

WABASHA PLANNING COMMISSION

October 12, 2021 6:00 PM

MEETING AGENDA

- 1) Call to Order
- 2) Approval of Minutes-
 - a) Planning Commission Minutes 7-13-2021
- 3) Changes or Additions to Agenda
- 4) Public Comment
- 5) Public Hearings
 - a) Amendment to Solar CUP 1712 Hiawatha Dr. East
- 6) Old Business
- 7) New Business
- 8) Board of Adjustment Business
- 9) Other Business
- 10) Next Regular Meeting Date - November 9, 2021
- 11) Adjourn

Planning Commission

2) a)

Meeting Date: 10/12/2021

SUBJECT: Planning Commission Minutes 7-13-2021

DEPARTMENT: Administration

TITLE:

Planning Commission Minutes 7-13-2021

PURPOSE:

Attachments

PC 7-13-2021

DRAFT

WABASHA PLANNING COMMISSION

July 13, 2021 6:00 PM

MEETING MINUTES

Commission Members: Tim Wallerich, Chair Sara Carrels, Vice Chair
 Scott Durand, Sharon Burke
 Ozzie Goodman Jeff Sulla
 Kris Kruse

Present: Scott Durand; Chair Tim Wallerich; Sharon Burke; Sara Carrels; Jeff Sulla

Absent: Kris Kruse; Ozzie Goodman

Also Present: Harry Davis, Contracted City Planner; Wendy Busch, City Clerk

1) Call to Order

Chair Wallerich called the regular Planning Commission meeting to order on Tuesday July 13, 2021 at 6:02 pm.

2) Approval of Minutes-

a) Minutes 6-15-2021

Motion made by Scott Durand, seconded by Jeff Sulla to approve the minutes from June 15, 2021 as written.

Vote: 5 - 0 Adopted - Unanimously

Other: Ozzie Goodman (ABSENT)

Kris Kruse (ABSENT)

3) Changes or Additions to Agenda

There were no changes to the agenda from staff or the commission.

- 4) Public Comment
- 5) Public Hearings
 - a) Herb + Arrow IUP/CUP Outdoor Seating 260 Main Street West

City Planner Davis reviewed the application presented to the commission for an IUP and CUP at 260 Main Street West, Herb & Arrow, to allow for outdoor seating. Davis indicated the need for an IUP in the rear is due to the seating being in City ROW and therefore would terminate with the end of the business rather than a CUP which runs with the land. The outdoor seating is being requested from 11am- 10pm. The proposed use is less than 30 percent of the interior floor area and meets the zoning requirements. A previous IUP was issued for the 30 by 15 foot rear patio was issued to an earlier business and the use was not injurious to the surrounding uses. Should the applicants want to move forward with the side lot for outdoor seating a new application would come before the Planning Commission at that time. A dumpster was discussed as it was mentioned in the report being located at the Northwest corner of the lot and will be required to be screened. Davis concluded that staff's recommendations is approval for the two (IUP/CUP) for outdoor seating.

Chair Wallerich opened the public hearing at 6:10pm. Hearing no comments from the public, Chair Wallerich closed the public hearing at 6:11 pm. No further discussion.

Motion made by Jeff Sulla, seconded by Sara Carrels to approve the CUP/IUP for outdoor seating at 260 Main Street West "Herb & Arrow" with the following resolution

Resolution 2021 - 01

CUP/IUP for an Outdoor Seating Patio

WHEREAS, the property numbered PID # R27.00172.00 located at 260 Main St. W., Wabasha, MN; and

WHEREAS, the site is currently zoned as TDC, Traditional Downtown Commercial, with S-4 Shoreland and Heritage Preservation as the zoning overlay districts, which allow outdoor seating as a conditional use.

WHEREAS, The Planning Commission provides the following findings:

- a) Herb + Arrow has submitted a complete Conditional and Interim Use Permit application.
- b) The proposed use will not have a negative impact on the health, welfare or safety of the area or the community in general.
- c) Conditions placed in this CUP and IUP will protect the health, safety & general welfare of the community and neighbors use and enjoyment of property and their property values.
- d) The outdoor seating will act as a retail accessory use to the principal structure.
- e) The proposed use complies with applicable regulations of the districts.
- f) There is adequate parking for the proposed use.
- g) Ingress and egress are provided off Main St. W.
- h) The proposed use does not obstruct scenic views from public right-of-way.
- i) The proposed area is adequate in size for the proposed use.
- j) The proposed use is less than 30 percent of the interior floor area of the principal use.

- k) Hours of operation for the outdoor seating will be 11 a.m. to 10 p.m.
- l) The proposed use meets requirements of the Heritage Preservation and S-4 Shoreland overlay districts.
- m) Building materials used are consistent with other building materials in the district.
- n) The proposed use meets height requirements.
- o) The applicant will complete and comply with all other state and federal regulatory agencies and obtain all necessary permits.
- p) The proposed use is consistent with the City comprehensive land use plan.
- q) The proposed use is in harmony with the general purposes and intent of the Ordinance.
- r) The findings in the staff report dated for the July 13th Planning Commission meeting shall be included and apply.

NOW THEREFORE, IT IS HEREBY RESOLVED, the Planning Commission approves the Conditional Use Permit and Interim Use Permit for outdoor seating with conditions:

- 1) The refuse receptacle shall be screened with fencing or vegetation upon placement on the property. The refuse receptacle location shall avoid conflicts with public infrastructure (including street lights) and trees on site. The applicant shall coordinate with their waste management provider on the final location of the receptacle;
- 2) The applicant shall work with local trash service providers to mitigate traffic congestion on adjacent streets;
- 3) Outdoor seating shall be limited to 30 percent of the interior floor area of the principal use;
- 4) Lights used shall prevent light pollution, limit glare and meet other requirements outlined in Section 162.096;
- 5) Signage shall comply with all regulations and receive a sign permit prior to installation;
- 6) The use shall preserve natural resources including, but not limited to, filling and grading limitations and avoid conflicts with trees on site;
- 7) The use shall obtain approval from the Heritage Preservation Commission;
- 8) The applicant will work to mitigate any potential conflicts between the proposed outdoor seating and necessary utilitarian uses typically occurring in the alley area. This includes but is not limited to refuse management. The applicant will not hold the City liable or responsible for a conflict of uses in the alley area;
- 9) If for any reason the Conditional and Interim Use Permits have not been established within one year after the date of this approval, then, without further action by the City, the Conditional and Interim Use permits shall be null and void;
- 10) Termination of the IUP shall occur when changes to the surrounding environment (e.g., changes in zoning, land use, environmental conditions or development projects); sale or transfer of property; violation of laws or codes (health codes and the like); termination or lapse of other required permits; or change of management or ownership take place;
- 11) If at any time in the future, the City Council determines public need for that part of the right-of-way approved for outdoor dining, this Interim Use Permit shall be considered revoked, and the applicant or property owner may be required to remove improvements.

Dated this 13 day of July, 2021.

Tim Wallerich
Planning Commission Chair

Wendy Busch
Wabasha City Clerk

Vote: 5 - 0 Adopted - Unanimously

Other: Ozzy Goodman (ABSENT)

Kris Kruse (ABSENT)

- 6) Old Business
- 7) New Business
- 8) Board of Adjustment Business

Chair Wallerich recessed the regular Planning Commission meeting at 6:12 pm

- a) BOA Minutes 6-15-2021

BOA Chair Durand opened the Board of Adjustment meeting at 6:12 pm and called for approval of the minutes from June 15, 2021. Members present: Burke, Carrels, Durand

Motion made by Sharon Burke, seconded by Sara Carrels to approve the minutes from June 15, 2021.

Vote: 3 - 0 Adopted - Unanimously

Other: Ozzy Goodman (ABSENT)
Kris Kruse (ABSENT)

Motion made by Sharon Burke, seconded by Sara Carrels to adjourn the Board of Adjustment at 6:12 pm.

Vote: 3 - 0 Adopted - Unanimously

Other: Ozzy Goodman (ABSENT)
Kris Kruse (ABSENT)

- 9) Other Business
- 10) Next Regular Meeting Date - August 10, 2021
- 11) Adjourn

Motion made by Sara Carrels, seconded by Sharon Burke to adjourn at 6:15 pm.

Vote: 5 - 0 Adopted - Unanimously

Other: Ozzy Goodman (ABSENT)
Kris Kruse (ABSENT)

Respectfully submitted by: _____
Wendy Busch, Planning & Zoning Assistant

Adopted Date

Planning Commission

5) a)

Meeting Date: 10/12/2021

SUBJECT: Amendment to Solar CUP

DEPARTMENT: Administration

TITLE:

Amendment to Solar CUP 1712 Hiawatha Dr. East

PURPOSE:

An amendment to an existing Conditional Use Permit has been requested by IPS Solar on behalf of Lawrence and Deborah Stegemann. The original development planned to construct a 1 MW Solar Garden on 8 acres of a 62 acre parcel in the southern part of the Wabasha Community (PIN R27.00110.00). Attached you will find the staff report prepared by City Planner, Harry Davis.

Attachments

Staff Report



Memorandum

Office of the City Planner

To: Wabasha Planning Commission
From: Harry Davis, AICP
Date: October 5, 2020
Subject: CUP Amendment Application – IPS Development, LLC

MEETING DATE: Tuesday October 12, 2021

I. REQUEST:

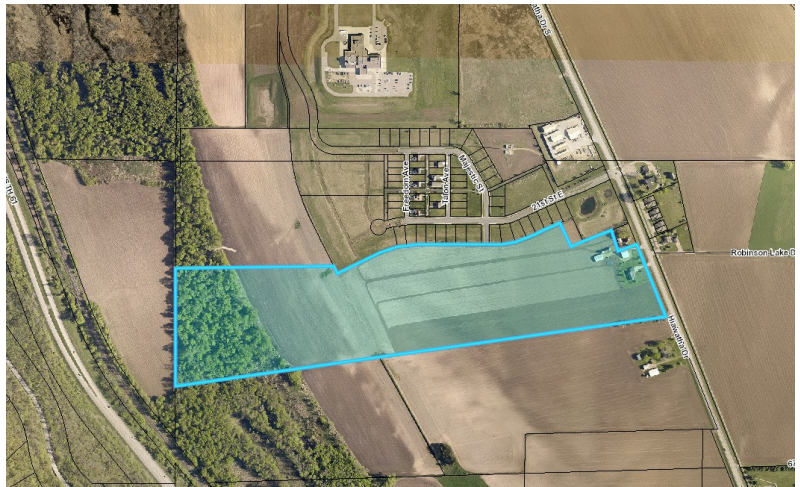
- 1) Applicant: IPS Development, LLC
- 2) Owner: Lawrence and Deborah Stegemann
- 3) Location: NW of the NW of Section 04, Township 110 Range 010, Wabasha

II. Staff Report

Zoning Summary

An amendment to an existing Conditional Use Permit has been requested by IPS Solar on behalf of Lawrence and Deborah Stegemann. The original development planned to construct a 1 MW Solar Garden on 8 acres of a 62-acre parcel in the southern part of the Wabasha Community (PIN R27.00110.00). The amendment increases the number of solar modules and amount of land used for the project.

Zone: R-2 Residential, RC Rural Conservancy, and Unidentified Floodplain District (No detailed maps identifying if it is in the Floodway or Flood-fringe) Shoreland Overlay S1 and S2 District



Existing Land Use: Agricultural and Open Space

	R-2	RC	
<u>District Provisions</u>	<u>Min</u>	<u>Min</u>	<u>Solar Site</u>
Min. Lot Size:	6,000 SF	20,000 SF (Unsewered)	61.4 Acres
Min. Lot Width:	60 feet	60 feet	Approximately 290'
Min. Lot Frontage:	20 feet	25 feet	Approximately 290'
Setbacks:	25' (Front)	25' (Front)	50 feet from property line
	25' (Rear)	25' (Rear)	
	5' (Side)	5' (Side)	

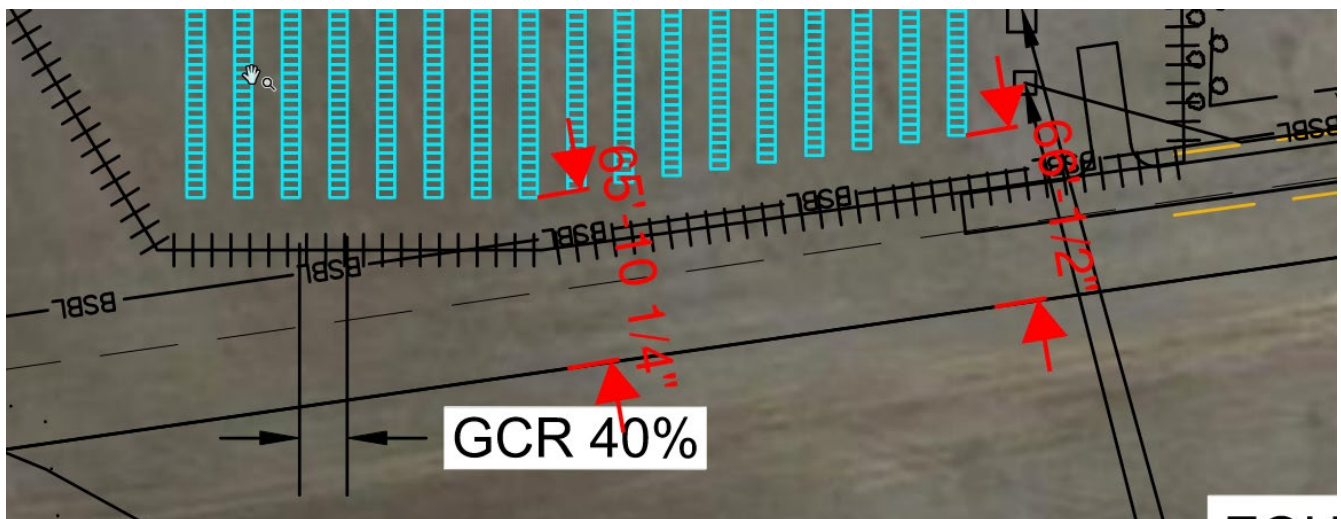
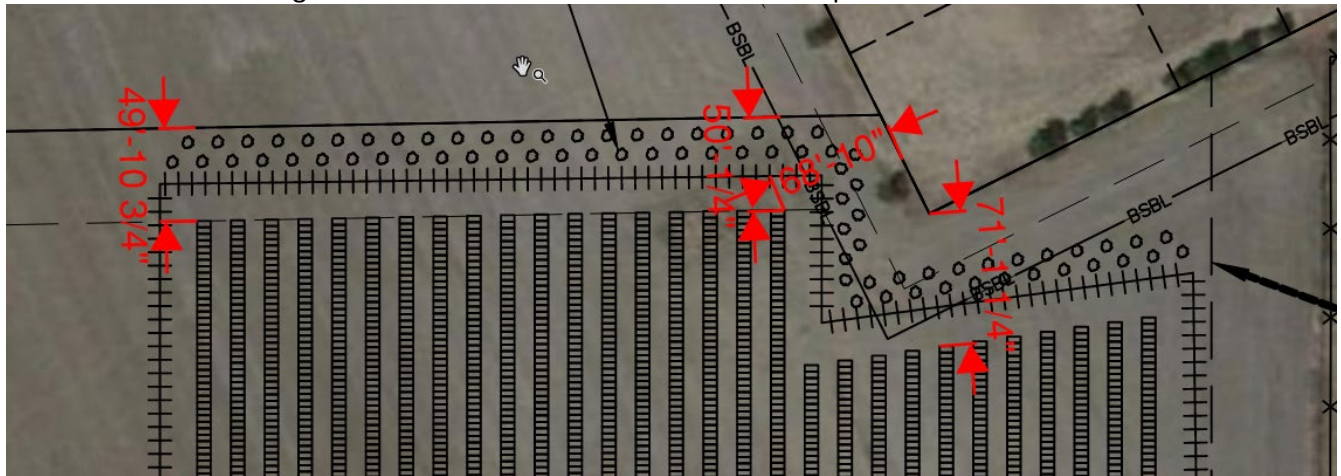
Parking: 1 stall per employee plus 1 space per vehicle stored on site
Application material suggests infrequently a maintenance person may visit the site

Details of the request:

- This 972 kilowatt array of photovoltaic panels will generate electricity that will be purchased by Xcel Energy under a 25-year contract.
- The solar energy conversion panels will be a single axis tracker, which will follow the sun west to east. They will be around 8 feet tall at the highest point of the panels tracking of the sun. There would be approximately 4,100 module solar panels.
- The racking system is installed in the ground with pilings/footings designed to engineered specifications that are driven directly into the ground at a depth usually between 6 feet and 8 feet depending on soil conditions.
- Building inspector will certify the design as part of the building permit.
- Site plan shows a 15' wide drive to access the site. It is unclear the material proposed for the drive.
- No grading plan has been included in the application material. Ordinance states that Planning Commissioners may require one. Either way, the applicant will need to submit a grading plan and have it approved prior to starting development.
- Runoff will be mitigated on site and will be engineered as part of the building permit process.
- A portion of the property is located in the floodplain without a detailed study of Floodway/Flood Fringe. DNR requires a PE verify the floodwaters in this area would not be excessive or dangerous to life and property.
- The applicant should confirm that the solar panels will be elevated above the regulatory flood protection elevation (panels themselves, not necessarily support poles).
- It appears the large parcel already includes principal residential structures on the east side of the property. Adding a 1 MW solar garden would add an additional principal use to the property. The applicant should think critically about any subdivision that will be done as part of this project. It may be in the applicant's best interest to do so for tax reasons. If a subdivision were to occur, impervious surface coverage would need to be considered.
- Section 162.106 of the Wabasha Zoning Ordinance provides specific performance standards for Solar Gardens/Farms.
 - A decommissioning plan outlining the removal of all structures and electrical components is required; a salvage value of photovoltaic systems have been provided. The original CUP was required to provide a financial security to assure that the site is restored. Planning Commission should discuss if one should be provided prior to approval of this amendment, but the applicant will need to provide the surety or

bond prior to starting development.

- A 8 foot galvanized fence is proposed for safety and security. Screening in the form of spruce evergreens are also proposed on the north lot line and along the eastern fence, mitigating any visual effects on residential properties. The tree line appears that is would mostly block views, but additional plantings are required by ordinance along the southern fence line since the adjacent lot is a residential zoning district. The applicant is required by ordinance to submit a maintenance plan for screening and will be need to be submitted prior to starting development. Planning Commission may discuss if they could/should require it prior to approval of the CUP amendment.
- Applicant should confirm that all on-site power will be buried so as to meet ordinance standards.
- The ordinance requires solar structures to be planted at the same elevation to each other. No grading plan has been submitted, so staff is unable to verify if this requirement can be met. The ordinance also requires a 100-foot setback from all property lines for solar structures. Planning Commission should discuss how the applicant could/should meet this requirement and if compliance is warranted given the original CUP did not have to meet these new requirements.



- Applicant should inform of any signage planned on the site. Signs must not exceed 32 square feet so as to require a IUP/CUP. Any sign is likely to require a permit.
- Infrequent maintenance is anticipated. Applicant should inform of how much/often and any regular hours of operation.

- The application should confirm that the site “will not create any noise, dust, fumes, glare, or other.”
- It is understood that no lighting is proposed.

Hours of Operation – Daylight, with panel pivoting as sun location warrants.

Surrounding Property Uses: Open space to the west. A residential subdivision to the northeast. There are other solar gardens constructed or proposed in the area. There is also agricultural property in the area.

Neighborhood Notification: All property owners within 350' feet of this property were notified within ten days of the public hearing and published in the paper on September 28, 2021 that a public hearing would be held on October 12, 2021 for this amendment to a conditional use permit.

