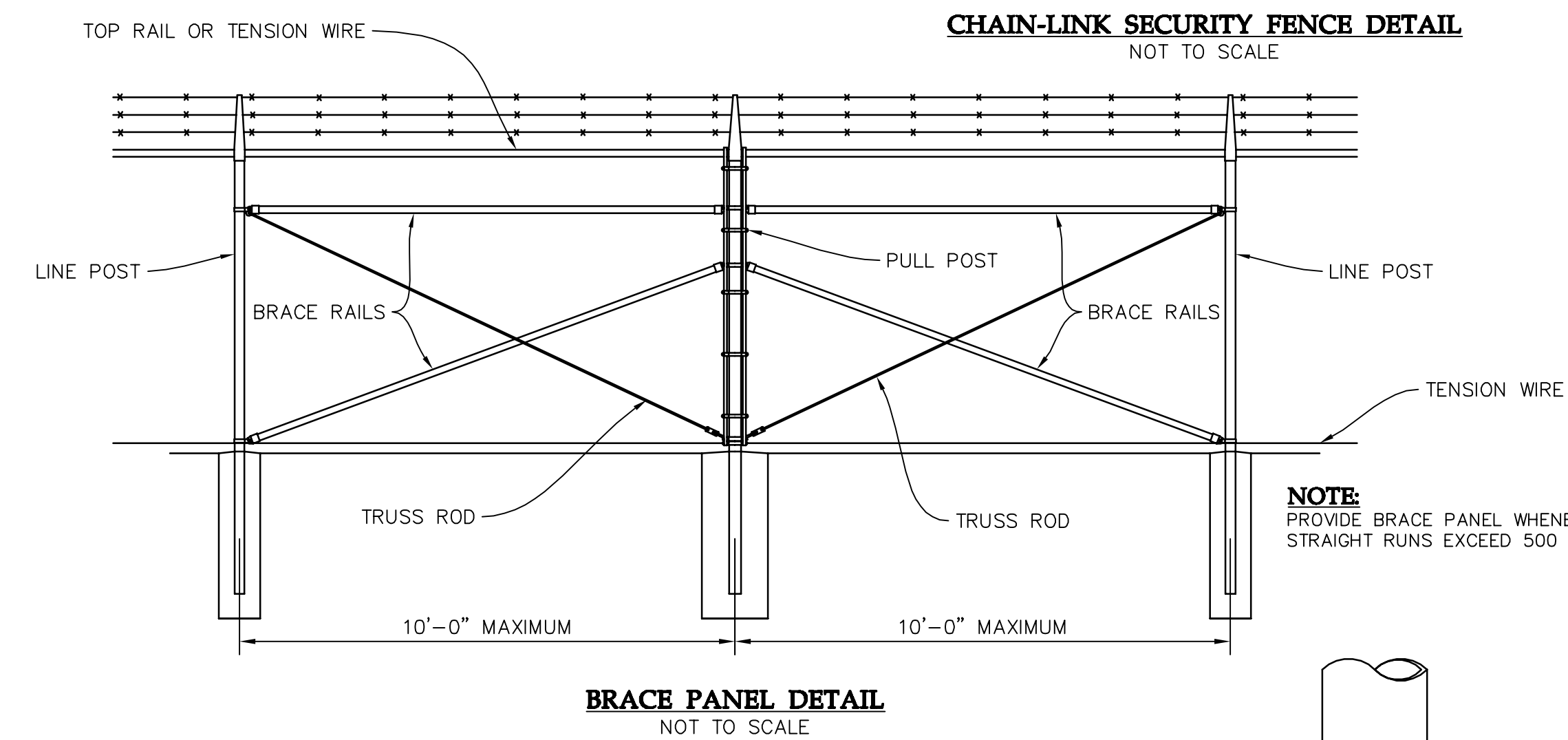
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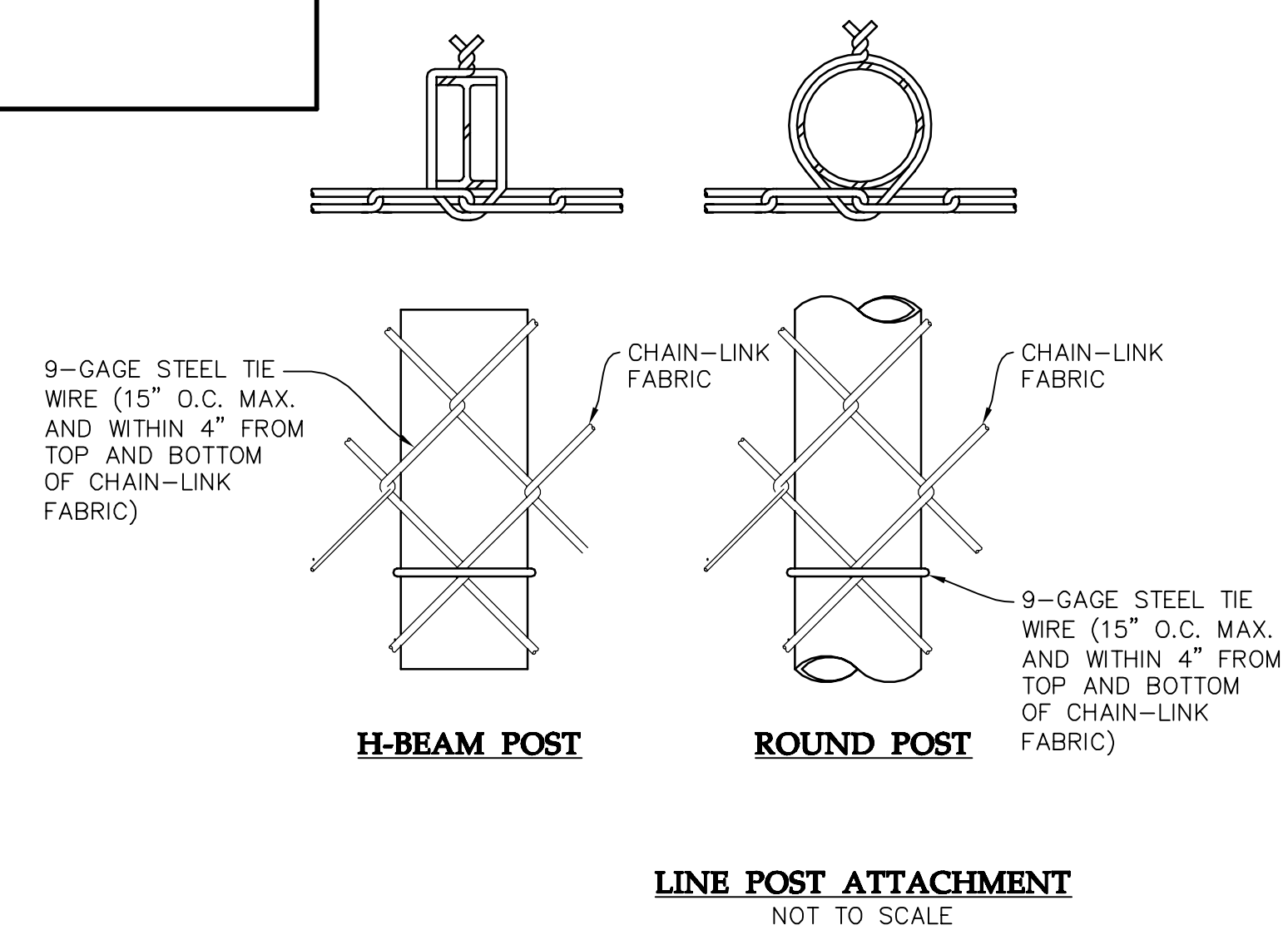
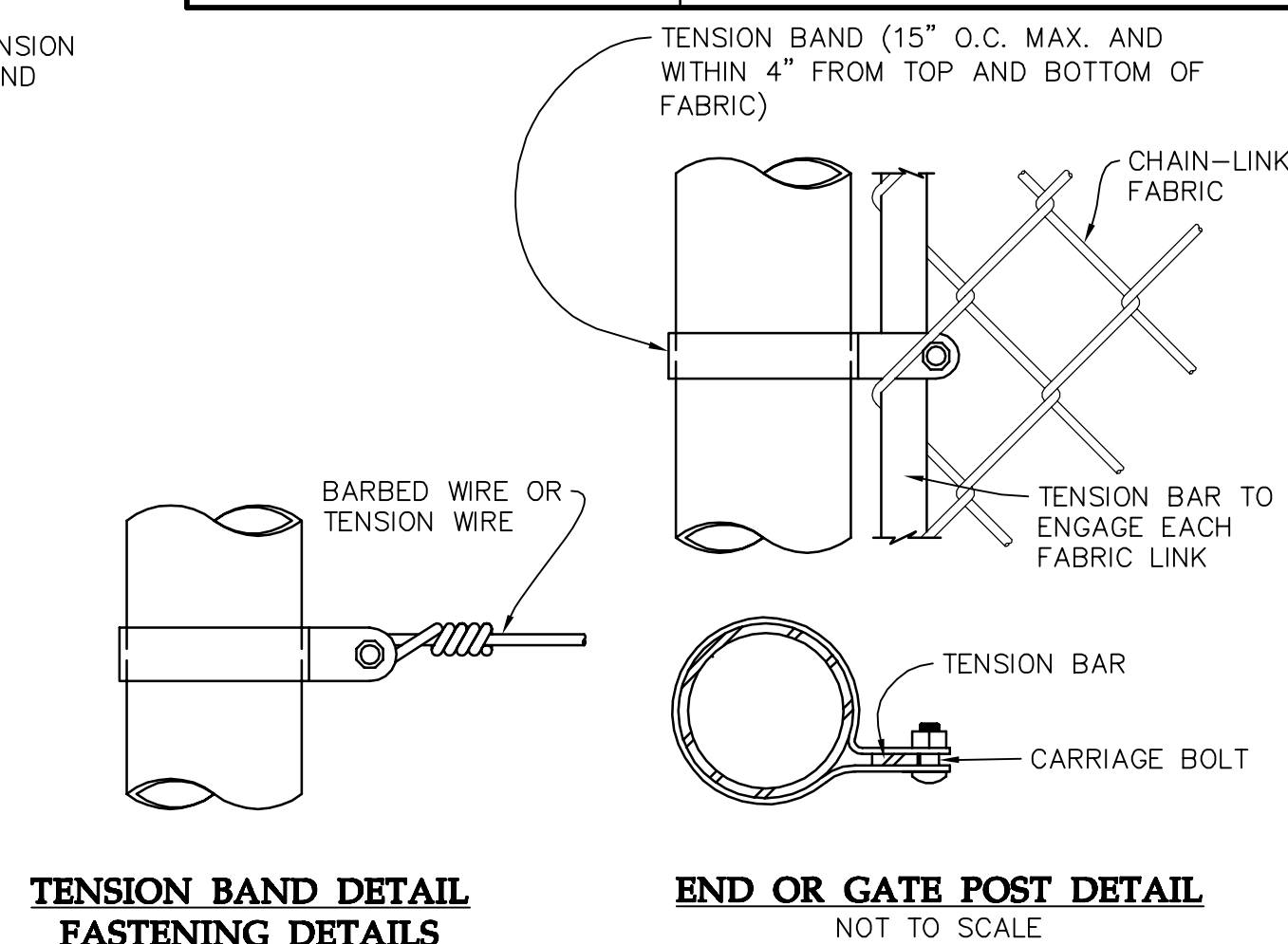
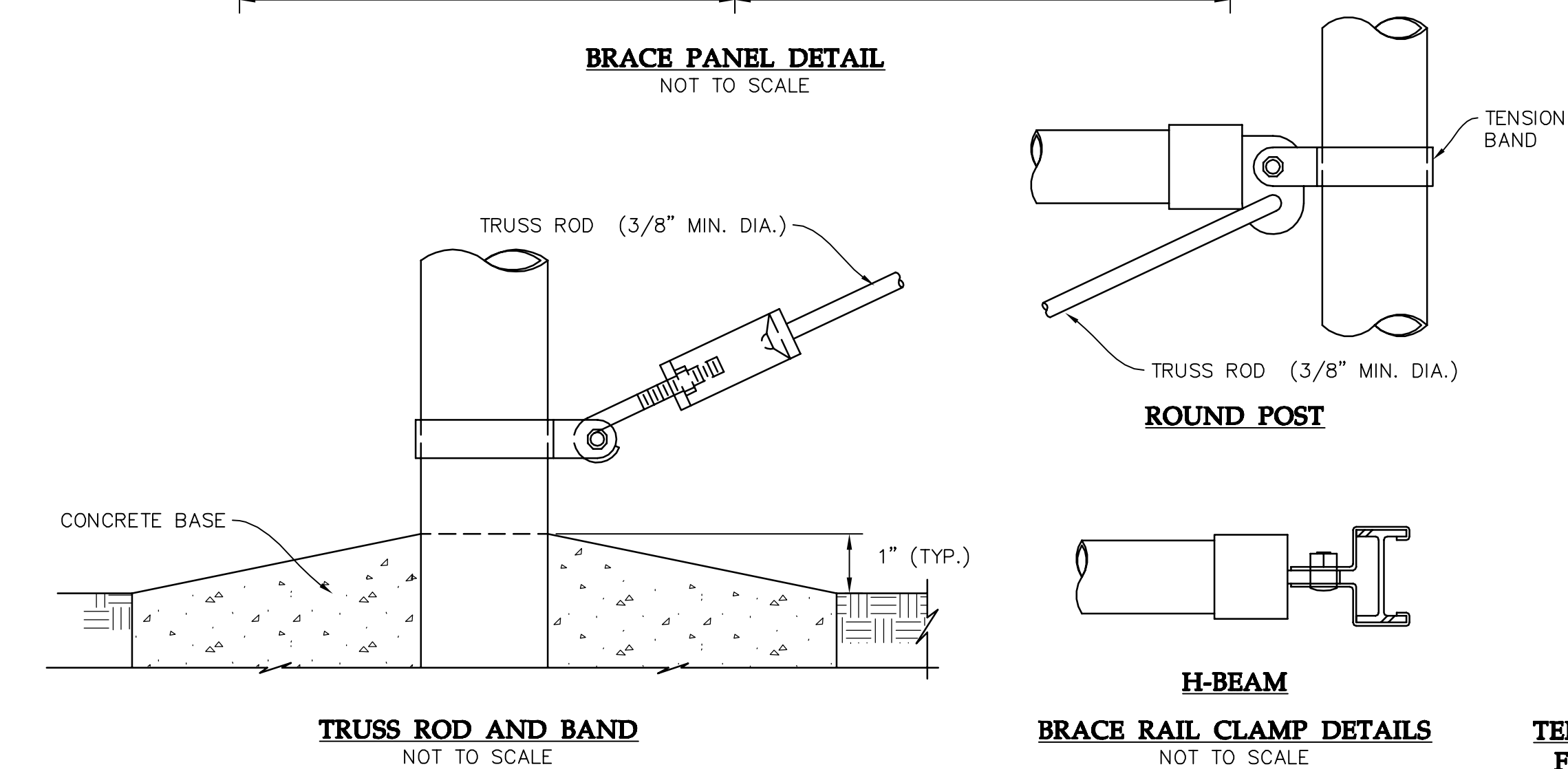
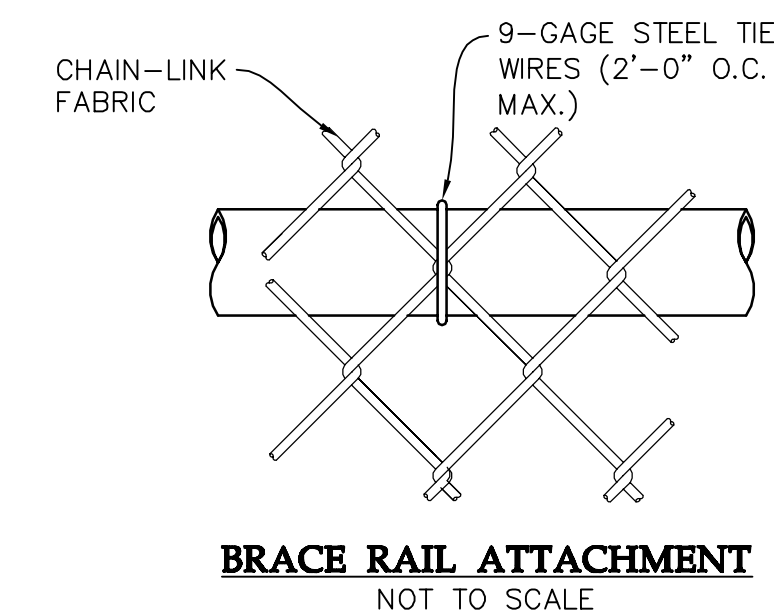
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- NOTES:**
1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPES OF FENCE SECTIONS AND METHODS OF INSTALLATION THAT COMPLY WITH THE MNDOT SPECIFICATIONS.
 2. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK SHALL BE PLACED ON THE SIDE OPPOSITE THE SECURE AREA.
 3. UNLESS SPECIFICALLY SHOWN OR SPECIFIED, ALL FENCE SHALL HAVE AN APRON EXTENDED OUTWARD FROM THE AREA BEING PROTECTED.
 4. C-SECTION POSTS SHALL BE INSTALLED SO THAT THE VOID INSIDE THE POST IS COMPLETELY FILLED WITH CONCRETE UP TO THE TOP OF FOUNDATION.



USE AND SECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)		
	FABRIC WIDTH 72" OR LESS	FABRIC WIDTH 84" TO 96"	FABRIC WIDTH 108" AND OVER
CORNER, END & PULL POSTS			
TUBULAR - ROUND	2.375" O.D.	2.875" O.D.	4.00" O.D.
TUBULAR - SQUARE	2.00" SQ.	2.50" SQ.	3.00" 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.	2.875" O.D.
H - SECTION	2.25" X 1.70"	2.25" X 1.70"	2.25" X 1.70"
C-SECTION (ROLL FORMED)	1.875" X 1.625"	2.25" X 1.70"	-----
BOTTOM & BRACE RAILS			
TUBULAR - ROUND		1.66" O.D.	
TUBULAR - SQUARE		1.50" SQ.	
H-SECTION		1.625" X 1.50"	
C-SECTION (ROLL-FORMED)		1.625" X 1.25"	





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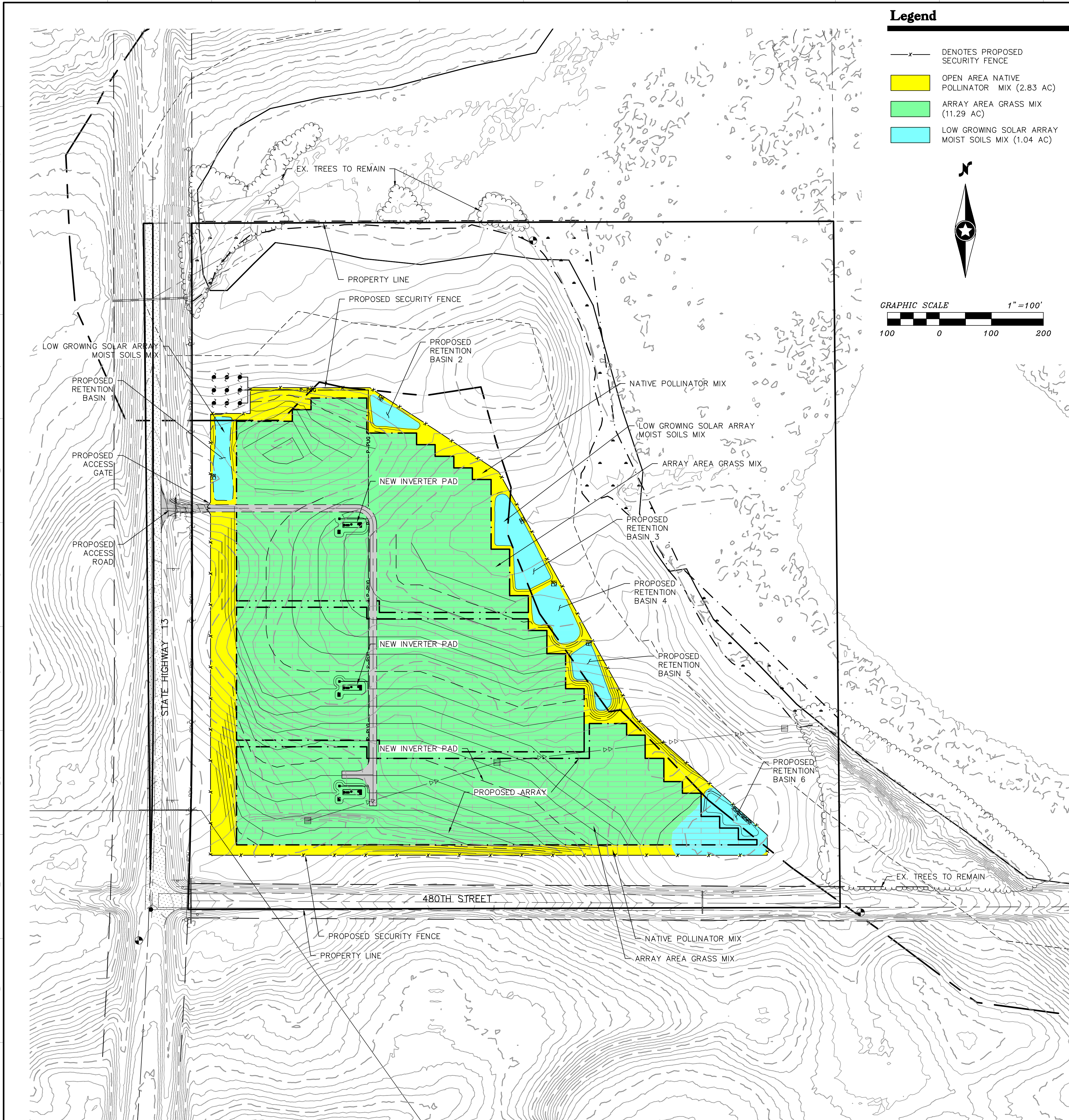
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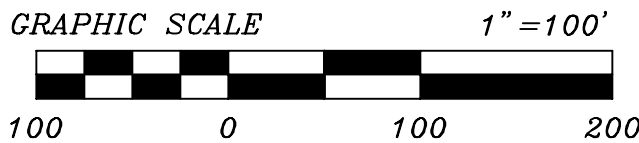
Scale: NTS	Project ID: 0007381.02
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Legend

