

MANKATO TOWNSHIP PLANNING COMMISSION
Regular Meeting September 17, 2025 - 6:30 p.m.
Mankato Township Hall
788 South Victory Drive, Mankato MN

Any person speaking to the Commission shall give to the Secretary of the
Commission the NAME and HOME ADDRESS of such person prior to speaking.

1. **CALL TO ORDER**

2. **APPROVAL OF AGENDA**

3. **APPROVAL OF MINUTES**

1. **April 16, 2025 Draft Planning Commission Minutes**

4. **BUSINESS ITEMS**

1.

CYM04-25

Request of Kate Pearson and Carsten Schmidt, on behalf of the property owner, Blue Earth County, for a conditional use permit for a large roof-mounted solar energy system on the existing Blue Earth County Public Works building located in the Agricultural district. The subject property is described as the south half of the southwest quarter (S ½ of SW ¼) of Section Thirty-one (31) in Township One Hundred Eight (108) North, of Range Twenty-Six (26) West, containing 76.4 acres of land, more or less, according to the United States Government Survey thereof; excepting therefrom 8.96 acres for Highway Right-of-way shown as parcel BM on the plat designated as Blue Earth County Highway Right-of-Way Plat No. 11 recorded in Book G of plats, Pages 90-84 under warranty deed filed October 16, 1996, and recorded as document 363CR210, 19505 Stoltzman Rd, Mankato MN 56001, Mankato Township, Blue Earth County (Blue Earth County PID R430931300001).

5. **MISCELLANEOUS**

6. **ADJOURNMENT**

Mankato Township Planning Commission

3. 1.

Meeting Date: 09/17/2025

Title

April 16, 2025 Draft Planning Commission Minutes

Attachments

April 16, 2025 Draft PC Minutes

MANKATO TOWNSHIP Planning Commission

4-16-25

The April 16, 2025 meeting of the Mankato Township PC was called to order by Roxanne Johnson at 6:30 PM at the township hall. PC members present: Roger Funfsinn, Jim Jensen, and Roxanne Johnson. Roxanne asked for an approval of the minutes from the March 2025 meeting, were approved as sent.

Planner Victoria Potts presented a request for a Conditional Use Permit and variance for Northern Natural Gas for an expansion of an existing essential public utility, and the variances for setbacks and height of fences

The conditional use and variances were discussed. Roxanne asked about the fence height with barbed wire on top- that is standard for the company. The staff recommends in favor of the conditional use and variances subject to planner recommendations. Public hearing was opened and then closed. Motion made by Roger Funfsinn to pass subject to all planner's recommendations- roll call vote was: Roxanne yes, Roger-yes, Jim yes. Motion carried with all in favor. The request will go to the board with all in favor from the Planning Commission.

The above application is attached to board minutes.

Being no further business meeting adjourned at 6:48.

Respectfully submitted.

Dan Fogal

Clerk

Mankato Township Board

4-16,2025

Meeting was called to order by Mike Lynch, board members present: Mike Lynch and Scott Morgan.

Minutes of the March meeting were approved as sent.

Gravel bids were opened. One from R & E Enterprises. Class 5 gravel \$15.25 per ton, ¾ inch with fines \$15.75 per ton, class five modified \$18.50 per ton. This was the only bid. Motion made by Scott to accept, second by Mike, motion carried with all in favor.

No Clerk report.

Planner Victoria Potts presented a request for a Conditional Use Permit and variance for Northern Natural Gas for an expansion of an existing essential public utility, and the variances for setbacks and height of fences

The Planning Commission recommended approval subject to the recommendations from the planner. Attached is the report from the planner. Public meeting was opened, no one there, public meeting was closed.

The conditional use and variances were discussed. Motion made by Mike to approve the requests subject to planning staff recommendations, second by Scott. All in favor.

Sleepy Hollow is talking about redoing their blacktop, Scott will touch base with them.

Treasurer gave his report and it was accepted as given.

Bills were read by the clerk and approved to be paid.

Discussed road work. Sam talked about the backhoe to get rid of it. Board decided to sell it. Scott moved to sell, second by Mike, motion carried with all in favor.

Being no further business, meeting was adjourned at 7:35.

Dan Fogal

Clerk

Meeting Date: 09/17/2025

Title

CYM04-25

Request of Kate Pearson and Carsten Schmidt, on behalf of the property owner, Blue Earth County, for a conditional use permit for a large roof-mounted solar energy system on the existing Blue Earth County Public Works building located in the Agricultural district. The subject property is described as the south half of the southwest quarter (S ½ of SW ¼) of Section Thirty-one (31) in Township One Hundred Eight (108) North, of Range Twenty-Six (26) West, containing 76.4 acres of land, more or less, according to the United States Government Survey thereof; excepting therefrom 8.96 acres for Highway Right-of-way shown as parcel BM on the plat designated as Blue Earth County Highway Right-of-Way Plat No. 11 recorded in Book G of plats, Pages 90-84 under warranty deed filed October 16, 1996, and recorded as document 363CR210, 19505 Stoltzman Rd, Mankato MN 56001, Mankato Township, Blue Earth County (Blue Earth County PID R430931300001).

Applicant

Kate Pearson and Carsten Schmidt, on behalf of the property owners, Blue Earth County.

Request

Request of Kate Pearson and Carsten Schmidt, on behalf of the property owner, Blue Earth County, for a conditional use permit for a large roof-mounted solar energy system on the existing Blue Earth County Public Works building located in the Agricultural district. The subject property is described as the south half of the southwest quarter (S ½ of SW ¼) of Section Thirty-one (31) in Township One Hundred Eight (108) North, of Range Twenty-Six (26) West, containing 76.4 acres of land, more or less, according to the United States Government Survey thereof; excepting therefrom 8.96 acres for Highway Right-of-way shown as parcel BM on the plat designated as Blue Earth County Highway Right-of-Way Plat No. 11 recorded in Book G of plats, Pages 90-84 under warranty deed filed October 16, 1996, and recorded as document 363CR210, 19505 Stoltzman Rd, Mankato MN 56001, Mankato Township, Blue Earth County (Blue Earth County PID R430931300001).

Location

The subject property is described as the south half of the southwest quarter (S ½ of SW ¼) of Section Thirty-one (31) in Township One Hundred Eight (108) North, of Range Twenty-Six (26) West, containing 76.4 acres of land, more or less, according to the United States Government Survey thereof; excepting therefrom 8.96 acres for Highway Right-of-way shown as parcel BM on the plat designated as Blue Earth County Highway Right-of-Way Plat No. 11 recorded in Book G of plats, Pages 90-84 under warranty deed filed October 16, 1996, and recorded as document 363CR210, 19505 Stoltzman Rd, Mankato MN 56001, Mankato Township, Blue Earth County (Blue Earth County PID R430931300001).subject property is described as a 1.87-acre Tracts A and B, Section 25, Township 108 North, Range 26 West, Blue Earth County (59698 203rd Street, Blue Earth County PID R430925200008).

Existing Land Use

The land consists of a 67.40-acre lot, and the site contains three buildings. The largest building, which will obtain the solar system, is the public works building and the two smaller accessory structures will be utilized for storage purposes.

Zoning

The subject property is located in the Agriculture zoning district.

Environmentally Sensitive Areas

The site does not contain slopes or wetlands

City Code

[Mankato Township Land Use Ordinance](#)

[Blue Earth County Code of Ordinances](#)

Review

Request of Kate Pearson and Carsten Schmidt, on behalf of the property owner, Blue Earth County, for a conditional use permit for a large roof-mounted solar energy system on the existing Blue Earth County Public Works building located in the Agricultural district.

The proposed 453-kilowatt solar energy system will span across all three rooftops of the newly built Blue Earth County Public Works facility. The applicant has stated in the submitted narrative that “the use of solar is to offset the building consumption, while also showcasing clean energy technology for the county”.

General Requirements

The rooftop solar system “shall be in compliance with any applicable local, state, and federal regulatory standards, including, but not limited to, the State of Minnesota Uniform Building Code, and the Minnesota State Electric Code, as amended” (Chapter 24 Zoning, Article IV. Requirements and Standards, Division 2 Performance Standards, Section 24-334. General Requirements).

The placement of the proposed rooftop solar system is located in the Agriculture District within the Mankato Township. While the Mankato Township’s Land Use Ordinance does not address standards for rooftop solar systems within the Agricultural district, it does provide that “[w]here the provisions of any statute, other ordinance or regulation impose greater restrictions than this Ordinance, the provides of such statute, other ordinance or regulation shall be controlling.” In this case, while the Mankato Township Land Use Ordinance does not provide standards, the Blue Earth County Zoning Ordinance does. According to Blue Earth County’s Zoning Ordinance, a large solar system is an allowed use within the Agricultural district as an interim use. However, the Mankato Township does not permit Interim uses, so a Conditional Use permit was applied for instead.

Blue Earth County’s Zoning Ordinance states small solar energy systems are permitted uses within the agriculture district and defines a small energy system as a “solar array that is a minimum of 120 square feet in size with a power capacity of less than 100 kilowatts” (Chapter 24, Article III. District regulations, Section 24-3 definitions and word usage). The site plans submitted exceed the wattage and size, thus making the submission of a large solar energy system request. The applicant has submitted for a coverage of 31,326 square feet and a 453 kilowatts rooftop solar energy system.

Given the location of the solar site, stormwater management and erosion and sediment controls are not applicable. The point of interconnection of the 823 solar arrays will be located in the utility room of the Blue Earth County Public Works Building.

Signage has not been proposed with this request; however, the applicant shall conform to all signage requirements found in Blue Earth County Ordinance as well as Mankato Township Ordinances. A condition has been listed herein that any future signage shall conform to both Blue Earth County and Mankato Township Ordinances.

The location of the proposal is not located in in any safety zones and therefore meets the requirements listed in Blue Earth County stating “systems shall be prohibited within an any safety zones as designated in the Mankato Regional Airport Zoning Ordinance, as amended” (Chapter 24, Article IV. Requirements and Standards, Section 24-334 Solar energy system standards, A. General requirements, subpart 7). The request is for a rooftop mounted solar

system. Therefore wetlands will not be disturbed and the applicant will conform to “the standards contained in Minnesota Rules Chapter Policy in the Blue Earth County Land Use Plan and Water Management Plan” (Chapter 24, Article IV. Requirements and Standards, Division 2. Performance Standards, Section 24-334 Solar energy system standards, A. General requirements, subpart 8).

Given the placement of the solar modules on the Blue Earth County Public Works roof, the systems operation and design will limit the misdirection of solar radiation onto adjacent property, public roads, and/or other areas open to the public.

Roof Mounted Solar Energy Systems

The submitted site plans indicate the roof-mounted solar system will not exceed the height of the parapet roof. The tallest part of the Blue Earth County Public works building is 35 feet, which meets the required height regulations of Mankato Township ordinance for the agriculture district. The solar modules will be placed inside the sunken area of the roof, and a side view site plan displays the height of the solar modules being lower than the parapet walls thus meeting the requirement of roof-mounted systems not exceeding “the maximum allowed height in any zoning district and shall not exceed greater than 4 feet above the existing structure’s roof” (Chapter 24, Article IV. Requirements and Standards, Division 2. Performance Standards, Section 24-334 Solar energy system standards, Part B. Performance Standards, subpart 2a).