Recommended Conditions:

- 1) All performance standards for a solar garden/farm are met, with the exception of those outlined below.
- 2) Additional evergreens should be planted along the northern, eastern, and southern fence lines to screen the solar array from view. A maintenance plan for the fence and evergreens shall be submitted prior to starting development.
- 3) All on-site power and communication lines running between solar panels and buildings shall be buried underground on the premise.
- 4) If the project disturbs more than 1-acre, a Construction SWPPP and Stormwater Management Plan Permit must be submitted and approved by the MPCA.
- 5) A grading plan must be approved by the City Engineer prior to the start of construction for the project.
- 6) A PE must verify the floodwaters in this area would not be excessive or dangerous to life and property.
- 7) Solar panels shall be elevated above the regulatory flood protection elevation (panels themselves, not necessarily support poles).
- 8) Financial assurances should be provided to ensure the removal of the project from the site at the end of its useful life.
- 9) The site shall not create any noise, dust, fumes, glare, or other.
- 10) A sign permit is required if necessary.

Optional Conditions:

- 11) The applicant shall adjust the proposal to meet a 100-foot setback.
- 12) The applicant shall adjust the proposal to have all solar structures be located at the same elevation.

III. PLANNING COMMISSION ACTION:

Following are sample resolutions for both approval and denial which may be used by the Planning Commission in their decision.

Sample resolution for approval

Resolution _____
CUP for a Solar Garden / Farm

WHEREAS, the property numbered PID # R27.00110.00 located in the NW of the NW of Section 04, Township 110 Range 010, Wabasha

WHEREAS, the site is currently utilized for agricultural purposes but zoned RC and R2 residential, which allows Solar Gardens as a conditional use.

WHEREAS, The Planning Commission provides the following findings:

- a) IPS Development, LLC on behalf of Lawrence and Deborah Stegemann have submitted a complete amendment to Conditional Use Permit, approved by Resolution 20-03.
- b) The amendment, if approved, will not have a negative impact on the health, welfare or safety of the area or the community in general
- c) The solar garden will support the energy needs of the community.
- d) Conditions placed in this CUP amendment will protect the health, safety & general welfare of the community and neighbors use and enjoyment of property and their property values.
- e) The City of Wabasha has sufficient areas zoned Residential to meet the residential needs of the City of Wabasha for the life of the Solar Garden
- f) The applicant will complete and comply with all other state and federal regulatory agencies and obtain all necessary permits.
- g) The proposed use is consistent with the City comprehensive land use plan.
- h) Ingress and egress is provided off access road that is to be constructed by the developer.
- i) The site does not need city sewer or water service.

NOW THEREFORE, IT IS HEREBY RESOLVED, the Planning Commission approves the Conditional Use Permit for a solar garden / farm allowing the applicant to submit plans for a building permit, with conditions:

- a) All performance standards for a solar garden/farm are met, with the exception of those outlined below.
- b) Additional evergreens should be planted along the northern, eastern, and southern fence lines to screen the solar array from view. A maintenance plan for the fence and evergreens shall be submitted prior to starting development.
- c) All on-site power and communication lines running between solar panels and buildings shall be buried underground on the premise.
- d) If the project disturbs more than 1-acre, a Construction SWPPP and Stormwater Management Plan Permit must be submitted and approved by the MPCA.
- e) A grading plan must be approved by the City Engineer prior to the start of construction for the project.

Oct 12, 2021

- f) A PE must verify the floodwaters in this area would not be excessive or dangerous to life and property.
- g) Solar panels shall be elevated above the regulatory flood protection elevation (panels themselves, not necessarily support poles).
- h) Financial assurances should be provided to ensure the removal of the project from the site at the end of its useful life.
- i) The site shall not create any noise, dust, fumes, glare, or other.
- j) A sign permit is required if necessary.

Tim Wallerich, Planning Commission Chair

Date

Wendy Busch, City Clerk

Date

Adopted _____

Sample resolution for denial:

Resolution _____
CUP for a Solar Garden / Farm

WHEREAS, the property numbered PID # R27.00110.00 located in the NW of the NW of Section 04, Township 110 Range 010, Wabasha

WHEREAS, the site is currently utilized for agricultural purposes but zoned R2 residential, which allows Solar Gardens as a conditional use.

WHEREAS, The Planning Commission provides the following findings: [insert findings as deemed appropriate]

- The CUP amendment, as proposed, does not adequately screen the site from adjacent uses
- The amendment, as proposed would have negative impacts on the health, safety & general welfare and would cause hazardous, harmful or otherwise adverse impacts to the environment or the value of the neighborhood or community.
- The establishment, maintenance or operation of the expanded use would be detrimental to and endanger the public health, safety, comfort or general welfare of the city;
- The expansion would be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, or substantially diminish and impair property values within the neighborhood;
- The expansion will impede the normal and orderly development of the surrounding property for uses permitted in the district;
- There is inadequate access to utilities and access to a road;
- The amendment would create drainage and erosion control issues
- The amendment would provide inadequate ingress and egress so as to minimize traffic congestion in the public streets;
- The use shall does not conform to the applicable regulations of the district in which it is located;
- The site, as proposed, provided inadequate parking facilities;
- The site, as proposed, does not preserve natural resources;
- The site, as proposed, would obstruct scenic views;
- The site, as proposed, is not of adequate size and configuration of property for the proposed use or activity;

NOW THEREFORE, IT IS HEREBY RESOLVED, the *Planning* Commission denies the Conditional Use Permit for a solar garden / farm use as requested in the application dated September 9, 2021.

Oct 12, 2021

Tim Wallerich, Planning Commission Chair

Date

Wendy Busch, City Clerk

Date

Adopted _____



Legend

- City Limits
- Parcels (06/01/2019)
- Current Floodplain
 - 100 Year
 - 500 Year

Approximate Floodplain Location



Disclaimer:

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information, and data located in various city, county, and state offices, and other sources affecting the area shown, and is to be used for reference purposes only. The City of Wabasha is not responsible for any inaccuracies herein contained.



0 263 Feet



Legend

- City Limits
- Parcels (06/01/2019)
- Zoning Overlay**
 - PUD Overlay District Eagle Basin
 - PUD Overlay District Downtown
 - Historic Preservation District
 - Shoreland S1
 - Shoreland S2
 - Shoreland S3
 - Shoreland S4
 - Shoreland Brewery Creek

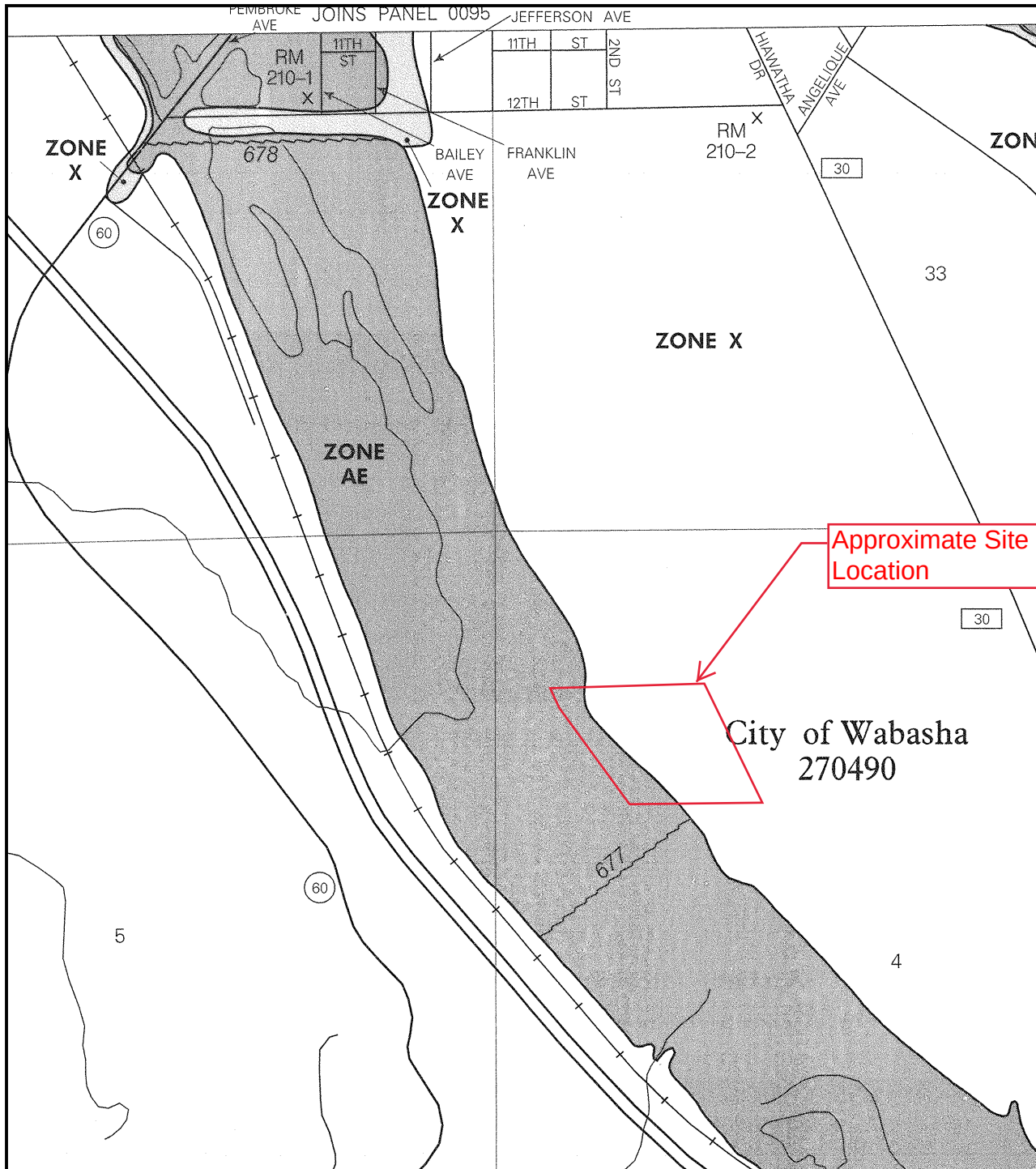
Approximate Floodplain Location



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0 263 Feet





APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
WABASHA COUNTY,
MINNESOTA
AND INCORPORATED AREAS

PANEL 210 OF 500
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
WABASHA CITY OF	270490	0210	D
WABASHA COUNTY	270483	0210	D

Notice to User: The MAP NUMBER shown below should be used when placing map order; the COMMUNITY NUMBER shown above should be used on insurance applications for the subject community.

MAP NUMBER
27157C0210 D

EFFECTIVE DATE:
JUNE 20, 2000



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



Legend

City Limits

Parcels (06/01/2019)

Zoning

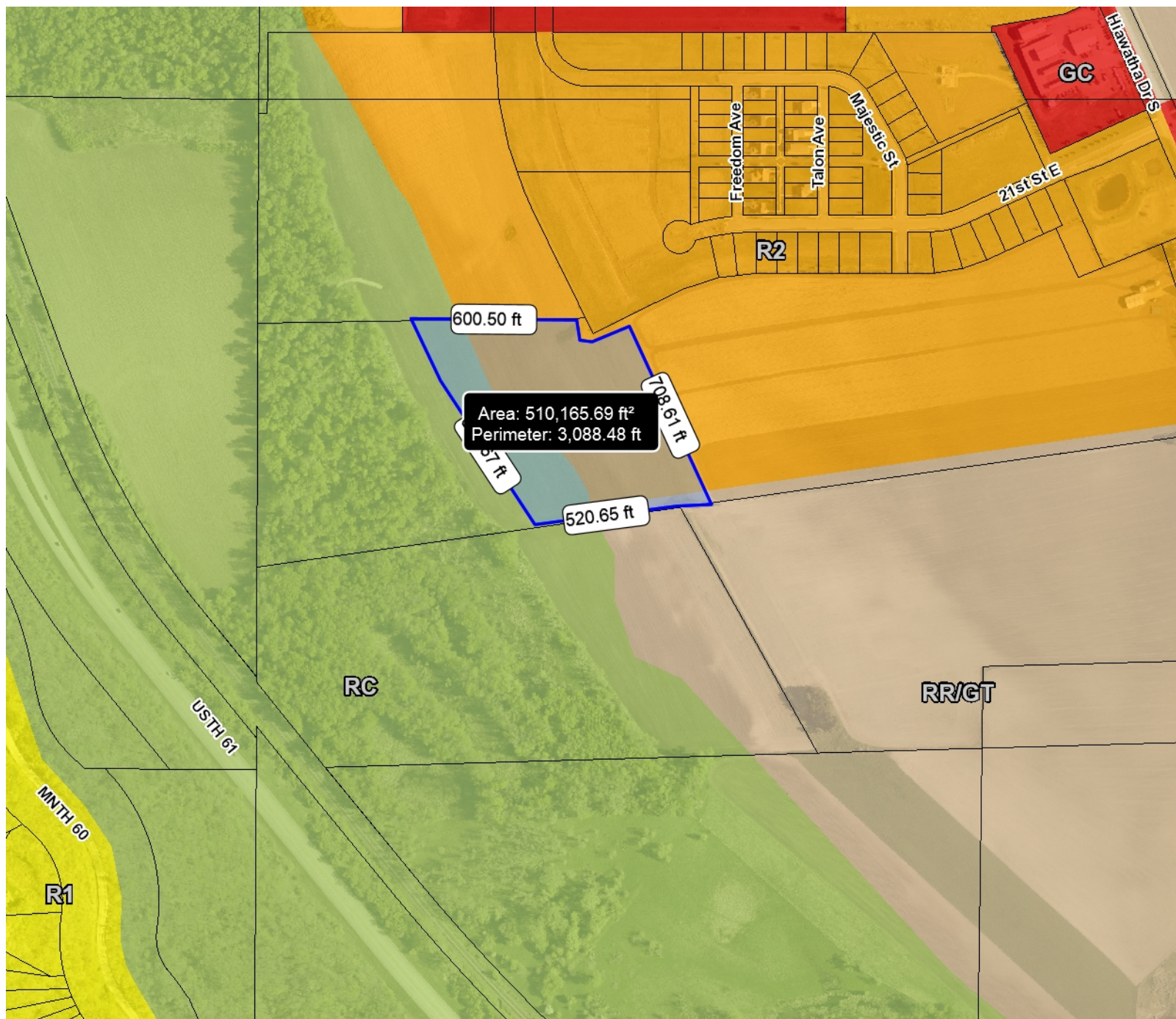
- RC - Residential Conservancy
- RR/LA - Rural/Residential/Limited/Agriculture
- RR/GT - Rural Residential Growth/Transitional
- R1 - Low Density Residential
- R2 - Medium Density Residential
- Traditional Downtown Commercial
- GC - General Commercial
- HC - Highway Commercial
- I - Industrial

Zoning District Approximate Site Location



Disclaimer:

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0 500 Feet

Amended and Proposed CUP Plans

From: Larry Stegemann stegemannlarry@gmail.com
Subject: Fwd: CUP Amendment Application
Date: September 3, 2021 at 1:20 PM
To: Debbie Stegemann debsteg@gmail.com

Sent from my iPhone

Begin forwarded message:

From: TJ Ozomoru <tj@ips-solar.com>
Date: September 3, 2021 at 1:04:39 PM CDT
To: stegemannlarry@gmail.com
Subject: CUP Amendment Application

Hi Larry,

See attached. At the bottom there's a spot for your signatures (no need for a notary) sign and send back. Thanks!

Let me know if you have any questions.

TJ Ozomoru

Solar Developer
Cell: (651)357-3065
e-mail: tj@ips-solar.com
ips-solar.com



Building Energy

IMPACT
POWER
SOLUTIONS

city of wabasha
application for land development activity

- | | | |
|---|--|---|
| ☐ Concept PUD | ☐ Preliminary PUD | ☐ Final PUD |
| ☐ Preliminary Plat | ☐ Final Plat | ☐ Lawrence Boulevard Shore Improvement |
| ☐ Site Plan Review | ☒ Request for Zoning Amendment (map or text) | |
| ☒ Variance/Appeal | ☐ CUP/IUP | ☐ Other _____ |

Applicant's Name: Tania Ozomoru Phone: (651) 357 3065
Mailing Address: 2670 Patton Rd Roseville Minnesota 55127 e-mail address: tj@ips-solar.com
Property Owner's Name (if different): Debbie Stegemann
Property Owner's Mailing Address (if different): 1712 Hinwatha Dr E Wabasha, MN 55981

Provide also contact information of Architects, Engineers, Contractors and/or other development professionals on separate page (s) along with a notation of their pertinent licenses

Description of Property: Parcel ID # (PIN) 270 0110.00 Current Zoning 101 Proposed Zoning 101
Name of Development: Stegemann CS6
Street Address: 1712 Hinwatha Dr E Wabasha, MN 55981
Total Acreage: 61.34 Acreage To Be Developed: 7.5
Type of Water Supply: N/A Sewage Disposal: N/A

Proposed Activity (include number/size of lots and/or buildings, type of use, public improvements proposed or need/hardship for Variance):

~~Amend~~ Amend our CUP from ~~the~~ Tracking system to
Bi-facial tracking system (provide attached pages as needed)

Describe Any Development Constraints (wetlands, shoreland, floodplain, existing structures/uses, etc.):

Behind an existing solar project / House on property
(provide attached pages as needed)

Signatures:  Applicant
Lawrence W. Stagemann
Deborah M. Stagemann Property Owner Date 09/03/2021

Office Use
Date Received: 9-9-2021 (Planner Initials: _____ Fee Paid: (amount) 250⁰⁰ (date) 9-9-2021 CB

Public Hearing Scheduled _____ (date) Hearing Advertised _____ (date) Notice Sent to Adjacent _____ (date)

Review By: Planning Commission _____ Board of Adjustment _____ City Council _____

Stegemann CSG

Decommissioning Plan

Prepared for:

**Impact Power Solutions
2670 Patton Road, Roseville, MN, 55113**

**Location: East Wabasha, MN
August 27, 2021**



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1.0 Introduction

The purpose of this report is to describe the decommissioning process for the Stegemann solar photovoltaic generation facility (“the project”) located at 1740 Hiawatha Dr, East Wabasha, MN 55981. The project consists of 4100 solar modules mounted to a driven pile, single axis tracker system. Both direct current (DC) and alternating current (AC) conductors will be trenched in conduit. After final circuit consolidation at the PV system pad mounted switchboard, the system’s voltage will be stepped-up to distribution level at the Xcel owned transformer and interconnected, onto an existing utility distribution circuit.

The project converted approximately 7.5 acres of agricultural land into a power generation facility. Construction included elevated solar modules mounted on driven steel piles, concrete inverter/transformer pads, and gravel access roads.

2.0 Summary Statement of Expected Decommissioning Cost

The expected residual value of the solar facility is the difference between the removal/restoration cost and the salvage value. The decommissioning cost to remove the solar pv facility and reestablish the property back to a grassy field is not expected to exceed a net expenditure of \$35000 at the end of the project’s expected service life.

3.0 Basis of Plan Narrative

The following is a list of assumptions and clarifications to further define the methodology used to establish the scope and values of the removal costs and salvage values.

3.1 General

- The intent of the decommissioning work will be to fully remove the solar facility, dispose of any components, and restore the site to a permanently stabilized grassed field.
- The service life of the facility is assumed to be 35 years. All dollar amounts are in net-present-value. It is assumed that all values will inflate/deflate at consistent with baseline inflation, therefore, the net-present-value comparison of removal cost to salvage value will remain relevant at the end of the service life.
- Costs associated with this plan represent a “turn key” operation for a general contractor to be hired for this work, including permits, mobilization, contingency, etc.
- Haul costs assume a maximum distance of 60 miles between the project and nearest disposal or recycling facility.
- No maximum duration has been assigned for this work. It has been assumed that this work would be handled by a single crew without full time site personnel.