- x— DENOTES PROPOSED SECURITY FENCE
- OPEN AREA NATIVE POLLINATOR MIX (2.83 AC)
- ARRAY AREA GRASS MIX (11.29 AC)
- LOW GROWING SOLAR ARRAY MOIST SOILS MIX (1.04 AC)



Array Area Grass Mix

GRASSES SPECIES	% OF MIX	PLS (LBS/ACRE)
BOUTELOUA CURTIPENDULA	35.00	77.00
CAREX VULPINOIDEA	2.00	4.40
FESTUCA LONGIFOLIA	7.00	15.40
FESTUCA OVINA SSP. HIRTULA	10.00	22.00
FESTUCA RUBARA VAR. COMMUTATE	6.00	13.2
FESTUCA RUBARA VAR. COMMUTATE	9.00	19.8
FESTUCA RUBRA VAR. RUBRA	10.00	22.00
FESTUCA RUBRA VAR. RUBRA	12.00	26.40
KOELERIA MACRANTHA	1.00	2.20
SPOBOBOLUS HETEROLEPIS	1.00	2.20

FORB SPECIES	% OF MIX	PLS (LBS/ACRE)
ASTER OLENTANGIENSIS	1.00	2.2
DALEA PURPUREA	1.00	2.2
MONARDA FISTULOSA	1.00	2.2
POTENTILLA ARGUTE	0.50	1.1
RUDBECKIA HIRTA	2.00	4.4
VERBENA STRICTA	0.50	1.1
ZIZIA AUREA	1.00	2.2
SKY-BLUE ASTER	1.00	2.2
PURPLE PRAIRIE CLOVER	1.00	2.2
WILD BERGAMOT	1.00	2.2
PRAIRIE CINQUEFOIL	1.00	2.2
BLACK-EYED SUSAN	2.00	4.4
HOARY VERVAIN	0.50	1.1
GOLDEN ALEXANDER	1.00	2.2

- *NOTES
- SPECIAL SEED MIX REQUESTED BY CLIENT
- SEE IF CHANGES ARE NECESSARY FOR SPECIFIC LOCATION

Open Area Native Pollinator Mix

GRASS SPECIES	% OF MIX	PLS (LBS/ACRE)
BOUTELOUA CURTIPENDULA	25.00	1.75
BOUTELOUA GRACILIS	0.75	0.04
BROMUS KALMII	10.00	0.70
ELYMUS VILLOSUS	2.50	0.18
KOELERIA MACRANTHA	10.00	0.70
SCHIZACHYRIUM SCOPARIUM	1.50	0.11
SPOBOBOLUS HETEROLEPIS	20.00	1.40
PRAIRIE DROPSIED	6.00	0.42

FORB SPECIES	% OF MIX	PLS (LBS/ACRE)
ACHILLEA MILLEFOLIUM	0.50	0.04
AGASTACHE FOENICULUM	0.75	0.05
ALLIUM STELLATUM	0.50	0.04
ASCLEPIAS INCARNATA	1.00	0.07
ASCLEPIAS SYRIACA	1.00	0.07
ASCLEPIAS TUBEROSA	1.00	0.07
ASTER OLENTANGIENSIS	1.25	0.09
ASTER LATERIFLORUS	1.00	0.07
ASTER NOVAE-ANGLIAE	0.75	0.05
ASTRAGALUS CANADENSIS	1.00	0.07
DALEA CANDIDUM	2.00	0.14
DALEA PURPUREA	2.00	0.14
DESMODIUM CANADENSE	1.00	0.07
LIATRIS PYCNOSTACHYA	1.00	0.07
MONARDA FISTULOSA	0.75	0.05
PENSTEMON GRACILIS	0.50	0.04
POTENTILLA ARGUTA	0.50	0.04
POCYNANTHEMUM VIRGINIANUM	1.00	0.07
RATIBIDA PINNATA	0.75	0.05
RUDBECKIA HIRTA	1.50	0.11
SOLIDAGO RIGIDA	1.75	0.12
TRADESCANTIA BRACTEATA	0.50	0.04
VERBENA HASTATA	1.00	0.07
VERBENA STRICTA	1.00	0.07
ZIZIA AUREA	1.00	0.07
YARROW	0.50	0.04
FRAGRANT HYSSOP	0.75	0.05
PRAIRIE ONION	0.50	0.04
MARSH MILKWEED	1.00	0.07
COMMON MILKWEED	1.00	0.07
BUTTERFLY MILKWEED	1.00	0.07
SKY BLUE ASTER	1.00	0.07
CALICO ASTER	1.00	0.07
NEW ENGLAND ASTER	0.75	0.05
CANADA MILK VETCH	1.00	0.07
WHITE PRAIRIE CLOVER	2.00	0.14
PURPLE PRAIRIE CLOVER	2.00	0.14
CANADA TICK TREFOIL	1.00	0.07
PRAIRIE BLAZING STAR	1.00	0.07
WILD BERGAMOT	0.75	0.05
SLENDER BEARDTONGUE	0.50	0.04
PRAIRIE CINQUEFOIL	0.50	0.04
MOUNTAIN MINT	1.00	0.07
YELLOW CONEFLOWER	0.75	0.05
BLACK-EYED SUSAN	1.50	0.11
STIFF GOLDENROD	1.75	0.12
PRAIRIE SPIDERWORT	0.50	0.04
BLUE VERVAIN	1.00	0.07
HOARY VERVAIN	1.00	0.07
GOLDEN ALEXANDERS	1.00	0.07

COVER CROP			
TRITICUM AESTIVUM	WINTER WHEAT	--	10.0

- *NOTES
- SPECIAL SEED MIX DESIGNED BY MINNESOTA NATIVE LANDSCAPES
- SEE IF CHANGES ARE NECESSARY FOR SPECIFIC LOCATION
- MINNESOTA NATIVE LANDSCAPES
8740 77TH STREET NE
OTSEGO, MN 55362

Low Growing Solar Array Moist Soils Mix

GRAMINOID SPECIES	% OF MIX	PLS (LBS/ACRE)
CALAMAGROSTIS CANADENSIS	4.58	0.05
GLYCERIA STRIATA	3.02	0.10
LEERSIA ORYZOIDES	2.84	0.25
POA PALUSTRIS	18.33	0.42

LEGUME SPECIES	% OF MIX	PLS (LBS/ACRE)
ASTRAGALUS CANADENSIS	0.37	0.06
DALEA CANDIDA	1.56	0.24
CANADA MIL VETCH	0.37	0.06
WHITE PRAIRIE CLOVER	1.56	0.24

SEDGES SPECIES	% OF MIX	PLS (LBS/ACRE)
CAREX SCORPARIA	1.92	0.07
CAREX STIPATA	1.92	0.17
CAREX VULPINOIDEA	3.67	0.11
SCIRPUS CYPERINUS	36.66	0.06
LANCE-FRUITED OVAL SEDGE	1.92	0.07
COMMON FOX SEDGE	1.92	0.17
BROWN FOX SEDGE	3.67	0.11
WOOLGRASS	36.66	0.06

FORB SPECIES	% OF MIX	PLS (LBS/ACRE)
ALLIUM STELLATUM	0.67	0.18
ANEMONE CANADENSIS	0.17	0.06
ASCLEPIAS INCARNATA	0.39	0.24
EUTHAMIA GRAMINIFOLIA	0.73	0.01
GALIUM BOREALE	0.23	0.01
LOBELIA SIPHILITICA	2.66	0.02
PHLOX PILOSA	0.07	0.01
POTENTILLA ARGUTA	0.09	0.00
POCYNANTHEMUM VIRGINIANUM	0.46	0.01
RATIBIDA COLUMNIFERA	1.45	0.10
RUDBECKIA HIRTA	1.45	0.05
SISYRINCHIUM CAMPESTRE	0.48	0.03
SYMPHYOTRICHUM LAEVE	0.58	0.03
SYMPHYOTRICHUM PUNICEUM	4.58	0.17
ZIZIA AUREA	0.92	0.25
PRAIRIE WILD ONION	0.67	0.18
CANADA ANEMONE	0.17	0.06
MARSH MILKWEED	0.39	0.24
GRASS-LEAVED GOLDENROD	0.73	0.01
NORTHERN BEDSTRAW	0.23	0.01
GREAT LOBELIA	2.66	0.02
PRAIRIE PHLOX	0.07	0.01
PRAIRIE CINQUEFOIL	0.09	0.00
VIRGINIA MOUNTAIN MINT	0.46	0.01
PRAIRIE CONEFLOWER	1.45	0.10
BLACK-EYED SUSAN	1.45	0.05
FIELD BLUE-EYED GRASS	0.48	0.03
SMOOTH ASTER	0.58	0.03
RED-STEMMED ASTER	4.58	0.17
GOLDEN ALEXANDERS	0.92	0.25

COVER CROP			
AVENA SATIVA	OATS	10.20	37.88

- *NOTES
- PILOT SEED MIX DESIGNED BY MINNESOTA BOARD OF WATER AND SOIL RESOURCES
- SEE IF CHANGES ARE NECESSARY FOR SPECIFIC LOCATION
- MINNESOTA BOARD OF WATER AND SOIL RESOURCES
520 LAFAYETTE ROAD NORTH
SAINT PAUL, MN 55155

Seeding Notes

- NOTES:
- SEEDING TO BE COMPLETED USING A DRILL SEED METHOD WHERE FEASIBLE. WHERE DRILL SEEDING IS NOT FEASIBLE THE APPLICATION OF SEED VIA ALTERNATE METHODS INCLUDING BUT NOT LIMITED TO, BROADCAST OR HYDROSEEDING.
- BROADCAST SEEDING SHALL BE COMPLETED IF AMBIENT SOIL TEMPERATURE IS CONSISTENTLY 60 DEGREES F OR LOWER
- IF NOT FROST SEEDING, DRILLING SHOULD OCCUR BETWEEN APRIL 1ST AND JUNE 1ST
- THE CONTRACTOR SHALL NOT TILL OR FERTILIZE THE FIELDS, IF THE GROUND NEEDS TO BE TILLED, CONTRACTOR SHALL USE A VERTICAL PLOW



M+W GROUP

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Westwood

Phone (480) 747-6558 6900 East Greenway Parkway, Suite 250
Fax (480) 376-9025 Scottsdale, AZ 85254
westwoodps.com
Westwood Professional Services, Inc.

PE Seal:
Professional Engineer
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.

Signature: *Matthew Philip Gauder*
Typed or Printed Name: Matthew Philip Gauder
Date: 12/28/2016 License Number: 52215

DRAWING ISSUE

- ☐ Preliminary ☒ Construction
- ☐ Customer Approval ☐ As-built
- ☐ Permitting ☐ Other

REVISIONS			
Rev	By	App	Description
A			50% SUBMITTAL
B			ISSUED FOR PERMIT

Issued for Construction

Project Name: Lyra Community Solar Garden, LLC
Site Address: Le Sueur County, Minnesota


Sheet Title: Landscape Plan

Scale: 1"=100' Project ID: 0007381.02

Sheet No: C-500

Date: 12/28/2016

0007452PLF01.dwg

Form 1721 (6-25-2013) MINNESOTA DEPARTMENT OF TRANSPORTATION APPLICATION FOR ACCESS (DRIVEWAY) PERMIT				Document Management System # _____ District <u>7A</u> Permit # <u>73980</u> C.S. <u>4001</u> T.H. <u>13</u> R.P. <u>MM 46.217</u> (THIS SECTION FOR MnDOT OFFICE USE ONLY.)	
ATTACH A SKETCH OF THE PROPOSED WORK AREA AND RELATION TO TRUNK HIGHWAY. SUBMIT TO DISTRICT OFFICE OF MINNESOTA DEPARTMENT OF TRANSPORTATION.					
APPLICANT <u>Lyra Community Solar Garden LLC</u>		TELEPHONE <u>952-988-9000</u>		ADDRESS (Street, City, State, Zip) <u>7650 Edenborough Way Ste 725, Edina, MN 55435</u>	
PROPERTY OWNER <u>Larry & Solveig Thors</u>		TELEPHONE <u>952-445-7249</u>		ADDRESS (Street, City, State, Zip) <u>3912 Westbridge Drive, Shakopee, MN 55379</u>	
LOCATION OF PROPOSED WORK (City/Township) (County) (Distance) (N-S-E-W) SPECIFIC ROAD INTERSECTION OR LANDMARK <u>Highway 13 in Waterville Township, Le Sueur Co. 1.1 Miles North of 480th Street</u>					
WILL THIS ACCESS BE WITHIN TRIBAL LANDS? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No IF YES, WHICH ONE?					
PURPOSE OF DRIVEWAY <input type="checkbox"/> Temporary <input type="checkbox"/> Field Entrance <input type="checkbox"/> Residential <input type="checkbox"/> Proposed Public Street <input checked="" type="checkbox"/> Commercial (Specify Type) _____		REQUESTED ENTRANCE WIDTH <u>20</u> Feet		PROPERTY IS IN <input type="checkbox"/> Platted Area <input checked="" type="checkbox"/> Unplatted Area	
IS BUILDING TO BE CONSTRUCTED <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (Specify Type) <u>Solar Farm</u>		WILL BUILDING BE <input checked="" type="checkbox"/> Temporary <input type="checkbox"/> Permanent		NUMBER OF PRESENT DRIVEWAYS TO PROPERTY <u>1</u>	
EXACT LOCATION OF PRESENT DRIVEWAY(S) <u>47857 State Highway 13, 44° 15' 22.36" N, 93° 35' 7.29" W</u>		EXACT LOCATION OF PROPOSED DRIVEWAY(S) <u>47857 State Highway 13, 44° 15' 22.36" N, 93° 35' 7.29" W</u>			
LEGAL DESCRIPTION OF PROPERTY <u>SW 1/4 of SW 1/4 of Section 10, Township 109, Range 23, Le Sueur County, Minnesota</u>					
WORK TO START ON OR AFTER <u>March 1, 2017</u>			WORK TO BE COMPLETED BY <u>December 31, 2017</u>		
APPLICANT'S ACCEPTANCE, WAIVER AND INDEMNIFICATION The undersigned applicant hereby agrees to comply with applicable statutes, rules, and all the standard conditions and special provisions of this permit. The applicant understands and agrees that no work in connection with this application will be started until the application has been approved and the permit issued. The applicant also understands that this permit may also be subject to the approval of local road authorities having joint supervision over said street or highway, and may be subject to applicant's compliance with the rules and regulations of the Minnesota Environmental Quality Board and/or any other affected governmental agencies. The applicant is aware of circumstances or hazards that may arise while performing the work associated with this application that could result in injury, loss, damage or death, and the applicant assumes the risk of such circumstances, dangers or hazards, whether reasonably foreseeable or not. The undersigned applicant expressly agrees that except for negligent acts of the State, its agents and employees, the applicant or his/her agents or contractor shall assume all liability for, and save the State, its agents and employees, harmless from any and all claims for damages, actions or causes of action arising out of the work to be done in connection with this application and permit.					
NAME AND TITLE <u>Nathan Franzen, Vice President, Development</u>			EMAIL ADDRESS <u>nathan@geronimoenergy.com</u>		
DATE <u>1/6/2017</u>			SIGNATURE <u>NB72</u>		
DO NOT WRITE BELOW THIS LINE					
PERMIT NOT VALID UNLESS BEARING SIGNATURE AND NUMBER					
AUTHORIZATION OF PERMIT In consideration of the applicant's agreement to comply in all respects with the applicable laws and the conditions of the Commissioner of Transportation pertaining to this permit, permission is hereby granted for the work to be performed as described in the above application, said work to be performed in accordance with the following standard conditions and special provisions: SEE ATTACHED STANDARD CONDITIONS AND SPECIAL PROVISIONS					
Date All Work To Be Completed By _____		Authorized MnDOT Signature _____		Date of Authorized Signature _____	
DISTRIBUTION Original to Area Maintenance Engineer _____ Applicant _____ Subarea Supervisor _____ Roadway Regulations Supervisor _____		DEPOSIT REQUIREMENTS <input checked="" type="checkbox"/> No Deposit Required <input type="checkbox"/> Deposit Required in the Amount of \$ _____ Date Deposit Received _____ Deposit to be returned upon satisfactory completion of all work		DEPOSIT TYPE Cashier's Check # _____ Certified Check # _____ Money Order # _____ Bond # _____	
DATE WORK COMPLETED _____ (The date when the work is completed must be reported to the MnDOT District Permits Office)					

ACCESS PERMIT GENERAL INFORMATION

To minimize site plan changes, a plat review shall be approved by the Minnesota Department of Transportation in accordance with Chapter 505 of the Minnesota Statutes and Minnesota Rule 8810 prior to the issuance of any access permit. By this means, construction and maintenance plans for the portion of the trunk highway under consideration may suggest alternate or improved methods or standards of construction or reconstruction to the property owner and/or lessee.

REQUIREMENTS

- No work under this application shall be started until application is approved and the permit issued.
- Where work on or near the traveled roadway is necessary, proper signs, channelizing devices, warning lights, and barricades shall be erected to protect traffic, employees, and pedestrians. All traffic control devices and methods shall conform to the Minnesota Field Manual on Temporary Traffic Control Zone Layouts, Minnesota Manual on Uniform Traffic Control Devices (MMUTCD), Minnesota Standard Sign Manual, and the appropriate provisions of Standard Specification 1710.
- No foreign material such as dirt, gravel, or bituminous material shall be deposited or left on the road during the construction of driveway or installation of drainage facilities.
- Roadside shall be cleaned to original status upon completion of work.
- After driveway construction is completed the permittee shall notify the Area Maintenance Engineer or his authorized representative that the work has been completed and is ready for final inspection and approval by the Minnesota Department of Transportation.
- No changes or alterations in entrances may be made at any time without written permission from the Minnesota Department of Transportation.

Driveways shall be so constructed as to slope down away from the shoulder line of the trunk highway according to the most recent MnDOT Standard Plate No. 9000. Permission is hereby granted for the construction of the driveway as described in the above application, said driveway to be constructed in accordance with MINNESOTA RULES 8810.41 - 8810.56 and subject to the above requirements and the special provisions.

SECURITY DEPOSIT may be required to insure proper restoration of highway surfaces and to cover payment for any damage to highways or State property. Additionally, any expense incurred by the Minnesota Department of Transportation above the posted deposit will be assessed against the applicant. In the event construction has not been started by the "WORK TO BE COMPLETED BY" date, this permit becomes null and void and deposit refunded.