Plans for solar modules that extend past the exterior perimeter of the building have not been submitted and the applicant has indicated that this is not the intended use nor future use of the solar site. In the future, if the applicant decides to place the solar modules near or on an awning, both a construction permit and amendment to the conditional use permit will be required.

The roof is a flat top parapet design; and the solar modules are proposed to be placed over 13 feet away from the exterior perimeter of the building. The applicant, therefore, meets the setback requirement of two feet.

A rooftop solar hot water system is not being proposed at this time. In the future if the applicant wishes to make this addition, both a construction permit and amendment to the conditional use permit will be required.

It is at the request of the applicant for a building-integrated system. Therefore, the roof-mounted system’s 80% requirement does not apply.

The photovoltaic solar energy system contains an electrical disconnect switch that is placed in the utility room found on the grounding transformer. The applicant is currently working with Xcel Energy company to receive an interconnection agreement. The applicant submitted documentation of the interconnection application with Xcel Energy which is currently pending approval.

According to the Inverter Specs sheet and the JA Solar Specs, the modules contain certifications by a third-party safety science organization called Underwriters Laboratories, which conforms with the Blue Earth County Code 24-334 for Photovoltaic solar energy systems stating that the “components must have an Underwriters Laboratory (UL) listing”.

Requirements for Large Solar Energy Systems

A pre-applicant meeting was held on July 30th, 2025, to discuss submittal requirements for a large solar energy system between staff and the applicants.

The site plans submitted indicate the placement of the solar modules will be attached via stainless steel anchor bolt system on the rooftop of the Public Works facility. Once a construction permit has been obtained from Mankato Township, the applicant shall submit, in writing from a licensed professional engineer or the manufacturer’s engineer, evidence that the foundation and design of the solar energy system is within accepted professional standards given the climate conditions within 60 days of completion of construction.

This project and placement of solar modules do not affect shorelands, wetlands, and the floodplain district given that the site is not located near shoreland, wetlands are not present on the parcel, and the site is not located in a floodplain district. Additionally, the solar site is located on top of the building and will not interact with any of the

previously listed areas of concern.

The solar system will conform to Blue Earth County Zoning Ordinance's prohibition on placement of a solar site in a previously wooded area, since the site will be located on top of the building and there is not an existing wooded area. Nor is the placement of the solar site going to be in an area "with moderate to high biological significance as identified by Minnesota Department of Natural Resources" (Chapter 24, Article IV. Requirements and Standards, Division 2. Performance Standards, Section 24-334. Solar Energy System Standards, Part C, Subpart 11).

The site is not located in a flood plain district and is on top of building. Therefore, the request is in conformance with Blue Earth County's Solar Ordinance pertaining to the placement in a flood plain district.

Given the placement of the solar energy system being on top of the public works facilities, stormwater will be directed off the roof and through spouts and not directed thereafter into the public right of way.

During construction, equipment, delivery vehicles, or employee vehicles will not be in a public right-of-way. The applicant stated that all items will be placed and/or stowed on the property as the solar modules are assembled. Additionally, the applicant stated that the parking of employee vehicles will be located in the designated parking lot as seen in the *Parking During Construction* document.

Setbacks

The request of the large solar system is located on the roof and will meet all of the required setbacks listed in Blue Earth County's Zoning Ordinance's performance standards for solar energy systems. As seen in image *Dwelling Setbacks*, the applicant exceeds the required 750 feet setback to the nearest dwelling.

The submitted site plan reflects the outmost edge of a solar array is more than 150 feet in all directions to the nearest public right-of-way, which conforms with Blue Earth County's Zoning Ordinance. The outermost edge of a solar array to the side yard and rear yard exceeds the 50 feet yard setback, which conforms to the Mankato Township Land Use Ordinance for the Agriculture District and Blue Earth County's Solar Ordinance.

Density

There is not a solar facility within 2500 feet of the proposed rooftop solar site, which conforms to the density requirement within Blue Earth County's Solar ordinance.

Screening

As previously stated, the placement of the Solar modules will be located on top of Blue Earth County's Public Works facilities. All buildings have a parapet rooftop, which naturally will screen the solar modules from sight. As seen in the Ground Eye View, the solar modules are not visible to any pedestrians standing or walking near the building at 6 feet in height.

Fences

Given that the Solar modules will be installed on top of the buildings, the parapet roof will act as the fencelike structure enclosing the solar site.

Landscaping Standards

No landscaping plans were submitted since the solar site will be located on top of the public works building.

Noise standards

Noise generated from the rooftop solar site shall comply with Minnesota Rules 7030 governing noise, any Minnesota Pollution Control Agency, or government agencies relating to solar arrays.

Odors

The proposed facilities do not anticipate the emission of odorous matter beyond the lot line.

Glare

The solar arrays will not be directed or reflecting on adjacent properties, since the placement will be located on the roof of the Public Works facility. The applicant, additionally, stated there was an anti-reflective coating on the

arrays and that they are considered tier one modules. “Meaning they have higher amount of irradiance absorption and less reflection, resulting in little to no glare”.

Exterior Lighting

No exterior lighting has been proposed at this time. If the applicant, in the future, proposes to install exterior lighting, it shall conform to the Mankato Township Land Use Ordinance’s performance standards for exterior lighting.

Vibration and Explosives

No earthshaking vibrations or explosives are anticipated based on the use. Therefore, the applicant will conform to all requirements surrounding vibration and explosives within the Mankato Township Land Use Ordinance.

Dust, Smoke, and Particulate Matter

The emission of dust, smoke, or particulate matter to the degree that is detrimental or an endangerment to the public safety, health, comfort or general welfare of the public is not a concern given that the use should not create dust, smoke, or particulate matter.

Toxic and Noxious Matter

The established use shall operate as to not discharge across the boundaries of the lot or through percolation into the subsoil toxic or noxious matter exceeding the State of Minnesota and Federal EPA standards.

Findings

Staff respectfully submits the following findings of fact for the proposed Conditional Use Permit:

1. The proposed use conforms with the Township Land Use Plan. Large Solar sites are considered Interim Use permits, but the Township does not process IUPs, so a conditional use permit has been applied for instead.
2. The applicant has demonstrated the need for the proposed use. As stated in the narrative, the applicant will utilize the solar site to convert energy for the Public Works facilities.
3. The proposed use will not degrade the water quality of the Township since the use will not impact wells, septic systems, or wetlands within the proposed parcels.
4. The proposed use will not adversely increase the quantity of water runoff. There are no known adverse impacts from water runoff.
5. The soil conditions are adequate to accommodate the proposed use. The placement of the solar site will be located on the roof of the Blue Earth County’s Public Works buildings and will not adversely affect the soil conditions.
6. The proposed use does not create a potential pollution hazard. There are no known pollution hazards enclosed within the proposal.
7. Adequate utilities, access roads, drainage, and other necessary facilities have been or are being provided.
8. Adequate measures have been taken by the applicant to continue to provide sufficient off-street parking and loading space during the construction of the project.
9. The proposed conditional use permit is not proposed to increase traffic congestion or traffic hazards based off the rooftop solar site.
10. The conditional use will not be injurious to the use and enjoyment of other property in the immediate vicinity for the purpose already permitted. The proposed use is an accessory use to the primary and the site is not visible to pedestrians walking to standing near by the facility.
11. The establishment of the conditional use will not impede the normal and orderly development and improvement of surrounding vacant properties for predominant uses of agriculture in the area.
12. Adequate measures have been taken to prevent or control offensive odor, fumes, dust, noise, and vibration, so that none of these will constitute a nuisance. The applicant has not submitted a proposal to install any lighted signs and other lights that would cause a disturbance to neighboring properties.
13. Site-specific conditions and such other conditions are established as required for the protection of the public’s health, safety, morals, and general welfare have been established and are included herein.

Recommendation

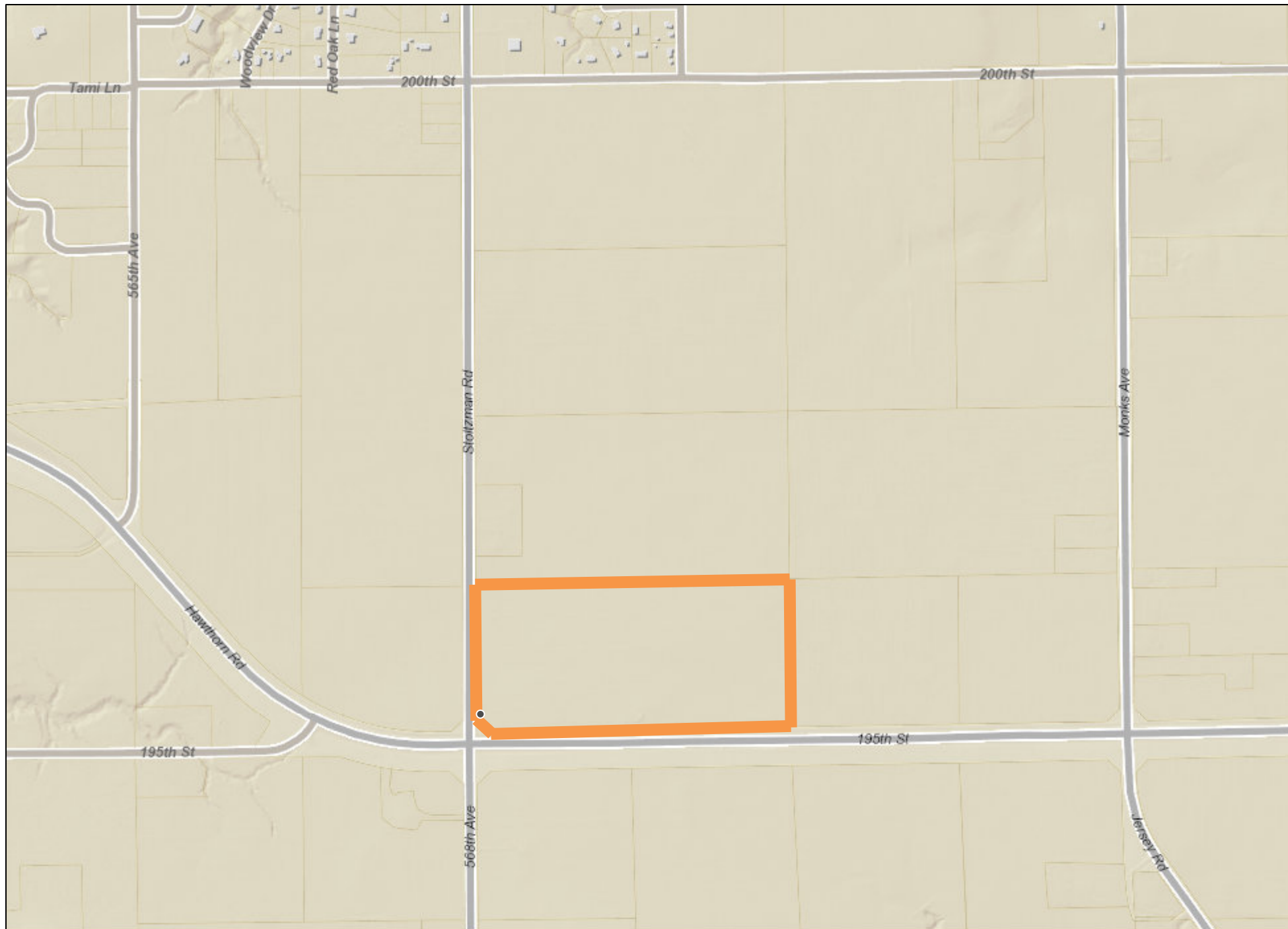
Staff recommends approval of the conditional use permit for a large roof-mounted solar energy system on the existing Blue Earth County Public Works building located in the Agricultural district, with the following conditions:

1. All solar equipment and solar related use shall be compliance with any applicable local, state, and federal regulatory standards, including, but not limited to, the State of Minnesota Uniform Building Code, and Minnesota State Electric Code, as amended.
2. A construction permit from Mankato Township shall be in place prior to the start of the work.
3. Any future signage shall conform to both Blue Earth County Zoning Ordinance and Mankato Township Land Use Ordinance and if a construction permit is applicable, it shall be obtained prior to the commencing of work.
4. In the future, if the applicant decides to place solar modules near or on an awning, both a construction permit and amendment to the conditional use permit will be required.
5. An amendment to the conditional use permit and a construction permit will be required, if the applicant wishes to add a rooftop solar hot water system.
6. An interconnection agreement shall be obtained prior to applying for a construction permit
7. All site development shall conform to the approved plans and resolution. Any revisions to the plans shall first be approved by the Mankato Township Board prior to any construction activities.
8. The manufacturer's licensed engineer or a State of Minnesota licensed professional engineer shall certify in writing that the foundation and design of the solar energy system is within accepted professional standards, given the climate conditions and the certification shall be provided within 60 days of project completion as per Blue Earth County Solar Ordinances.
9. All staging areas, employee parking, construction parking and delivery parking shall be provided on-site in the designated area. Parking or staging on the township road or county road, or in its right-of-way is prohibited.
10. Noise generated by the solar site shall comply with Minnesota Rules 7030, any Minnesota Pollution Control Agency, or government agencies relating to solar arrays.
11. No exterior lighting was proposed at this time, however, if the applicant proposes to install exterior lighting, it shall conform to the Mankato Township Land Use Ordinance's performance standards for exterior lighting.

Attachments

General Location Map
Aerial Map
Aerial Site Plan
Site Plan
Project Narrative
Racking Drawings
Rooftop Attachment
Point of Interconnection
Side View Site Plan
Solar Array Rooftop setbacks
Inverter
JA Solar
Xcel Interconnection Application
Parking During Construction
Dwelling Setbacks
Additional Setbacks
Ground Eye View
Current Use - Aerial View
Cross section Public Works Facilities

General Location Map



Date: August 2025

Author:

This information is to be used for reference purposes only. The City of Mankato does not guarantee accuracy of the material contained herein and is not responsible for misuse or misinterpretation.



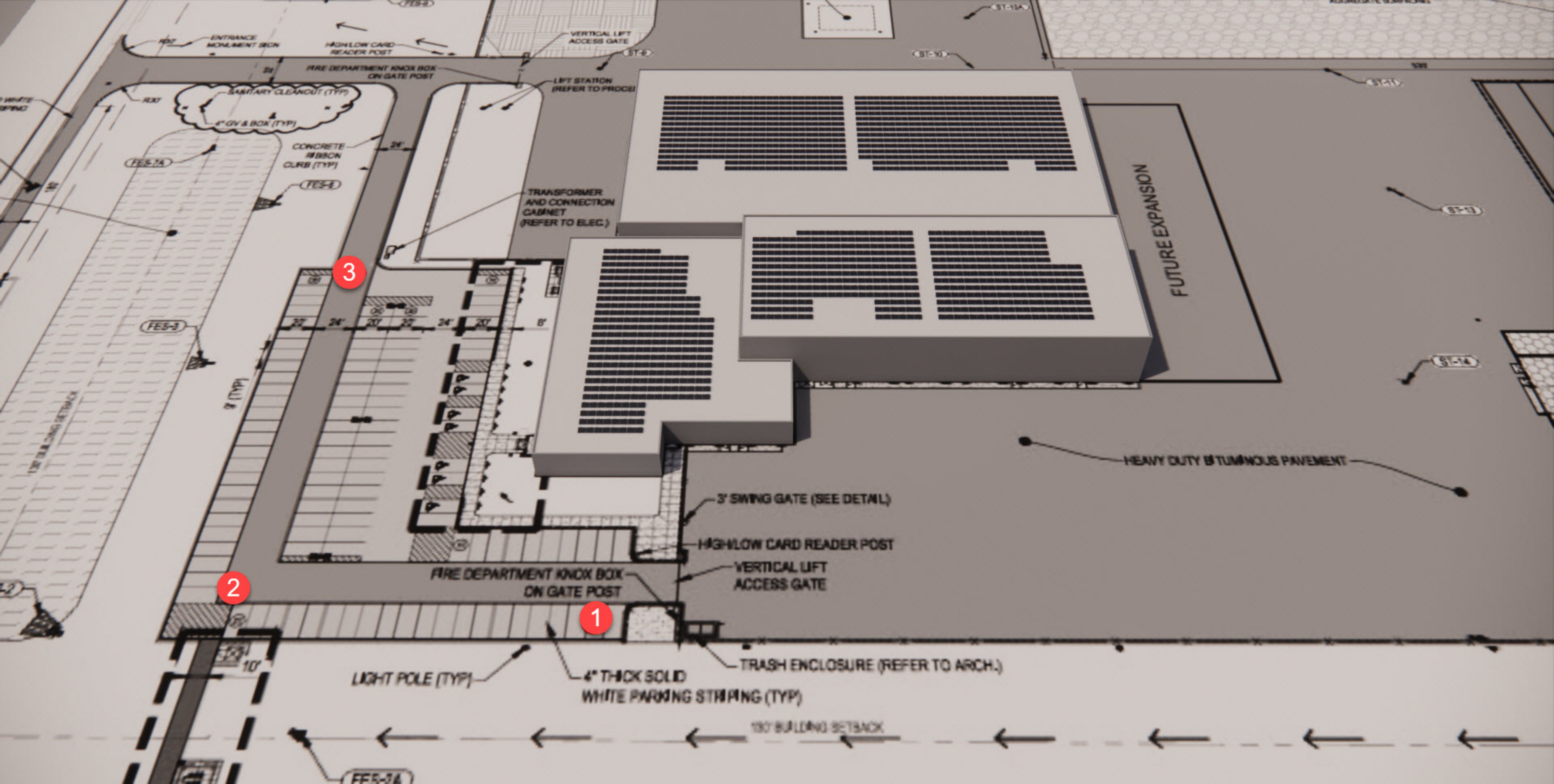
Aerial Map



Date: August 2025

Author:

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STOLTZMAN ROAD (CSAH 16)

(E) UTILITY TRANSFORMER
(E) UTILITY METERING CABINET
POINT OF INTERCONNECTION FOR PV SYSTEM
LOCATED ADJACENT TO UTILITY TRANSFORMER

(N) UTILITY PRODUCTION METER
(N) PV UTILITY AC DISCONNECT

6' FIRE SETBACK, TYP.

ARRAY 1

ARRAY 2

(N) IRRADIANCE SENSOR, (N) AMBIENT TEMPERATURE
SENSOR & (N) MODULE TEMPERATURE SENSOR

(N) PANELBOARD "DP-PV1-1" &
(N) SOLAREEDGE DATALOGGER

(N) SOLAREEDGE SE120KUS (SE-TRI-US00IBNS4) INVERTERS #1-#3

C
E-503

ARRAY 4

ARRAY 5

ARRAY 3

195TH STREET (CSAH 90)

01 SITE PLAN

SCALE: 1" = 50'-0"

POINT OF INTERCONNECTION PLAN

SCALE: 1/4" = 1'-0"

(N) GROUNDING TRANSFORMER "T-PV"

(E) UTILITY TRANSFORMER

(E) UTILITY METERING CABINET
POINT OF INTERCONNECTION FOR PV SYSTEM
LOCATED ADJACENT TO UTILITY TRANSFORMER

(N) PANELBOARD "DP-PV1"

(N) UTILITY PRODUCTION METER
(N) PV UTILITY AC DISCONNECT

MODULE COUNTS AND RATINGS PER ARRAY												
ARRAY	TYPE	MODULE TYPE	MODULE DIMENSIONS	MODULE RATING	AZIMUTH	TILT	MODULES	PV OPTIMIZER STRINGS	SPARE MODULES	TOTAL MODULES	KWDC	KWAC
ARRAY 1	ROOFTOP	JA SOLAR JAM72D30-550/MB	89.69"x44.65"x1.38"	550W	180°	10°	192	8	0	192	105.60KWDC	360.00KWAC
ARRAY 2	ROOFTOP	JA SOLAR JAM72D30-550/MB	89.69"x44.65"x1.38"	550W	180°	10°	218	8	0	218	119.90KWDC	
ARRAY 3	ROOFTOP	JA SOLAR JAM72D30-550/MB	89.69"x44.65"x1.38"	550W	180°	10°	165	7	0	165	90.75KWDC	
ARRAY 4	ROOFTOP	JA SOLAR JAM72D30-550/MB	89.69"x44.65"x1.38"	550W	180°	10°	128	11	0	128	70.40KWDC	
ARRAY 5	ROOFTOP	JA SOLAR JAM72D30-550/MB	89.69"x44.65"x1.38"	550W	180°	10°	120		0	120	66.00KWDC	
MODULES PER PV OPTIMIZER STRING				23 – 26		TOTALS	823	34	0	823	452.65KWDC	360.00KWAC

GENERAL NOTES

- (823) JA SOLAR JAM72D30-550/MB 550W MODULES.
- (3) SOLAREEDGE SE120KUS (SE-TRI-US00IBNS4) INVERTERS.
- (823) SOLAREEDGE C65IU OPTIMIZERS.
- PANELCLAW CLAWFRPLUS 10 DEGREE MODULE RACKING.
- CONTRACTOR TO ENSURE THAT THE PHOTOVOLTAIC ARRAY AND ASSOCIATED EQUIPMENT MEET FIRE CODE.
- INVERTERS COMPLY WITH RAPID SHUTDOWN PER NEC ART. 690.12.
- REFERENCE STRUCTURAL DRAWINGS FOR ARRAY DIMENSIONS.
- EQUIPMENT LABELS SHALL BE IN ACCORDANCE WITH NEC 690 AND XCEL ENERGY STANDARDS.
- A PERMANENT PLAQUE OR DIRECTORY SHALL BE INSTALLED PROVIDING THE LOCATION OF THE AC DISCONNECTING MEAN IF NOT WITHIN 10' OF THE MAIN SERVICE IN COMPLIANCE WITH NEC 690.56(B).
- ALL XCEL ENERGY EQUIPMENT IS 24/7 UNESCORTED KEYLESS ACCESS.
- NO OVERHEAD POWER LINES IN THE VICINITY.