3.2 Civil Infrastructure

- Topsoil used to backfill excavations will be borrowed from onsite locations. No topsoil import is included.
- Remove rip rap at stormwater basins.
- Aggregate removal will be the full depth of the aggregate section for roads, equipment pads, and other areas utilizing aggregate. No aggregate will be buried. Includes subgrade scarification prior to backfilling with topsoil.
- Turf establishment includes mulch, fertilizer, and water as necessary to achieve 70% ground cover as required to satisfy the NPDES Construction General Permit.
- Sediment control cost consists of silt fence but could also be fiber logs. Location of sediment control will be downslope from exposed soils only in areas where sedimentation offsite or into onsite water bodies can reasonably be expected.
- Trees and shrubs shall be protected and shall remain in place.

3.3 Structural Infrastructure

- Steel pile foundation removal is estimated at 25% the effort and cost as pile installation.
- Steel racking removal is estimated at 50% the effort and cost of racking installation.

3.4 Electrical Infrastructure

- PV modules to be recycled. Assumption is that the modules are 72 cell polysilicon modules, having an approximate dimension of 6' x 3' in dimension.
- Switchgear including transformers will be removed from their respective concrete pads and recycled or returned to the manufacturer.
- Copper wiring will be dug up (if required) and recycled.
- Aluminum wiring will be dug up (if required) and recycled.
- On site riser or interconnection poles shall be removed.
- String inverters/combiner boxes are no more than 130 lbs. in weight and not more than 40" x 25" x 12" in dimension. A two-person crew can dismantle a string inverter and recycle the components.
- Transformers are pad mounted and weigh approximately 8,500 pounds. These are dry type transformers, so there is no need for any oil disposal.
- Underground power and communication cables can be removed by excavating with a power trencher or excavator.

3.5 Recycling PV Modules

- Recycling solar modules have environmental benefits such as
 - o Creating a useful and sustainable method of disposal
 - o Providing raw materials for repurposing and reprocessing
 - o Recovering up to 90% of the photovoltaic glass and up to 95% of the semiconductor material necessary for further production
 - o Recycling of rare earth metals.

4.0 Schedule of Removal and Restoration Costs

Stegemann CSG						
ENGINEER'S ESTIMATE						
8/27/2021						
Schedule of Removal and Restoration Costs						
		QUANTITY	UNITS	\$/UNIT	COST	NOTES
CIVIL INFRASTRUCTURE						
1	Aggregate Removal	75	CY	\$4.00	\$300.00	Remove full section of aggregate road, structural concrete base material, and surfacing around equipment pads
2	Aggregate Haul and Offsite Disposal	75	CY	\$10.00	\$750.00	
3	Geotextile Removal under Aggregate Roads	36,675	SF	\$0.18	\$6,601.50	
4	Geotextile Haul and Offsite Disposal	36,675	SF	\$0.10	\$3,667.50	
5	Topsoil Backfill	23	CY	\$10.00	\$230.00	Onsite relocation of topsoil to backfill road and equipment pad excavations
6	Rip Rap Removal	120	CY	\$10.00	\$1,200.00	Remove CMP of approximate 30' length with no greater than 2' of cover
7	Rip Rap Haul and Offsite Disposal	120	CY	\$10.00	\$1,200.00	
8	Chainlink Fence Removal	2,305	LF	\$1.00	\$2,305.00	Includes fence mesh, post framing, concrete foundations, gates, etc. Assumes min 20' clearance from energized equipment
9	Chainlink Fence Haul and Offsite Disposal	2,305	LF	\$0.50	\$1,152.50	
10	Reinforced Concrete Equipment Pad Removal	1	EA	\$500.00	\$500.00	
11	Concrete Waste Haul and Offsite Disposal	1	EA	\$500.00	\$500.00	
12	Site Grading	1	AC	\$2,000.00	\$2,000.00	Grading smooth all areas disturbed by removals, excavations, etc, assumed (0.1 x project area) + Road Area + Equipment Pad Area
13	Turf Establishment	1	AC	\$1,500.00	\$1,500.00	Hydroseed all areas disturbed by removals, excavations, etc
14	Sediment Control	1200	LF	\$1.50	\$1,800.00	Silt fence, assumed 2 x the project area N-S length
Structural Infrastructure						
15	Foundation Removal	820	EA	\$4.50	\$3,690.00	Assumed [20] posts for 100 mod tables and [15] posts for 75 mod tables
16	Foundation Haul and Offsite Disposal	820	EA	\$1.50	\$1,230.00	
17	Steel Racking Removal	1.77	MW	\$3,000.00	\$5,310.00	
18	Steel Racking Haul and Offsite Disposal	1.77	MW	\$500.00	\$885.00	
Electrical Infrastructure						
19	Removal of Solar Modules	4,100	EA	\$3.00	\$12,300.00	
20	Removal of String Inverters	9	EA	\$40.00	\$360.00	
21	Removal of Switchgear/Xfmr	2	EA	\$1,200.00	\$2,400.00	
22	Removal of Riser and Interconnection Poles	3	EA	\$800.00	\$2,400.00	
23	Removal of SCADA/Aux Panel/Weather Station	1	EA	\$350.00	\$350.00	
24	Removal of Medium Voltage AL Cables	1	MW	\$1,200.00	\$1,200.00	
25	Removal of Fiber Optic Cables	1	MW	\$250.00	\$250.00	
Total Cost					\$54,081.50	

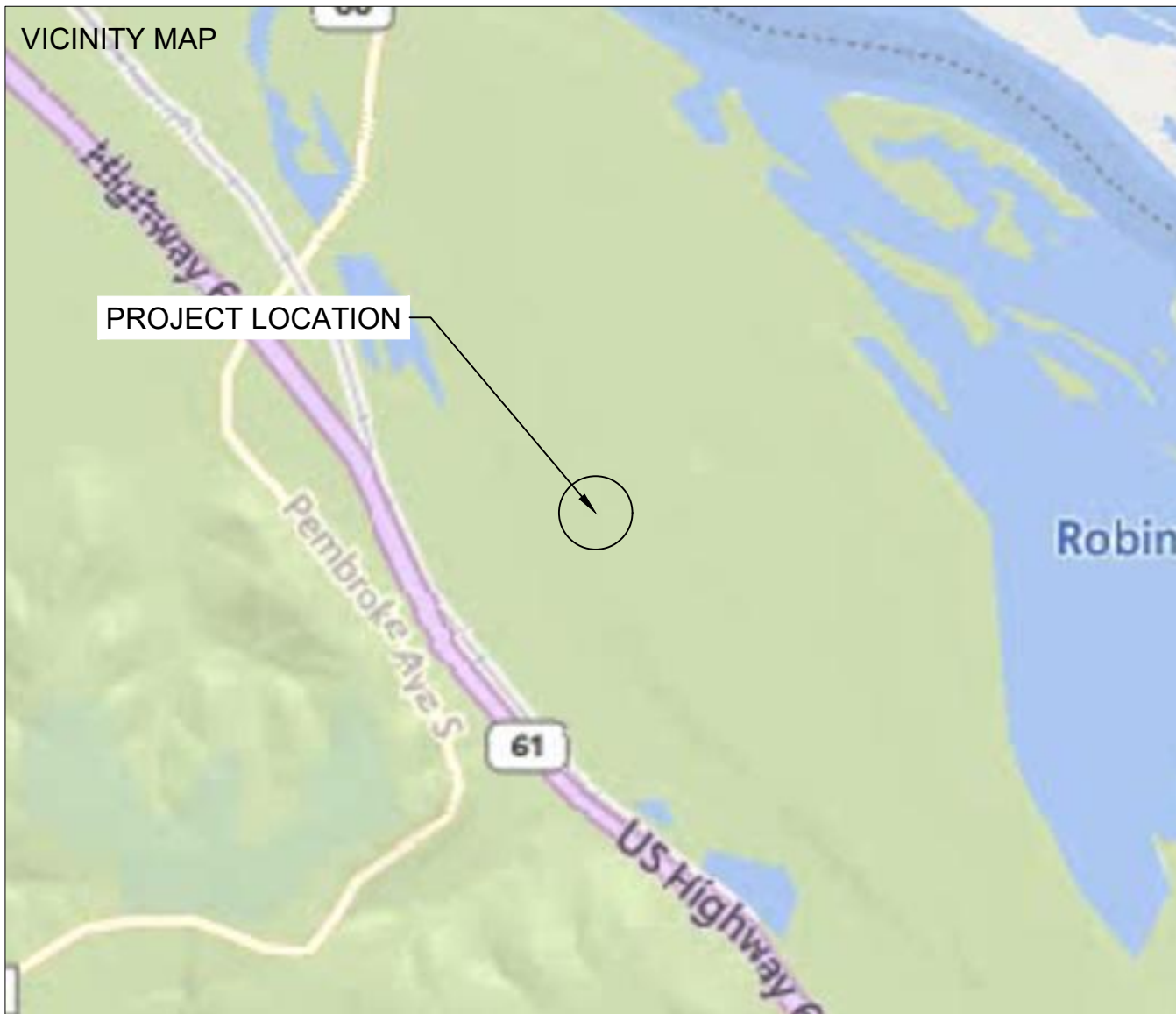
5.0 Schedule of Salvage Values

Stegemann CSG						
ENGINEER'S ESTIMATE						
8/27/2021						
Schedule of Salvage Value						
		QUANTITY	UNITS	\$/UNIT	Value	NOTES
	Structural Infrastructure					
1	Steel Pile	33.12	TONS	\$40.00	\$1,324.80	Assuming 80 lbs. per pile
2	Steel Racking	66.24	TONS	\$40.00	\$2,649.60	
3	Chainlink Fence	2,305	LF	\$0.50	\$1,152.50	
	Electrical Infrastructure					
4	PV Modules	4,100	EA	\$2.00	\$8,200.00	
5	String Inverters	9	EA	\$500.00	\$4,500.00	
6	Equipment Switchgear in Xfmrs	2	EA	\$1,200.00	\$2,400.00	
7	SCADA/Aux/Weather Station Equipment	1	EA	\$350.00	\$350.00	
8	MV AL Collection Lines	2400	lbs	\$0.20	\$480.00	http://www.nehringwire.com/aluminum/aac-all-aluminum-conductor/
9	DC Copper Wires	5,130	lbs	\$1.00	\$5,130.00	http://colonialwire.com/wp-content/uploads/2013/09/WIRE-WEIGHTS1.pdf
10	AC Aluminum Wires	1,630	lbs	\$0.40	\$652.00	
	Total Cost				\$26,838.90	

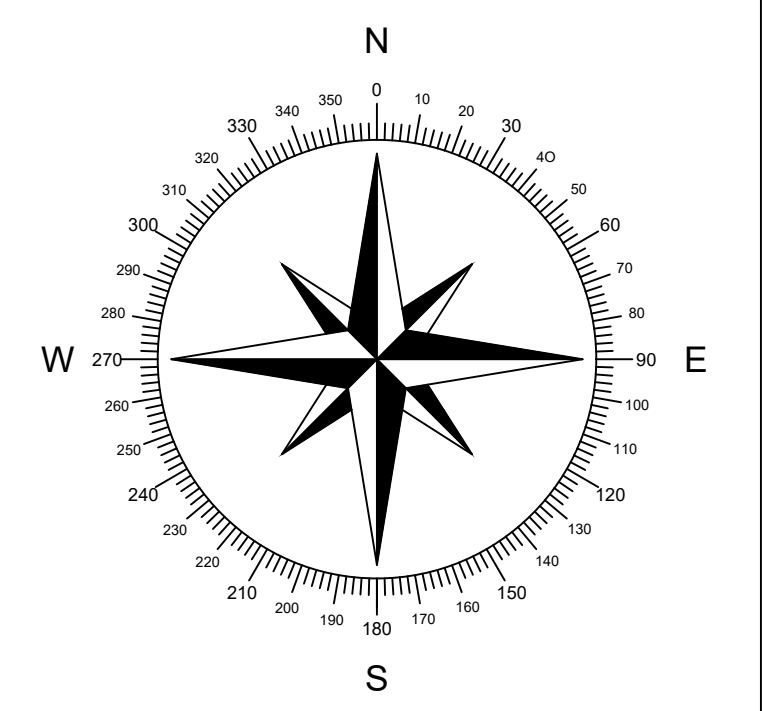
$$\text{NET EXPENSE} = \text{REMOVAL} - \text{SALVAGE} = \$27,242.60$$

Multiply by 125% for safety factor:

$$\$27,242.60 \times 125\% = \$34,053.25$$



SPACE FOR PE STAMP:



SHEET NOTES:

UTILITY POLES ARE SHOWN FOR INDICATING LOCATIONS ONLY. SPACING BETWEEN POLES, PHYSICAL PROTECTION BARRIER FOR SWITCHBOARDS, ETC. WILL BE ADDED IN THE DRAWINGS PREPARED FOR THE CONSTRUCTION DOCUMENTS

■ JINKO 460
■ REC 375



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443-267-5012

PROJECT ADDRESS
1740 HIAWATHA DR EAST
WABASHA, MN 55981

LAT: 44.3633924125
LONG: -92.0267205706

SYSTEM SPECIFICATIONS

SYSTEM SIZE DC	1.765 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.00 MW
DC/AC RATIO	1.765
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	4100
MODULE TYPE	(2675) JINKO JKM460M-7RL3-TV BIFACIAL AND (1425) REC375TP72
MODULE STC RATING	460 W AND 375 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER 125KW
INVERTER POWER	125KW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA

MIN/MAX TEMP.	-28°C / 32°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 03651411

NO POSITION, DISTANCE, OR CLEARANCE ISSUES WITH OVERHEAD ELECTRIC SERVICE LINES OR OTHER UTILITIES IN RELATION TO THE PV PANELS.

24/ 7 UNESCORTED KEYLESS ACCESS PROVIDED FOR THE METERS AND AC DISCONNECT.

REVISIONS

#	DESCRIPTION	BY	DATE
0	ORIGINAL DESIGN	SPC	3/20/2020
1	SITEPLAN UPDATE	JT	07/01/2021
2	LEASE AREA/ ACCESS EASEMENT	IR	8/2/2021
3	MODULE UPDATE	IR	8/6/2021
4	SCREENING UPDATE	KHC	9/3/2021
5			
6			
7			

DRAWN BY

STEVEN CHAN

PROJECT NAME

STEGEMANN CSG

DRAWING TITLE

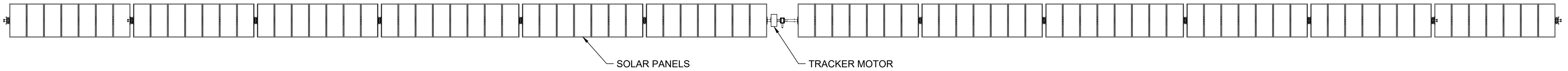
SITE PLAN

SCALE ¹

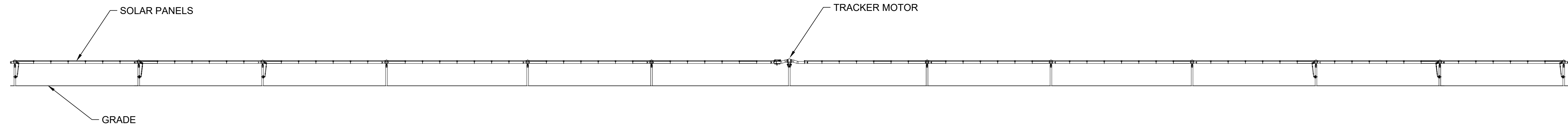
1" = 120' 0 1" 2"

SHEET

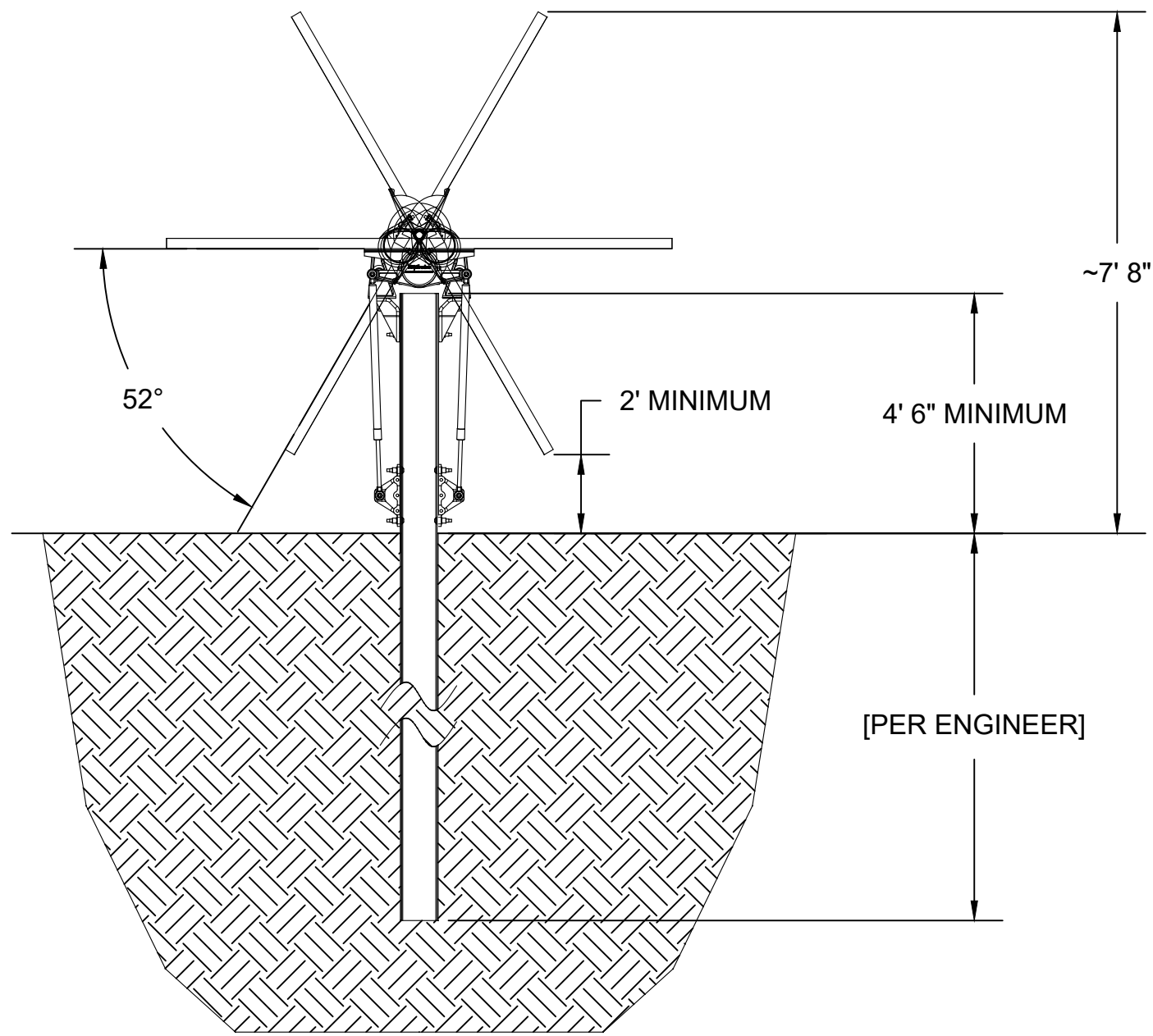
PV1



1 SINGLE AXIS TRACKER TOP DOWN VIEW
NTS



2 SINGLE AXIS TRACKER EAST-WEST ELEVATION
NTS



3 SINGLE AXIS TRACKER NORTH-SOUTH ELEVATION
NTS



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MODULE STC RATING	460 W AND 375 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER 125KW
INVERTER POWER	125KW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA	
MIN/MAX TEMP	-28°C / 32°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 03651411

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5			
6			
7			

DRAWN BY

STEVEN CHAN

PROJECT NAME

STEGEMANN CSG

DRAWING TITLE

SAT RACKING DETAIL

SCALE ¹

NTS

SHEET

PV2

SYSTEM SPECIFICATIONS

SYSTEM SIZE DC	1.765 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.00 MW
DC/AC RATIO	1.765
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	4100
MODULE TYPE	(2675) JINKO JKM460M-7RL3-TV BIFACIAL AND (1425) REC375TP72
MODULE STC RATING	460 W AND 375 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER 125KW
INVERTER POWER	125kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA

MIN/MAX TEMP.	-28°C / 32°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 03651411

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7			

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STEVEN CHAN

PROJECT NAME

STEGEMANN CSG

DRAWING TITLE

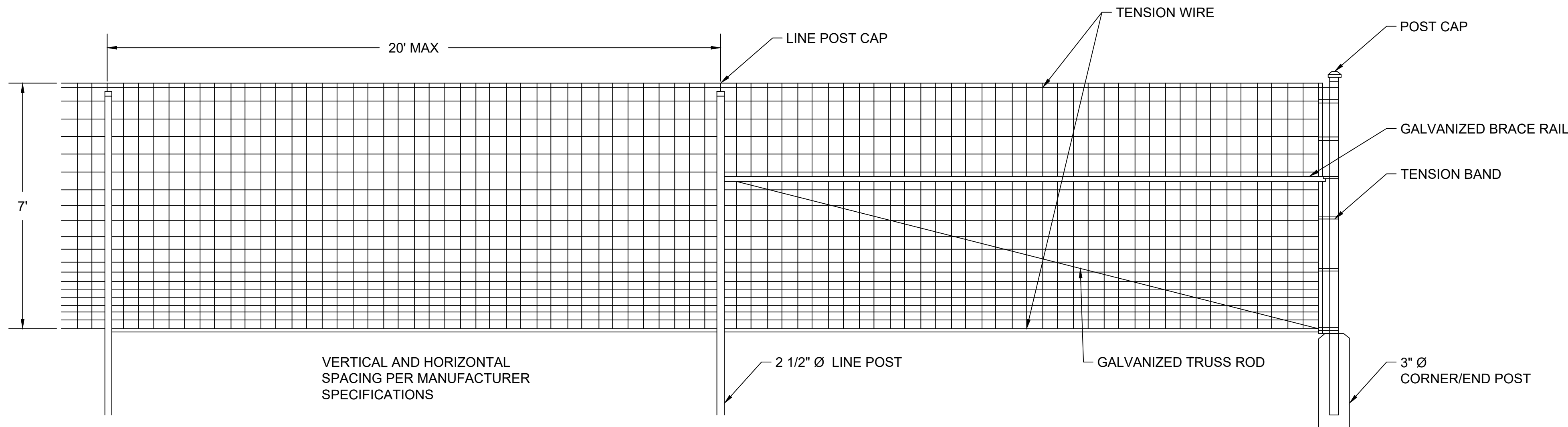
FENCE DETAIL

SCALE ¹

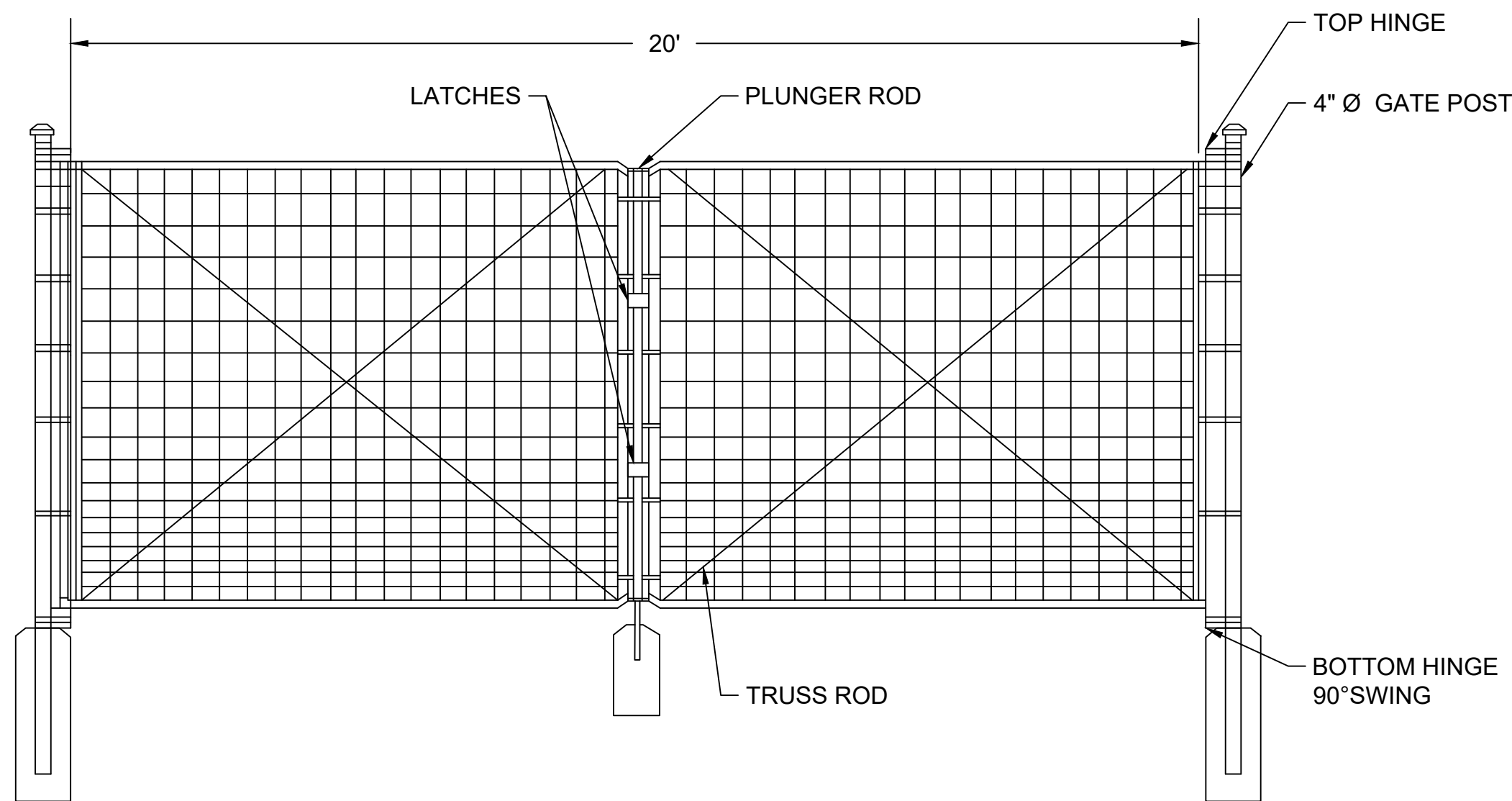
NTS

SHEET

PV3



1 8' FIXED KNOT FENCE
NTS



2 8' FIXED KNOT FENCE GATE
NTS

NOTE:
1. THIS DRAWING IS FOR INFORMATIONAL PURPOSES ONLY
AND NOT TO BE USED FOR CONTRUCTION.
2. DO NOT SCALE DRAWING



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TILT	+/- 52°
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INVERTER POWER	125KW
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BUILDING HEIGHT	0'-0"

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5			
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DRAWN BY

STEVEN CHAN

PROJECT NAME

STEGEMANN CSG

DRAWING TITLE

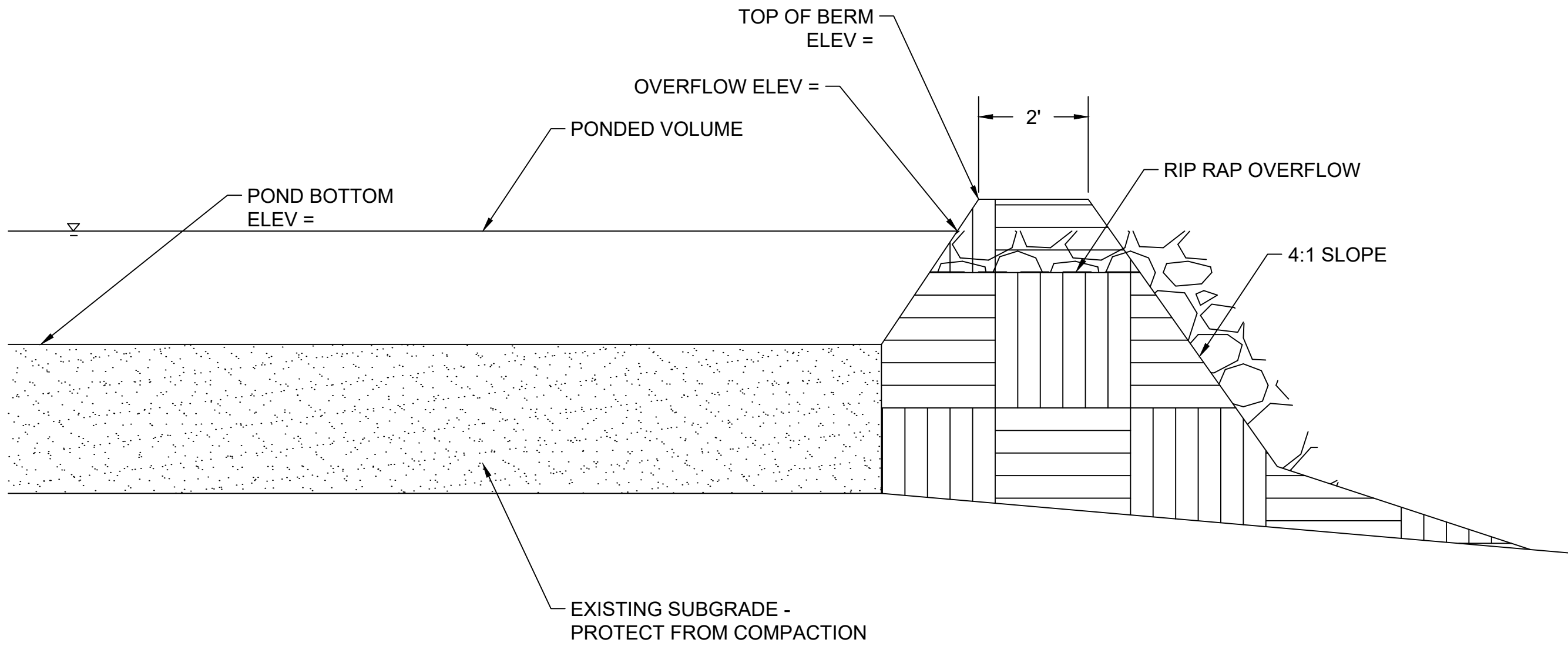
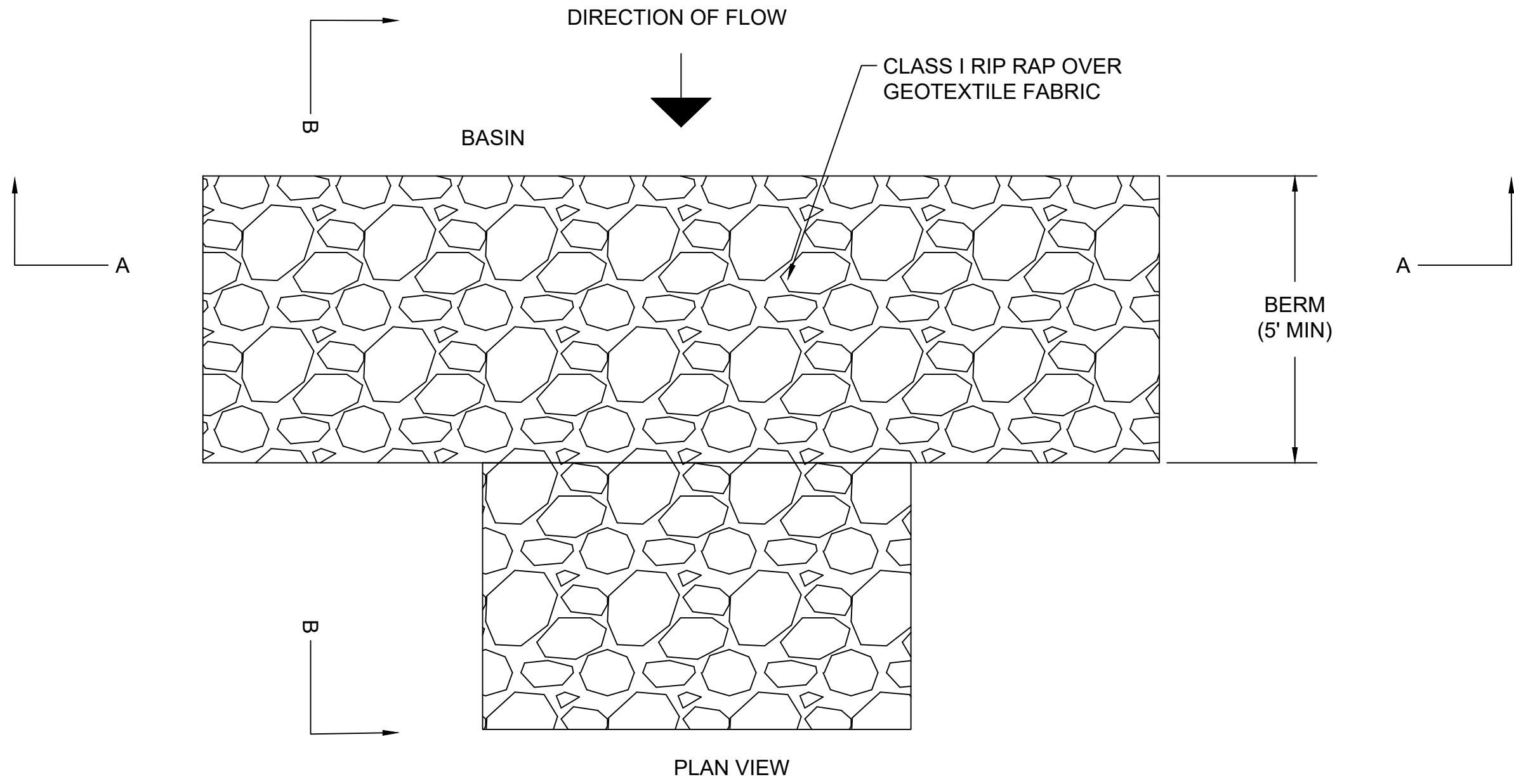
INFILTRATION BASIN DETAIL