LYRA COMMUNITY
SOLAR GARDEN, LLC
PID No. 14.010.7500
LE SUEUR COUNTY
Civil Construction Plans

SHEET LIST TABLE			
DWG. NO.	SHEET TITLE	REV	DATE
C-100	COVER SHEET	B	12/28/16
C-101	EXISTING CONDITION	B	12/28/16
C-102	OVERALL SITE AND GRADING PLAN	B	12/28/16
C-200	CIVIL SITE AND GRADING PLAN SHEET	B	12/28/16
C-201	CIVIL SITE AND GRADING PLAN SHEET	B	12/28/16
C-202	CIVIL SITE AND GRADING PLAN SHEET	B	12/28/16
C-203	CONSTRUCTION NOTES	B	12/28/16
C-204	CONSTRUCTION NOTES	B	12/28/16
C-205	CONSTRUCTION DETAILS	B	12/28/16
C-300	EROSION CONTROL PLAN	B	12/28/16
C-301	EROSION CONTROL DETAILS	B	12/28/16
C-400	FENCING PLAN	B	12/28/16
C-401	FENCING DETAILS	B	12/28/16
C-402	FENCING DETAILS	B	12/28/16
C-500	LANDSCAPE PLAN	B	12/28/16

CONTROL POINTS (CP)				
POINT NO.	NORTHING	EASTING	ELEVATION	
1	123713.950	381540.585	1076.715	1/2" REBAR SET
2	121928.667	381491.153	1095.174	1/2" REBAR SET
3	121982.429	382879.433	1077.451	1/2" REBAR SET
4	123274.558	382249.386	1060.665	1/2" REBAR SET

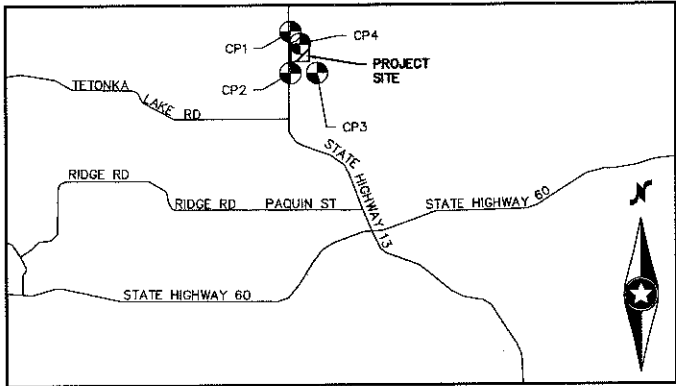
PROJECT LOCATION (APPROXIMATE CENTER OF SITE)
LATITUDE = 44°15'20.27"N
LONGITUDE = 93°35'0.78"W

PROJECT COORDINATE SYSTEM
BEARINGS & DIMENSIONS ARE BASED ON
1983NAD (2007 ADJ.) LE SUEUR COUNTY COORDINATES IN US SURVEY FEET.

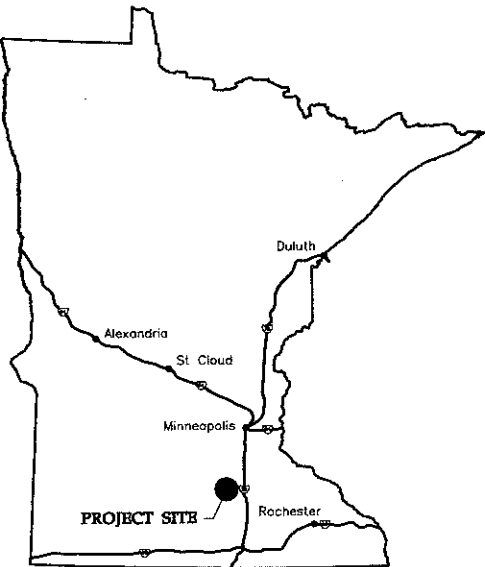
HORIZONTAL/VERTICAL DATUM
THE HORIZONTAL DATUM IS 1983 NAD(2007) LE SUEUR COUNTY COORDINATES
(THIS IS THE BEARING ASSUMPTION) IN US SURVEY FEET AND THE VERTICAL
DATUM IS 1988 NAVD IN US SURVEY FEET.

PROJECT BENCHMARK
ELEVATION = 1085.00 (MNDOT NAME IS WATERVILLE C)
2.3 MILES NORTHEAST OF WATERVILLE, 2.6 MILES NORTHWEST ALONG TRUNK
HIGHWAY 13 FROM THE JUNCTION OF TRUNK HIGHWAY 13 AND TRUNK
HIGHWAY 60 IN WATERVILLE, TO TRUNK HIGHWAY 13 MILEPOINT 45.1, THEN
0.35 MILE WEST ON COUNTY ROAD 12, THEN 0.80 MILE NORTH ON COUNTY
ROAD 5, 30.0 FEET EAST OF COUNTY ROAD 5, 22.0 FEET SOUTH OF STREET
SIGN, 15.0 FEET SOUTH OF FIELD ENTRANCE, 0.8 FOOT WEST OF WITNESS
POST.

LE SUEUR COUNTY
CONDITIONS OF PERMIT: XX-XX.



VICINITY MAP
NTS



STATE MAP
NTS

PROJECT OWNER/DEVELOPER
LYRA COMMUNITY SOLAR GARDEN 1, LLC
LYRA COMMUNITY SOLAR GARDEN 2, LLC
LYRA COMMUNITY SOLAR GARDEN 3, LLC

RPC CONTRACTOR
M+W ENERGY, INC.
A COMPANY OF THE M & W GROUP
21 FADEM ROAD
SPRINGFIELD, NJ 07081
CONTACT: WILL NOWAK, P.E.
PHONE: (480) 468-8284

PROJECT CIVIL ENGINEER
WESTWOOD PROFESSIONAL SERVICES, INC.
6909 E. GREENWAY PKWY., SUITE 250
SCOTTSDALE, AZ 85254
CONTACT: CLINT BILLS, P.E. (ARIZONA)
PHONE: (480) 840-7710
MOBILE: (480) 721-2022

GEOTECHNICAL ENGINEER
TERRACON
13400 15TH AVENUE NORTH
MINNEAPOLIS, MN 55441
CONTACT: LISA BREUER, P.E.
PHONE: (763) 489-3100

LEGEND & ABBREVIATIONS

---	EX. BOUNDARY LINE
---	EX. SECTION LINE
---	EX. RIGHT-OF-WAY LINE
---	EX. EASEMENT LINE
---	EX. PARCEL LINE
---	EX. NATURAL WATER COURSE
---	EX. FENCE LINE
---	EX. OVERHEAD POWERLINE
---	EX. UNDERGROUND POWELINE
---	EX. UNDERGROUND TELEPHONE LINE
---	EX. GAS LINE
---	EX. INDEX CONTOUR LINE
---	EX. INTERVAL CONTOUR LINE
---	EX. PAVED ROAD
---	EX. GRAVEL ROAD
---	EX. COUNTY TILE LINE
---	EX. PRIVATE TILE LINE
---	SETBACK LINE
---	PROPOSED ROAD CENTERLINE
---	PROPOSED UNDERGROUND POWER LINE
---	PROPOSED FENCE LINE
---	PROPOSED INDEX CONTOUR LINE
---	PROPOSED INTERVAL CONTOUR LINE
---	PROPOSED GRADING LIMITS LINE
---	PROPOSED TEMPORARY AB
---	PROPOSED ACCESS ROAD
---	PROPOSED SILT FENCE
---	PROPOSED ROCK ENTRANCE
---	FOUND MOUNDMENT
---	EX. POWER POLE
---	EX. TELEPHONE BOX
---	EX. ELECTRIC BOX
---	EX. POST
---	EX. SIGN
---	EXISTING
---	R.O.W.
---	S/B
---	TYP
---	TS
---	HW
---	EOF
---	UON
---	PCS

ESTIMATED EARTHWORK QUANTITIES*
ONSITE:
CUT = 14,028 CY
FILL = 9,351 CY
IMPORT = 290 CY (AGGREGATE BASE FOR ROADWAYS)

*EARTHWORK QUANTITIES ARE RAW QUANTITIES AND HAVE NOT BEEN ADJUSTED
FOR SHRINKAGE OR SWELL.
**QUANTITIES ARE FOR ESTIMATING ONLY. ENGINEER MAKES NO GUARANTEE OF
ACCURACY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALCULATE QUANTITIES.
***EXCESS CUT WILL BE SPREAD EVENLY OVER THE SITE.

ESTIMATED FENCING QUANTITIES

6' FENCE: 3,468 LF
24' GATE: 1 EA

ESTIMATED ROADWAY QUANTITIES

AB: 1,692 SY

TOTAL PROJECT AREA
15.5 ACRES

DISTURBED AREA SUMMARY

PV ARRAY=	11.10 AC
ACCESS ROAD=	0.35 AC
GRADED AREA/ DISTURBED SOILS OUTSIDE OF ARRAY	3.36 AC
TOTAL	14.8 AC



M+W GROUP

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1095 Morris Avenue, Suite 102
Union, NJ 07083
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Westwood

Phone: (480) 747-4558 8509 East Greenway Parkway, Suite 250
Fax: (480) 176-8025 Scottsdale, AZ 85254
westwoodps.com

Westwood Professional Services, Inc.

PE Seal:
Professional Engineer
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.

Signature:
Typed or Printed Name: Matthew Philip Gaudin
Date: 12/28/2016 License Number: 52215

DRAWING ISSUE

☐ Preliminary ☒ Construction
☐ Customer Approval ☐ As-built
☐ Permitting ☐ Other

REVISIONS

Rev	By	App	Description	Date
A			50% SUBMITTAL	12/14/2016
B			ISSUED FOR PERMIT	12/28/2016

Issued for Construction

Project Name:
Lyra Community
Solar Garden, LLC
Site Address:
Le Sueur County, Minnesota

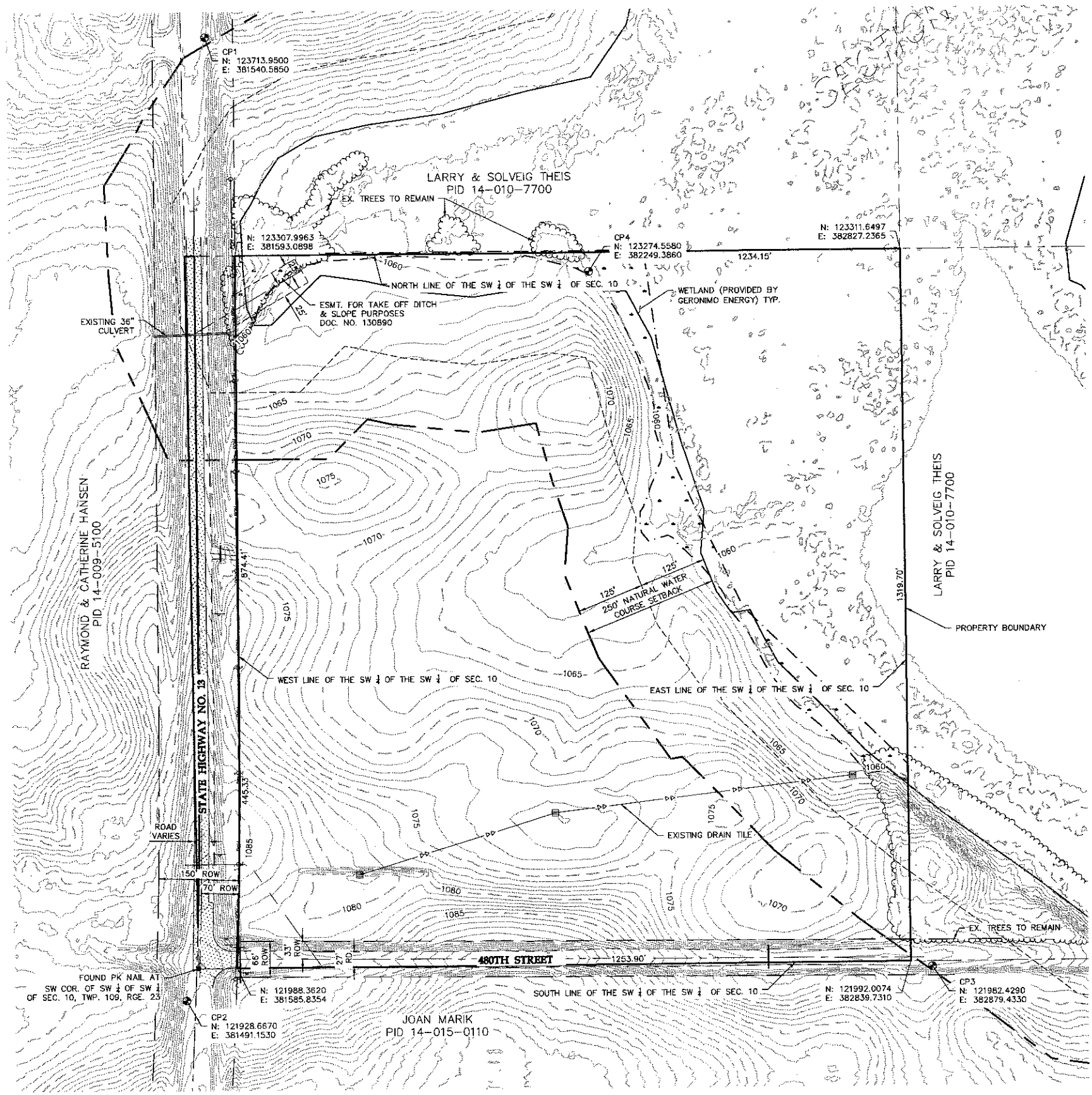
Sheet Title:
Cover Sheet

Scale: NTS | Project ID: 0007381.02

Sheet No.: C-100

Date: 12/28/2016

0007452C\F01.dwg



- GENERAL NOTES**
1. PRIVATE TILE LOCATIONS SHOWN ARE APPROXIMATE LOCATIONS.
 2. SUBCONTRACTOR TO FIELD VERIFY PRIVATE TILE LINES. IF IN CONFLICT WITH PROPOSED IMPROVEMENTS, CONTACT ENGINEER.

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PE Seal:
Professional Engineer
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.

Signature: *[Signature]*
Typed or Printed Name: Matthew Philip Gaender
Date: 12/28/2016 License Number: 62216

DRAWING ISSUE			
<input type="checkbox"/> Preliminary	<input checked="" type="checkbox"/> Construction		
<input type="checkbox"/> Customer Approval	<input type="checkbox"/> As-built		
<input type="checkbox"/> Permitting	<input type="checkbox"/> Other		
REVISIONS			
Rev	By	App	Description
A			50% SUBMITTAL
B			ISSUED FOR PERMIT

Issued for Construction

Project Name:
Lyra Community Solar Garden, LLC

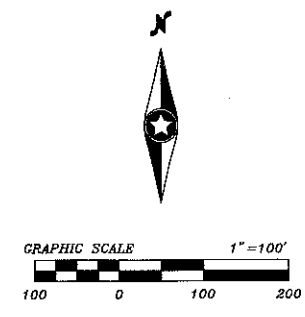
Site Address:
Le Sueur County, Minnesota

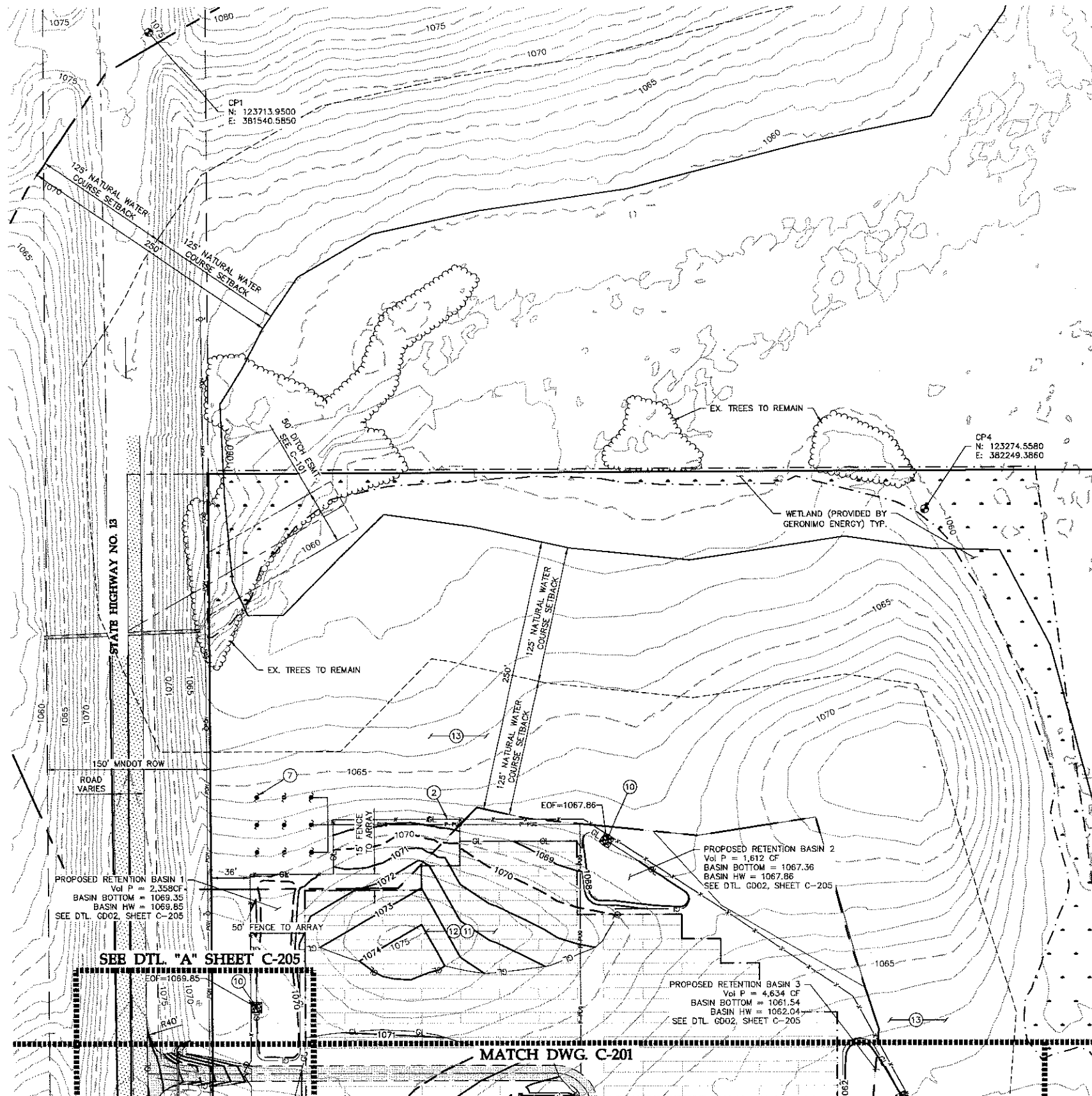
Sheet Title:
Existing Conditions

Scale: 1"=100' Project ID: 0007381.02

Sheet No: C-101

Date: 12/28/2016





- CONSTRUCTION NOTES**
1. PROPOSED ACCESS ROAD PER DETAILS RD01 AND RD02 ON DWG. C-204.
 2. PROPOSED CHAIN LINK FENCE - SEE FENCING ON DWGS. C-400 - C-402.
 3. PROPOSED 24" WIDE CHAIN LINK GATE WITH EMERGENCY ACCESS KEY BOX PER MSFC 2007 506.1 - SEE FENCING ON DWGS. C-400 - C-402.
 4. PROPOSED PCS - SEE SEPARATE ELECTRICAL PLANS.
 5. PROPOSED ELECTRICAL EQUIPMENT LOCATION. FOUNDATION DESIGN BY WESTWOOD. SEE SEPARATE STRUCTURAL PLANS.
 6. NOT USED
 7. PROPOSED ELECTRICAL EQUIPMENT AND POLES. - SEE SEPARATE ELECTRICAL PLANS. PERMITTED PROPOSED WEATHER STATION - SEE SEPARATE ELECTRICAL PLANS.
 8. PROPOSED XCEL COMMUNICATION EQUIPMENT - SEE SEPARATE ELECTRICAL PLANS. PERMITTED CONSTRUCT EMERGENCY OVERFLOW RIP-RAP PER DETAIL GD02 ON SHEET C-204.
 9. PREPARE SITE PER CONSTRUCTION NOTES ON DWG. C-202.
 10. PROPOSED REVEGETATION - SEE LANDSCAPE PLANS SHEETS C-500.
 11. NO GRADING OUTSIDE OF FENCE U.O.N. EXISTING VEGETATION TO REMAIN.
 12. NOT USED
 13. NOT USED
 14. NOT USED
 15. NOT USED
 16. TEMPORARY CONSTRUCTION ROAD & LAYDOWN AREA. TEMPORARY CONSTRUCTION & LAYDOWN AREA TO BE REMOVED UPON COMPLETION OF CONSTRUCTION ACTIVITIES. SEE RD03 ON SHEET C-204 FOR TEMPORARY FACILITY SURFACE SECTION.
 17. PROPOSED 21" CMP CULVERT EXTENSION. SEE DTL. GD04, SHEET C-204 FOR DETAILS.