KEYNOTES

- LOCATED ON NORTH-FACING WALL AT ROOF.
- CONTRACTOR TO ENSURE IRRADIANCE SENSOR HAS A CLEAR AND UNOBSTRUCTED VIEW OF THE SKY, FREE FROM ANY OBJECTS THAT COULD CAST SHADOWS OR BLOCK SUNLIGHT.



REV.	DATE	DESCRIPTION
0	07/01/25	PERMIT SUBMITTAL
1	07/28/25	UTILITY COMMENTS

SITE PLAN

19505 STOLTZMAN ROAD
MANKATO TOWNSHIP, MN 56001

PROJECT NAME	BLUE EARTH COUNTY PUBLIC WORKS FACILITY
DESIGNER	MCCALMONT ENGINEERING
DRAWN BY	J. BAGLIETTO
CHECKED BY	N. LOVGREN
DATE	03/10/2025
SCALE	E-100.500
PLANT DATE	07/28/2025
SHEET SIZE	24" X 36"

Professional Engineer
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
Signature: Aaron McCalmont
Title: Professional Engineer
Date: 07/28/2025
License Number: 58593



1600 Utica Ave Suite 900
St Louis Park, MN 55416
443.904.7632 • McKinstry.com



August 6th, 2025

Victoria Potts
MVCOG Program Administrator
10 Civic Center Plaza
Mankato, MN 56001

Dear Ms Potts,

Please see the following explanations and attached documentation required for a Conditional Use Permit application for a *Large Solar Energy System* for the Blue Earth County Public Works Rooftop Solar array.

Project Description:

The Blue Earth County's new Public Works facility is currently under construction and is to be completed in late 2025. Simultaneously, McKinstry is working with Blue Earth County to construct a **453kW_{dc}; 360kW_{ac}** rooftop solar array. The array will cover all three rooftops on the building and will have setbacks of at least 10ft from the inside edge of the parapet wall. The goal of this array is to offset the buildings consumption, while also showcasing clean energy technology for the County and creating economic resiliency for municipal operations through significant cost savings long term. From this array, the County will avoid using 856,082 pounds of CO₂, which is equivalent to 52 homes' energy use for one year and 82 homes' electricity use for one year.

1. Pre-Application Meeting

- a) A virtual pre-application meeting was held on Wednesday, June 30th with Victoria Potts from the City of Mankato and Kate Pearson, Chris Sawyer, Carsten Schmidt, and Jared Mitchell from McKinstry. It was discussed that most items were only applicable to ground mount solar arrays, please find the responses to the application questions below and supplemental information as requested:
 - a. **Existing Conditions Site Plan** – per guidance from Ms. Potts, an aerial image of the current state of the building is acceptable. See attached image (*Attachment 1-Existing Conditions Site Plan Aerial Image*). Additionally, the site plan of the building under construction is included (*Attachment 2- Existing Site Plan*). Note: the building construction is not part of McKinstry's solar project.
 - b. **Proposed Conditions Site Plan** – see attached image of the proposed conditions site plan (*Attachment 3- Proposed Conditions Site Plan*) – this was reviewed with Ms. Potts as an acceptable document to submit showing the proposed conditions of the rooftop solar array.
 - c. **Written approval for road access from the applicable road authority** – Not applicable - This project is a rooftop solar array, which will not need any additional road access outside of the existing parking lot and roadways into the facility. The Public Works facility has already received approval for the road access that is currently being constructed.
 - d. **Proposed Grading Plan** – Not Applicable - There will not be any grading associated with this project. All work will be done on the rooftop.
 - e. **Stormwater Pollution Prevention Plan** – Not Applicable - A stormwater pollution prevention plan is not applicable as this project will not disturb any ground area and is located on the roof of the building.
 - f. **National Pollutant Discharge Elimination System Construction Stormwater Permit** Not Applicable - This permit is not applicable as this project will not disturb any ground area and is located on the roof of the building.



- g. **Operations and Maintenance Plans for All Permanent and Temporary Stormwater Control Measures** – Not Applicable - This plan is not applicable as this project will not disturb any ground area and is located on the roof of the building.
- h. **Vegetation and Seeding Plan for All Perennial Vegetation** - Not Applicable - This plan is not applicable as this project will not disturb any ground area and is located on the roof of the building.
- i. **Maintenance Plan for all Perennial Vegetation** - Not Applicable - This plan is not applicable as this project will not disturb any ground area and is located on the roof of the building.
- j. **Decommissioning Plan** – Not Applicable - A decommissioning plan is not applicable for this project as this array is to be in service indefinitely and is not to be decommissioned in the foreseeable future. If there are any equipment issues with the system such as inverter or module failures, these components will be individually replaced with new equipment by licensed professionals.
- k. **Proof of a Financial Surety Agreement to Guarantee Decommissioning, Payable to the Landowner** – Not Applicable - to this project as a decommissioning plan is not applicable.
- l. **A statement signed by the landowner acknowledging the County's ability to create a lien on the property and collect as a special assessment, any solid waste removal costs incurred by the County as a result of an inadequate financial surety** – Not Applicable - There will not be any solid waste removal associated with this project.

2. The manufacturer's engineer or a State of Minnesota, licensed professional engineer shall certify in writing that the foundation and design of the solar energy system is within accepted professional standards, given local soil and climate conditions, within 60 days of completion of construction.

Not Applicable - This array is a mix between a ballasted and mechanically attached rooftop solar array, which will not have any foundations in the ground nor disturb any soils. A ballasted rooftop system is comprised of a racking system that sits on top of the roof and has 32lb concrete blocks that sit in trays on the roof in order to weigh the array down due to any wind uplift. There are also 11 mechanical attachments on this array, which are anchored into the roof to also keep the system attached to the roof during high wind events. Not Applicable

3. All elements of the system shall be prohibited within shoreland as defined in section 14-4.

Not Applicable - This array will not be located near any shoreland and is located on the rooftop of a building.

4. Any system proposed within an area governed by an orderly annexation agreement shall have written approval from the municipality and township prior to the county accepting an application.

Not Applicable - This system is not located in an area governed by an orderly annexation agreement.

5. Property, wetlands and waterways down gradient from a proposed system shall be protected from flooding and erosion due to increases in the volume, velocity and peak water flow rate of stormwater runoff.

Not Applicable - This is a rooftop solar array and will not be exposed to any stormwater runoff.

6. Any project proposed on a grade of eight percent or greater shall be carefully reviewed to ensure adequate measures have been taken to prevent erosion or sedimentation from impacting down gradient properties, wetlands or waterways.

Not applicable - This project is located on a flat roof surface.

7. The conversion of existing wooded areas for the placement of systems is prohibited.



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St Louis Park, MN 55416
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Not applicable - This project is not located in a wooded area.

8. All elements of the system shall be prohibited within all floodplain districts.

Not Applicable - This project is not located in a floodplain district.

9. Stormwater runoff shall not be directed into any public rights-of-way.

Not Applicable - This project does not produce any stormwater runoff.

10. Sites which require permanent stormwater management facilities or best management practices shall be designed in accordance with the MPCA NPDES construction stormwater permit and Blue Earth County stormwater standards. Plans for permanent stormwater management facilities or best management practices shall be approved by Blue Earth County prior to making application for a land development permit that requires a public hearing.

Not Applicable - This is a rooftop solar array and will not require any permanent stormwater management or best management practices.

11. All elements shall be prohibited in areas with moderate to high biological significance as identified in the Minnesota Department of Natural Resources Biological Survey.

Not Applicable - The is a rooftop solar array and will not be located nor will disturb any areas with biological material.

12. The parking of any equipment, delivery vehicles, or employee vehicles within any area of public rights-of-way during the construction or maintenance phases of the proposed project, shall be prohibited.

Not Applicable - There will not be any equipment, delivery vehicles, or employee vehicles in any public rights-of-way during construction.

13. Large solar energy systems shall meet or exceed the prescribed setbacks

Not applicable – all setbacks are attributed to ground mount solar arrays. This project is a rooftop solar array does not trigger any required setbacks.

14. Density. New or expansion of existing large solar energy systems proposed within 2,500 feet of an existing or approved large solar energy system shall be reviewed by county staff for a determination of aggregate impact. Additional conditions may be added by the county to mitigate those impacts.

Not applicable – This array will not be located within 2500ft of an existing solar array.

15. Screening. All newly proposed large solar energy systems or proposed modifications to existing large solar energy systems may be subject to conditions requiring the development of a landscape plan, and installation and maintenance of screening placed outside of the fenced perimeter and consisting of suitable native shrubbery and/or trees.

Not applicable – This is a rooftop solar array system that will not require a landscaping plan.

16. Fences. All fencing shall meet the accessory structure setback requirements for the applicable zoning district. The required setbacks may be increased if deemed necessary by the zoning administrator. Fences shall consist of open fencing such as agricultural fence, chain link, or barbed wire security fence. Other fencing plans shall be approved by the affected road authority. Fences shall not exceed six feet in height, except security fences, which shall not exceed eight feet in height, including barbed wire toppings.

Not applicable – This is a rooftop solar array system that will not require a fence.



17. Application for large solar energy systems. Any person proposing to construct or erect a large solar energy system shall make a written land use development application to the zoning administrator. Application for such permit shall be made upon a form furnished by the county and shall not be complete unless it contains the following:

- a. **A site plan of existing conditions shall be prepared and submitted to the planning agency.**

Per guidance from Ms Potts, an aerial image of the current state of the building is acceptable. See attached image (*Attachment 1-Existing Conditions Site Plan Aerial Image*). Additionally, the site plan of the building currently under construction has been included as *Attachment 2 – Existing Site Plan*. This building construction is not a part of the McKinstry project.

- b. **A site plan of proposed conditions:**

See *Attachment 3-Proposed Conditions Site Plan*, which shows the following:

- **Location, size, and spacing of solar arrays on the site** - Included
- **Location and spacing of all power poles associated with the proposed project** - Not Applicable
- **Location and size of all roadways including roadways used for access and maintenance of the site.**
- **Planned location of all electric lines connecting the solar energy system to the building, substation or other electric load.** - Included
- **New electrical equipment other than at the existing building or substation that is the connection point for the solar energy system.** - Included
- **Proposed erosion and sediment control measures as required by section 24-304.** - Not Applicable
- **Computer generated rendering (profile view) of the project that accurately depicts the proposed solar energy system in relation to any structures or roads within 1,000 feet of the outermost edge of a proposed solar array. Changes in surface water drainage patterns.** - Not Applicable
- **Proposed permanent stormwater management facilities and best management practices, when required.** - Not Applicable
- **Proposed location of all employee parking areas.** - Included
- **Proposed location of all staging areas.** - Not Applicable
- **Proposed location of all temporary structures related to the construction of the project.** - Not Applicable
- **Proposed location of any temporary refueling stations.** - Not Applicable
- **Delineated wetland boundaries, approved by Blue Earth County, when applicable** - Not Applicable
- **A table showing the total amount of impervious surface being added to the site, including, but not limited to: inverter pads, access roads, solar panels, etc.** - Not Applicable

- c. **The proposed installed capacity, in kilowatts, for the site.**

The proposed rooftop solar pv system will be 453kWdc; 360kWac.