SCALE ¹

NTS

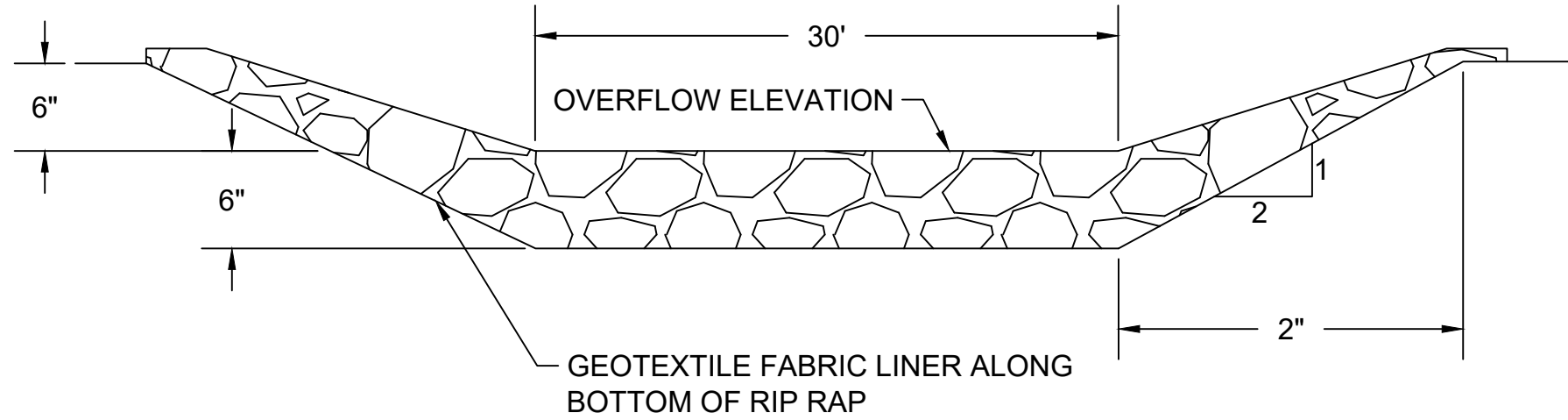
SHEET

PV4

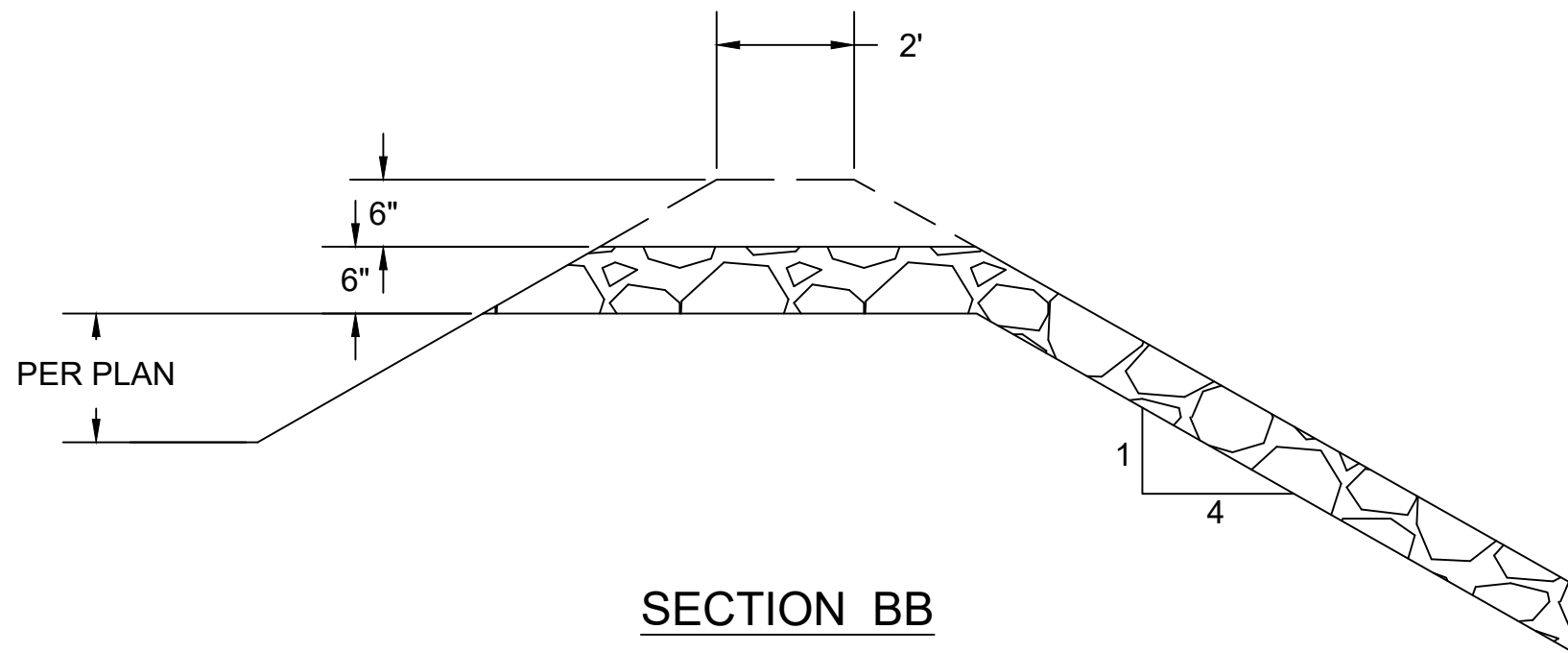


1 INFILTRATION BASIN

NTS



SECTION AA



2 RIP RAP OVERFLOW

NTS



1 NATIVE EVERGREEN SCREENING

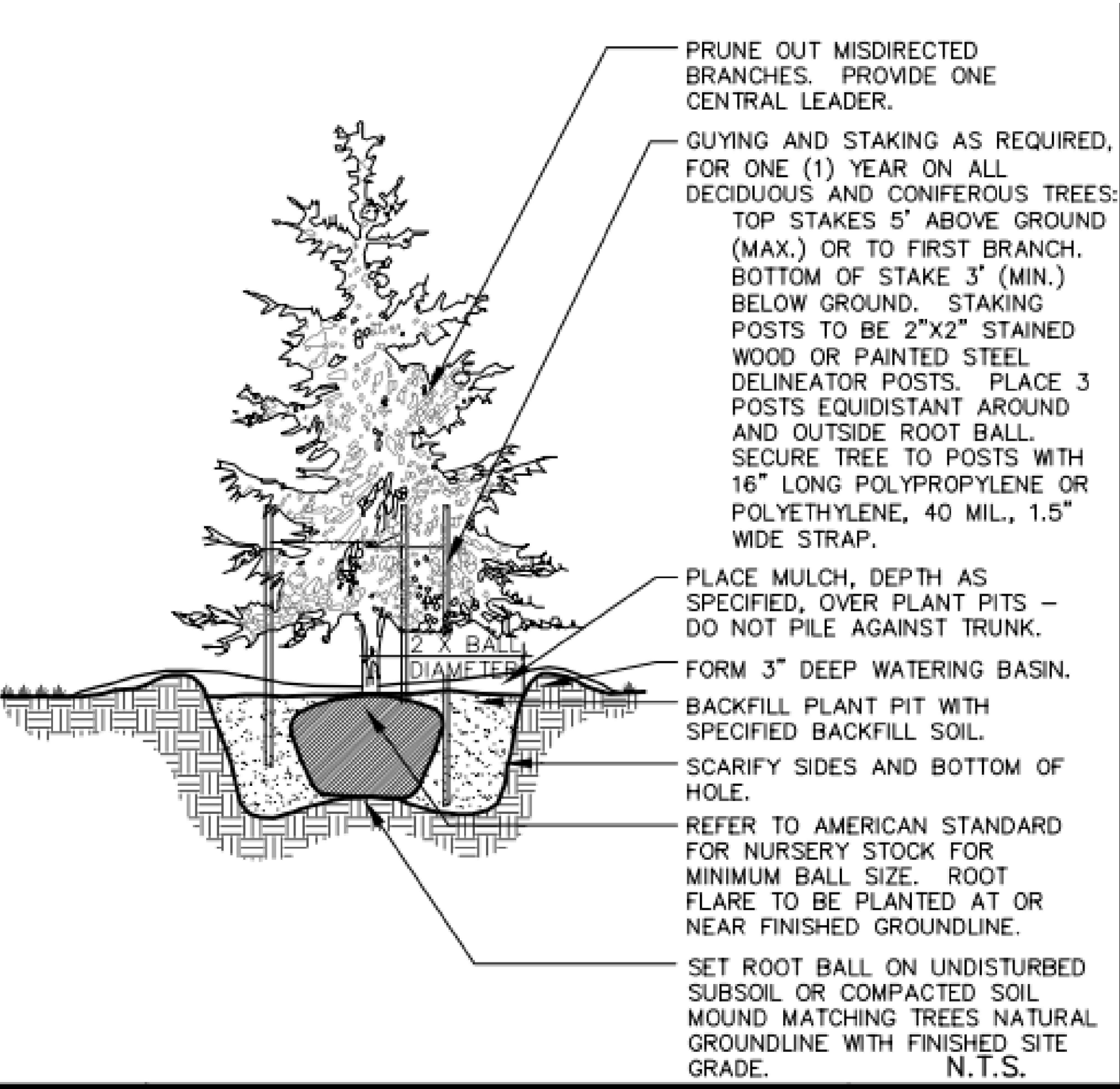
Scale: N.T.S.

PLANTING SCHEDULE

TYPE : NATIVE EVERGREENS

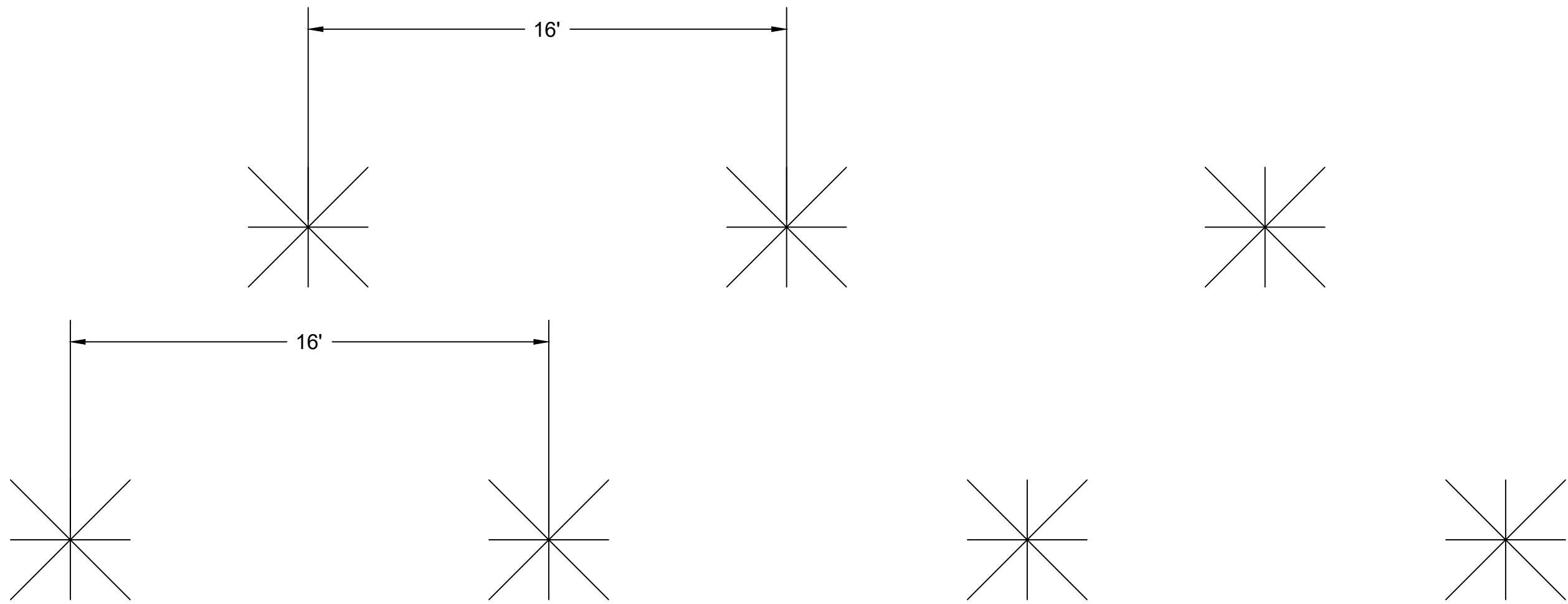
NUMBER OF ROWS: 2

SPACING: 16' O.C.



2 EVERGREEN PLANTING DETAIL

Scale: N.T.S.



3 PLAN VIEW

Scale: N.T.S.



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SYSTEM SPECIFICATIONS

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TILT	+/- 52°
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INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER 125KW
INVERTER POWER	125KW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA

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BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 03651411

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5			
6			
7			

DRAWN BY

STEVEN CHAN

PROJECT NAME

STEGEMANN CSG

DRAWING TITLE

TREE PLAN

SCALE¹

NTS

SHEET

PV5

SYSTEM SPECIFICATIONS

SYSTEM SIZE DC	1.765 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.00 MW
DC/AC RATIO	1.765
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	4100
MODULE TYPE	(2675) JINKO JKM460M-7RL3-TV BIFACIAL AND (1425) REC375TP72
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INVERTER POWER	125KW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA

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WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 03651411

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5			
6			
7			

DRAWN BY

STEVEN CHAN

PROJECT NAME

STEGEMANN CSG

DRAWING TITLE

ELECTRICAL DETAILS

SCALE¹

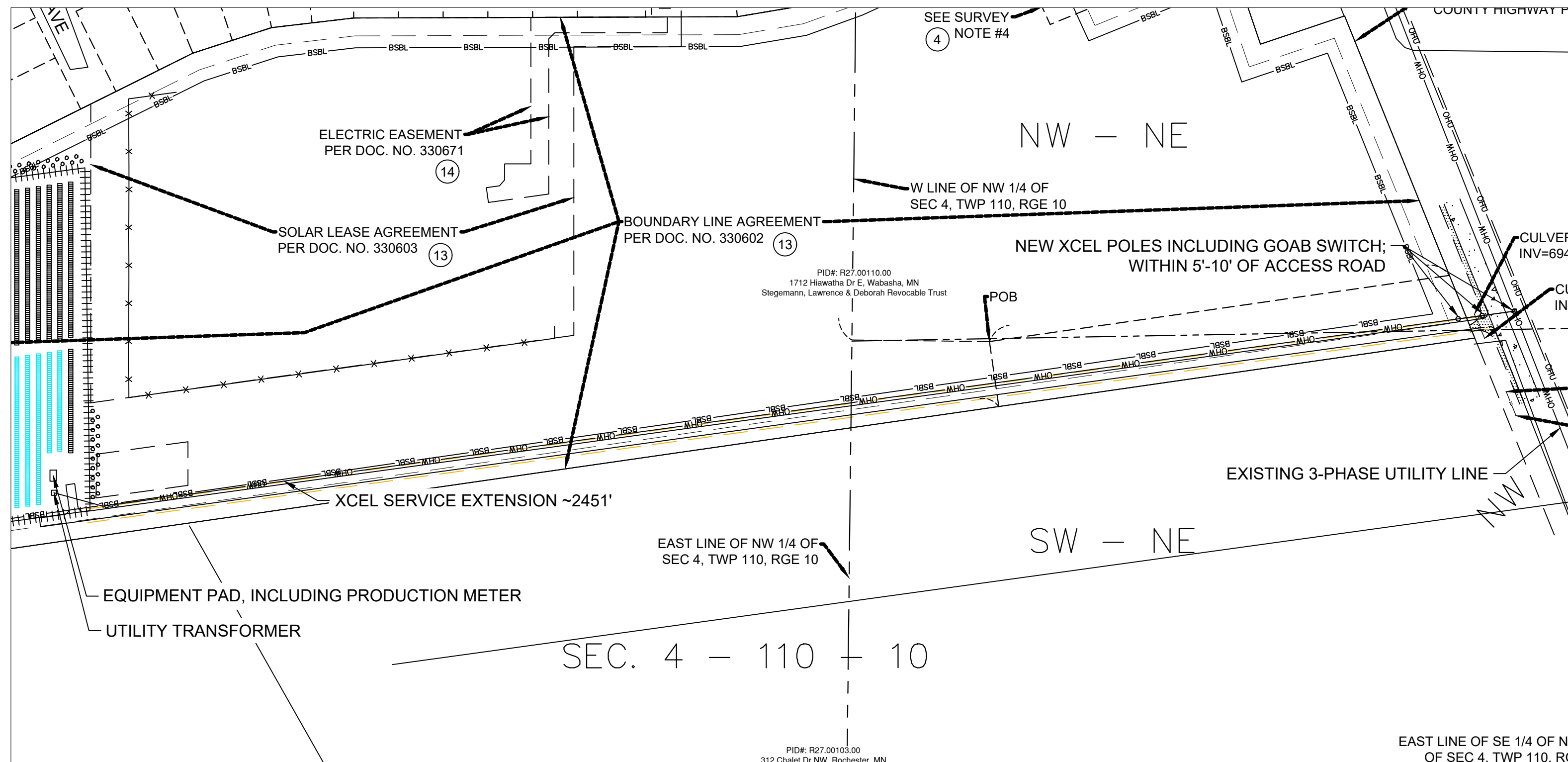
AS NOTED

SHEET

E3

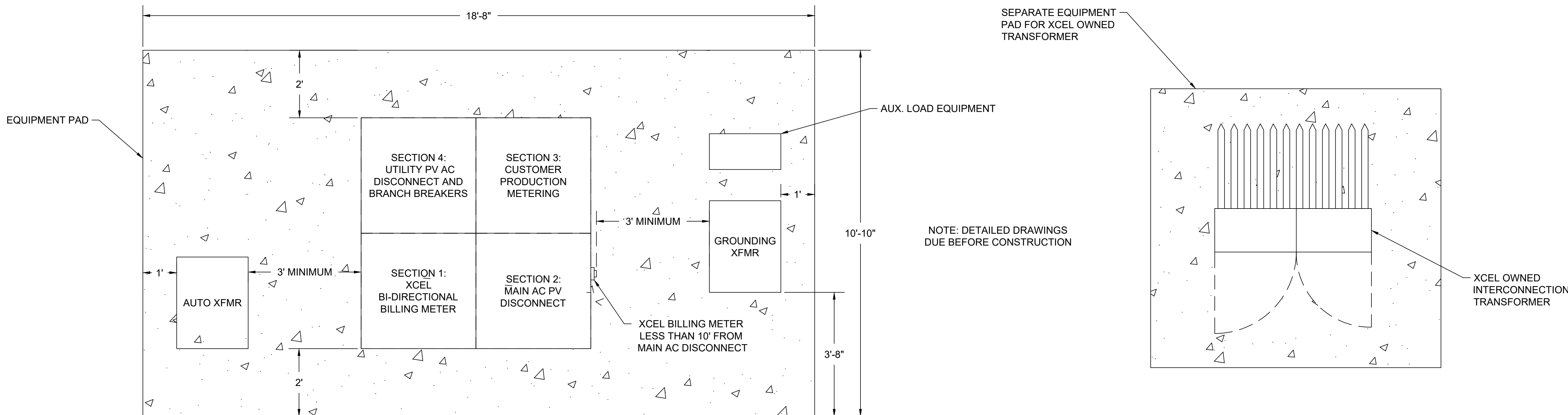
SHEET NOTES:

- Overhead line to underground service
conductors detail - provided by utility
- Fence Detail and Fence Grounding -
provided in the civil engineering
drawings



1 INTERCONNECTION PLAN

Scale: 1" = 160'



2 EQUIPMENT PAD PLAN

Scale: 3/4" = 1'

SUNNY HIGHPOWER PEAK3 125-US / 150-US



Cost effective - Modular architecture reduces BOS and maximizes system uptime - Compact design and high power density maximize transportation and logistical efficiency	Maximum flexibility - Scalable 1,500 VDC building block with best-in-class performance - Flexible architecture creates scalability while maximizing land usage	Simple install, commissioning - Ergonomic handling and simple connections enable quick installation - Centralized commissioning and control with SMA Data Manager	Highly innovative - SMA Smart Connected reduces O&M costs and simplifies field service - Powered by award winning enverOS cross sector energy management platform
--	---	--	--

SUNNY HIGHPOWER PEAK3 125-US / 150-US

A superior modular solution for large-scale power plants

The PEAK3 1,500 VDC inverter offers high power density in a modular architecture that achieves a cost-optimized solution for large-scale PV integrators. With fast, simple installation and commissioning, the Sunny Highpower PEAK3 is accelerating the path to energization. SMA has also brought its field-proven Smart Connected technology to the PEAK3, which simplifies O&M and contributes to lower lifetime service costs. The PEAK3 power plant solution is powered by the enverOS cross sector energy management platform, 2018 winner of the Intersolar smarter E AWARD.

Technical Data	Sunny Highpower PEAK3 125-US	Sunny Highpower PEAK3 150-US
Input [DC]		
Maximum array power	187500 Wp STC	225000 Wp STC
Maximum system voltage		1500 VDC
Rated MPPT voltage range	725 V ... 1450 V	880 V ... 1450 V
MPPT operating voltage range	684 V ... 1500 V	855 V ... 1500 V
MPPT trackers		1
Maximum operating input current		180 A
Maximum input short-circuit current		322 A
Output [AC]		
Nominal AC power	125000 W	150000 W
Maximum apparent power	125000 VA	150000 VA
Output phases / line connections		3 / 3 PE
Nominal AC voltage	480 V	600 V
Compatible transformer winding configuration		Wye-grounded
Maximum output current		151 A
Rated grid frequency		60 Hz
Grid frequency / range		50 Hz, 60 Hz / ±4 Hz ... ±4 Hz
Power factor at rated power / adjustable displacement		1 / 0.0 leading ... 0.0 lagging
Harmonics (THD)		<3%
Efficiency		
CEC efficiency	98.5 %	99.0 %
Protection and safety features		
Ground fault monitoring: Riso / Differential current		● / ●
DC-reverse polarity protection		●
AC short circuit protection		●
Monitored surge protection (Type 2): DC / AC		● / ●
Protection class / overvoltage category (as per UL 840)		1 / IV
General data		
Device dimensions (W / H / D)	770 / 830 / 444 mm (30.3 / 32.7 / 17.5 in.)	
Device weight	99 kg (216 lb)	
Operating temperature range	-25°C ... +60°C [13°F ... +140°F]	
Storage temperature range	-40°C ... +70°C [40°F ... +158°F]	
Audible noise emission (full power @ 1m and 25°C)	< 69 dB(A)	
Internal consumption at night	< 5 W	
Topology	Transformerless	
Cooling concept	OptiCool (forced convection, variable speed fans)	
Enclosure protection rating	Type 4X (as per UL 50E)	
Maximum permissible relative humidity (non-condensing)	100%	
Additional information		
Mounting	Rack mount	
DC connection	Terminal lugs: up to 600 kcmil CU/AL	
AC connection	Screw terminals: up to 300 kcmil CU/AL	
LED indicator [Status/Fault/Communication]		●
SMA Speedwire (Ethernet network interface)		● (2 x RJ45 ports)
Data protocols: SMA Modbus / SunSpec Modbus		● / ●
Integrated Root Control / Q1 on Demand 24/7		● / ●
Off-grid capable / SMA Hybrid Controller compatible		— / ●
SMA Smart Connected (proactive monitoring and service)		●
Certifications		
Certifications and approvals	UL 62109, UL 1998, CAN/CSA-C22.2 No.62109	
FCC compliance	FCC Part 15, Class A	
Grid interconnection standards	IEEE 1547, UL 1741 SA, CA Rule 21, HECO Rule 14H	
Advanced grid support capabilities	L/HVRT, L/HVRT, Volt/VAr, Volt/Watt, Frequency/Watt, Ramp Rate Control, Fixed Power Factor	
Warranty		
Standard	5 years	
Optional extensions	10 / 15 / 20 years	
Type designation	SHP 125-US-20	SHP 150-US-20
Technical data as of May 2020	● Standard features	○ Optional features — Not available

Toll Free +1 888 4 SMA USA
www.SMA-America.com

SMA America, LLC



EAGLE 78TR G4b

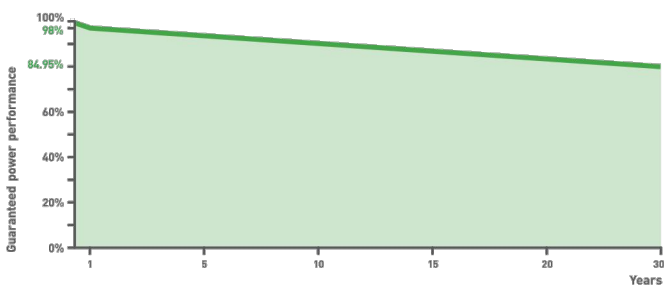
455-475 WATT
TILING RIBBON BIFACIAL
MONOCRYSTALLINE MODULE

Positive power tolerance of 0~+3%

- NYSE-listed since 2010, Bloomberg Tier 1 manufacturer
- Best-selling panel globally for last 4 years
- Top performance in the strictest 3rd party labs
- 99.9% on-time delivery
- Automated manufacturing utilizing artificial intelligence
- Vertically integrated, tight controls on quality
- Premium solar panel factories in USA and Malaysia