- GENERAL NOTES**
1. TOPSOIL SHALL BE SEGREGATED FROM ALL EARTHWORK ACTIVITIES THAT REQUIRE SUB-SOIL EXCAVATION.
 2. MINOR SURFACE SMOOTHING MAY OCCUR FOR BACKING INSTALLATIONS.
 3. INTERNAL ROADS WILL BE CONSTRUCTED TO MATCH THE SURROUNDING EXISTING GROUND ELEVATIONS TO ALLOW EXISTING DRAINAGE PATTERNS TO PERSIST.
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 6. SUBCONTRACTOR TO PREPARE SITE PER SITE PREPARATION NOTES, SHEET C-202.
 7. THE ACCESS ROAD WAS NOT DESIGNED FOR CONSTRUCTION ACTIVITIES AND WILL NEED TO BE MAINTAINED DURING CONSTRUCTION AND FINALIZED UPON COMPLETION OF CONSTRUCTION. THIS MAY REQUIRE ADDITIONAL AS BE ADDED TO THE ROAD.



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Signature:
Typed or Printed Name: Matthew Philip Gaudier
Date: 12/28/2016 License Number: 52216

DRAWING ISSUE

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REVISIONS

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Issued for Construction

Project Name:
Lyra Community Solar Garden, LLC
Site Address:
Le Sueur County, Minnesota

Sheet Title:
Civil Site and Grading Plan Sheet

Scale: 1"=50' Project ID: 0007381.02

Sheet No: C-200

Date: 12/28/2016

0007452CP01.dwg



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Signature: *Matthew Philip Gaarder*

Typed or Printed Name: Matthew Philip Gaarder

Date: 12/28/2016 License Number: 52215

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Project Name:

Lyra Community
Solar Garden, LLC

Site Address:

Le Sueur County, Minnesota

Sheet Title:

Civil Site and
Grading Plan Sheet

Scale: 1"=50' Project ID: 0007381.02

Sheet No: C-201

Date: 12/28/2016

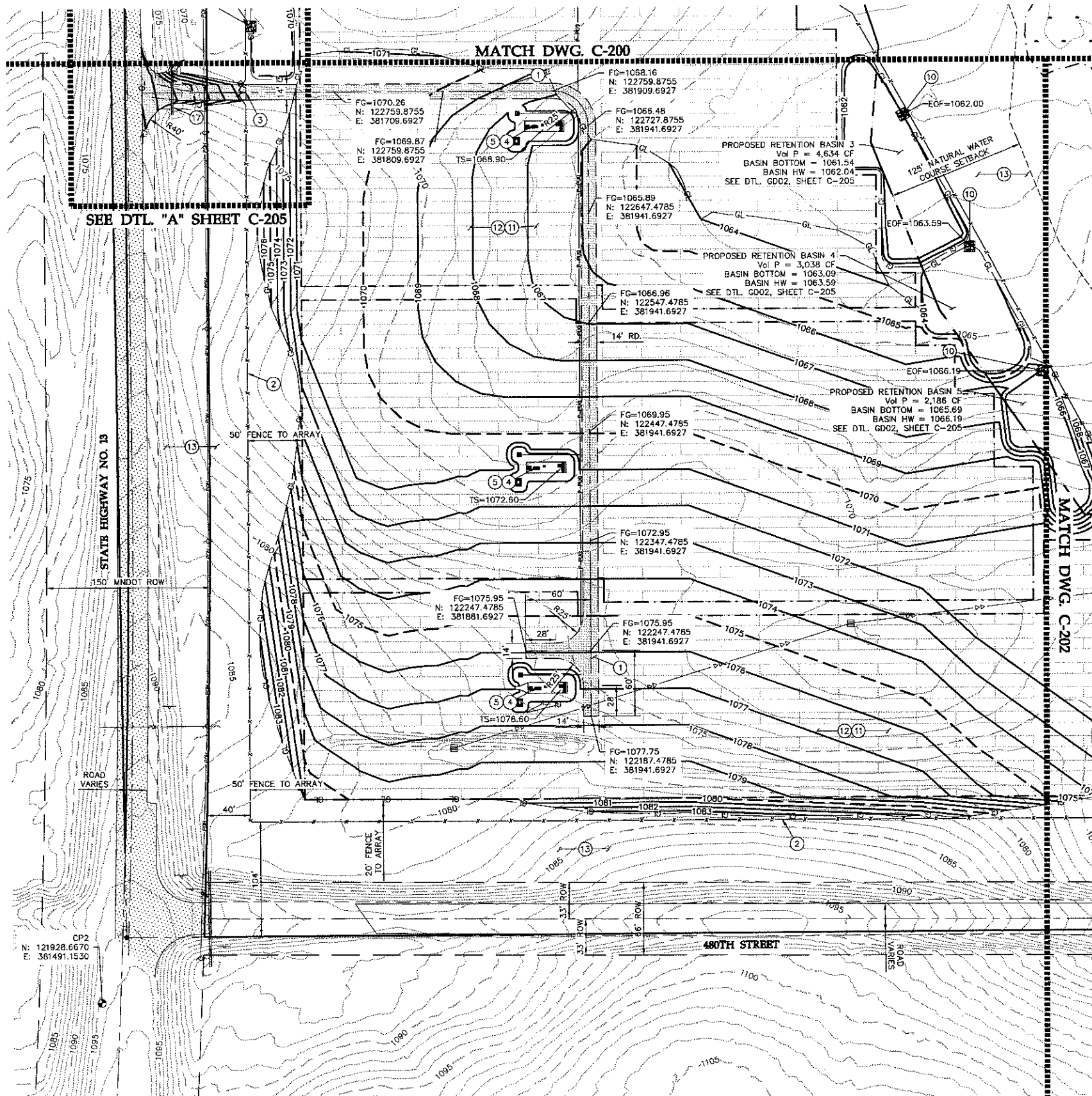
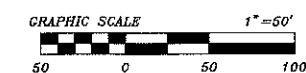
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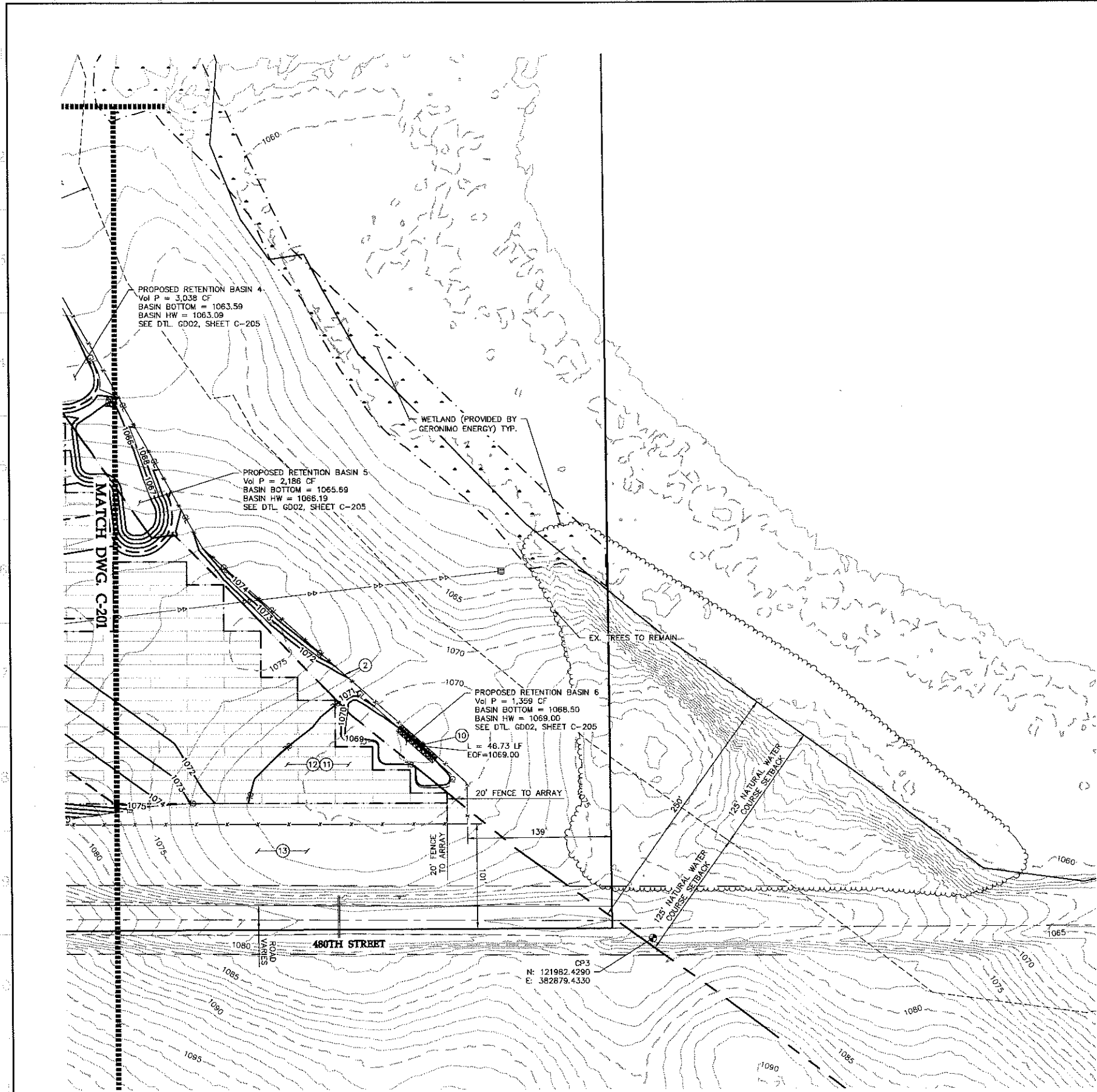
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Signature:

Typed or Printed Name: Matthew Philip Gaudin

Date: 12/28/2016 License Number: 52215

DRAWING ISSUE

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REVISIONS

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Issued for Construction

Project Name:
**Lyra Community
Solar Garden, LLC**

Site Address:
Le Sueur County, Minnesota

Sheet Title:

**Civil Site and
Grading Plan Sheet**

Scale: 1"=50' Project ID: 0007381.02

Sheet No: C-202

Date: 12/28/2016

0007452CPF01.dwg

CIVIL CONSTRUCTION NOTES

INTERNAL/ACCESS ROAD DESIGN PARAMETERS

1. THE ROAD HAS BEEN DESIGNED TO ACCOMMODATE LIGHT DUTY TRUCKS FOR LOW VOLUME USE IN NORMAL OPERATING CONDITIONS. THE ROAD DESIGN SPECIFIED IS NOT INTENDED FOR ALL WEATHER USE FOR HEAVY DUTY, HIGH VOLUME, CONSTRUCTION LOADS.
2. ROAD MAINTENANCE CAN BE EXPECTED DURING CONSTRUCTION AND OVER THE LIFE OF THE PERMANENT FACILITY.
3. ROAD SECTION AND SPECIFICATION SHOWN ON THE PLANS WERE PREPARED BY WESTWOOD PROFESSIONAL SERVICES BASED ON GEOTECHNICAL RECOMMENDATIONS FROM ENGINEERING (TERRACON).

PRODUCTS

1. INTERNAL/ACCESS ROAD AND INVERTER SKID WALKWAY AGGREGATE SHALL CONSIST OF CRUSHED CLASS 5 AGGREGATE BASE MEETING MNDOT SPEC 3138 AND THE GRADATION PROVIDED IN TABLE 1 ON C-204.
2. CULVERTS: SEE PLAN FOR DRAINAGE CULVERT LOCATIONS. ACCESS ROAD CULVERTS SHALL MEET THE MINIMUM SPECIFICATIONS SET FORTH BY THE MINNESOTA DEPARTMENT OF TRANSPORTATION AND/OR CHIPPEWA COUNTY. ALL CULVERTS SHALL BE HELICAL CORRUGATED 12 GAUGE OR APPROVED EQUAL AND MANUFACTURED OF CORRUGATED METAL PIPE.
3. GEOTEXTILE FABRIC SHALL BE TENSAR BX1200 OR APPROVED ALTERNATE.
4. EXCAVATED SOILS THROUGHOUT PROJECT SHALL BE UTILIZED AS FILL. SOILS SHALL BE CLEAN OF DEBRIS AND ORGANIC MATERIAL.

EXECUTION

1. **SITE PREPARATION**
 - A. THE CONTRACTOR SHALL BE REQUIRED TO CLEAR AND GRUB AREAS DESIGNATED ON THE PLANS REMOVING ALL TREES, STUMPS, BRUSH AND DEBRIS. ANY TREES OR BRUSH THAT ARE LOCATED WITHIN A WETLAND ARE ONLY ALLOWED TO BE TRIMMED. TREES AND BRUSH LOCATED OUTSIDE OF THE PROJECT DEVELOPMENT AREA SHALL NOT BE DISTURBED.
 - B. AREAS THAT ARE NOT TO BE CLEARED AND GRUBBED SHALL HAVE ANY EXISTING VEGETATION MOWED TO A MAXIMUM HEIGHT OF 3 INCHES.
 - C. THE CONTRACTOR SHALL PRESERVE OTHER EXISTING VEGETATION TO THE MAXIMUM EXTENT PRACTICABLE. ANY VEGETATION THAT IS REMOVED WITHIN THE PROJECT BOUNDARY IS TO REMOVE ONLY THAT VEGETATION WHICH SHALL BE DESIGNATED BY THE OWNERS REPRESENTATIVE FOR REMOVAL, AND SHALL EXERCISE EXTREME CARE AROUND EXISTING VEGETATION TO BE SAVED. CONSTRUCTION FENCING MAY BE INSTALLED TO PROTECT AREAS THAT ARE NOT TO BE DISTURBED.
 - D. NO BURNING OF DEBRIS IS ALLOWED WITHOUT THE NECESSARY PERMITS FROM JURISDICTIONAL GOVERNING AUTHORITIES AND APPROVAL BY THE OWNER.
2. **FILL MATERIALS AND PLACEMENT**
 - A. PRIOR TO PLACEMENT OF FILL MATERIAL, EXISTING SURFACE SHALL BE CLEARED OF ALL VEGETATION, LOOSE MATERIALS, COMPACTED TO 90% PER ASTM D698.
 - B. ALL FILL MATERIALS SHALL BE INORGANIC SOILS FREE OF VEGETATION, DEBRIS, AND FRAGMENTS LARGER THAN THREE (3) INCHES IN SIZE. PEA GRAVEL OR OTHER SIMILAR NON-CEMENTITIOUS, POORLY-GRADED MATERIALS SHALL NOT BE USED AS FILL OR BACKFILL WITHOUT THE PRIOR APPROVAL OF THE GEOTECHNICAL ENGINEER.
 - C. CLEAN ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS FILL MATERIAL FOR GENERAL SITE GRADING. THIS MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 8".
 - D. ANY IMPORTED SOILS MUST HAVE EXPANSION VALUES IN THE "VERY LOW" RANGE AS DEFINED BY ASTM D-4829, VERY LOW IS AN EXPANSION INDEX FROM 0 TO 20.

INTERNAL/ACCESS ROAD CONSTRUCTION AND SITE GRADING

1. **TOPSOIL MANAGEMENT**
 - A. TOPSOIL SHALL BE STRIPPED FROM ALL ROADWAY AREAS A MINIMUM OF 12". TOPSOIL SHALL BE STRIPPED THROUGH THE TOPSOIL DEPTH IN GRADING AREAS. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THESE DESIGNATED AREAS OR WHERE THE PROPOSED GRADE AND ELEVATIONS CHANGES ARE LESS THAN THE TOPSOIL DEPTH. APPROXIMATE TOPSOIL DEPTH PER GEOTECHNICAL REPORT=0.5".
 - B. STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS SHALL BE STOCKPILED ON THE SITE IN THE LOCATION SHOWN ON THE PLANS OR AS APPROVED BY THE SITE MANAGER. STOCKPILES WITHIN THE SITE SHALL HAVE TEMPORARY EROSION AND SEDIMENT CONTROL APPLIED IN ACCORDANCE WITH THE PROJECT SWPPP OR USED TO REVEGETATE LANDSCAPED AREAS OR EXPOSED SLOPES AFTER COMPLETION OF GRADING OPERATIONS. IF IT IS NECESSARY TO DISPOSE OF ORGANIC MATERIALS ON-SITE THEY SHALL BE PLACED IN NON-STRUCTURAL AREAS.
2. **SITE GRADING**
 - A. SUBSEQUENT TO THE SURFACE CLEARING, GRUBBING AND TOPSOIL REMOVAL IN AREAS SHOWN ON THE PLANS, THE SUBSURFACE SOILS SHALL HAVE THE GRADES AND ELEVATIONS MODIFIED AS SHOWN ON THE PLANS. THE PROPOSED CONTOURS AND ELEVATIONS SHOWN ON THE PLANS ARE TO FINISHED GRADE.
 - B. SUBSURFACE SOILS SHALL BE MOISTURE CONDITIONED AND COMPACTED TO THE SPECIFICATIONS OF TABLE 3, SHEET C-204.
 - C. ANY CUT MATERIAL THAT CANNOT BE USED FOR STRUCTURAL BACKFILL THROUGHOUT THE PROJECT SHALL BE USED IN FILL AREAS IDENTIFIED ON THE PLANS. THE FILL AREA SHALL HAVE TOPSOIL REMOVED AND MANAGED AS IDENTIFIED ABOVE IN "TOPSOIL MANAGEMENT".
 - D. CLEAN, ORGANIC FREE, ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS SUBGRADE MATERIAL FOR GENERAL SITE GRADING.
3. **SUBGRADE PREPARATION**
 - A. SUBSEQUENT TO THE SURFACE CLEARING, GRUBBING, TOPSOIL REMOVAL AND EMBANKMENT CONSTRUCTION, THE EXPOSED SUBGRADE SOILS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF TWELVE (12) INCHES, MOISTURE CONDITIONED AND COMPACTED TO THE SPECIFICATIONS OF TABLE 3 ON SHEET C-204. THE COMPACTED EXPOSED SUBGRADES SHALL BE PROOF ROLLED AND OBSERVED BY A GEOTECHNICAL ENGINEER TO DETERMINE IF SOFT SOILS EXIST. IF SOFT SOILS EXIST THEY SHALL BE SCARIFIED AND ALLOWED TO DRY, RECOMPACTED AND TESTED AGAIN, IF THEY CONTINUE TO REMAIN SOFT, THE SOFT SOILS SHALL BE REMOVED AND REPLACED WITH ON-SITE FILL MATERIAL.
 - B. ROAD SUBGRADE PREPARATION SHALL EXTEND HORIZONTALLY AT LEAST TWO FEET BEYOND THE OUTSIDE EDGE OF THE DRIVABLE SURFACE. THE PURPOSE IS MITIGATE THE DAMAGE DONE BY A DELIVERY TRUCK PARKING OFF THE ROAD'S EDGE AND TURNING AROUND. THE MOISTURE CONTENT AND COMPACTION OF ROAD SUBGRADE SOILS SHALL BE MAINTAINED UNTIL AGGREGATE BASE PLACEMENT.
 - C. THE MOISTURE CONTENT AND COMPACTION OF ROAD SUBGRADE SOILS SHALL BE MAINTAINED UNTIL AGGREGATE BASE PLACEMENT.
 - D. CLEAN, ORGANIC FREE, ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS SUBGRADE MATERIAL FOR GENERAL SITE GRADING AND ROADWAY AREAS.
4. **AGGREGATE PLACEMENT**
 - A. **INTERNAL/ACCESS ROADS** - SUBSEQUENT TO THE SUBGRADE PREPARATION THE GEOTEXTILE FABRIC SHALL BE PLACED ABOVE THE SUBGRADE AND THE ROAD AGGREGATE BASE SHALL BE PLACED AND COMPACTED TO THE SPECIFICATIONS IDENTIFIED IN TABLE 3 ON SHEET C-204.
5. **TOPSOIL REDISTRIBUTION AND STABILIZATION**
 - A. FOLLOWING THE PLACEMENT OF THE AGGREGATE BASE AND APPROVAL OF THE TESTING, TOPSOIL SHALL BE DISTRIBUTED OVER THE EXPOSED DISTURBED AREAS, EXCLUDING THE AGGREGATE DRIVING SURFACE.
 - B. FOLLOWING SITE GRADING OPERATIONS, TOPSOIL CAN BE USED TO BRING THE GROUND ELEVATIONS UP TO THE DESIGNED FINISHED GRADE ELEVATIONS.
 - C. THE TOPSOIL SHALL HAVE TEMPORARY AND PERMANENT STABILIZATION MEASURES ESTABLISHED IN ACCORDANCE WITH THE PROJECT SWPPP.