- d. **Proposed type of mounting and racking systems, and manufacturer's specifications or engineering designs for the type of mounting and racking, including a description of the type of foundation needed for the proposed system, if applicable.**

See *Attachment 4 – Racking Drawings* for the manufacturer's specifications and engineering designs. The racking for this array will be PanelClaw clawFRplus – 10 degree tilt. This array is a mix between a ballasted and mechanically attached rooftop solar array and will not have any foundations. The ballast blocks are 32 pound,



4"x8"x16" concrete blocks that will sit in the racking trays. Page 7 of *Attachment 4 – Racking Drawings* show how the ballast blocks will be positioned underneath of the panels in the racking trays. Additionally, here is a link that visually shows how the racking system is installed:

<https://www.youtube.com/watch?v=ONpOYb7Kj6w>

There are also 11 mechanical attachments on this array, which are anchored into the roof to also keep the system attached to the roof during high wind events. The mechanical attachments are detailed on Page 13 of *Attachment 3 – Racking Drawings* as well as in *Attachment 5 – Mechanical Attachments*.

e. **A description of the method of connecting the system to a building or substation.**

See *Attachment 6 – Electrical Interconnection*. This array will be interconnected into the Public Works facility in order to offset building consumption. The solar array panels will have conduit wiring routed to the inverters located on the north-facing wall at the highest roof edge – see Callout A on the drawings. From the inverters, the conduit is routed along the rooftop, through the parapet walls, to a PV junction box in the main electrical room. The conduit then goes out to a panelboard and PV utility ac disconnect where the array is interconnected into the utility metering cabinet. All of the equipment is located next to the existing utility transformer pad.

f. **A copy of the interconnection agreement with the local electric utility or a written explanation outlining why an interconnection agreement is not necessary.**

The proposed arrays interconnection application was started with Xcel Energy on May 2nd, 2025 and officially submitted on July 18th, 2025. A timeline of events between the initial start of the application to the official submission is below. Refer to *Attachment 7 – Xcel Interconnection Status* for documentation on the status of the application.

- 5/2/2025 – Began filling out the application but needed Xcel to approve the load analysis for approval as the Public Works facility is a new building
- 5/6/2025 – McKinstry email follow up with Xcel on approval, no response.
- 5/9/2025 – McKinstry email follow up with Xcel on approval, no response.
- 5/13/2025 – McKinstry email follow up with Xcel on approval, no response.
- 5/15/2025 – McKinstry email follow up with Xcel on approval, no response.
- 5/19/2025 – McKinstry follow up with Xcel on approval – response explaining how they need the load analysis submitted explaining what the anticipated electric consumption is for the new building to determine the solar array offset potential.
- 5/28/2025 – McKinstry submitted load analysis to Xcel. Xcel indicated they needed the load analysis stamped by an engineer.
- 6/12/2025 – McKinstry worked with the new buildings electrical contractor to get the load analysis and calculations stamped. McKinstry then submitted to Xcel.
- 6/17/2025 – McKinstry sent checks for Interconnection application to Xcel
- 6/18/2025 – McKinstry email follow up with Xcel on approval, no response.
- 6/27/2025 – Initial application was submitted and Xcel verified all signatures.
- 7/5/2025 – McKinstry follow up with Xcel if checks were received – Significant back and forth because Xcel could not find the checks. Xcel found the checks on 7/17/2025 and pushed the application forward. **Official submission with all documents was 7/18/2025.**
- 7/24/2025 – Xcel reviewed for application completeness and made comments on the single line diagram
- 7/29/2025 – McKinstry updated electrical drawings and resubmitted to Xcel



- 8/5/2025 – Xcel has until this date to continue application review. At this point, the application will then get pushed into their official engineering review. The engineering review will take 3 weeks to complete. If the engineering review does not trigger any additional studies, the interconnection agreements are sent out.

The interconnection process has a lengthy timeline and typically takes about 12-16 weeks after initial application submission to interconnection agreement documents. Although this project does not have the interconnection agreement with Xcel completed yet, the application is well underway. Additionally, this project was submitted to Xcel to complete a pre-application report. These reports give an initial indication if there are any capacity issues with the proposed project. From the results of this report, there were not any concerns with existing transmission capacity and the size of this proposed project. See *Attachment 8 – Xcel Pre Application Report* for the final report completed by Xcel on January 28th, 2025.

- g. **An itemized decommissioning plan with cost estimates for each item shall be required to ensure that facilities are properly removed after their useful life. Decommissioning of solar energy systems must occur within 180 days of either the end of the system's serviceable life, or the system's discontinued use. If a system does not generate energy for a period of 12 consecutive months, it is deemed to be a discontinued use. All items associated with a discontinued use shall be defined as solid waste, in accordance with Section 24-3 of the Blue Earth County Code of Ordinances. The board shall require the posting of a bond, letter of credit or the establishment of an escrow account in the name of the landowner, to ensure proper decommissioning. Any cost incurred by the county for the decommissioning of a discontinued system, as a result of an inadequate financial surety, shall be assessed back to the landowner under Subd. 14 of Minnesota Statute 375.18, as amended.**

A decommissioning plan is not applicable for this project as this array is to be in service indefinitely and is not to be decommissioned in the foreseeable future. If there are any equipment issues with the system such as inverter or module failures, these components will be individually replaced with new equipment by licensed professionals.

- h. **Application fee as established by resolution of the county board of commissioners.** A fee of \$400 will be submitted for this application.

Additional Information

The height of the modules and racking system can also be shown on page 4 of *Attachment 4 – Racking Drawings*. From the base of the roof to the top of the module at a 10-degree tilt, the array is 11.53 inches in height, at the maximum height of the module. The height of the highest roof on the building is 35ft, shown in the red box in *Attachment 9 – Roof Heights*, with the parapet height being 1' $\frac{3}{4}$ ". *Attachment 10 – Roof Parapet Height* shows the detail in the red box on the parapet heights of the building. Therefore, the modules will be lower than the top parapet edge.

8

7

6

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2

1

Site Design Criteria - Flat Roof PV System Basis of Design

Roof Live Load (psf)	20(see footnote 1)
Ground Snow Pg (psf)	50
Flat Roof Snow (psf)	38.5
Snow Importance Factor (Is)	1.0
Wind Design Data	
Basic Wind Speed (mph)	110
Risk Category	II
Wind Exposure	C
Earthquake Design Data	
Risk Category	II
Importance Factor (Ie)	1.00
Component Importance Factor (Ip)	1.0
Mapped Acceleration Parameter (Ss)	0.052
Mapped Acceleration Parameter (S1)	0.034
Seismic Site Class	D
Design Spectral Acceleration Parameter (Sds)	0.055
Design Spectral Acceleration Parameter (Sd1)	0.054
Seismic Design Category (SDC)	A
Basic seismic-force-resisting system(s)	N/A (see footnote 2)
Base Design Shear = Fp x W	N/A (see footnote 2)
Response Modification Factor (Rp)	N/A (see footnote 2)
Analysis Procedure	N/A (see footnote 2)
Design Code (with local amendments)	2020 MN ST BC
-	ASCE 7 - 16
ALTERNATE DESIGN METHOD	
1. Roof Live Load only applicable to areas not covered by PV modules. Reference SEAOC Design Guidelines	
2. Per ASCE 7-16 Section 11.7, nonstructural components in seismic design category (SDC) A are exempt from seismic design requirements. Per Section 13.1.4, mechanical and electrical components in SDC B are exempt from the requirements of Chapter 13 - Seismic Design Requirements for Nonstructural Components.	

1. ALL SITE, PROJECT, AND BUILDING DETAILS ARE PROVIDED BY CUSTOMER OR GENERATED VIA SATELLITE IMAGERY FROM INFORMATION PROVIDED BY CUSTOMER. PANELCLAW IS NOT RESPONSIBLE FOR SITE INACCURACIES THAT COULD LEAD TO CHANGES TO THESE DRAWING DETAILS AND ARRAY LAYOUT CONFIGURATIONS. ALL INFORMATION CONTAINED WITHIN THESE DOCUMENTS ARE TO BE FIELD VERIFIED BY CUSTOMER AND INSTALLER. ANY CHANGES OR MODIFICATIONS TO THESE DOCUMENTS, CONTAINED INFORMATION, OR FINAL ARRAY AND MOUNTING SYSTEM INSTALLATIONS MUST BE SUBMITTED TO PANELCLAW AND OTHER PROJECT AUTHORITIES FOR APPROVAL.

2. REFER TO AND FOLLOW THE APPROPRIATE PANELCLAW INSTALLATION MANUALS AND PROCEDURES DURING THE INSTALLATION PROCESS. NOT FOLLOWING SUCH PROCEDURES AND METHODS COULD RESULT IN DAMAGE TO THE COMPONENTS OR MAY VOID THE PRODUCT WARRANTY.

3. ARRAY SETBACKS: ALL ARRAYS ARE REQUIRED TO BE SETBACK 4-FEET FROM ALL ROOF EDGES UNLESS OTHERWISE SPECIFIED AND CALLED OUT ON THE ARRAY DIAGRAMS ON THIS PAGE OR ON ADDITIONAL ARRAY BALLAST PAGES.

4. REFER TO THE SPECIFIC ARRAY BALLAST SHEETS FOR BALLASTING REQUIREMENTS BASED ON THE PROVIDED SITE INFORMATION.

5. SYSTEM PSF INCLUDES ALL PANELCLAW RACKING COMPONENTS, MECHANICAL ATTACHMENTS (IF APPLICABLE), PV MODULE AND BALLAST BLOCKS. FOR MAXIMUM SYSTEM POINT LOAD SUMMARY (PLS), REFER TO CALCULATIONS.

6. PANELCLAW AND/OR PANELCLAW CONSULTING ENGINEERS ARE NOT RESPONSIBLE FOR DETERMINING THE ADEQUACY OF THE STRUCTURE TO SUPPORT LOADS IMPOSED BY THE ARRAY AND MOUNTING SYSTEM. SUPPORT STRUCTURE TO BE CHECKED BY OTHERS.

7. ALWAYS ALLOW A MINIMUM OF 6" CLEARANCE BETWEEN NEIGHBORING SUBARRAYS, 6" BETWEEN SUBARRAYS AND ALL FIXED ROOF OBJECTS AND 4' BETWEEN SUBARRAYS AND ROOF EDGES. REFER TO LOCAL FIRE CODES AND ELECTRICAL CODES FOR ADDITIONAL REQUIREMENTS WHICH MAY GOVERN DESIGN. SUBARRAYS THAT USE A SEISMIC ANALYSIS METHOD OF DELTA MPV PREDICTED MOVEMENT HAVE THEIR OWN CLEARANCE REQUIREMENTS. REFER TO THE BALLAST LAYOUT SHEETS WITHIN THIS DOCUMENT FOR DETAILS.

8. BALLAST BLOCK DIMENSIONS MUST CONFORM TO THE FOLLOWING SPECIFICATIONS: 3-3/4" THICK MAX., 7-5/8" ± 1/8" WIDTH, 15-5/8" ± 1/8" LENGTH.