LINEAR PERFORMANCE WARRANTY

30-Year Performance Warranty

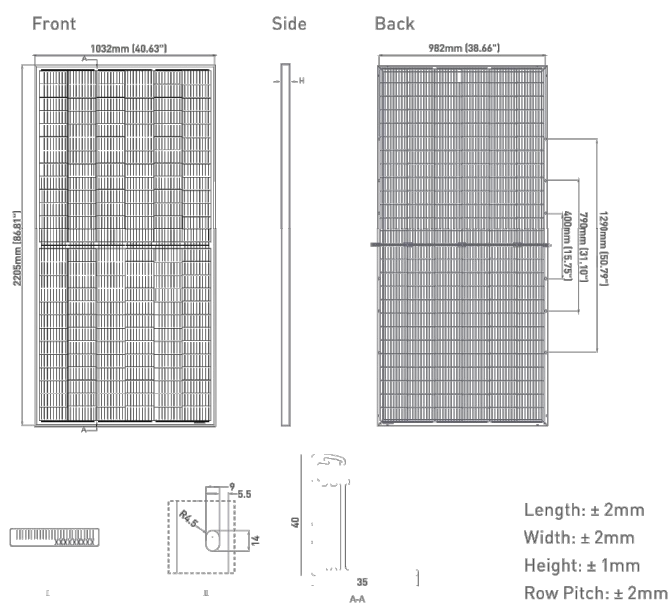


- ISO9001:2015 Quality Standards
- ISO14001:2015 Environmental Standards
- IEC61215, IEC61730 certified products
- ISO45001:2018 Occupational Health & Safety Standards
- UL61730 certified products

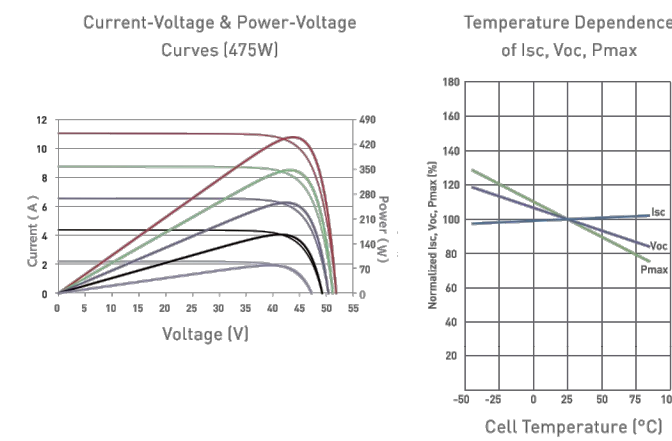
BUILDING YOUR TRUST IN SOLAR. JINKOSOLAR.US



ENGINEERING DRAWINGS



ELECTRICAL PERFORMANCE & TEMPERATURE DEPENDENCE



MECHANICAL CHARACTERISTICS

Cells	Bifacial Monocrystalline Cell
No. of Half Cells	156 (2x78)
Dimensions	2205x1032x40mm (86.81x40.63x1.57in)
Weight	26.5kg (58.42lbs)
Front Glass	3.2mm, Anti-Reflection Coating High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP67 Rated
Output Cables	12 AWG, 1400mm (55.12in) or Customized Length
Fine Type	Type 1
Pressure Rating	5400Pa (Snow) & 2400Pa (Wind)

TEMPERATURE CHARACTERISTICS

Temperature Coefficients of Pmax	-0.35%/°C
Temperature Coefficients of Voc	-0.28%/°C
Temperature Coefficients of Isc	0.048%/°C
Nominal Operating Cell Temperature (NOCT)	45±2°C
Refer: Bifacial Factor	70±5%

MAXIMUM RATINGS

Operating Temperature (°C)	-40°C ~ +85°C
Maximum System Voltage	1500VDC (UL and IEC)
Maximum Series Fuse Rating	25A

PACKAGING CONFIGURATION

[Two pallets = One stage]
27pcs/pallet, 54pcs/stack, 540pcs/40' HQ Container

BIFACIAL OUTPUT-REAR SIDE POWER GAIN

5%	Maximum Power (Pmax)	478Wp	483Wp	488Wp	494Wp	499Wp
	Module Efficiency (%)	20.99%	21.23%	21.44%	21.69%	21.92%
15%	Maximum Power (Pmax)	523Wp	529Wp	535Wp	541Wp	546Wp
	Module Efficiency (%)	22.99%	23.25%	23.50%	23.75%	24.01%
25%	Maximum Power (Pmax)	567Wp	575Wp	581Wp	588Wp	594Wp
	Module Efficiency (%)	24.99%	25.27%	25.54%	25.82%	26.09%

ELECTRICAL CHARACTERISTICS

Module Type	JKM455M-7RL3-TV		JKM460M-7RL3-TV		JKM465M-7RL3-TV		JKM470M-7RL3-TV		JKM475M-7RL3-TV	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	455Wp	339Wp	460Wp	342Wp	465Wp	344Wp	470Wp	350Wp	475Wp	353Wp
Maximum Power Voltage (Vmp)	43.25V	39.73V	43.32V	39.84V	43.38V	39.95V	43.44V	40.05V	43.50V	40.11V
Maximum Power Current (Imp)	10.52A	8.52A	10.62V	8.59A	10.72A	8.66A	10.82V	8.73A	10.92A	8.81A
Open-circuit Voltage (Voc)	51.80V	48.89V	51.90V	48.99V	52.00V	49.08V	52.10V	49.18V	52.16V	49.23V
Short-circuit Current (Isc)	11.26A	9.09A	11.35A	9.17A	11.44A	9.24A	11.53A	9.31A	11.63A	9.39A
Module Efficiency STC (%)	20.00%		20.21%		20.43%		20.65%		20.87%	

*STC: ☀ Irradiance 1000W/m² ☁ Cell Temperature 25°C
NOCT: ☀ Irradiance 800W/m² ☁ Ambient Temperature 20°C
*Power measurement tolerance: ±3%

The company reserves the final right to explain any of the information presented. JKM455-475M-7RL3-TV-A2-US

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NEW ENERGY EQUITY, LLC
2530 RIVA ROAD, SUITE 200
ANNAPOLIS, MD 21041
NEWENERGYEQUITY.COM
443-267-5012

PROJECT ADDRESS
1740 HIAWATHA DR EAST
WABASHA, MN 55981

LAT: 44.3633924125
LONG: -92.0267205706

SYSTEM SPECIFICATIONS

SYSTEM SIZE DC	1.765 MW
SYSTEM SIZE AC	POWER LIMITED TO 1.00 MW
DC/AC RATIO	1.765
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	4100
MODULE TYPE	(2675) JINKO JKM460M-7RL3-TV BIFACIAL AND (1425) REC375TP72
MODULE STC RATING	460 W AND 375 W
INVERTER COUNT	9
INVERTER TYPE	SMA SUNNY HIGHPOWER 125KW
INVERTER POWER	125KW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA

MIN/MAX TEMP.	-28°C / 32°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 03651411

NO POSITION, DISTANCE, OR CLEARANCE
ISSUES WITH OVERHEAD ELECTRIC
SERVICE LINES OR OTHER UTILITIES IN
RELATION TO THE PV PANELS.

24/ 7 UNESCORTED KEYLESS ACCESS
PROVIDED FOR THE METERS AND AC
DISCONNECT.

REVISIONS

#	DESCRIPTION	BY	DATE
0	ORIGINAL DESIGN	SPC	3/20/2020
1	SITEPLAN UPDATE	JT	07/01/2021
2	LEASE AREA/ ACCESS EASEMENT	IR	8/2/2021
3	MODULE UPDATE	IR	8/6/2021
4	SCREENING UPDATE	KHC	9/3/2021
5			
6			
7			

DRAWN BY

STEVEN CHAN

PROJECT NAME

STEGEMANN CSG

DRAWING TITLE

EQUIPMENT DOCUMENTS

SCALE ¹

NTS

SHEET

E4

Resolution 20-03 and Approved CUP Plans



The Oldest City in Minnesota

Resolution 20-03

CUP for a Solar Garden / Farm

1712 Hiawatha Dr. East, R27.00110.00,

Sect-04 Twp-110 Range-010 61.64 AC N1/2 DESC AS: COMM AT NW COR THOF TH S0DEG0'41"W WCCS ALNG WLY LIN THOF 806.85' TO POB TH N88DEG55'47"E 1188.49' TO WLY LIN EAGLES BASIN OUTLOTS TH S26DEG27'48"E 62.42' TO SW COR EAGLES BASIN OUTLOTS TH N63DEG32'12"E 360' TH N72DEG2'6"E 138.72' TH N83DEG18'58"E 138.52' TH N89DEG48'45"E 643.11' TH N80DEG24'3"E 104.72' TH N70DEG8'4"E 92.94' TH N65DEG22'29"E 375' TH S24DEG37'31"E 199.44' TH N67DEG53'42"E 226.21' TH S18DEG44'21"E 163.74' TH N71DEG26'28"E 148.87' TO CSAH #30 ROW PLAT #10 TH S22DEG0'19"E 582.16' TH S81DEG49'6"W 3725.22' TO W LIN N1/2 TH N0DEG0'41"E ALNG W LIN THOF 880.69' MOL TO POB, EX

WHEREAS, the property numbered PID # R27.00110.00 located in the NW of the NW of Section 04, Township 110 Range 010, Wabasha

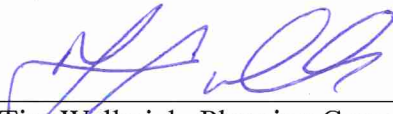
WHEREAS, the site is currently utilized for agricultural purposes but zoned RC and R2 residential, which allows Solar Gardens as a conditional use.

WHEREAS, The Planning Commission provides the following findings:

- a. IPS Development, LLC on behalf of Lawrence and Deborah Stegemann have submitted a complete Conditional Use permit application
- b. The use, if approved will not have a negative impact on the health, welfare or safety of the area or the community in general
- c. The solar garden, if approved, will support the energy needs of the community.
- d. Conditions placed in this CUP will protect the health, safety & general welfare of the community and neighbors use and enjoyment of property and their property values.
- e. The City of Wabasha has sufficient areas zoned Residential to meet the residential needs of the City of Wabasha for the life of the Solar Garden
- f. The applicant will complete and comply with all other state and federal regulatory agencies and obtain all necessary permits.
- g. The proposed use is consistent with the City comprehensive land use plan.
- h. Ingress and egress is provided off access road that is to be constructed by the developer.
- i. The site does not need city sewer or water service.

NOW THEREFORE, IT IS HEREBY RESOLVED, the Planning Commission approves the Conditional Use Permit for a solar garden / farm allowing the applicant to submit plans for a building permit, with conditions:

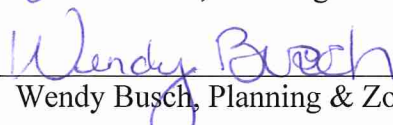
- 1) All performance standards for a solar garden/farm are met.
- 2) Additional evergreens could/should be planted an additional 100 feet to the east or 200 feet to the south to fully screen the solar field from established residential neighborhoods.
- 3) All on-site power and communication lines running between solar panels and buildings shall be buried underground on the premise.
- 4) If the project disturbs more than 1-acre, a Construction SWPPP and Stormwater Management Plan Permit must be submitted and approved by the MPCA.
- 5) A grading plan must be approved by the City Engineer prior to the start of construction for the project.
- 6) A PE must verify the floodwaters in this area would not be excessive or dangerous to life and property.
- 7) Solar panels shall be elevated above the regulatory flood protection elevation (panels themselves, not necessarily support poles).
- 8) A decommissioning plan should be submitted and financial assurances provided to ensure the removal of the project from the site at the end of its useful life.
- 9) The site shall not create any noise, dust, fumes, glare, or other.
- 10) A sign permit is required if necessary



Tim Wallerich, Planning Commission Chair

9-15-2020

Date



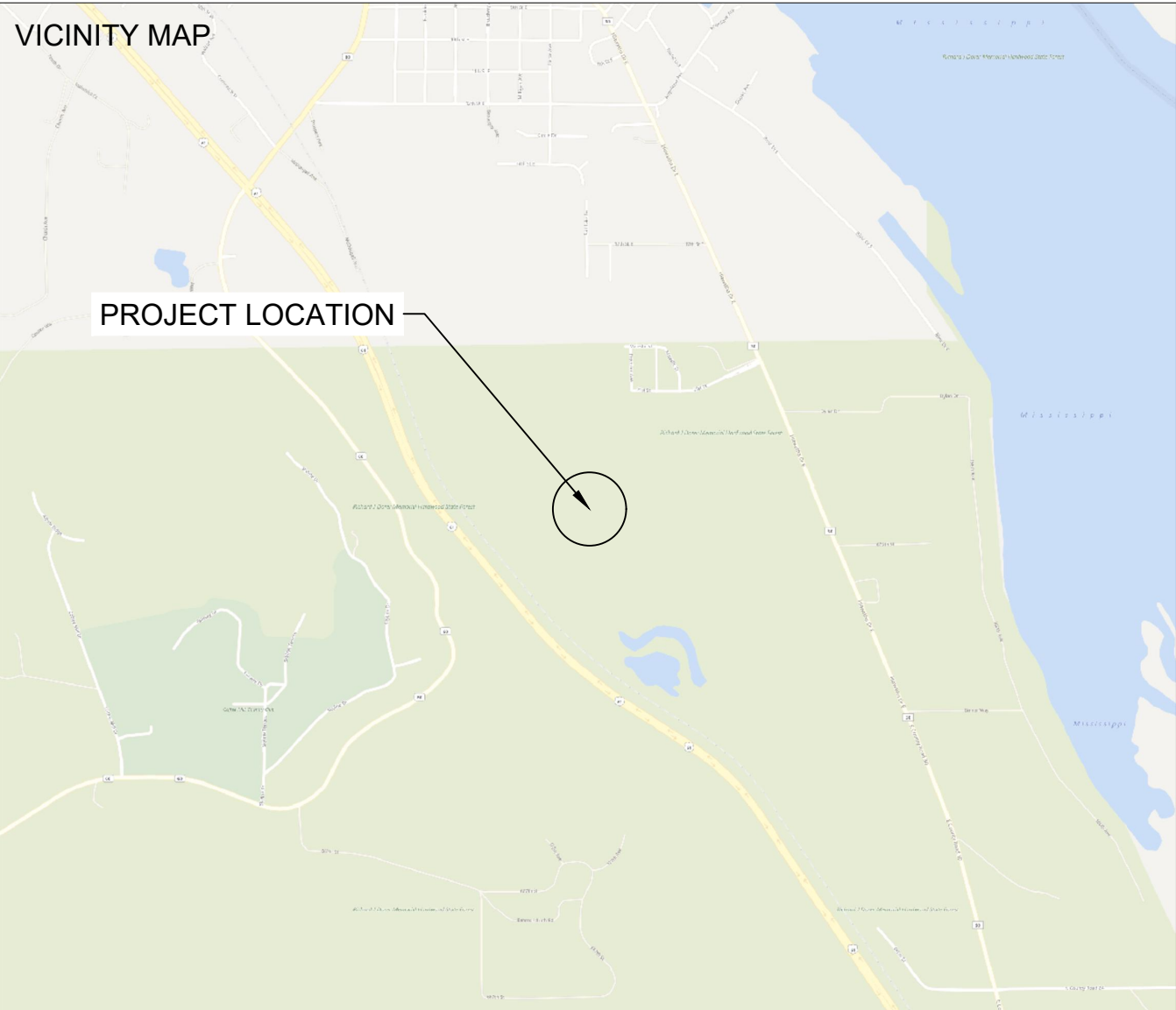
Wendy Busch, Planning & Zoning Assistant

9-15-2020

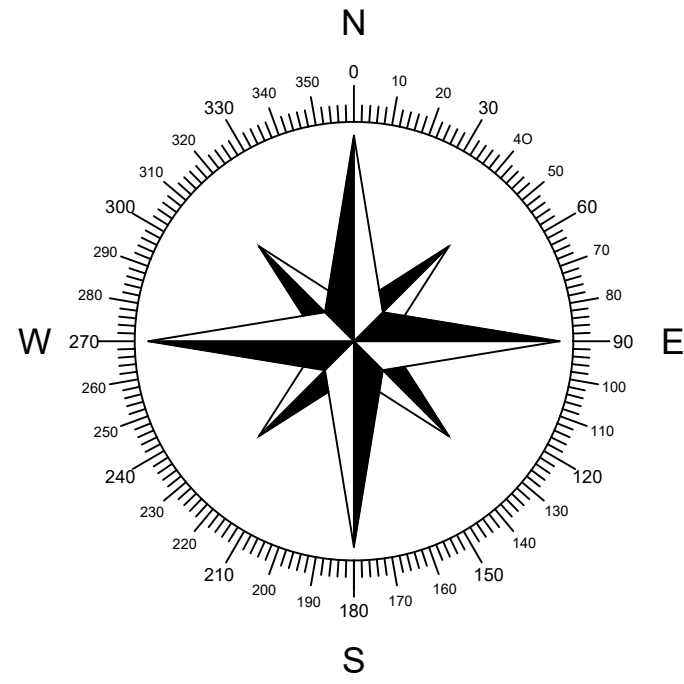
Date

Adopted

June 9, 2020



SPACE FOR PE STAMP:



SHEET NOTES:

UTILITY POLES ARE SHOWN FOR INDICATING LOCATIONS ONLY. SPACING BETWEEN POLES, PHYSICAL PROTECTION BARRIER FOR SWITCHBOARDS, ETC. WILL BE ADDED IN THE DRAWINGS PREPARED FOR THE CONSTRUCTION DOCUMENTS



NEW ENERGY EQUITY, LLC
2530 RIVA ROAD, SUITE 200
ANNAPOLIS, MD 21041
NEWENERGYEQUITY.COM
443-267-5012

PROJECT ADDRESS
924 21ST ST
WABASHA, MN 55981

LAT: 44.3633924125
LONG: -92.0267205706

SYSTEM SPECIFICATIONS

SYSTEM SIZE DC	1.452 MW
SYSTEM SIZE AC	1.000 MW
DC/AC RATIO	1.452
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	3822
MODULE TYPE	REC 380TP72
MODULE STC RATING	380 W
INVERTER COUNT	8
INVERTER TYPE	CPS SCA125KTL-DO/US
INVERTER POWER	125kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA

MIN/MAX TEMP.	-28°C / 32°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 03651411

NO POSITION, DISTANCE, OR CLEARANCE ISSUES WITH OVERHEAD ELECTRIC SERVICE LINES OR OTHER UTILITIES IN RELATION TO THE PV PANELS.

24/ 7 UNESCORTED KEYLESS ACCESS PROVIDED FOR THE METERS AND AC DISCONNECT.