CONSTRUCTION ROAD & LAYDOWN AREA

1. **PREPARATION**
 - A. THE LAYDOWN/STORAGE YARD SHALL CONSIST OF AN AGGREGATE BASE MATERIAL PER DETAIL RD03 ON SHEET C-205.
 - B. THE AGGREGATE BASE SHALL BE MOISTURE CONDITIONED AND COMPACTED TO THE SPECIFICATIONS OF TABLE 3 (NON-STRUCTURAL AREA).
 - C. FOLLOWING CONSTRUCTION AND REMOVAL OF PROJECT INVENTORY THE COMPACTED AGGREGATE BASE SHALL BE DECOMPACTED AND REMOVED. SUBGRADE SHALL BE DECOMPACTED PERMANENTLY STABILIZED IN ACCORDANCE WITH THE PROJECT SWPPP SPECIFICATIONS.

CONCRETE PAD CONSTRUCTION

1. **TOPSOIL MANAGEMENT**
 - A. TOPSOIL SHALL BE STRIPPED FROM ALL CONCRETE PAD AREAS THROUGH THE ROOT ZONE. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THESE DESIGNATED CLEARING AND GRUBBING AREAS. THE APPROXIMATE TOPSOIL DEPTH=0.5".
 - B. STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS SHALL BE STOCKPILED ON THE SITE IN THE LOCATION SHOWN ON THE PLANS. STOCKPILES WITHIN THE SITE SHALL HAVE TEMPORARY EROSION AND SEDIMENT CONTROL APPLIED IN ACCORDANCE WITH THE PROJECT SWPPP OR USED TO REVEGETATE LANDSCAPED AREAS OR EXPOSED SLOPES AFTER COMPLETION OF GRADING OPERATIONS. IF IT IS NECESSARY TO DISPOSE OF ORGANIC MATERIALS ON-SITE THEY SHALL BE PLACED IN NON-STRUCTURAL AREAS.
2. **CONCRETE PAD EMBANKMENT**
 - A. EMBANKMENT CONSTRUCTION SHALL CONSIST OF THE PLACING OF SUITABLE FILL MATERIAL, AFTER TOPSOIL STRIPPING, ABOVE THE EXISTING GRADE WHERE THE CONCRETE PAD IS BUILT UP. GENERALLY, THE CONCRETE PAD EMBANKMENT SHALL HAVE COMPACTED SUPPORT SLOPES OF THREE FEET HORIZONTAL TO ONE FOOT VERTICAL.
 - B. THE MATERIAL FOR EMBANKMENT CONSTRUCTION SHALL BE GENERATED ON SITE BY THE CONTRACTOR FROM THE IDENTIFIED GRADING AREAS ON SITE. THIS MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 8".
 - C. ALL SLOPES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GRADING SHOWN ON THE PLANS.
 - D. EXPOSED SURFACES SHALL BE FREE OF MOUNDS AND DEPRESSIONS WHICH COULD PREVENT UNIFORM COMPACTION.
 - E. SEE TABLE 2 FOR TESTING REQUIREMENTS AND TABLE 3 FOR COMPACTION REQUIREMENTS.
3. **SUBGRADE PREPARATION**
 - A. SUBSEQUENT TO THE SURFACE CLEARING, GRUBBING AND TOPSOIL REMOVAL, THE EXPOSED SUBGRADE SOILS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF EIGHT (8) INCHES, MOISTURE CONDITIONED AND COMPACTED TO THE SPECIFICATIONS OF TABLE 3. IF SOFT SOILS EXIST THEY SHALL BE SCARIFIED AND ALLOWED TO DRY, RECOMPACTED AND TESTED AGAIN, IF THEY CONTINUE TO REMAIN SOFT THE SOFT SOILS SHALL BE REMOVED AND REPLACED WITH ON-SITE FILL MATERIAL.
 - B. THE MOISTURE CONTENT AND COMPACTION OF CONCRETE PAD SUBGRADE SOILS SHALL BE MAINTAINED UNTIL PAVEMENT CONSTRUCTION.
 - C. CLEAN, ORGANIC FREE, ON-SITE SOILS OR APPROVED IMPORTED MATERIAL MAY BE USED AS SUBGRADE MATERIAL FOR GENERAL SITE GRADING AND ROADWAY AREAS.
4. **SOIL STABILIZATION**
 - A. FOLLOWING THE CONSTRUCTION OF THE CONCRETE PAD, TOPSOIL SHALL BE DISTRIBUTED OVER THE EXPOSED DISTURBED AREAS FOR FINAL STABILIZATION.
 - B. THE TOPSOIL SHALL HAVE TEMPORARY AND PERMANENT STABILIZATION MEASURES ESTABLISHED IN ACCORDANCE WITH THE PROJECT SWPPP.

INVERTER SKID CONSTRUCTION

1. **TOPSOIL MANAGEMENT**
 - A. TOPSOIL SHALL BE STRIPPED FROM ALL FILL AREAS AND WALKWAY PATHS THROUGH THE ROOT ZONE. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THESE DESIGNATED AREAS. APPROXIMATE TOPSOIL DEPTH=0.5".
 - B. STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS SHALL BE STOCKPILED ON THE SITE IN THE LOCATION SHOWN ON THE PLANS. STOCKPILES WITHIN THE SITE SHALL HAVE TEMPORARY EROSION AND SEDIMENT CONTROL APPLIED IN ACCORDANCE WITH THE PROJECT SWPPP OR USED TO REVEGETATE LANDSCAPED AREAS OR EXPOSED SLOPES AFTER COMPLETION OF GRADING OPERATIONS. IF IT IS NECESSARY TO DISPOSE OF ORGANIC MATERIALS ON-SITE THEY SHALL BE PLACED IN NON-STRUCTURAL AREAS.
2. **INVERTER SKID EMBANKMENT**
 - A. EMBANKMENT CONSTRUCTION SHALL CONSIST OF THE PLACING OF SUITABLE FILL MATERIAL, AFTER TOPSOIL STRIPPING, ABOVE THE EXISTING GRADE AS A WORKING PAD AROUND THE PERIMETER OF THE INVERTER SKID. GENERALLY, THE INVERTER SKID EMBANKMENT SHALL HAVE COMPACTED SUPPORT SLOPES OF THREE FEET HORIZONTAL TO ONE FOOT VERTICAL.
 - B. THE MATERIAL FOR EMBANKMENT CONSTRUCTION SHALL BE GENERATED ON SITE BY THE CONTRACTOR FROM THE IDENTIFIED GRADING AREAS ON SITE. THIS MATERIAL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 10-12".
 - C. ALL SLOPES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GRADING SHOWN ON THE PLANS.
 - D. SUBSURFACE SOILS FOR WALKWAY PATH SHALL BE MOISTURE CONDITIONED AND COMPACTED.
 - E. EXPOSED SURFACES SHALL BE FREE OF MOUNDS AND DEPRESSIONS WHICH COULD PREVENT UNIFORM COMPACTION.
 - F. SEE TABLE 2 FOR TESTING REQUIREMENTS AND TABLE 3 FOR COMPACTION REQUIREMENTS.
3. **SOIL STABILIZATION**
 - A. FOLLOWING THE CONSTRUCTION OF THE CONCRETE PAD, TOPSOIL SHALL BE DISTRIBUTED OVER THE EXPOSED DISTURBED AREAS FOR FINAL STABILIZATION.
 - B. THE TOPSOIL SHALL HAVE TEMPORARY AND PERMANENT STABILIZATION MEASURES ESTABLISHED IN ACCORDANCE WITH THE PROJECT SWPPP.

SURFACE SMOOTHING

1. **INTENT**
 - A. THE INTENT IS TO HAVE MINIMAL SURFACE SMOOTHING ON THE SITE.
2. **TOPSOIL MANAGEMENT**
 - A. TOPSOIL DOES NOT NEED TO BE STRIPPED FOR SURFACE SMOOTHING.
3. **GRADING**
 - A. GRADES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GRADING SHOWN ON THE PLANS.
4. **SOIL STABILIZATION**
 - D. THE EXPOSED TOPSOIL SHALL HAVE TEMPORARY AND PERMANENT STABILIZATION MEASURES ESTABLISHED IN ACCORDANCE WITH THE PROJECT SWPPP.



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Signature:
Typed or Printed Name: Phillip Gaarder
Date: 12/28/2016 License Number: 62215

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Issued for Construction

Project Name:

Lyra Community
Solar Garden, LLC

Site Address:

Le Sueur County, Minnesota

Sheet Title:

Construction Notes

Scale: NTS Project ID: 0007381.02

Sheet No: C-203

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Date: 12/28/2016 License Number: 62215

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Project Name:

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Le Sueur County, Minnesota

Sheet Title:

Construction Notes

Scale: NTS Project ID: 0007381.02

Sheet No: C-204

Date: 12/28/2016

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TESTING REQUIREMENTS:

DEFINITIONS

- THE CONTRACTOR SHALL SUBMIT MATERIAL TESTING REPORTS AS SHOWN ON THE DRAWINGS AS WELL AS GEOTEXTILE MATERIAL TO BE USED DURING CONSTRUCTION.
- TESTING SHALL BE PERFORMED BY A DESIGNATED INDEPENDENT TESTING AGENCY.
- SUBMIT TESTING AND INSPECTION RECORDS SPECIFIED TO THE CIVIL ENGINEER OF RECORD FOR REVIEW.
 - THE ENGINEER WILL REVIEW THE TESTING AND INSPECTION RECORDS TO CHECK CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONSTRUCTION CONTRACTOR FROM THE RESPONSIBILITY FOR CORRECTING DEFECTIVE WORK.
- PROOF ROLLING SHALL BE PERFORMED USING A FULLY LOADED TANDEM AXLE DUMP TRUCK WITH A MINIMUM GROSS WEIGHT OF 25 TONS OR A FULLY LOADED WATER TRUCK WITH AN EQUIVALENT AXLE LOADING. PROOF-ROLLING ACCEPTANCE STANDARDS INCLUDE NO RUTTING GREATER THAN 2 INCHES (PER MNDOT SPEC 2111), AND NO "PUMPING" OF THE SOIL BEHIND THE LOADED TRUCK.
- SIEVE ANALYSIS SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM C136
- PROCTORS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D698
- ATTERBERG LIMITS SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D4318
- MOISTURE DENSITY (NUCLEAR DENSITY) TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM D2922

REQUIREMENTS

- COMPACTION:
 - REFER TO TABLE 3 FOR COMPACTION REQUIREMENTS AND ACCEPTABLE MOISTURE CONTENTS.
- IMPORT FILL MATERIAL:
 - IMPORT SOILS USED AS FILL MATERIAL SHALL BE TESTED FOR GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, PROCTOR TESTS, R-VALUES, SAND EQUIVALENTS, DURABILITY INDEX, LIQUID LIMIT, PLASTICITY INDEX, AND MAXIMUM EXPANSION INDEX.
- COMPACTED SUBGRADE: (2 OF 3 TESTS REQUIRED WITH RESULTS DOCUMENTED AND PROVIDED TO OWNER & ENGINEER.)
 - PROVIDE 1 MOISTURE DENSITY COMPACTION TEST FOR EVERY 100 L.F. OF ROAD LENGTH.
 - THE ENTIRE INTERNAL/ACCESS ROAD SUBGRADE SHALL BE PROOF-ROLLED PRIOR TO THE PLACEMENT OF THE AGGREGATE BASE TO IDENTIFY AREAS OF UNSTABLE SUBGRADE. IF UNSTABLE SUBGRADE IS ENCOUNTERED SCARIFY, MOISTURE CONDITION, AND RECOMPACT SOILS TO ACHIEVE COMPACTION.
- AGGREGATE BASE: (2 OF 3 TESTS REQUIRED WITH RESULTS DOCUMENTED AND PROVIDED TO OWNER & ENGINEER.)
 - PROVIDE 1 MOISTURE DENSITY COMPACTION TEST FOR EVERY 100 L.F. OF ROAD LENGTH.
 - AGGREGATE BASE SHALL BE PROOF-ROLLED OVER THE ENTIRE LENGTH. IF PROOF ROLLING DETERMINES THAT THE ROAD IS UNSTABLE, ADDITIONAL AGGREGATE SHALL BE ADDED UNTIL THE UNSTABLE SECTION IS ABLE TO PASS A PROOF ROLL FOR ALL ROAD CLASSIFICATIONS.
 - PROVIDE 1 SIEVE ANALYSIS PER 2000 CY OF ROAD AGGREGATE BASE PLACED.
- MISCELLANEOUS FILL:
 - PROVIDE MOISTURE DENSITY COMPACTION TESTS ONCE PER 2 FOOT VERTICAL LIFTS AND/OR 200 C.Y. OF COMPACTED FILL MATERIAL.

TRAFFIC CONTROL:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING TRAFFIC CONTROL DEVICES SUCH AS BARRICADES, WARNING SIGNS, DIRECTIONAL SIGNS, FLAGGERS AND LIGHTS TO CONTROL THE MOVEMENT OF TRAFFIC WHERE NECESSARY. PLACEMENT OF THESE DEVICES SHALL BE APPROVED BY THE CITY/COUNTY AND ENGINEER PRIOR TO PLACEMENT. TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST VERSION OF THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

GENERAL NOTES:

- CONSTRUCTION PLANS ARE BASED OFF OF THE LE SUEUR COUNTY COORDINATE SYSTEM, US FOOT.
- PROPOSED SOLAR LAYOUT FOR THIS PROJECT PROVIDED BY M+W ENERGY, INC.
- THE ALTA SURVEY AND EXISTING PLANIMETRIC DATA WAS PROVIDED BY WESTWOOD PROFESSIONAL SERVICES.
- ALL DIMENSIONS ARE TO PROJECT BOUNDARY, EDGE OF GRAVEL, FENCE LINES AND SOLAR PANELS UNLESS OTHERWISE NOTED.
- THE GROUND SURFACE CONTOURS (AT ONE-FOOT VERTICAL INTERVALS) AND ELEVATIONS ARE BASED ON A LIDAR DATA FROM THE STATE OF MINNESOTA. THE ELEVATIONS AND CONTOURS SHOWN ON THESE CONSTRUCTION DRAWINGS WERE VERIFIED BY A TOPOGRAPHIC SURVEY PREPARED BY WESTWOOD PROFESSIONAL SERVICES. THE PROJECT SITE IS LOCATED IN A PREVIOUSLY FARMED FIELD THAT WAS TILLED.
- WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE OWNER SHALL BE NOTIFIED AND ARE NOT TO BE REMOVED WITHOUT PERMISSION FROM THE OWNER. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- THE CONTRACTOR SHALL NOTIFY MINNESOTA DIG ALERT (811 ONE CALL) AT LEAST 48 HOURS BEFORE EXCAVATION ACTIVITIES COMMENCE.
- ELECTRONIC FILES ARE AVAILABLE FOR CONSTRUCTION OPERATIONS.

EROSION AND SEDIMENT CONTROL / STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