9. IF AN ARRAY CLEARANCES TABLE APPEARS BELOW ON THIS PAGE, THE DESIGN UTILIZES THIRD PARTY SEISMIC NON-LINEAR RESPONSE ANALYSIS TO ESTIMATE MAXIMUM ARRAY SEISMIC DISPLACEMENT. THE PREDICTED MOVEMENT IS ONLY AN ESTIMATE. PANELCLAW IS NOT RESPONSIBLE OR LIABLE FOR ANY DAMAGES OR COSTS ASSOCIATED WITH PV ARRAY MOVEMENT INCLUDING MOVEMENT IN EXCESS OF THE CLEARANCES NOTED IN THIS DOCUMENT OR ANY REQUIREMENT TO REPOSITION THE ARRAYS IF MOVEMENT OCCURS.

10. DEFLECTORS MUST BE INSTALLED WHEN WINDS ARE EXPECTED TO EXCEED APPROX. 25% OF WIND SPEED DOCUMENTED IN SITE DESIGN CRITERIA TABLE. DEFLECTORS ARE REQUIRED ON ALL MODULES UNLESS OTHERWISE NOTED ON BALLAST LAYOUT PAGES.

NO.

DESCRIPTION

PC-1

COVER SHEET

PC-2

PROJECT SUMMARY

PC-3

ARRAY SITE MAP

PC-4

TYPICAL ARRAY DIMENSIONS

PC-5

ASSEMBLIES

PC-6

RACKING COMPONENTS

PC-7

BALLAST LEGEND

PC-8 TO PC-12

BALLAST LAYOUT - 1 TO 5

PC-13

MECHANICAL ATTACHMENT DETAIL

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

Print Name

Mark A. Tryon

Signature

Date

05/21/2025

2

Revised Layout

3

Revised Layout and Module

4

Revised DT Layout

5

Revised Ballast Map Layout

REV

DESCRIPTION

2025-03-12

2025-03-28

2025-04-11

2025-04-23

DATE

RH

AG

DH

RH

PREP

CHECK

SCALE:

0"

1/2"

1"

2"

ORIGINAL SIZE 36"X24"

SHEET SIZE ARCH "D"

PREPARED FOR:

McKinstry

PROJECT:

Blue Earth County Public Works Building

LOCATION:

19505 Stoltzman Road, Mankato, Mankato Township, MN 56001, USA

SHEET TITLE:

COVER SHEET

REVISION:

5

SHEET:

PC-1

THIS CONSTRUCTION SET PROVIDES THE RACKING LAYOUT FOR ALL ARRAYS WITH NUMBER OF BALLAST BLOCKS AND/OR MECHANICAL ATTACHMENTS BASED ON THE APPROVED STRUCTURAL CALCULATIONS FOR THE COMPLETED INSTALLED CONDITION OF THE SOLAR ARRAY. THE INSTALLER IS RESPONSIBLE FOR THE SAFETY AND CARE OF THE ARRAY DURING ALL PHASES OF INSTALLATION. THEREFORE, THE INSTALLER MUST MONITOR THE WEATHER FORECAST AND TAKE NECESSARY PRECAUTIONS (SEE GENERAL NOTE #10) TO TEMPORARILY SHORE/BRACE ALL ARRAYS DURING CONSTRUCTION UNTIL INSTALLATION IS COMPLETED IN CONFORMANCE WITH THIS APPROVED CONSTRUCTION SET AND THE PRODUCT INSTALLATION MANUAL (SEE GENERAL NOTE #2). THE INSTALLER HAS SOLE RESPONSIBILITY FOR THE MEANS, METHODS, AND TECHNIQUES OF CONSTRUCTION OF THE SOLAR ARRAY FOR COMPLIANCE WITH LAWS, REGULATIONS, AND CODES, AND FOR THE SAFETY OF CONSTRUCTION APPLICABLE TO THIS WORK.

APPROVED FOR CONSTRUCTION

25.02.04.0

6.0.5

v3.0.940

OM

Structural
ENGINEERING

1815 W. DIEHL RD., SUITE 100, NAPERVILLE, IL 60563
(630) 219-1997

SEI Project NO. 250001.107

LIMITED TO
STRUCTURAL
DESIGN ONLY

MARK ADAM TRYON

LICENSED
PROFESSIONAL
ENGINEER

51979

STATE OF MINNESOTA

05/21/2025

panelclaw®

RACKING CONSTRUCTION SET

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2025-03-12	2025-03-28	2025-04-11	2025-04-23	DATE
				CHECK
RH	AG	DH	RH	PREP
Revised Layout	Revised Layout and Module	Revised DT Layout	Revised Ballast Map Layout	DESCRIPTION
2	3	4	5	REV

SCALE:

0"

1/2"

1"

2"

ORIGINAL SIZE 36"X24"

SHEET SIZE ARCH "D"

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SHEET TITLE:

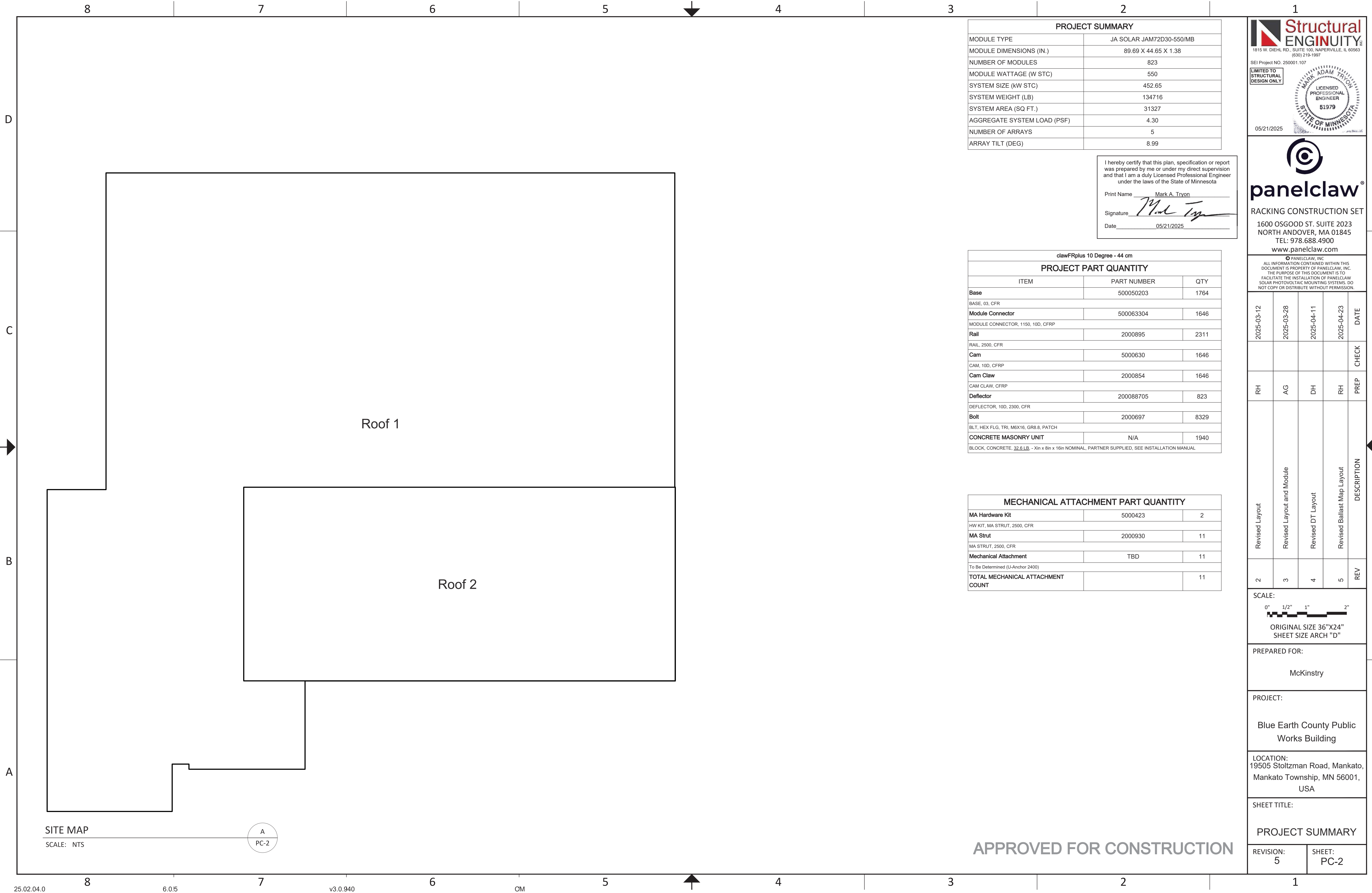
COVER SHEET

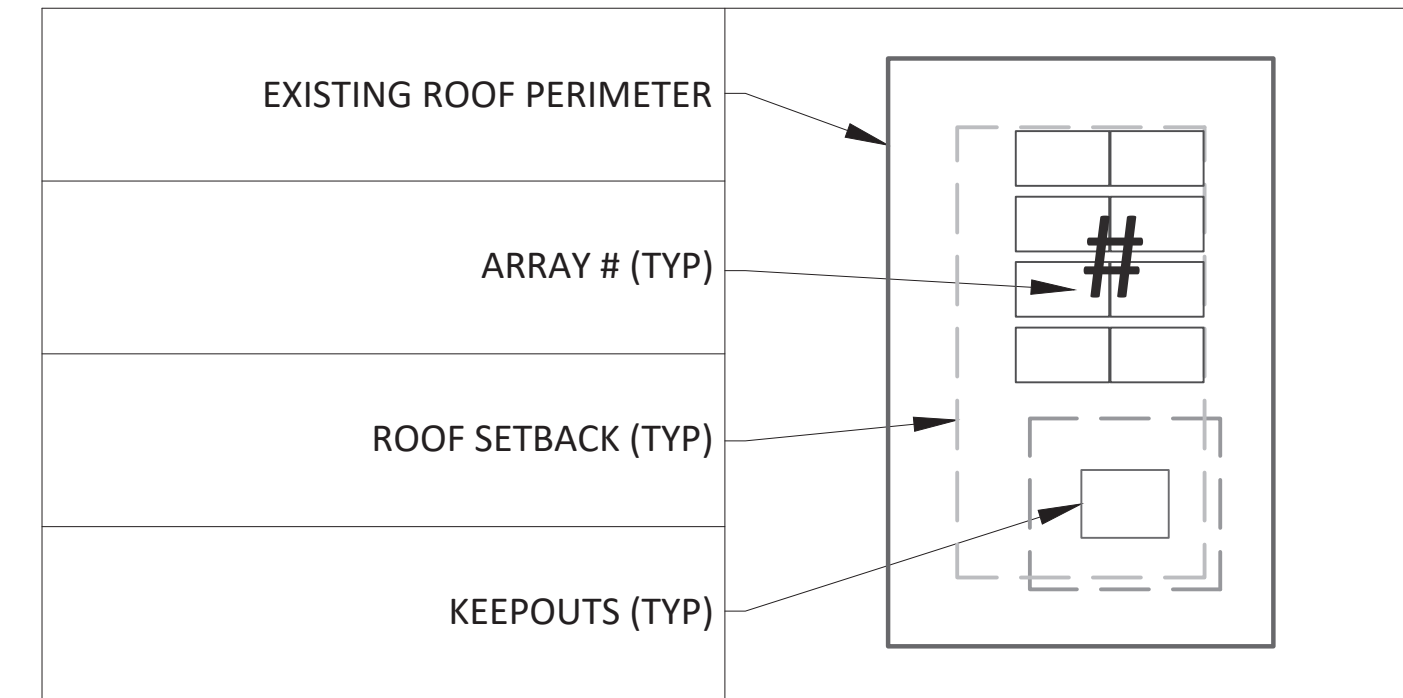
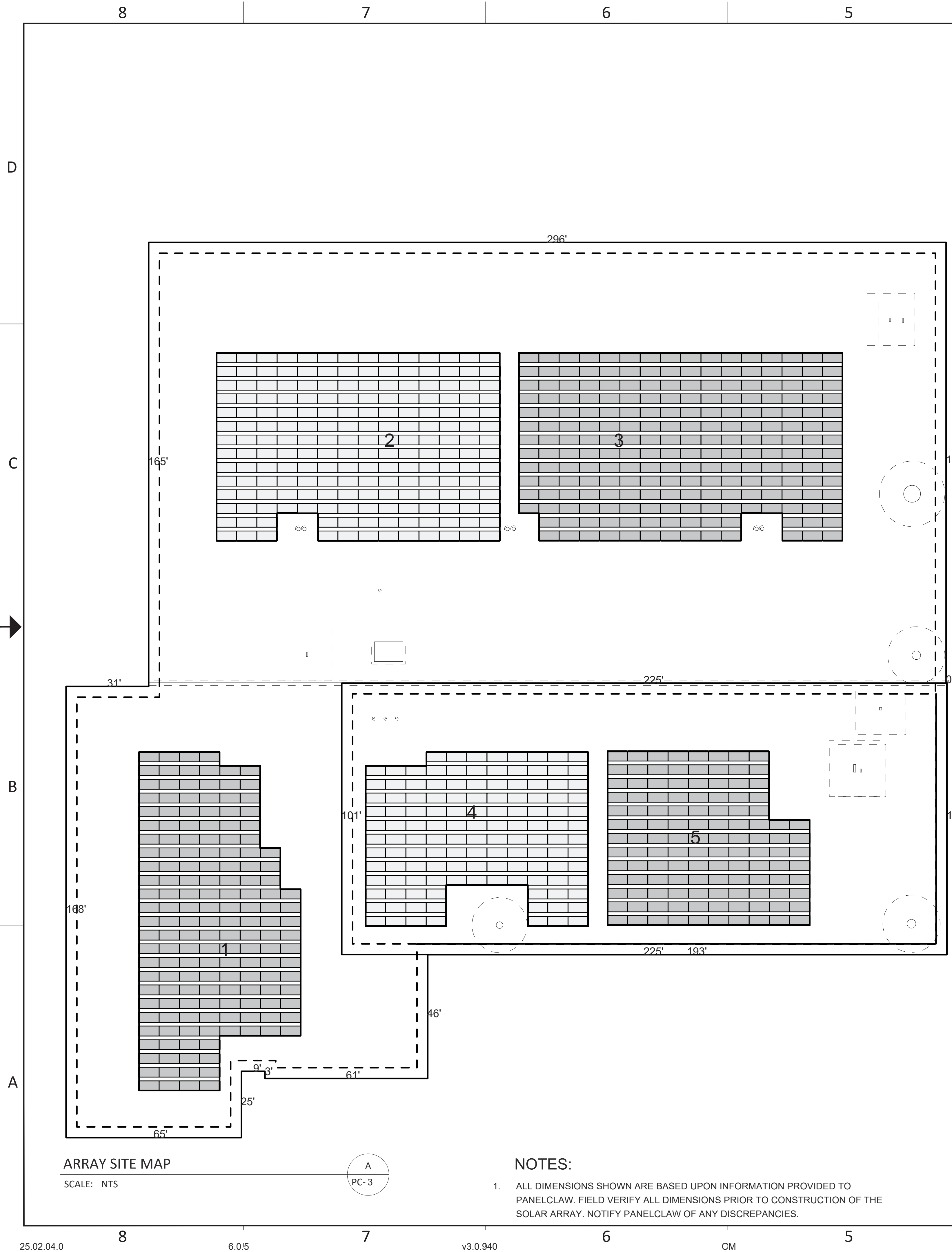
REVISION:

5

SHEET:

PC-1





ROOF NAME	ROOF SETBACK (FT.)	ROOF HEIGHT (FT)	PARAPET HEIGHT (FT)	ROOF TILT (DEG)
Roof 1	4.00	28.00	1.0	1
Roof 2	4.00	35.00	1.0	1

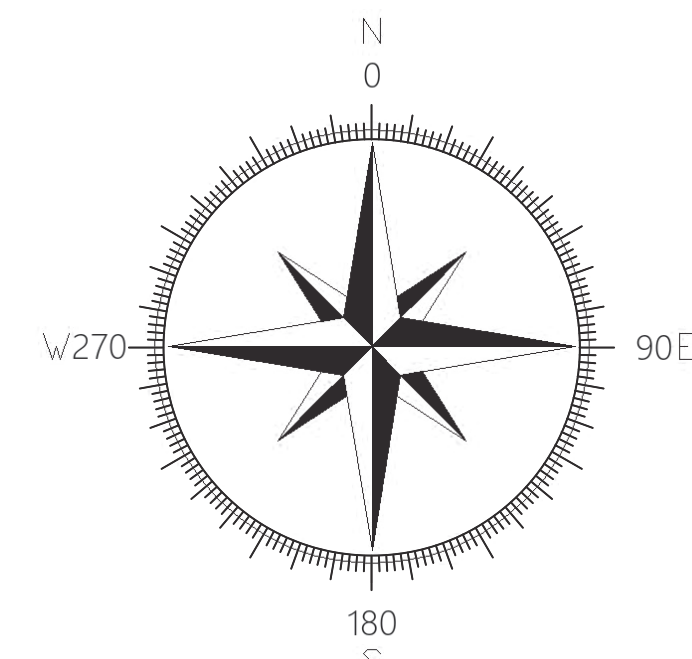
KEEPOUT NAME	KEEPOUT CLEARANCE (FT.)	KEEPOUT HEIGHT (IN.)
Group 1	1	96
Group 2	0.5	6
Group 3	9	12
Group 4	1	48

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

Print Name Mark A. Tryon

Signature

Date 05/21/2025



APPROVED FOR CONSTRUCTION

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2	3	4	5	REV

SCALE:

0" 1/2" 1" 2"

ORIGINAL SIZE 36"X24"
SHEET SIZE ARCH "D"

PREPARED FOR:

McKinstry

PROJECT:

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ARRAY SITE MAP

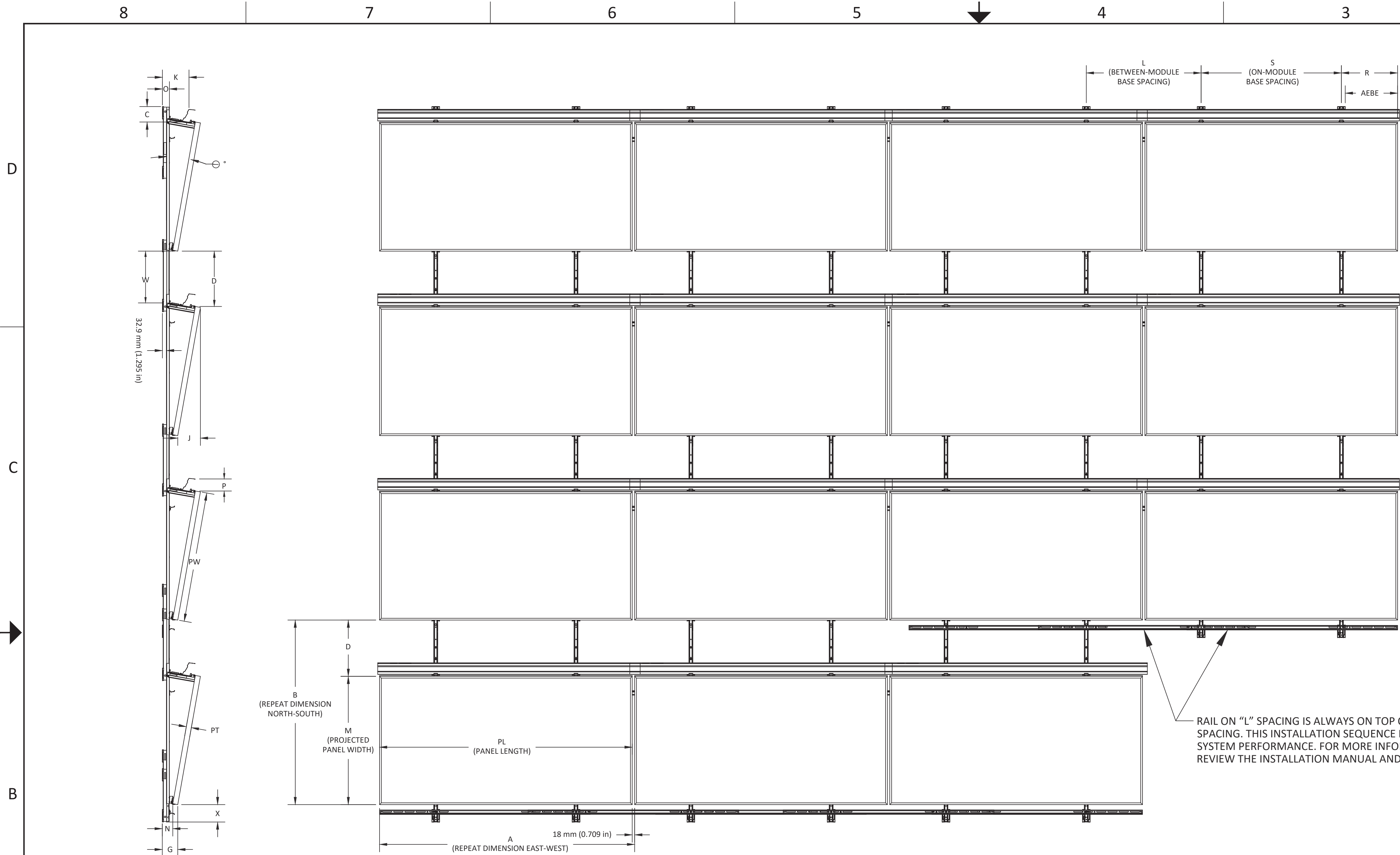
REVISION:	SHEET:
5	PC-3

D

C

B

A



ARRAY CROSS SECTION VIEW

SCALE: NTS

ARRAY TOP VIEW

SCALE: NTS

RAIL DETAIL

SCALE: NTS

INSTALLATION MEASUREMENTS				
UNITS	mm	AEBE	S	L
	inches	486	1246	1050
*CAM SPACING SHOWN ON ASSEMBLIES PAGE.				