REVISIONS

#	DESCRIPTION	BY	DATE
0	ORIGINAL DESIGN	SPC	3/20/2020
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DRAWN BY

STEVEN CHAN

PROJECT NAME

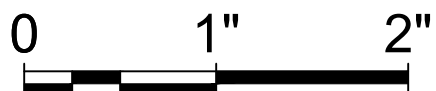
STEGEMANN CSG

DRAWING TITLE

SITE PLAN

SCALE ¹

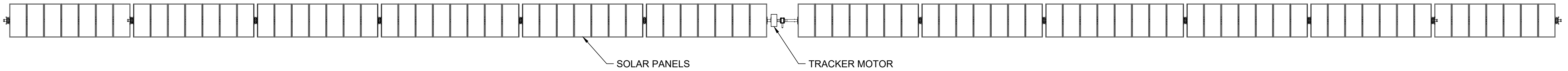
1" = 120'



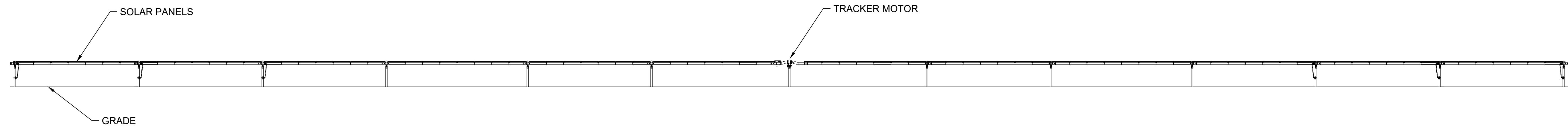
SHEET

PV1

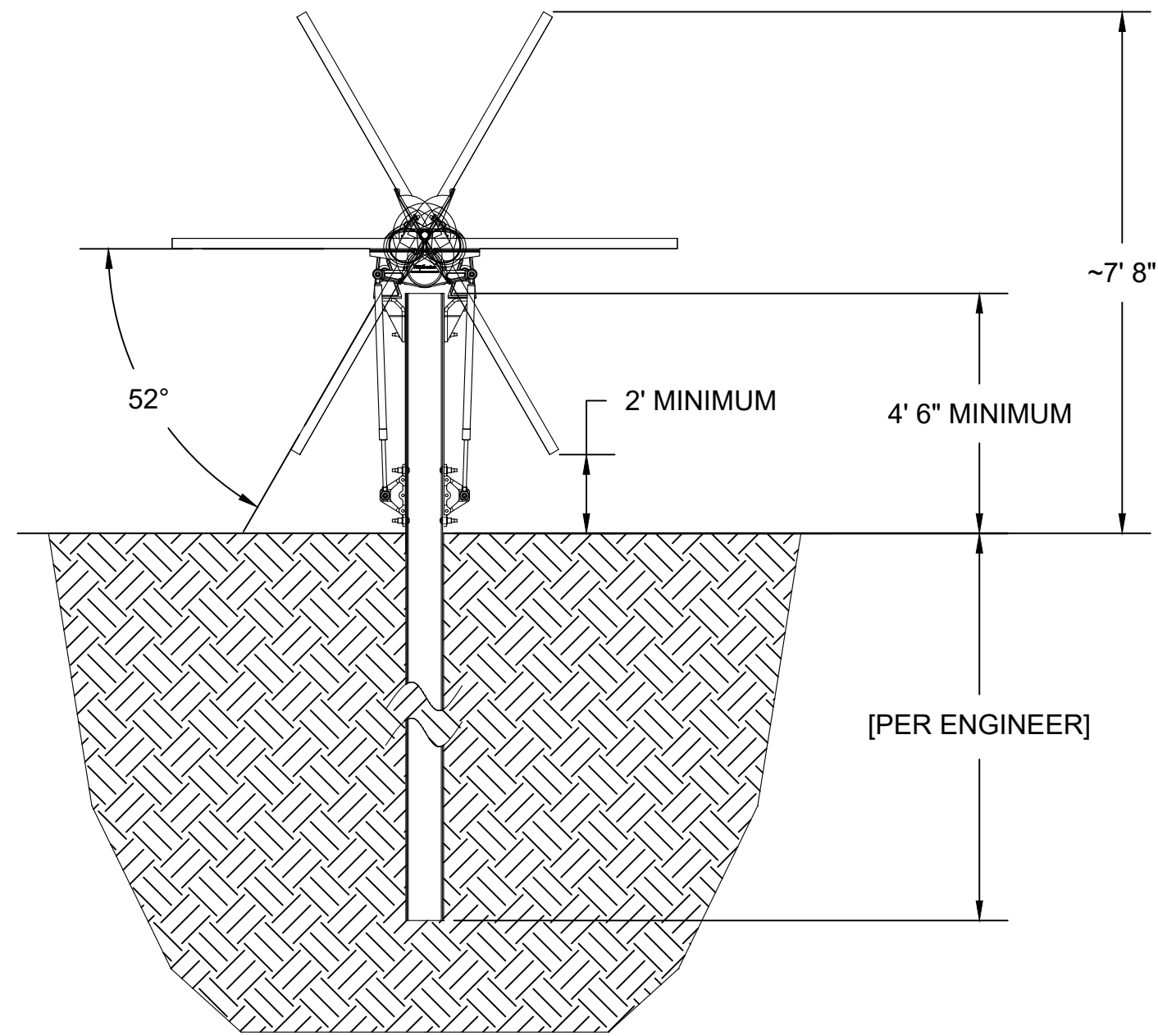




1 SINGLE AXIS TRACKER TOP DOWN VIEW
NTS



2 SINGLE AXIS TRACKER EAST-WEST ELEVATION
NTS



3 SINGLE AXIS TRACKER NORTH-SOUTH ELEVATION
NTS



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LAT: 44.3633924125
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SYSTEM SIZE DC	1.452 MW
SYSTEM SIZE AC	1.000 MW
DC/AC RATIO	1.452
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	3822
MODULE TYPE	REC 380TP72
MODULE STC RATING	380 W
INVERTER COUNT	8
INVERTER TYPE	CPS SCA125KTL-DO/US
INVERTER POWER	125kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA

MIN/MAX TEMP.	-28°C / 32°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

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DRAWN BY

STEVEN CHAN

PROJECT NAME

STEGEMANN CSG

DRAWING TITLE

SAT RACKING DETAIL

SCALE ¹

NTS

SHEET

PV2

SYSTEM SPECIFICATIONS

SYSTEM SIZE DC	1.452 MW
SYSTEM SIZE AC	1.000 MW
DC/AC RATIO	1.452
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	3822
MODULE TYPE	REC 380TP72
MODULE STC RATING	380 W
INVERTER COUNT	8
INVERTER TYPE	CPS SCA125KTL-DO/US
INVERTER POWER	125kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA

MIN/MAX TEMP.	-28°C / 32°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 03651411

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STEVEN CHAN

PROJECT NAME

STEGEMANN CSG

DRAWING TITLE

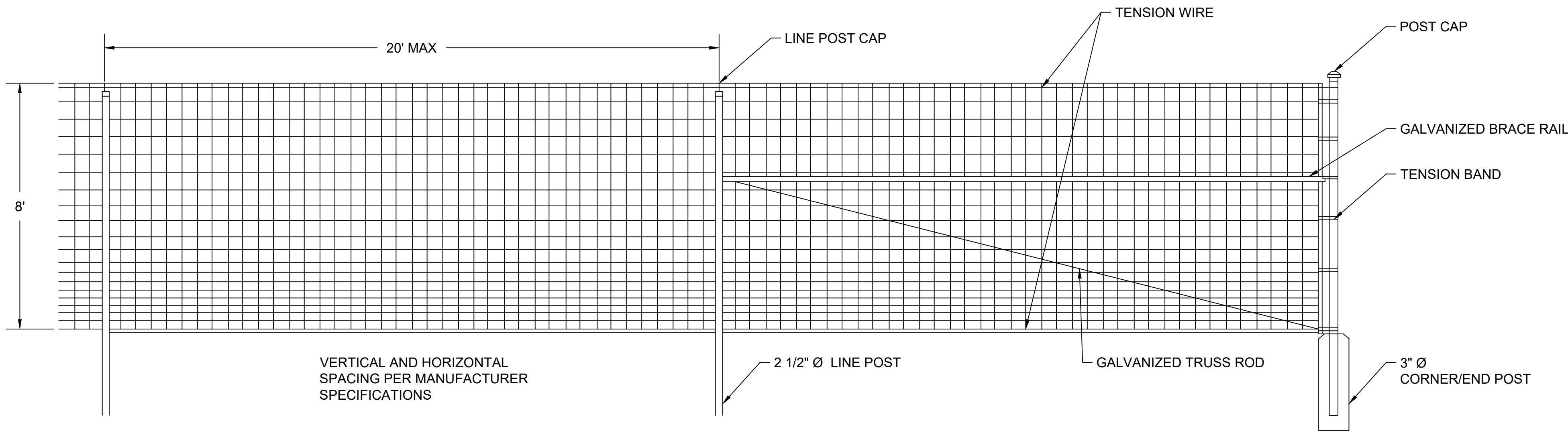
FENCE DETAIL

SCALE ¹

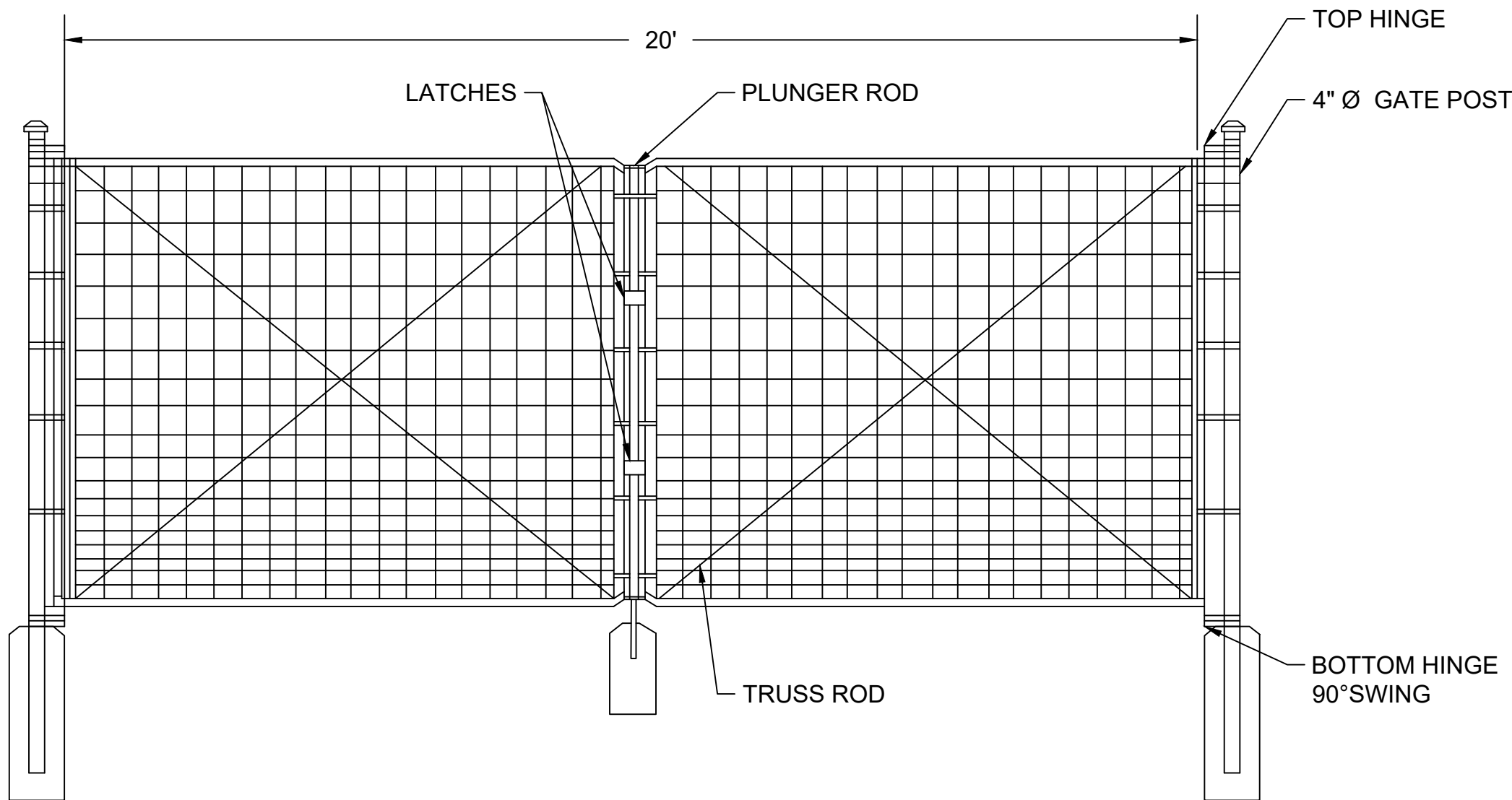
NTS

SHEET

PV3



1 8' FIXED KNOT FENCE
NTS



2 8' FIXED KNOT FENCE GATE
NTS

NOTE:
1. THIS DRAWING IS FOR INFORMATIONAL PURPOSES ONLY
AND NOT TO BE USED FOR CONSTRUCTION.
2. DO NOT SCALE DRAWING

SYSTEM SPECIFICATIONS

SYSTEM SIZE DC	1.452 MW
SYSTEM SIZE AC	1.000 MW
DC/AC RATIO	1.452
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	3822
MODULE TYPE	REC 380TP72
MODULE STC RATING	380 W
INVERTER COUNT	8
INVERTER TYPE	CPS SCA125KTL-DO/US
INVERTER POWER	125KW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA

MIN/MAX TEMP.	-28°C / 32°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
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BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 03651411

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DRAWN BY

STEVEN CHAN

PROJECT NAME

STEGEMANN CSG

DRAWING TITLE

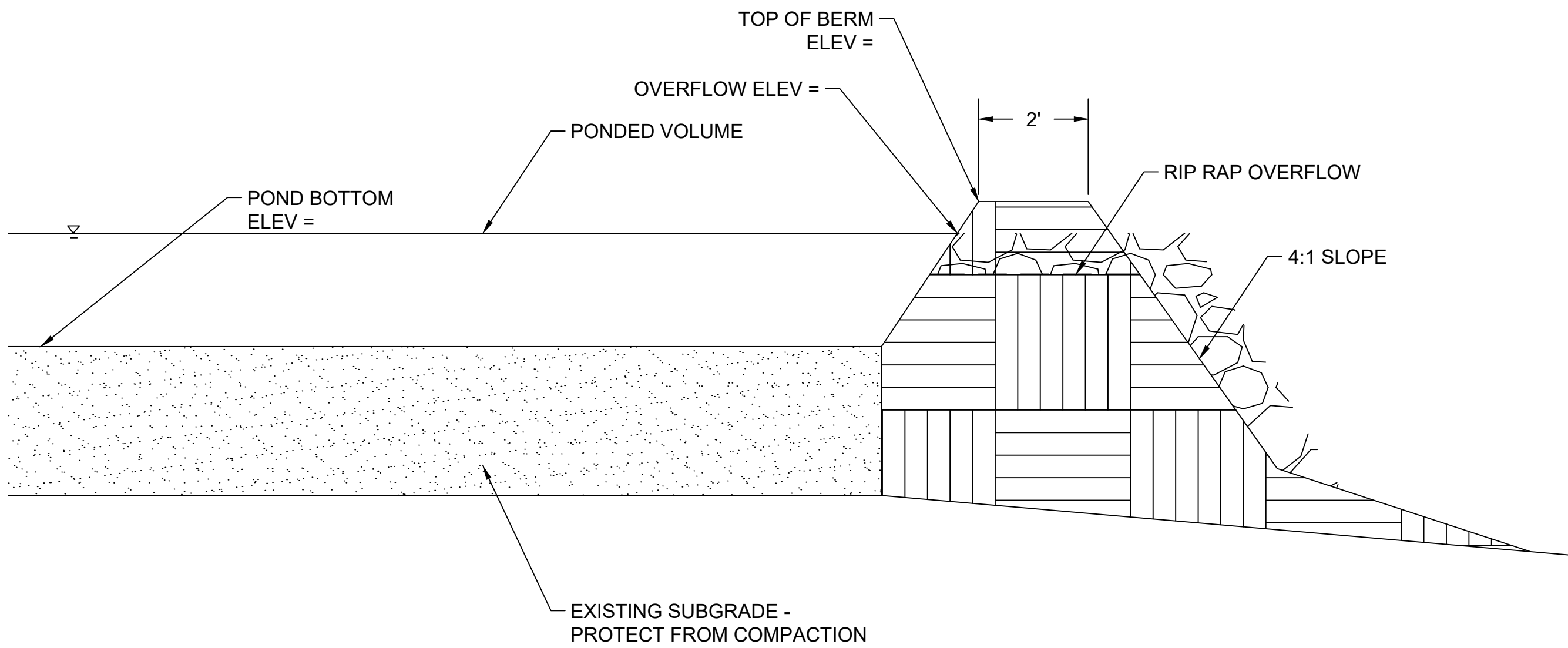
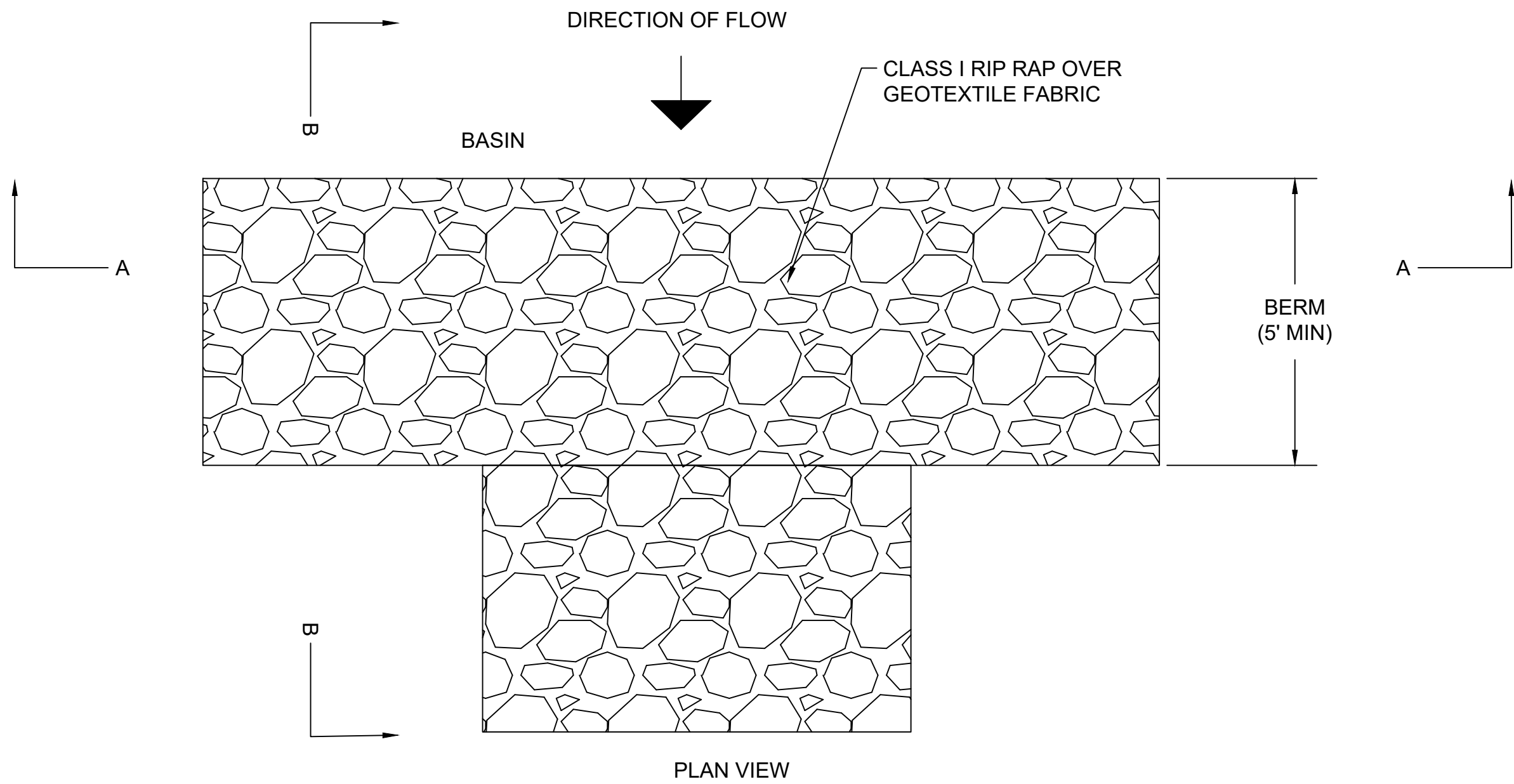
INFILTRATION BASIN DETAIL