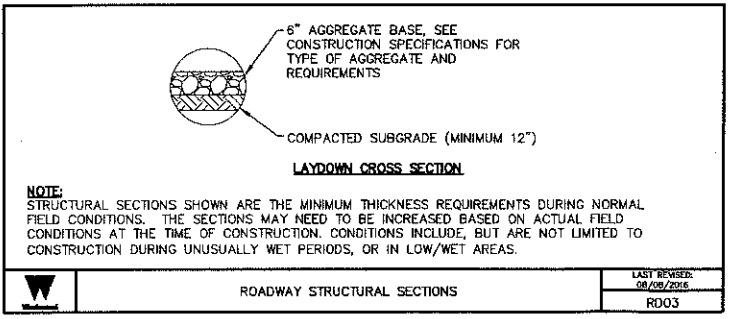
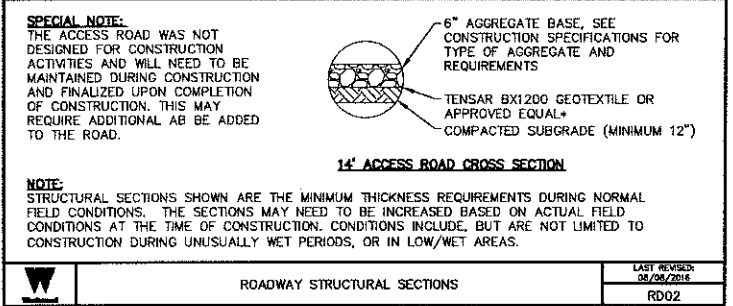
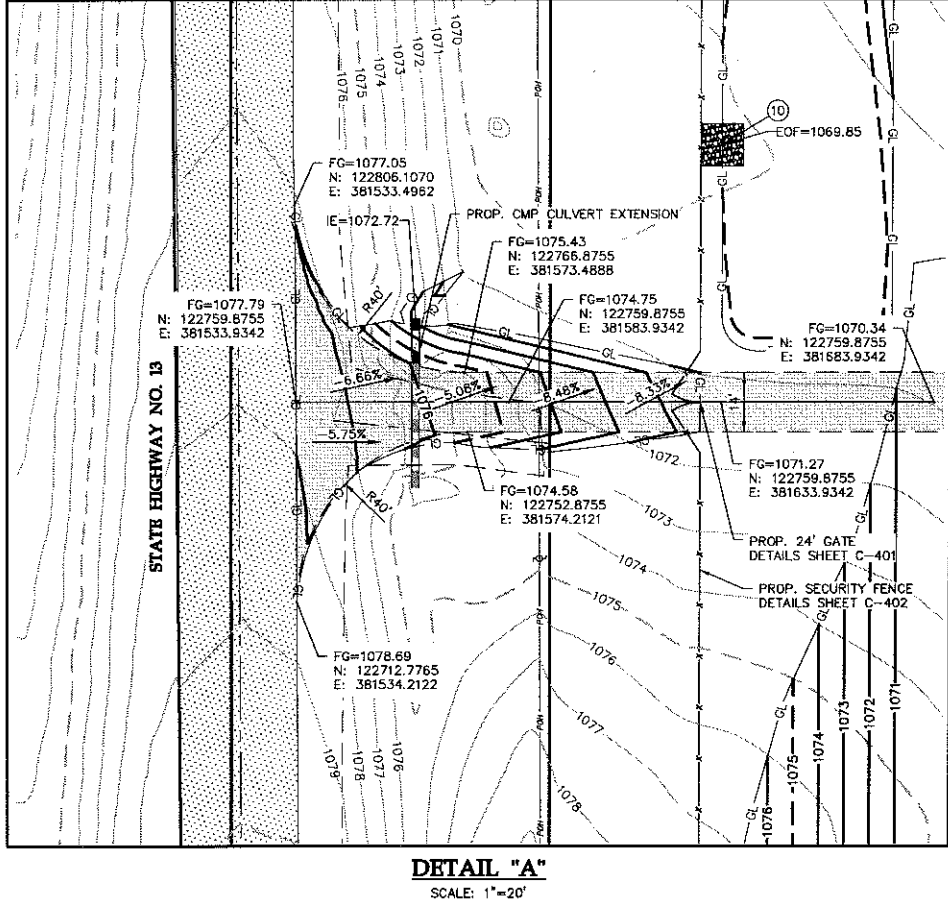
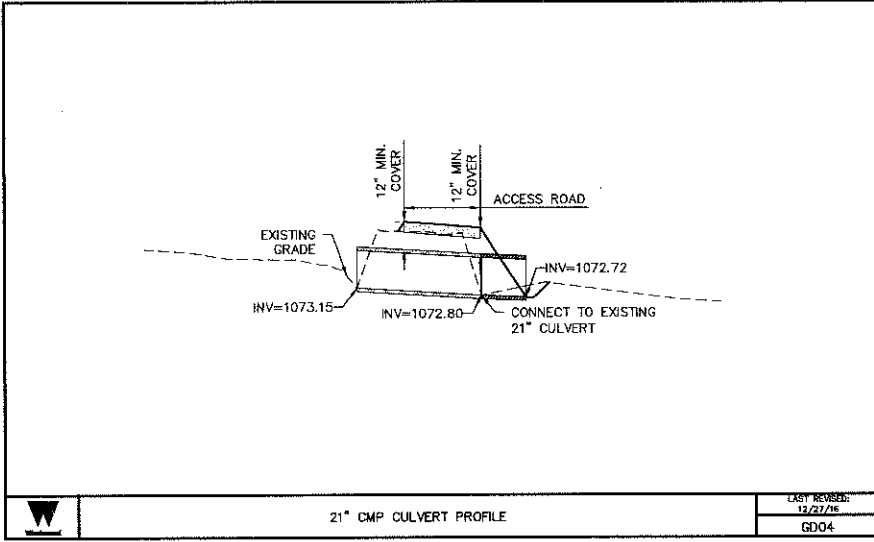
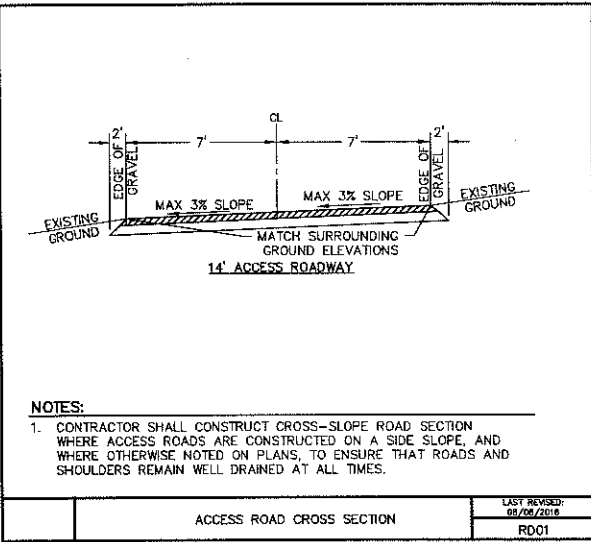
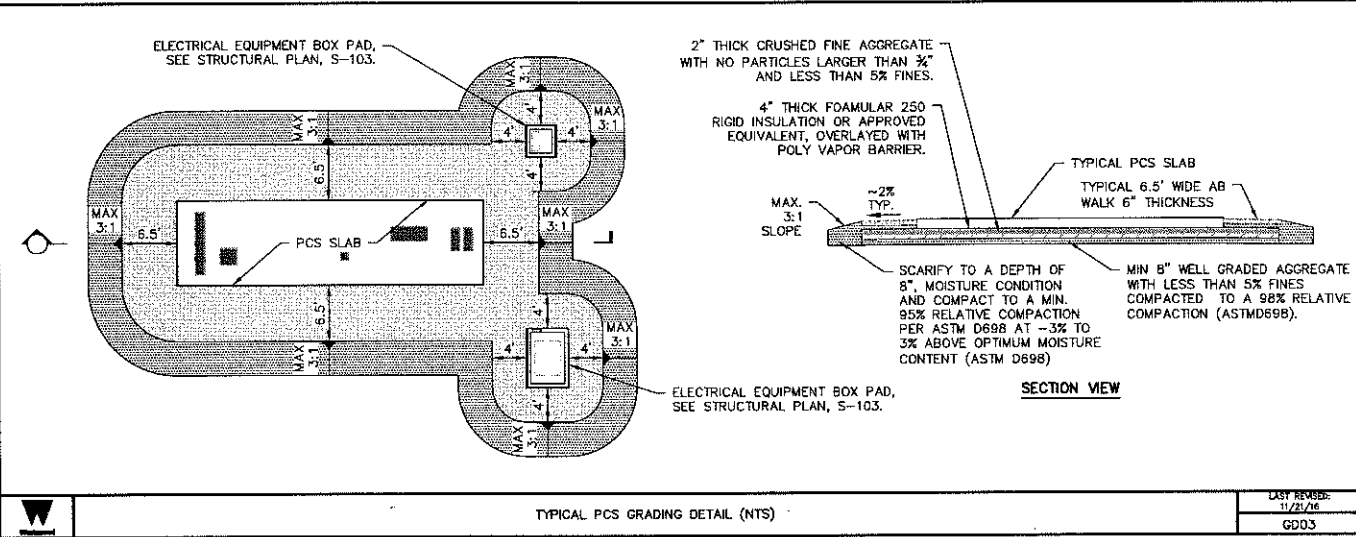
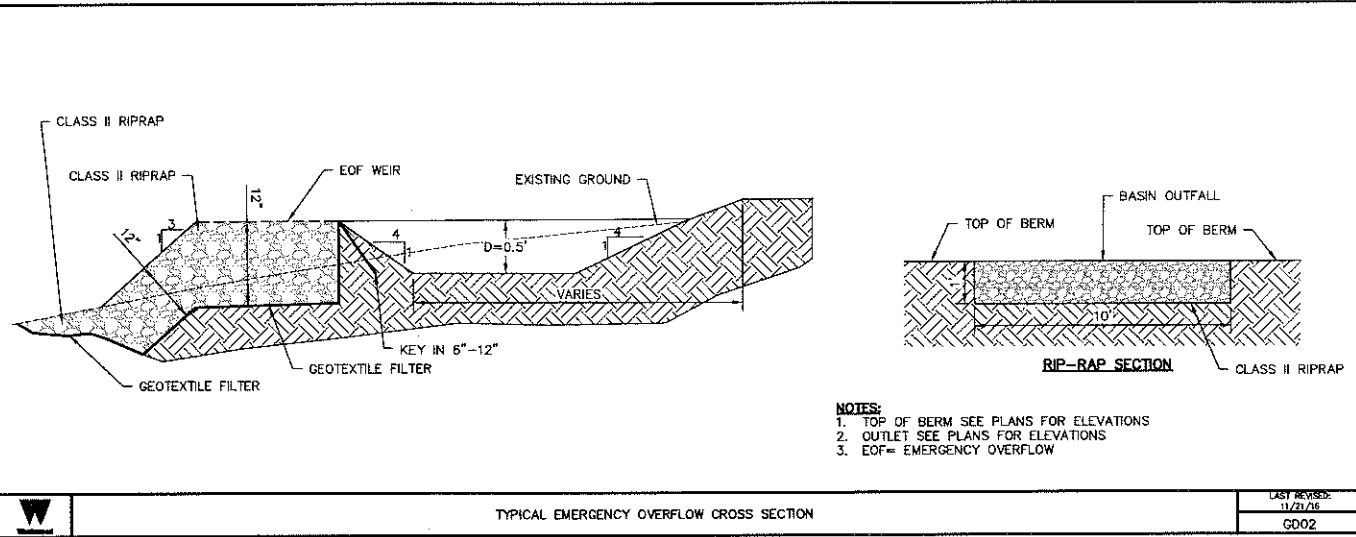
- THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES AS PLANNED AND SPECIFIED FOLLOWING BEST MANAGEMENT PRACTICES AS OUTLINED BY THE MINNESOTA POLLUTION CONTROL AGENCY (MPCA) AND BEING IN CONFORMANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL STORMWATER PERMIT. SEE THE PROJECT SITE PLANS AND ASSOCIATED STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR EROSION CONTROL AND RESTORATION LOCATIONS AND SPECIFICATIONS. UNLESS OTHERWISE NOTED OR MODIFIED IN THE SWPPP/HEREIN, ALL SECTIONS OF THE GENERAL CONDITIONS SHALL APPLY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SWPPP'S AVAILABILITY.
- ALL FIBER ROLLS AND OTHER EROSION CONTROL FEATURES SHALL BE IN-PLACE PRIOR TO ANY EXCAVATION/CONSTRUCTION AND SHALL BE MAINTAINED UNTIL Viable TURF OR GROUND COVER HAS BEEN ESTABLISHED.
- ALL DRAINAGE SWALES DISTURBED DURING CONSTRUCTION ACTIVITIES AND NOT COVERED BY ROAD SURFACING MATERIALS, SHALL BE STABILIZED IN ACCORDANCE WITH THE SWPPP PLAN.

TABLE 1: MNDOT CLASS 5, MNDOT SPEC 318	
SIEVE SIZE	PERCENT PASSING
1"	(100)
3/4"	(90-100)
3/8"	(50-90)
#4	(35-80)
#10	(20-65)
#40	(10-35)
#200	(3.0-10.0)

TABLE 2: TESTING SCHEDULE SUMMARY		
LOCATION	TEST	FREQUENCY
STRUCTURAL FILL	GRAIN SIZE ANALYSIS, MOISTURE CONTENT, ATTERBERG LIMITS ON FINES CONTENT, AND PROCTOR	1 PER MAJOR SOIL TYPE
COMPACTED SUBGRADE	MOISTURE DENSITY TEST (NUCLEAR DENSITY)*	1 EVERY 100 LF OF ROAD
	PROOF-ROLL*	ENTIRE LENGTH
AGGREGATE BASE	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 EVERY 100 LF OF ROAD
	PROOF-ROLL*	ENTIRE LENGTH
	SIEVE ANALYSIS*	1 PER 2000 CY
MISCELLANEOUS FILL	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 PER 2 FOOT VERTICAL LIFTS AND/OR 200 C.Y. OF MATERIAL
TRENCH BACKFILL	MOISTURE DENSITY TEST (NUCLEAR DENSITY)	1 EVERY 200 LF OF TRENCH, ALTERNATE TEST DEPTHS OF 18" AND AT GRADE

* 2 OF 3 TESTS REQUIRED WITH RESULTS DOCUMENTED AND PROVIDED TO OWNER & ENGINEER.

TABLE 3: COMPACTION AND MOISTURE CONTENT REQUIREMENTS			
MATERIAL TYPE AND LOCATION	MINIMUM COMPACTION REQUIREMENT PER ASTM D698 (% OF MAXIMUM DRY DENSITY)	RANGE OF MOISTURE CONTENTS FOR COMPACTION (% OVER OPTIMUM)	
		MINIMUM	MAXIMUM
AGGREGATE BASE:	95	-1	+3
STRUCTURAL FILL:	95	-1	+3
SUBGRADE (BENEATH EQUIPMENT PADS, ROADWAYS, AND NATIVE MATERIAL)	95	-1	+3
SUBGRADE (BENEATH EQUIPMENT PADS, ROADWAYS, AND IMPORT NON-EXPANSIVE SOILS)	95	-1	+3
INVERTER PAD WALKWAY	95	-1	+3



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Signature: *Matthew Philip Gaudier*
Typed or Printed Name: Matthew Philip Gaudier
Date: 12/28/2016 License Number: 52216

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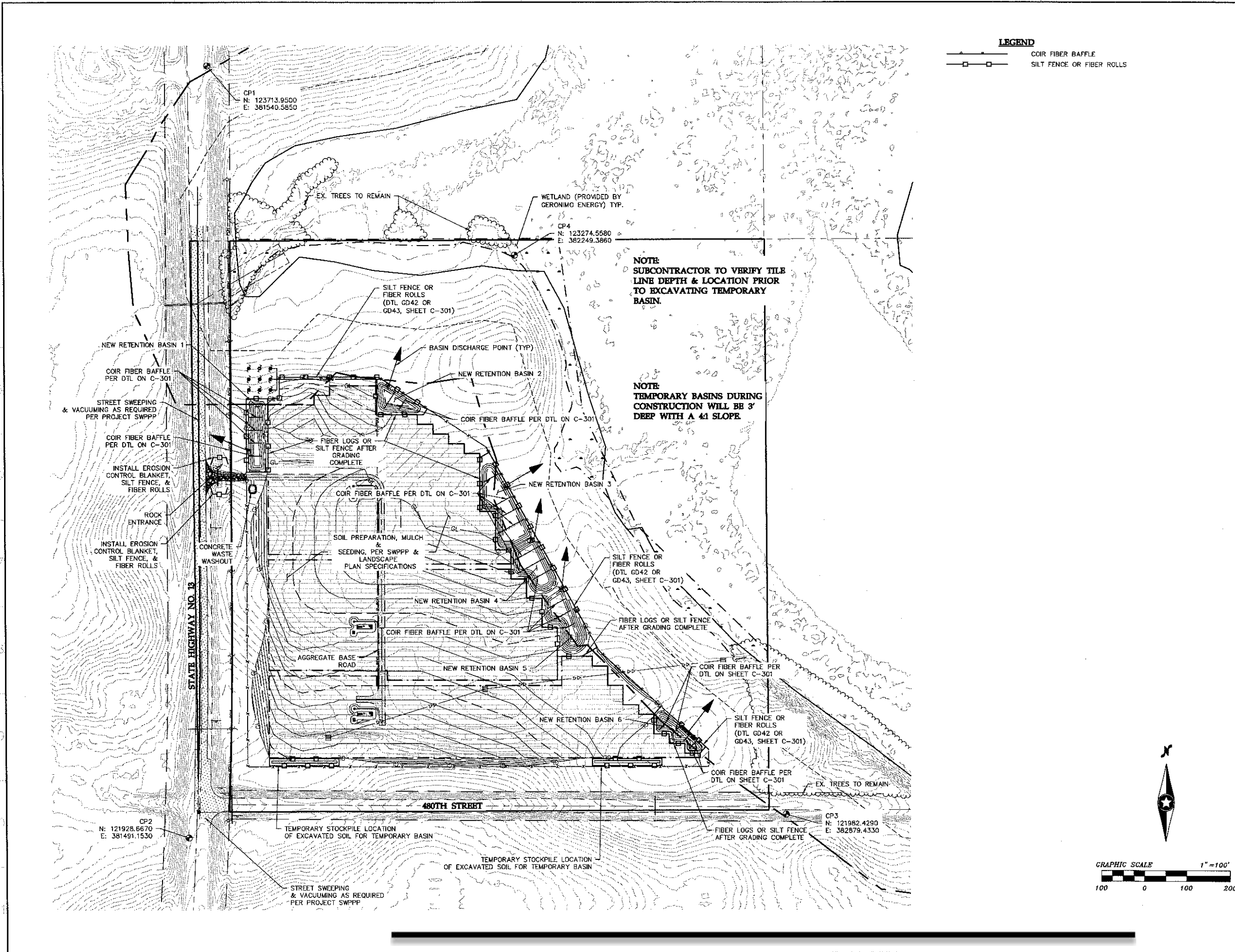
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Project Name: **Lyra Community Solar Garden, LLC**
Site Address: **Le Sueur County, Minnesota**

Sheet Title: **Construction Details**

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Sheet No: C-205
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Date: 12/28/2016 License Number: 52215

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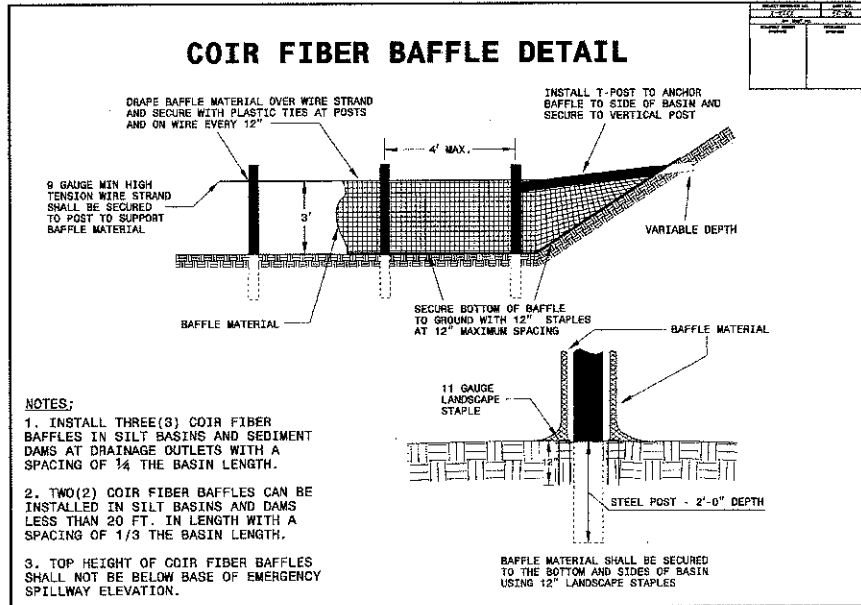
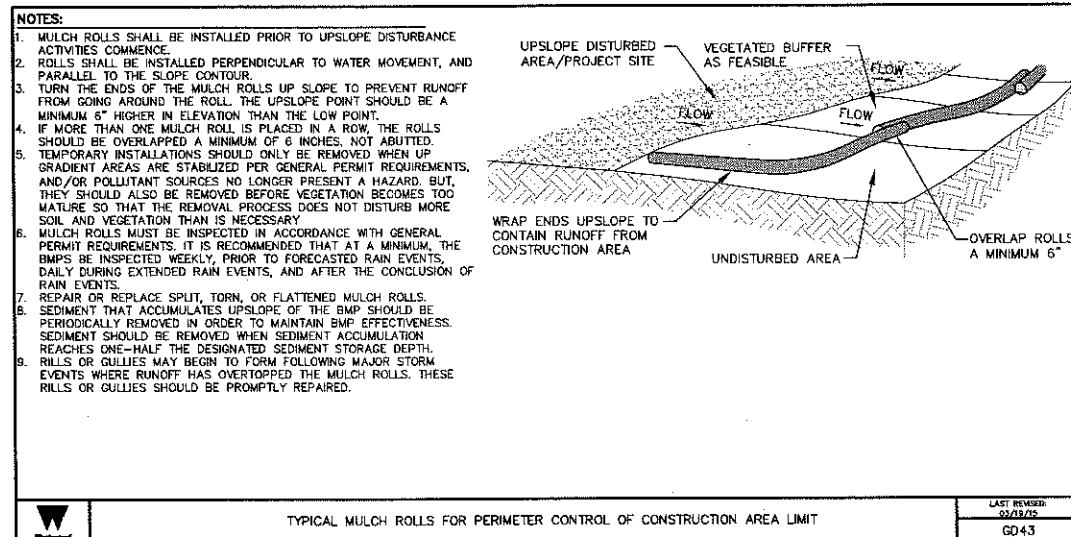
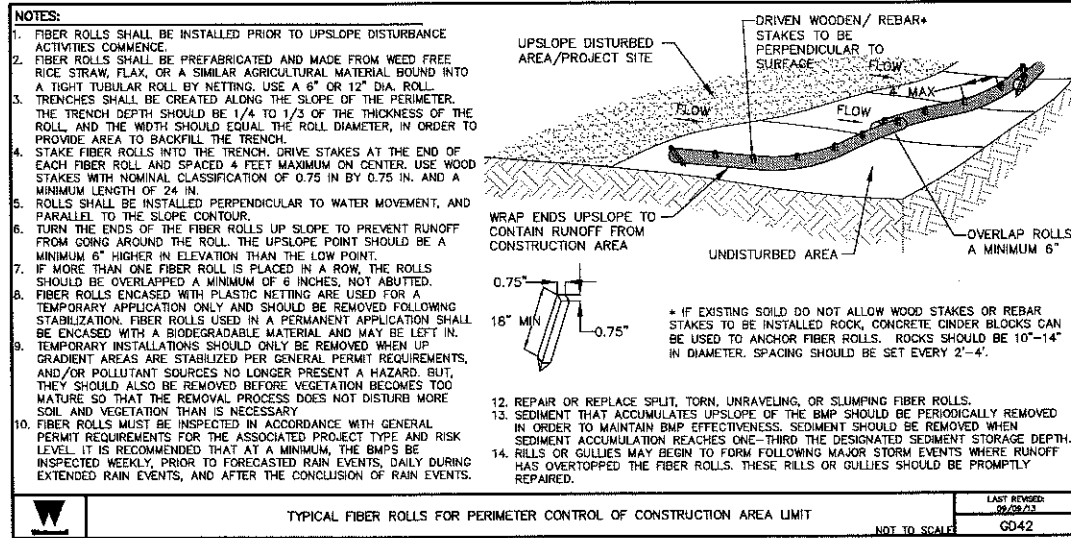
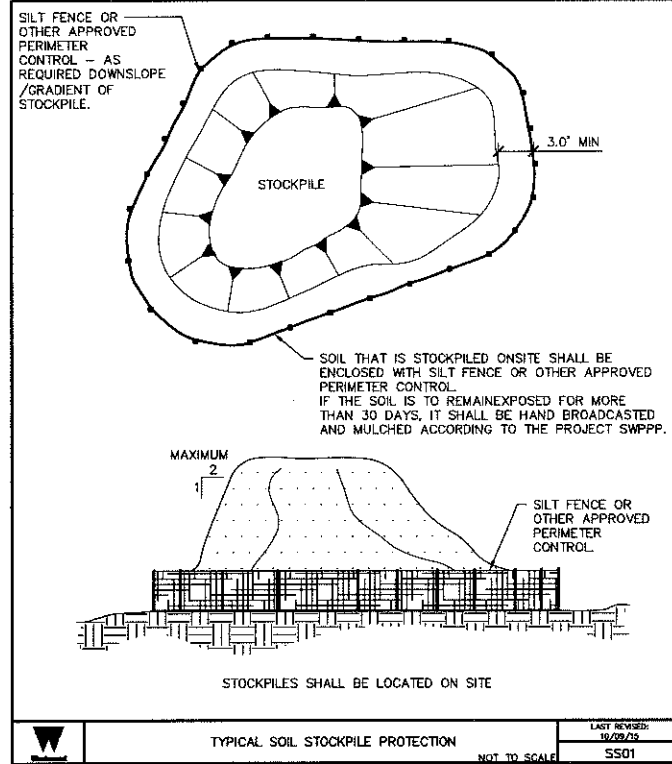
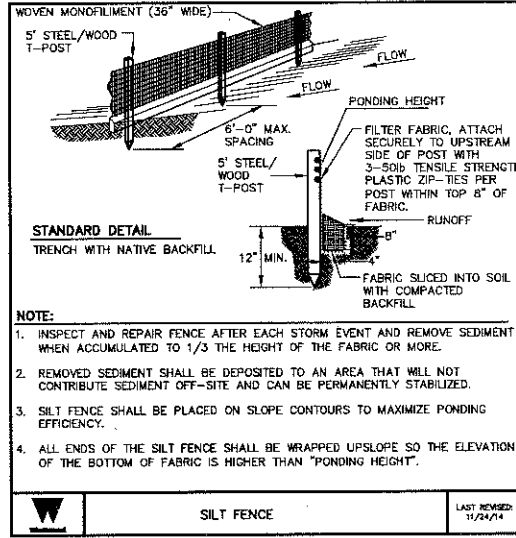
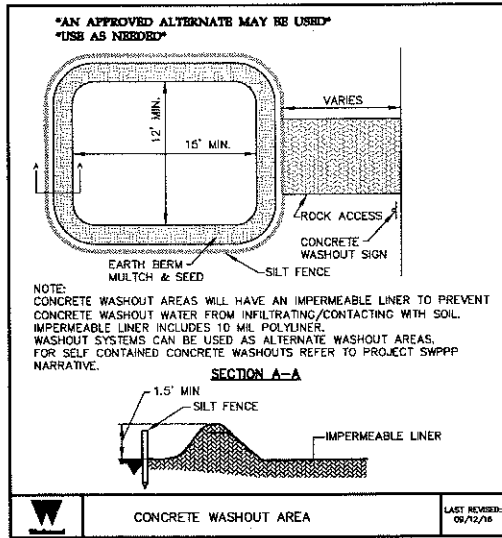
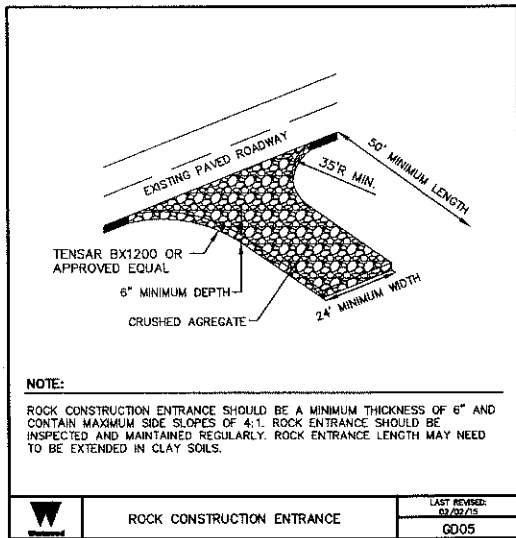
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Project Name:
Lyra Community Solar Garden, LLC