SCALE ¹

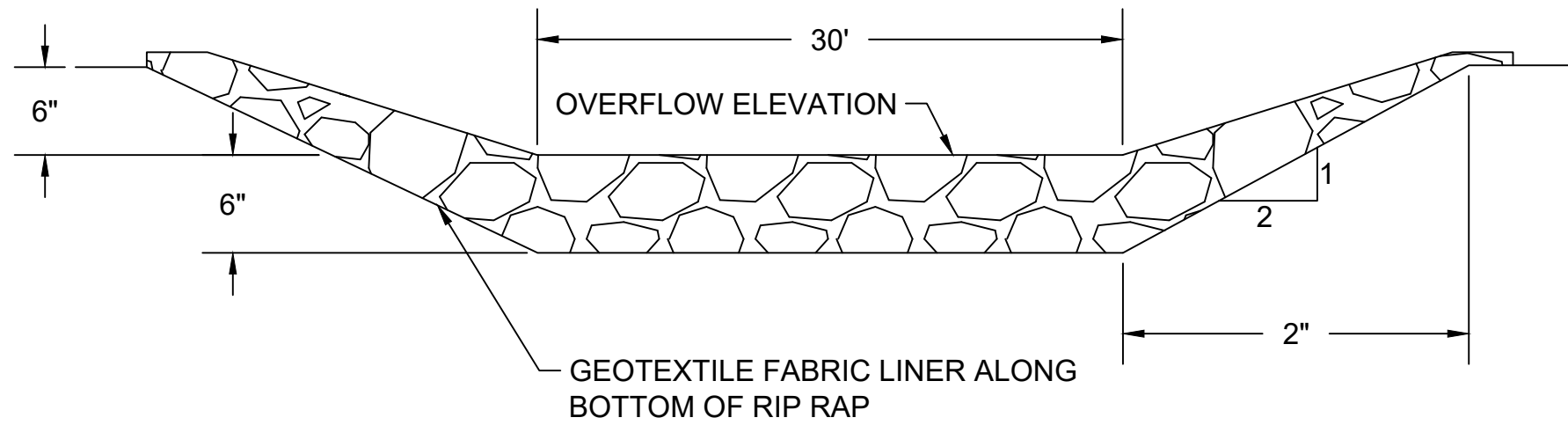
NTS

SHEET

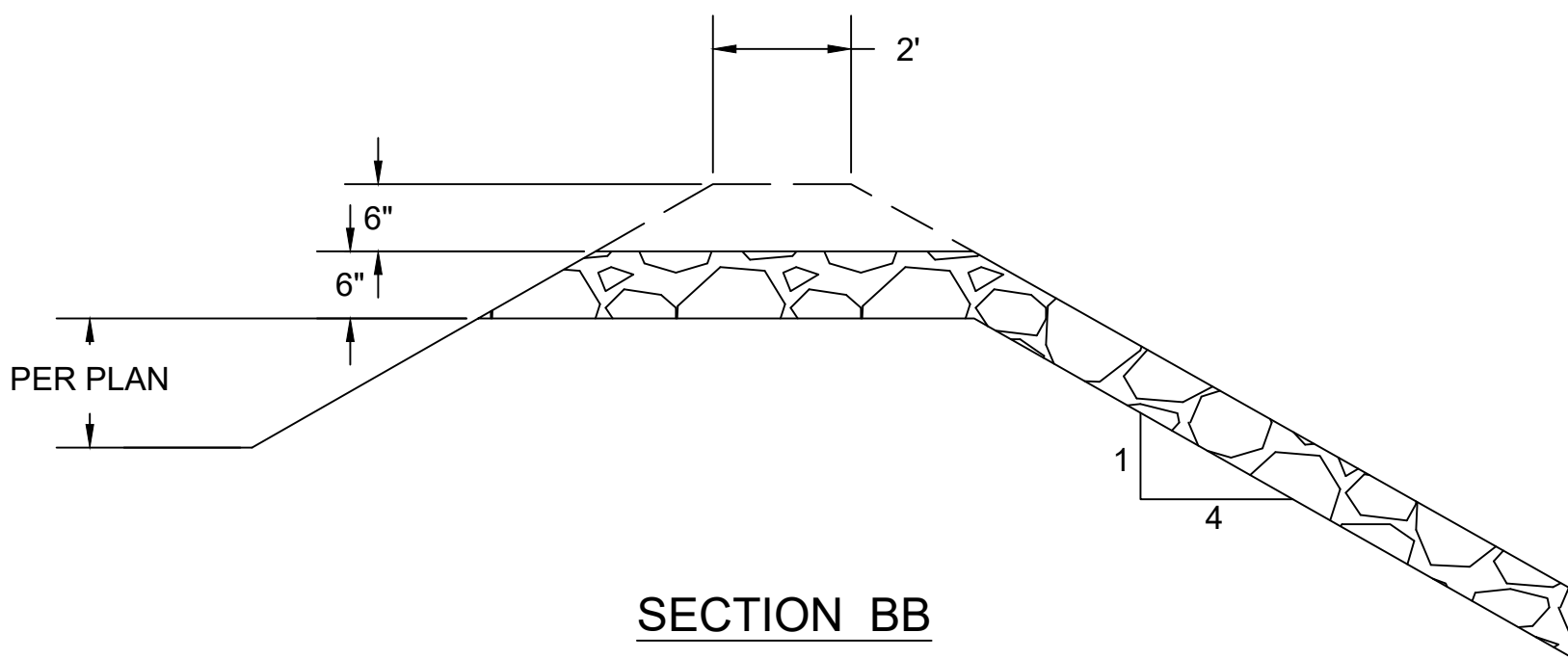
PV4



1 INFILTRATION BASIN NTS



SECTION AA

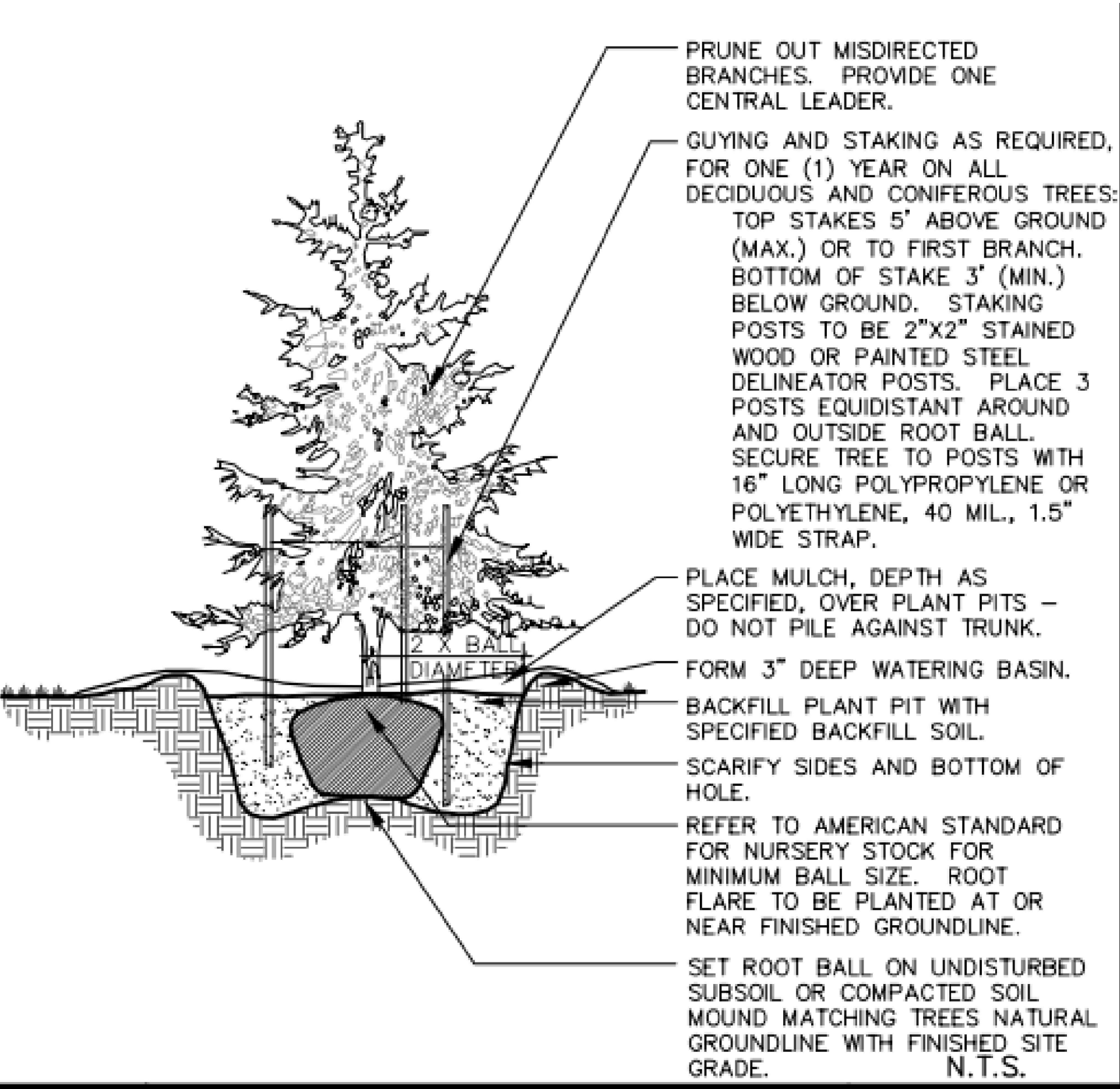


2 RIP RAP OVERFLOW NTS



1 BLACK HILLS SPRUCE SCREENING

Scale: N.T.S.



2 EVERGREEN PLANTING DETAIL

Scale: N.T.S.

PLANTING SCHEDULE

TYPE : BLACK HILLS SPRUCE

HEIGHT : 6' MIN WITHIN 3 YEARS OF PLANTING

NUMBER OF ROWS: 1

SPACING: 16' O.C.



3 PLAN VIEW

Scale: N.T.S.



NEW ENERGY EQUITY, LLC
2530 RIVA ROAD, SUITE 200
ANNAPOLIS, MD 21041
NEWENERGYEQUITY.COM
443-267-5012

PROJECT ADDRESS
924 21ST ST
WABASHA, MN 55981

LAT: 44.3633924125
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SYSTEM SPECIFICATIONS

SYSTEM SIZE DC	1.452 MW
SYSTEM SIZE AC	1.000 MW
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TILT	+/- 52°
MODULE COUNT	3822
MODULE TYPE	REC 380TP72
MODULE STC RATING	380 W
INVERTER COUNT	8
INVERTER TYPE	CPS SCA125KTL-DO/US
INVERTER POWER	125kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA

MIN/MAX TEMP.	-28°C / 32°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
EXPOSURE CATEGORY	C
GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 03651411

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24/ 7 UNESCORTED KEYLESS ACCESS PROVIDED FOR THE METERS AND AC DISCONNECT.

REVISIONS

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0	ORIGINAL DESIGN	SPC	3/20/2020
1			
2			
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7			

DRAWN BY

STEVEN CHAN

PROJECT NAME

STEGEMANN CSG

DRAWING TITLE

TREE PLAN

SCALE¹

NTS

SHEET

PV5

SYSTEM SPECIFICATIONS

SYSTEM SIZE DC	1.452 MW
SYSTEM SIZE AC	1.000 MW
DC/AC RATIO	1.452
AZIMUTH	180°
TILT	+/- 52°
MODULE COUNT	3822
MODULE TYPE	REC 380TP72
MODULE STC RATING	380 W
INVERTER COUNT	8
INVERTER TYPE	CPS SCA125KTL-DO/US
INVERTER POWER	125kW
RACKING	TBD
MONITORING	ALSO ENERGY

DESIGN CRITERIA

MIN/MAX TEMP.	-28°C / 32°C
WIND SPEED (ASCE 7-10)	105 MPH
BUILDING CATEGORY	I
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GROUND SNOW LOAD	50 PSF
BUILDING HEIGHT	0'-0"

OTHER NOTES

CASE NUMBER 03651411

NO POSITION, DISTANCE, OR CLEARANCE
ISSUES WITH OVERHEAD ELECTRIC
SERVICE LINES OR OTHER UTILITIES IN
RELATION TO THE PV PANELS.

24/ 7 UNESCORTED KEYLESS ACCESS
PROVIDED FOR THE METERS AND AC
DISCONNECT.

REVISIONS

#	DESCRIPTION	BY	DATE
0	ORIGINAL DESIGN	SPC	3/20/2020
1			
2			
3			
4			
5			
6			
7			

DRAWN BY

STEVEN CHAN

PROJECT NAME

STEGEMANN CSG

DRAWING TITLE

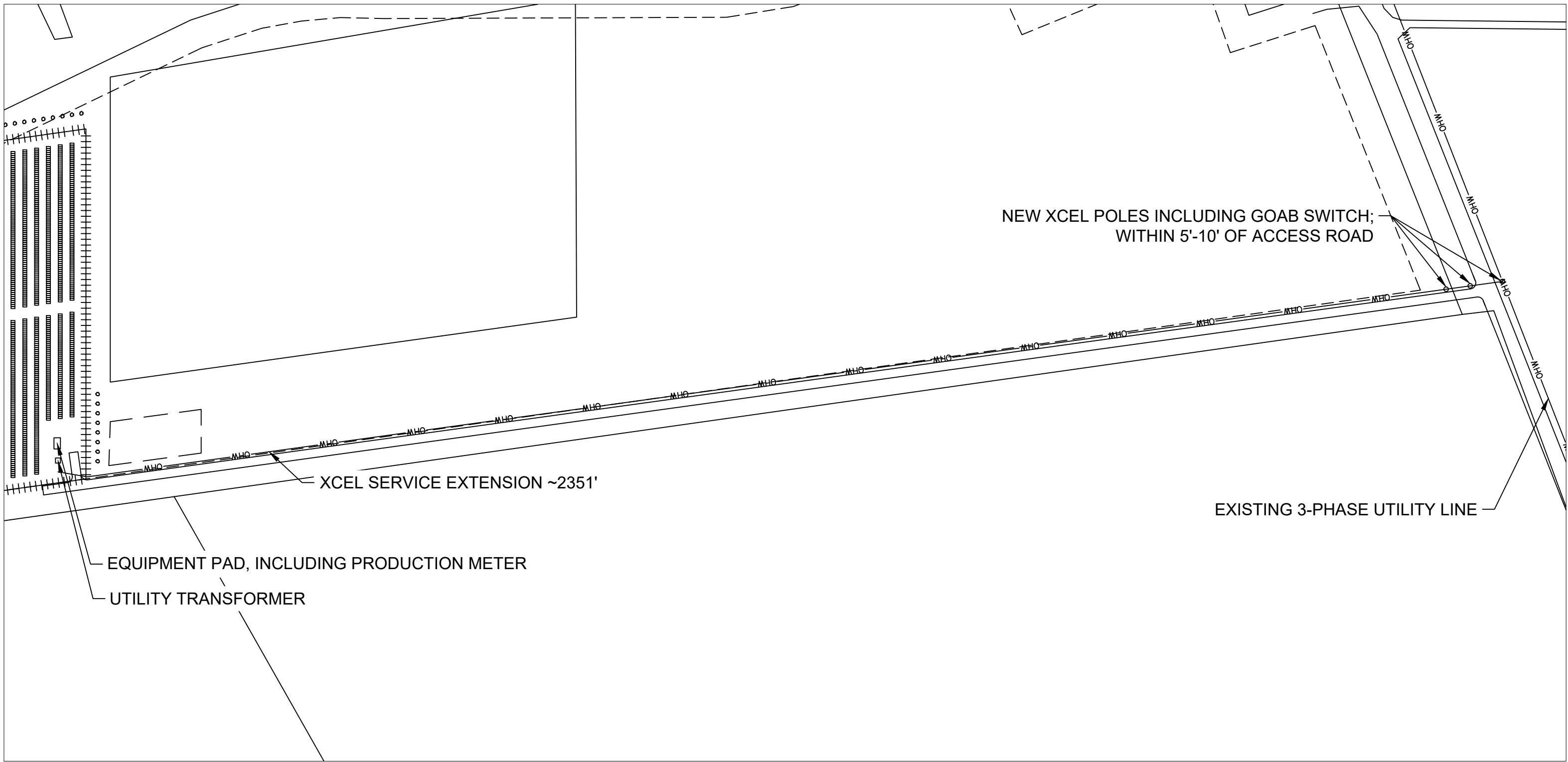
ELECTRICAL DETAILS

SCALE ¹

AS NOTED

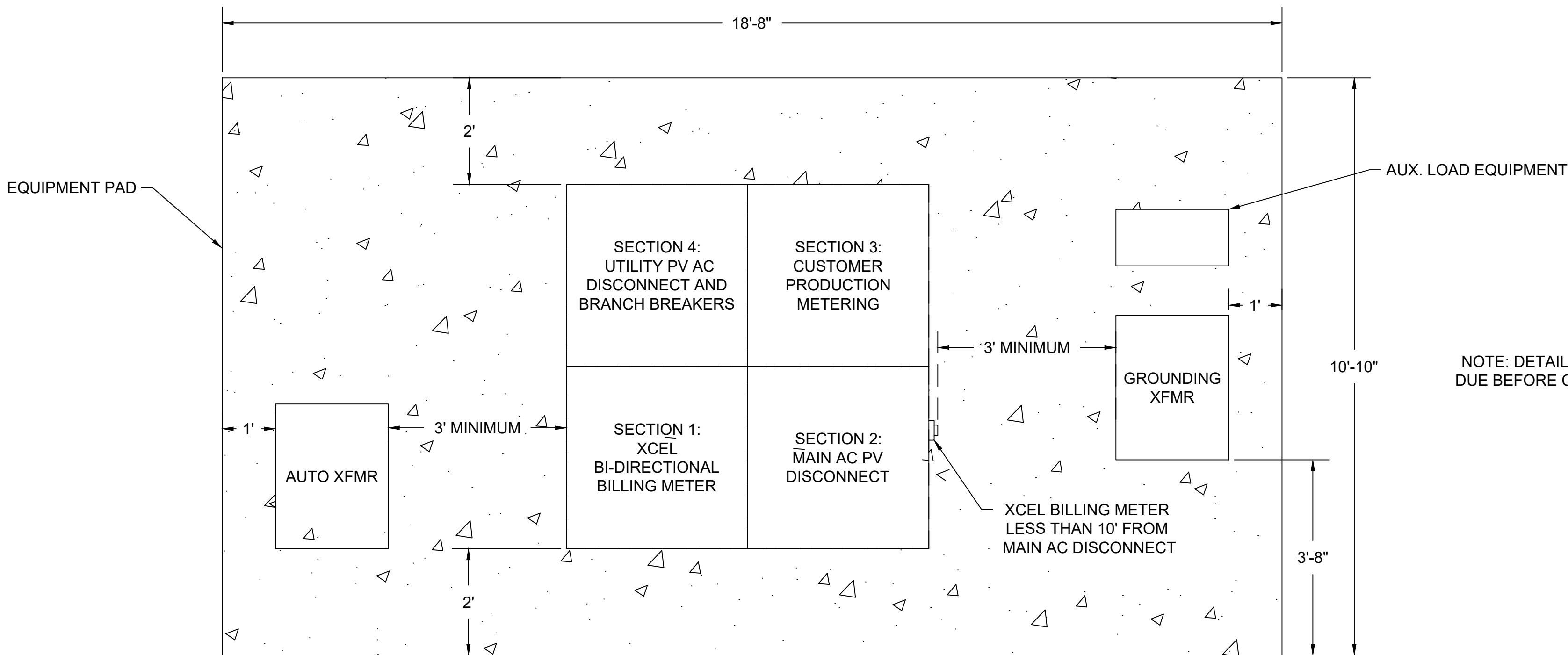
SHEET

E3



1 INTERCONNECTION PLAN

Scale: 1" = 160'



2 EQUIPMENT PAD PLAN

Scale: 3/4" = 1'

NOTE: DETAILED DRAWINGS
DUE BEFORE CONSTRUCTION