Site Address:
Le Sueur County, Minnesota

Sheet Title:
Erosion Control Plan

Scale: 1"=100' Project ID: 0007381.02
Sheet No: C-300
Date: 12/28/2016
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Date: 12/28/2016 License Number: 52215

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Sheet Title:
Erosion Control Details

Site Address:
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Scale: NTS Project ID: 0007381.02
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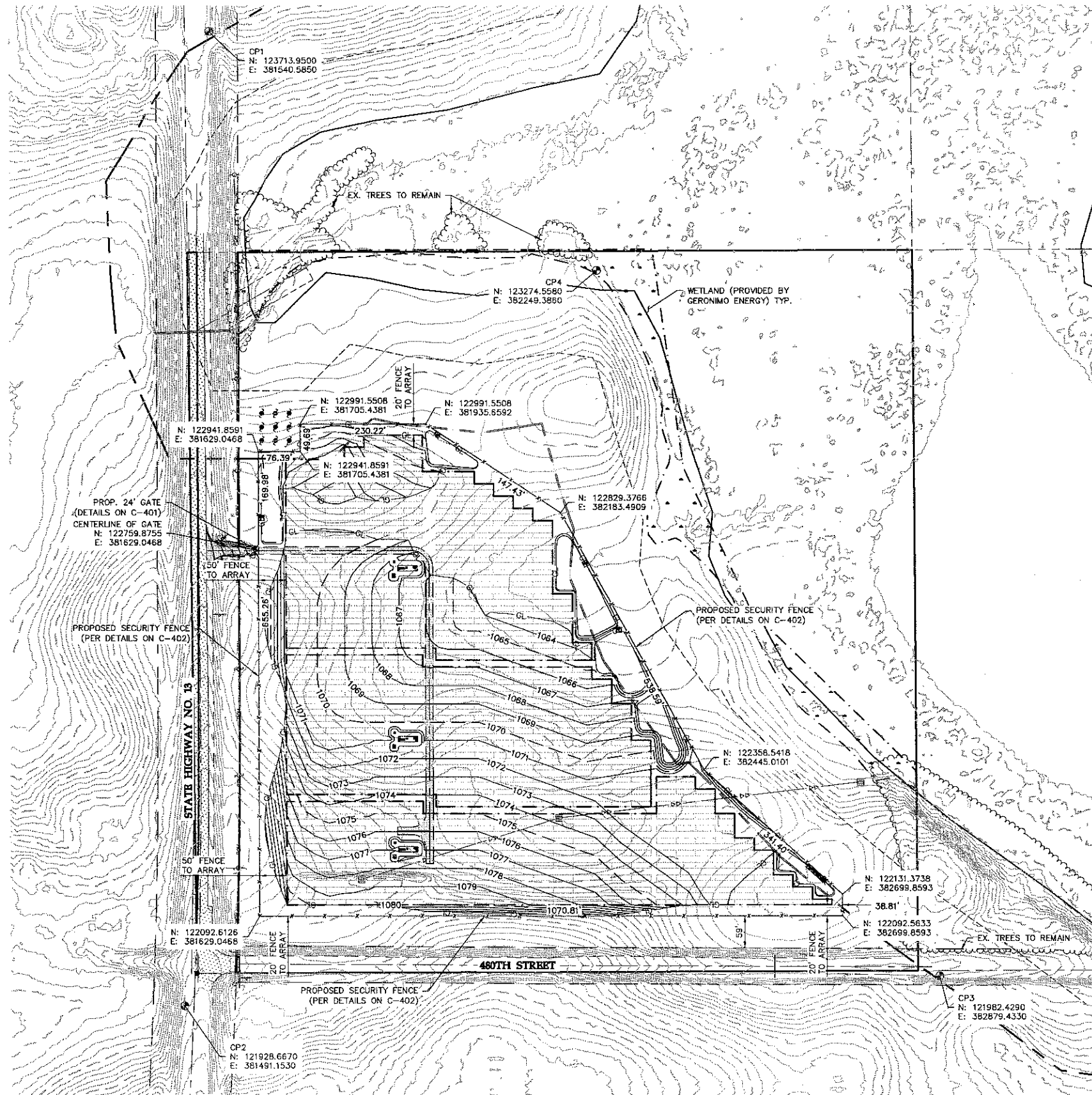
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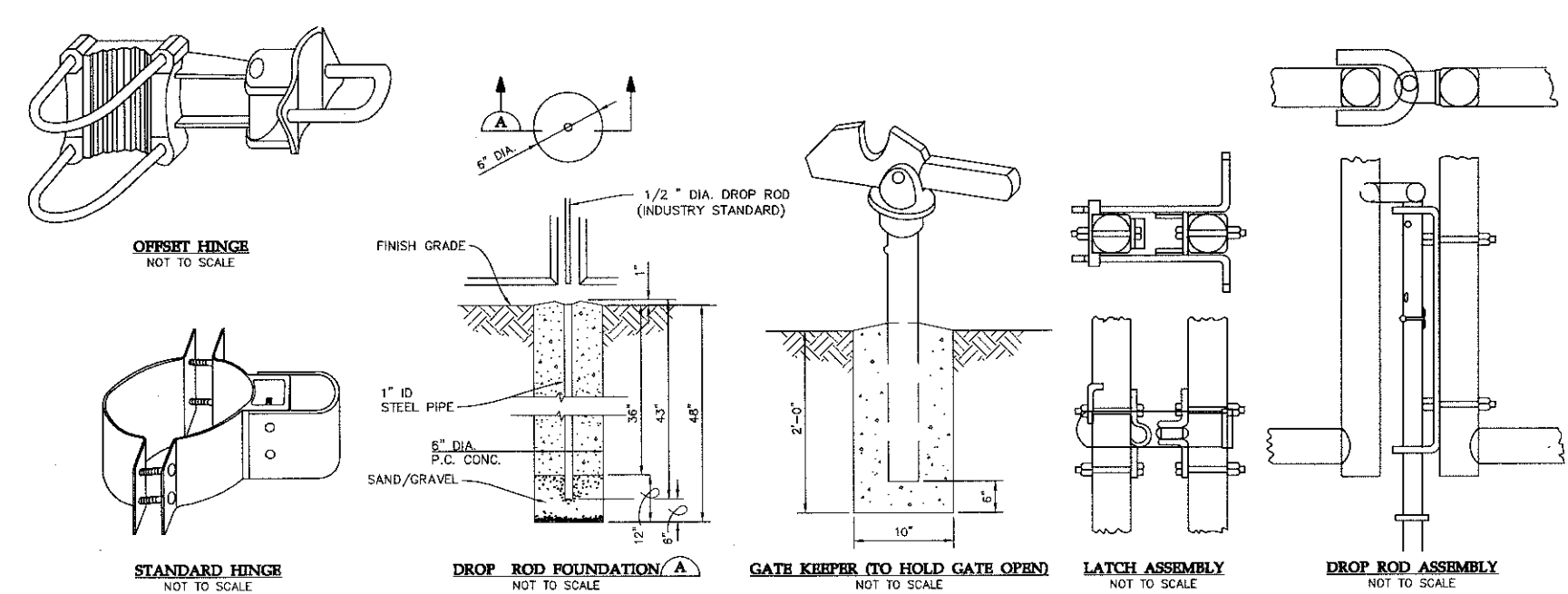
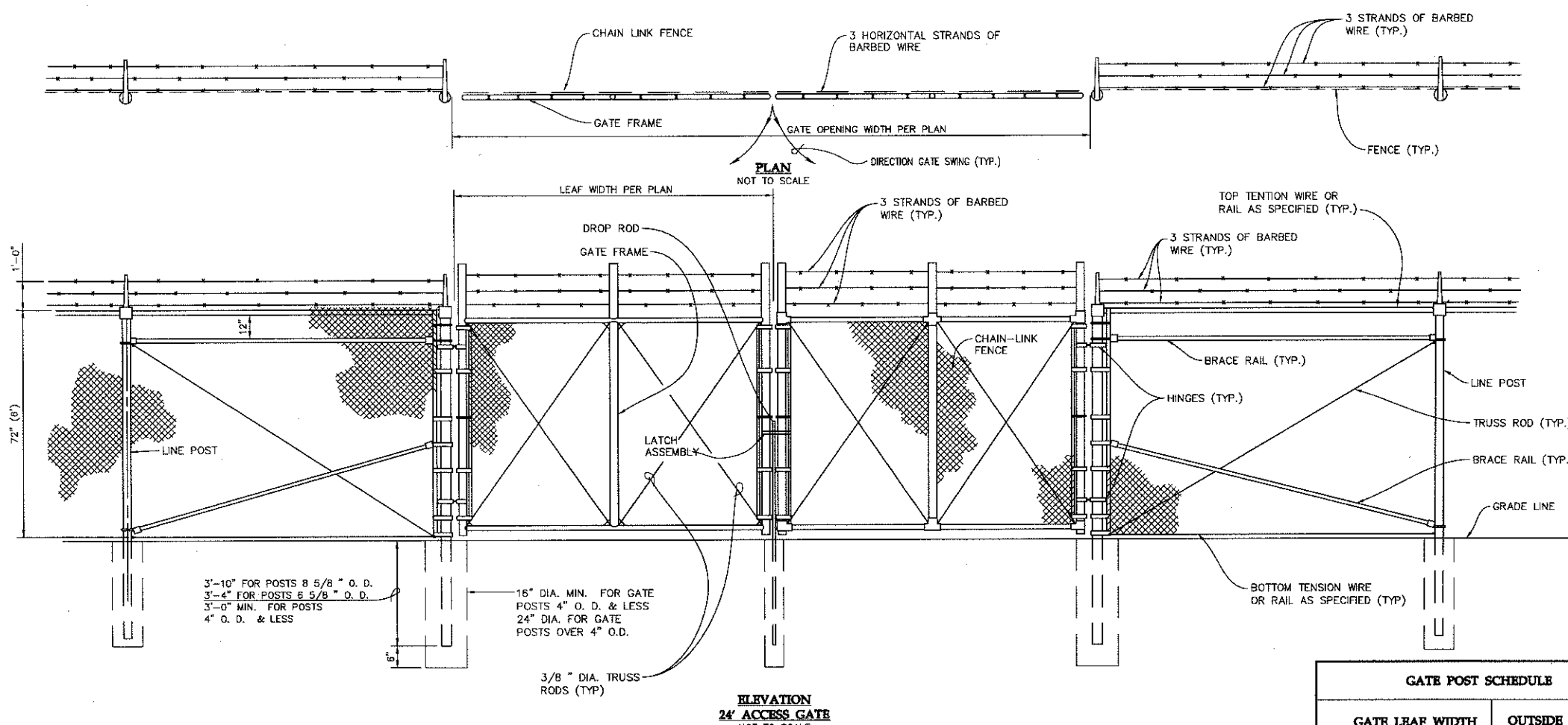
Scale: 1"=100' Project ID: 0007381.02

Sheet No: C-400

Date: 12/28/2016

0007452PWF01.dwg





GATE POST SCHEDULE	
GATE LEAF WIDTH (NOMINAL)	OUTSIDE DIMENSION (NOMINAL)
6' OR LESS	2.875" OD (SCH 40 MIN.) 2.5" SQ
GREATER THAN 6' TO 12'	4.0" OD (SCH 40 MIN.)
GREATER THAN 12' TO 18'	6.625" OD (SCH 40 MIN.)
MORE THAN 18'	8.625" OD (SCH 40 MIN.)

- NOTES:**
- FOR NON-SENSORED FENCES, DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPE OF FENCE SECTIONS AND METHODS OF INSTALLATION WHICH COMPLY WITH THE SPECIFICATIONS.
 - SWING GATES SHALL BE CONSTRUCTED WITH DROP RODS, PADLOCKS, LATCH ASSEMBLY AND GATE KEEPERS EXCEPT AS NOTED.
 - ALL GATE FRAMES SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM F800 1.90" NOMINAL (ROUND) OR 2.00" NOMINAL (SQUARE). GATE FRAMES SHALL BE OF WELDED CONSTRUCTION OR SHALL BE ASSEMBLED USING HEAVY FITTINGS. AT CONTRACTOR'S OPTION A WELDED HORIZONTAL BRACE MAY BE USED IN LIEU OF TRUSS RODS TO BRACE ALL-WELDED GATE FRAMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER RIGID CONSTRUCTION OF ALL GATES SUPPLIED.
 - GATES SHALL BE DESIGNATED AS FOLLOWS:
 FENCE TYPE - FES, FEG, ETC.
 FENCE HEIGHT - INCHES
 TYPE OPENING - SO (SINGLE)
 - DO (DOUBLE)
 HINGE - RA (STANDARD)
 - HO (OFFSET)
 OPENING - FEET (CLEAR OPENING BETWEEN GATE POSTS)
 EXAMPLES: FES-BA-DO-RA-24
 FES-48-SO-HO-6
 5. CONCRETE FOOTING SHALL BE 2500 PSI MINIMUM.
 - CHAIN LINK FENCING TO BE TWISTED SELVAGE ON TOP, AND KNUCKLED SELVAGE ON BOTTOM
 - PROVIDE KNOX BOX FOR FIRE DEPARTMENT ACCESS

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Westwood

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 6909 East Greenway Parkway, Suite 250
 Scottsdale, AZ 85254
 westwoodpe.com
 Westwood Professional Services, Inc.

PE Seal:
 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.

Signature: *Matthew Phillip Gardner*
 Typed or Printed Name: Matthew Phillip Gardner
 Date: 12/28/2016 License Number: 62215

DRAWING ISSUE

<input type="checkbox"/> Preliminary	<input checked="" type="checkbox"/> Construction
<input type="checkbox"/> Customer Approval	<input type="checkbox"/> As-built
<input type="checkbox"/> Permitting	<input type="checkbox"/> Other

REVISIONS

Rev	By	App	Description	Date
A			50% SUBMITTAL	12/14/2016
B			ISSUED FOR PERMIT	12/28/2016

Issued for Construction

Project Name:
Lyra Community Solar Garden, LLC

Site Address:
Le Sueur County, Minnesota

Sheet Title:
Fencing Details

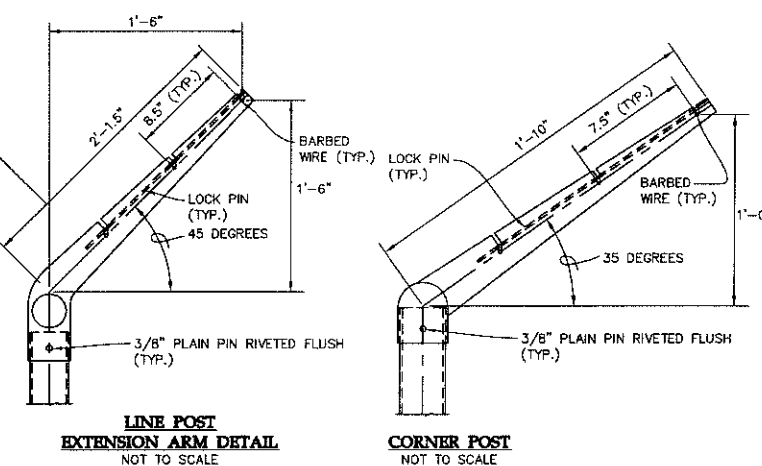
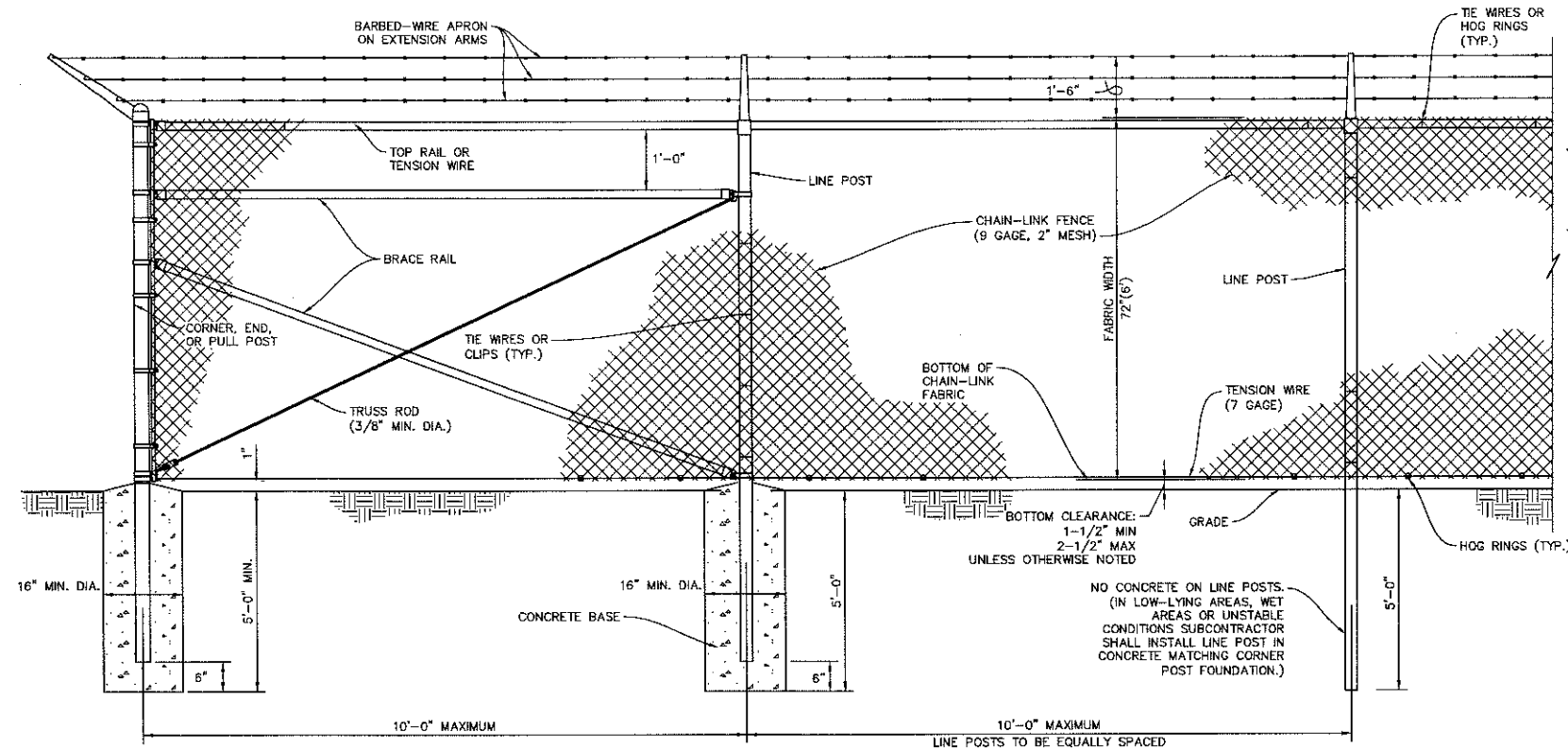
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Project ID: 0007381.02

Sheet No: C-401

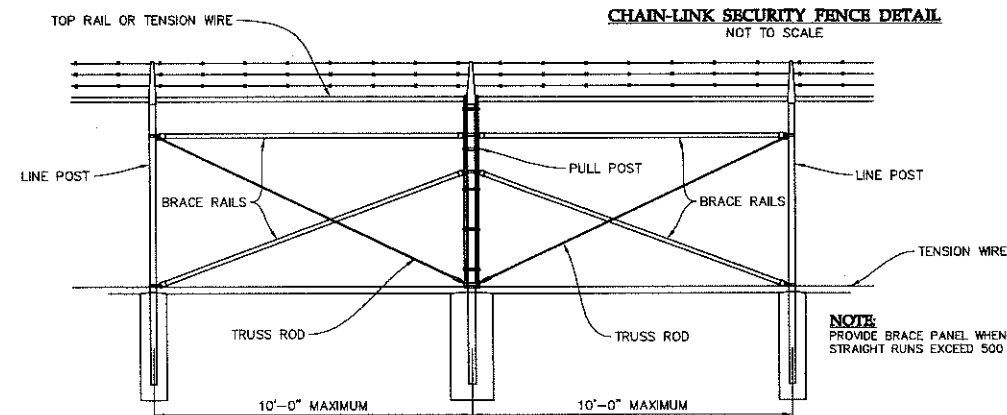
Date: 12/28/2016

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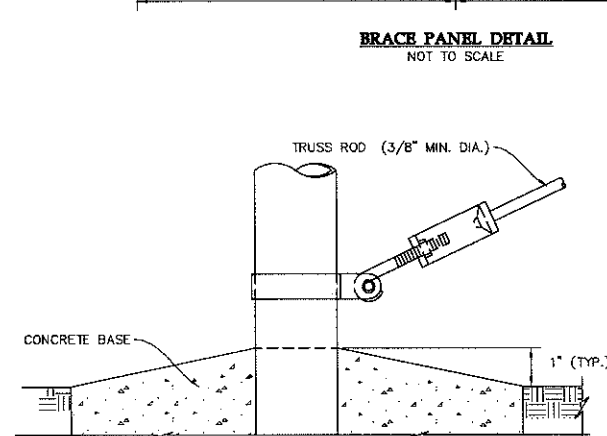


- NOTES:**
1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPES OF FENCE SECTIONS AND METHODS OF INSTALLATION THAT COMPLY WITH THE MNDOT SPECIFICATIONS.
 2. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK SHALL BE PLACED ON THE SIDE OPPOSITE THE SECURE AREA.
 3. UNLESS SPECIFICALLY SHOWN OR SPECIFIED, ALL FENCE SHALL HAVE AN APRON EXTENDED OUTWARD FROM THE AREA BEING PROTECTED.
 4. C-SECTION POSTS SHALL BE INSTALLED SO THAT THE VOID INSIDE THE POST IS COMPLETELY FILLED WITH CONCRETE UP TO THE TOP OF FOUNDATION.

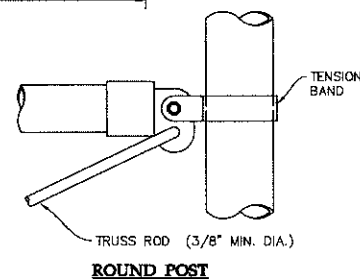
CHAIN-LINK SECURITY FENCE DETAIL
NOT TO SCALE



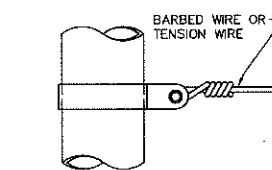
BRACE PANEL DETAIL
NOT TO SCALE



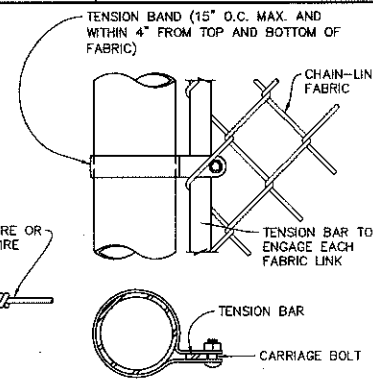
TRUSS ROD AND BAND
NOT TO SCALE



ROUND POST
BRACE RAIL CLAMP DETAILS
NOT TO SCALE



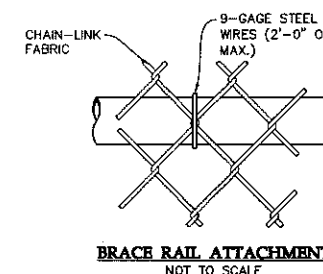
TENSION BAND DETAIL FASTENING DETAILS
NOT TO SCALE



END OR GATE POST DETAIL
NOT TO SCALE

STEEL POST SCHEDULE

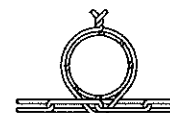
STEEL POST SCHEDULE			
USE AND SECTION	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)		
	FABRIC WIDTH 72" OR LESS	FABRIC WIDTH 84" TO 96"	FABRIC WIDTH 108" AND OVER
CORNER, END & PULL POSTS			
TUBULAR — ROUND	2.375" O.D.	2.875" O.D.	4.00" O.D.
TUBULAR — SQUARE	2.00" SQ.	2.50" SQ.	3.00" SQ.
C-SECTION (ROLL FORMED)	3.50" X 3.50"	3.50" X 3.50"	-----
LINE POSTS			
TUBULAR — ROUND	1.90" O.D.	2.375" O.D.	2.875" O.D.
H — SECTION	2.25" X 1.70"	2.25" X 1.70"	2.25" X 1.70"
C-SECTION (ROLL FORMED)	1.875" X 1.625"	2.25" X 1.70"	-----
BOTTOM & BRACE RAILS			
TUBULAR — ROUND		1.66" O.D.	
TUBULAR — SQUARE		1.50" SQ.	
H-SECTION		1.825" X 1.50"	
C-SECTION (ROLL-FORMED)		1.625" X 1.25"	



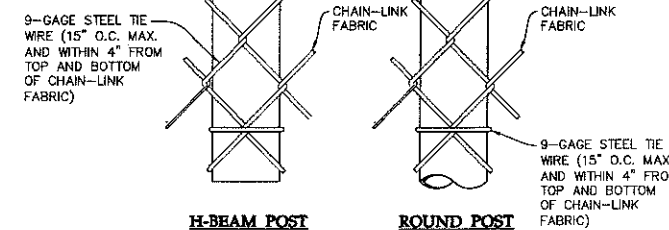
BRACE RAIL ATTACHMENT
NOT TO SCALE



H-BEAM POST



ROUND POST



LINE POST ATTACHMENT
NOT TO SCALE



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www.westwoodpe.com

Westwood Professional Services, Inc.

PE Seal:
Professional Engineer
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.

Signature: *Matthew Philip Gaudier*
Typed or Printed Name: Matthew Philip Gaudier
Date: 12/28/2016 License Number: 52215

DRAWING ISSUE

- ☐ Preliminary ☒ Construction
☐ Customer Approval ☐ As-built
☐ Permitting ☐ Other

REVISIONS

Rev	By	App	Description	Date
A			50% SUBMITTAL	12/14/2016
B			ISSUED FOR PERMIT	12/28/2016

Issued for Construction

Project Name:

Lyra Community
Solar Garden, LLC

Site Address:

Le Sueur County, Minnesota

Sheet Title:

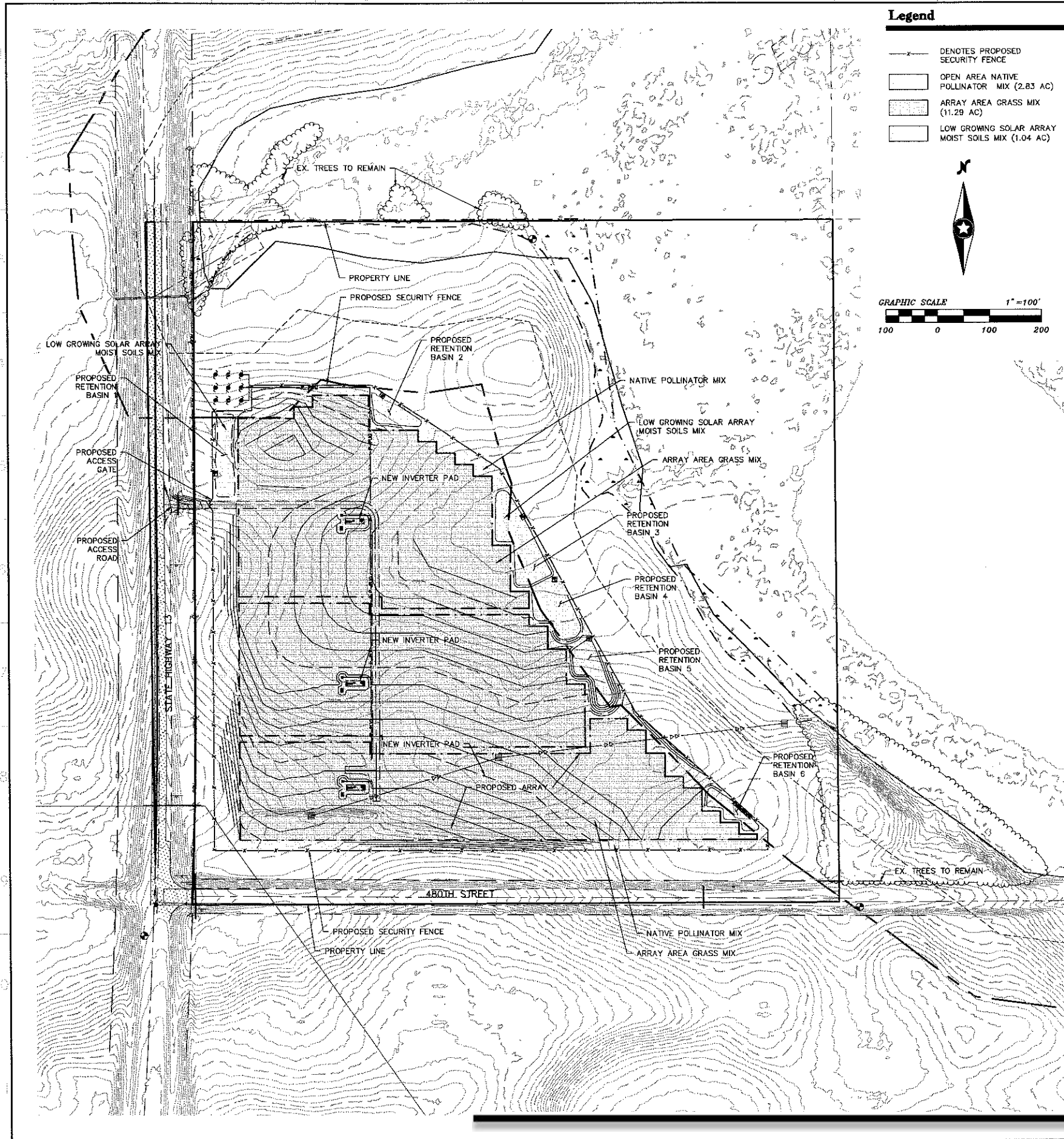
Fencing Details

Scale: NTS Project ID: 0007381.02

Sheet No: C-402

Date: 12/28/2016

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Legend

- DENOTES PROPOSED SECURITY FENCE
- OPEN AREA NATIVE POLLINATOR MIX (2.83 AC)
- ARRAY AREA GRASS MIX (11.29 AC)
- LOW GROWING SOLAR ARRAY MOIST SOILS MIX (1.04 AC)

Array Area Grass Mix

GRASSES SPECIES	% OF MIX	PLS (LBS/ACRE)
BOUTELOUA CURTIPENDULA	35.00	77.00
CAREX VULPINOIDEA	2.00	4.40
FESTUCA LONGIFOLIA	7.00	15.40
FESTUCA OVINA SSP. HIRTULA	10.00	22.00
FESTUCA RUBRA VAR. COMMUTATA	6.00	13.2
FESTUCA RUBRA VAR. COMMUTATA	9.00	19.8
FESTUCA RUBRA VAR. RUBRA	10.00	22.00
FESTUCA RUBRA VAR. RUBRA	12.00	26.40
KOeleria macrantha	1.00	2.20
SPOSOBOLUS HETEROLEPIS	1.00	2.20

FORB SPECIES	% OF MIX	PLS (LBS/ACRE)
ASTER COLENTANGENSIS	1.00	2.2
DALEA PURPUREA	1.00	2.2
MONARDA FISTULOSA	1.00	2.2
POTENTILLA ARGUTA	0.50	1.1
RUBICECKIA HIRTA	2.00	4.4
VERBENA STRICTA	0.50	1.1
ZIZIA AUREA	1.00	2.2

- *NOTES
- * SPECIAL SEED MIX REQUESTED BY CLIENT
- * SEE IF CHANGES ARE NECESSARY FOR SPECIFIC LOCATION

Open Area Native Pollinator Mix

GRASS SPECIES	% OF MIX	PLS (LBS/ACRE)
BOUTELOUA CURTIPENDULA	25.00	1.75
BOUTELOUA GRACILIS	10.00	0.70
BROMUS KALMI	2.50	0.18
ELYMUS VILLOSI	10.00	0.70
KOeleria macrantha	1.50	0.11
SCHIZACHYRIUM SCOPARIUM	20.00	1.40
SPOSOBOLUS HETEROLEPIS	6.00	0.42

FORB SPECIES	% OF MIX	PLS (LBS/ACRE)
ACHILLEA MILLEFOLIUM	0.50	0.04
AGASTACHE FOENICULUM	0.75	0.05
ALLIUM STELLATUM	0.50	0.04
ASCLEPIAS INCARNATA	1.00	0.07
ASCLEPIAS SYRIACA	1.00	0.07
ASCLEPIAS TUBEROSA	1.00	0.07
ASTER COLENTANGENSIS	1.25	0.09
ASTER LATERIFLORUS	1.00	0.07
ASTER NOVAE-ANGLIAE	0.75	0.05
ASTRAGALUS CANADENSIS	1.00	0.07
DALEA CANDIDA	2.00	0.14
DALEA PURPUREA	2.00	0.14
DESMODIUM CANADENSE	1.00	0.07
LIATRIS PYNOSTACHYA	1.00	0.07
MONARDA FISTULOSA	0.75	0.05
PENSTEMON GRACILIS	0.50	0.04
POTENTILLA ARGUTA	0.50	0.04
PYCNANTHEMUM VIRGINIANUM	1.00	0.07
RATIBIDA PINATA	0.75	0.05
RUBICECKIA HIRTA	1.50	0.11
SOLIDAGO RIGIDA	1.75	0.12
TRADESCANTIA BRACKETATA	0.50	0.04
VERBENA HASTATA	1.00	0.07
VERBENA STRICTA	1.00	0.07
ZIZIA AUREA	1.00	0.07

COVER CROP	% OF MIX	PLS (LBS/ACRE)
TRITICUM AESTIVUM	10.00	10.0

- *NOTES
- * SPECIAL SEED MIX DESIGNED BY MINNESOTA NATIVE LANDSCAPES
- * SEE IF CHANGES ARE NECESSARY FOR SPECIFIC LOCATION
- * MINNESOTA NATIVE LANDSCAPES
8740 77TH STREET NE
OTTSEGO, MN 55362

Low Growing Solar Array Moist Soils Mix

GRAMINOID SPECIES	% OF MIX	PLS (LBS/ACRE)
CALAMAGROSTIS CANADENSIS	4.58	0.06
GLYCYERIA STRIATA	3.02	0.10
LEERSIA ORYZOIDES	2.84	0.25
POA PALUSTRIS	18.33	0.42

LEGUME SPECIES	% OF MIX	PLS (LBS/ACRE)
ASTRAGALUS CANADENSIS	0.37	0.06
DALEA CANDIDA	1.56	0.24

SEDGES SPECIES	% OF MIX	PLS (LBS/ACRE)
CAREX SCORPARIA	1.92	0.07
CAREX STIPATA	1.92	0.17
CAREX VULPINOIDEA	3.67	0.11
SORPUS CYPERINUS	36.66	0.06

FORB SPECIES	% OF MIX	PLS (LBS/ACRE)
ALLIUM STELLATUM	0.67	0.16
ANEMONE CANADENSIS	0.17	0.06
ASCLEPIAS INCARNATA	0.36	0.24
EUTHAMIA GRAMINIFOLIA	0.73	0.01
GALLIUM BOREALE	0.23	0.01
LOBELIA SPHILLITICA	2.66	0.02
PHLOX PILOSA	0.07	0.01
POTENTILLA ARGUTA	0.09	0.00
PYCNANTHEMUM VIRGINIANUM	0.46	0.01
RATIBIDA COLUMNIFERA	1.46	0.10
RUBICECKIA HIRTA	1.45	0.05
SISYRINCHUM CAMPESTRE	0.46	0.03
SYMPHYOTRICHUM LAEVE	0.58	0.03
SYMPHYOTRICHUM PUNICEUM	4.58	0.17
ZIZIA AUREA	0.92	0.25

COVER CROP	% OF MIX	PLS (LBS/ACRE)
AVENA SATIVA	10.20	37.88

- *NOTES
- * PILOT SEED MIX DESIGNED BY MINNESOTA BOARD OF WATER AND SOIL RESOURCES
- * SEE IF CHANGES ARE NECESSARY FOR SPECIFIC LOCATION
- * MINNESOTA BOARD OF WATER AND SOIL RESOURCES
520 LAFAYETTE ROAD NORTH
SAINT PAUL, MN 55155

Seeding Notes

- NOTES
- 1. SEEDING TO BE COMPLETED USING A DRILL SEED METHOD WHERE FEASIBLE. WHERE DRILL SEEDING IS NOT FEASIBLE THE APPLICATION OF SEED VIA ALTERNATE METHODS INCLUDING BUT NOT LIMITED TO, BROADCAST OR HYDROSEEDING.
- 2. BROADCAST SEEDING SHALL BE COMPLETED IF AMBIENT SOIL TEMPERATURE IS CONSISTENTLY 60 DEGREES F OR LOWER.
- 3. IF NOT FROST SEEDING, DRILLING SHOULD OCCUR BETWEEN APRIL 1ST AND JUNE 1ST
- 4. THE CONTRACTOR SHALL NOT TILL OR FERTILIZE THE FIELDS, IF THE GROUND NEEDS TO BE TILLED, CONTRACTOR SHALL USE A VERTICAL PLOW



M+W GROUP

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Fax (480) 370-8929 Scottsdale, AZ 85254

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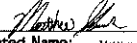
Professional Engineer

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.

Signature: 

Typed or Printed Name: Matt New, PE, PE 52215

Date: 12/28/2016 License Number: 52215

DRAWING ISSUE

- ☐ Preliminary ☒ Construction
- ☐ Customer Approval ☐ As-built
- ☐ Permitting ☐ Other

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Issued for Construction

Project Name: Lyra Community Solar Garden, LLC

Site Address: Le Sueur County, Minnesota

Sheet Title: Landscape Plan

Scale: 1"=100' Project ID: 0007381.02

Sheet No: C-500

Date: 12/28/2016

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