MODULE DIMENSIONS				
UNITS	mm	PL	PW	PT
	inches	2278	1134	35

INSTALLED ARRAY DIMENSIONS																		
UNITS	mm	A	B	C	D	G	J	K	M	N	O	P	R	W	X	Theta (DEG)	D/J (#:1)	G.C.R.*
	inches	2296	1553	121	433	116	177	209	1120	81	59	92	516	407	137	8.99	2.44	0.73

* G.C.R. = (PW) / B

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

Print Name Mark A. Tryon
Signature *Mark A. Tryon*
Date 05/21/2025

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Blue Earth County Public Works Building

LOCATION:

19505 Stoltzman Road, Mankato, Mankato Township, MN 56001, USA

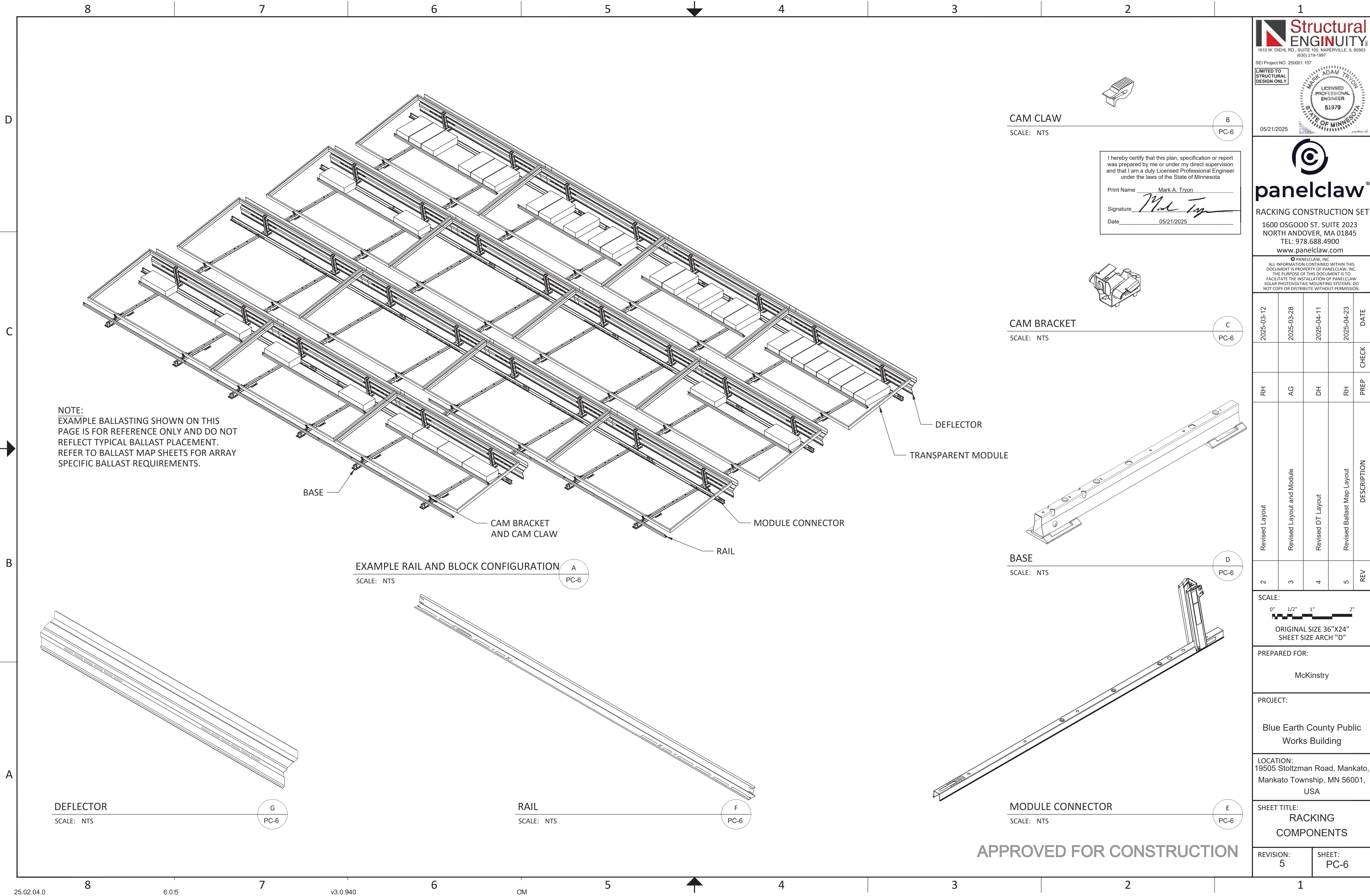
SHEET TITLE:

TYPICAL ARRAY DIMENSIONS

REVISION: 5

SHEET: PC-4

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NOTE:
EXAMPLE BALLASTING SHOWN ON THIS
PAGE IS FOR REFERENCE ONLY AND DO NOT
REFLECT TYPICAL BALLAST PLACEMENT.
REFER TO BALLAST MAP SHEETS FOR ARRAY
SPECIFIC BALLAST REQUIREMENTS.

EXAMPLE RAIL AND BLOCK CONFIGURATION
SCALE: NTS

A
PC-6

DEFLECTOR
SCALE: NTS

G
PC-6

RAIL
SCALE: NTS

F
PC-6

CAM CLAW
SCALE: NTS

B
PC-6

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Print Name Mark A. Tryon
Signature *Mark A. Tryon*
Date 05/21/2025

CAM BRACKET
SCALE: NTS

C
PC-6

BASE
SCALE: NTS

D
PC-6

MODULE CONNECTOR
SCALE: NTS

E
PC-6

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1815 W. DIEHL RD., SUITE 100, NAPERVILLE, IL 60563
(630) 219-1997

SEI Project NO. 250001.107

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MARK ADAM TRYON
LICENSED
PROFESSIONAL
ENGINEER
51979
STATE OF MINNESOTA

05/21/2025

RACKING CONSTRUCTION SET

1600 OSGOOD ST. SUITE 2023
NORTH ANDOVER, MA 01845
TEL: 978.688.4900
www.panelclaw.com

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2025-03-12	2025-03-28	2025-04-11	2025-04-23	DATE
				CHECK
RH	AG	DH	RH	PREP
Revised Layout	Revised Layout and Module	Revised DT Layout	Revised Ballast Map Layout	DESCRIPTION
2	3	4	5	REV

SCALE:

0" 1/2" 1" 2"

ORIGINAL SIZE 36"X24"
SHEET SIZE ARCH "D"

PREPARED FOR:

McKinstry

PROJECT:

Blue Earth County Public
Works Building

LOCATION:

19505 Stoltzman Road, Mankato,
Mankato Township, MN 56001,
USA

SHEET TITLE:

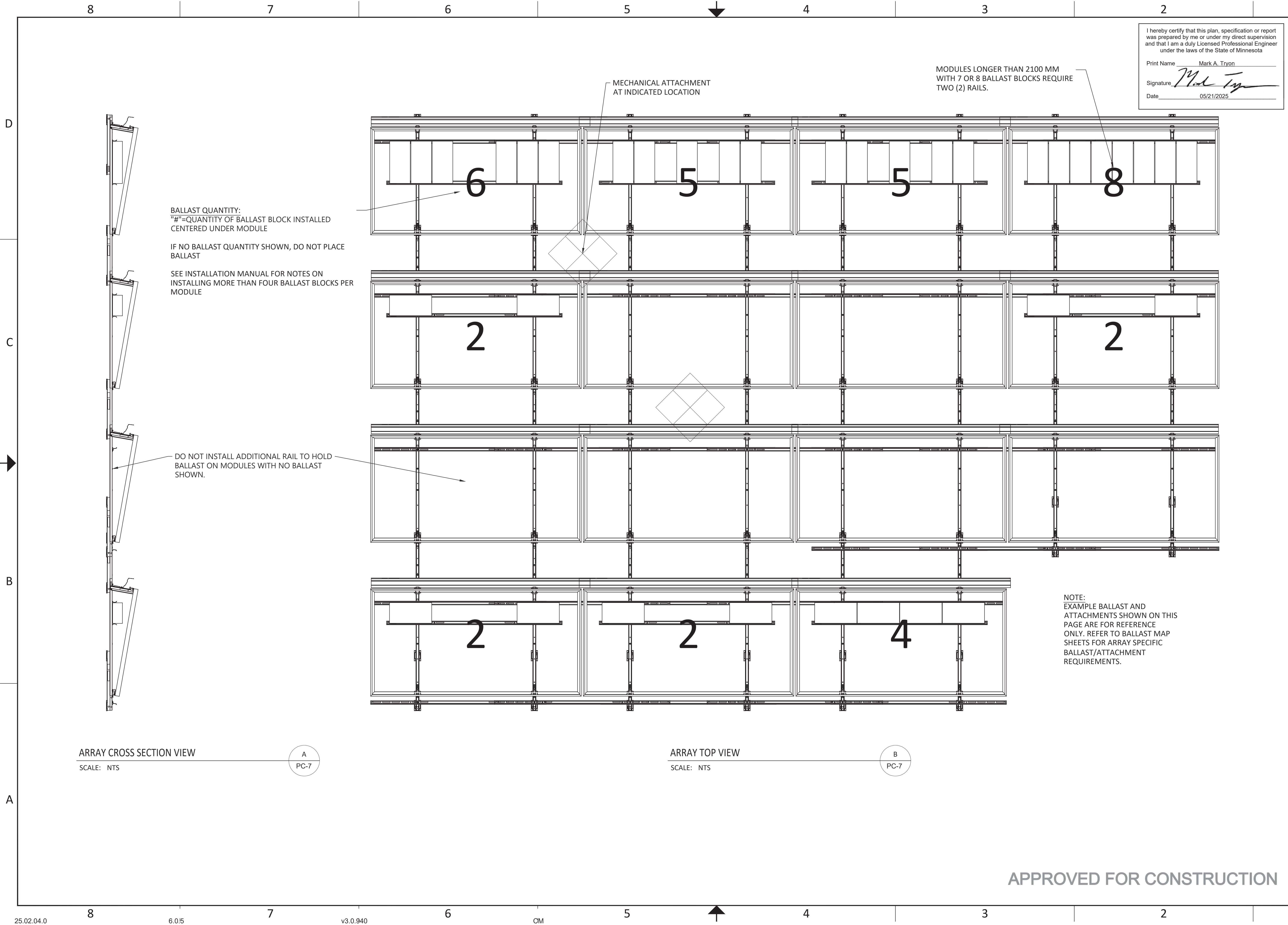
RACKING
COMPONENTS

REVISION:

5

SHEET:

PC-6



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Print Name Mark A. Tryon

Signature Mark A. Tryon

Date 05/21/2025

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ENGUITY**
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SEI Project NO. 250001.107

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				CHECK
RH	AG	DH	RH	PREP
Revised Layout	Revised Layout and Module	Revised DT Layout	Revised Ballast Map Layout	DESCRIPTION
2	3	4	5	REV

SCALE:
0" 1/2" 1" 2"
ORIGINAL SIZE 36"X24"
SHEET SIZE ARCH "D"

PREPARED FOR:
McKinstry

PROJECT:
Blue Earth County Public
Works Building

LOCATION:
19505 Stoltzman Road, Mankato,
Mankato Township, MN 56001,
USA

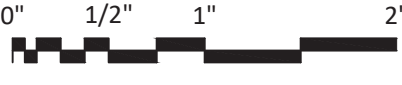
SHEET TITLE:
BALLAST LEGEND

REVISION: 5 SHEET: PC-7

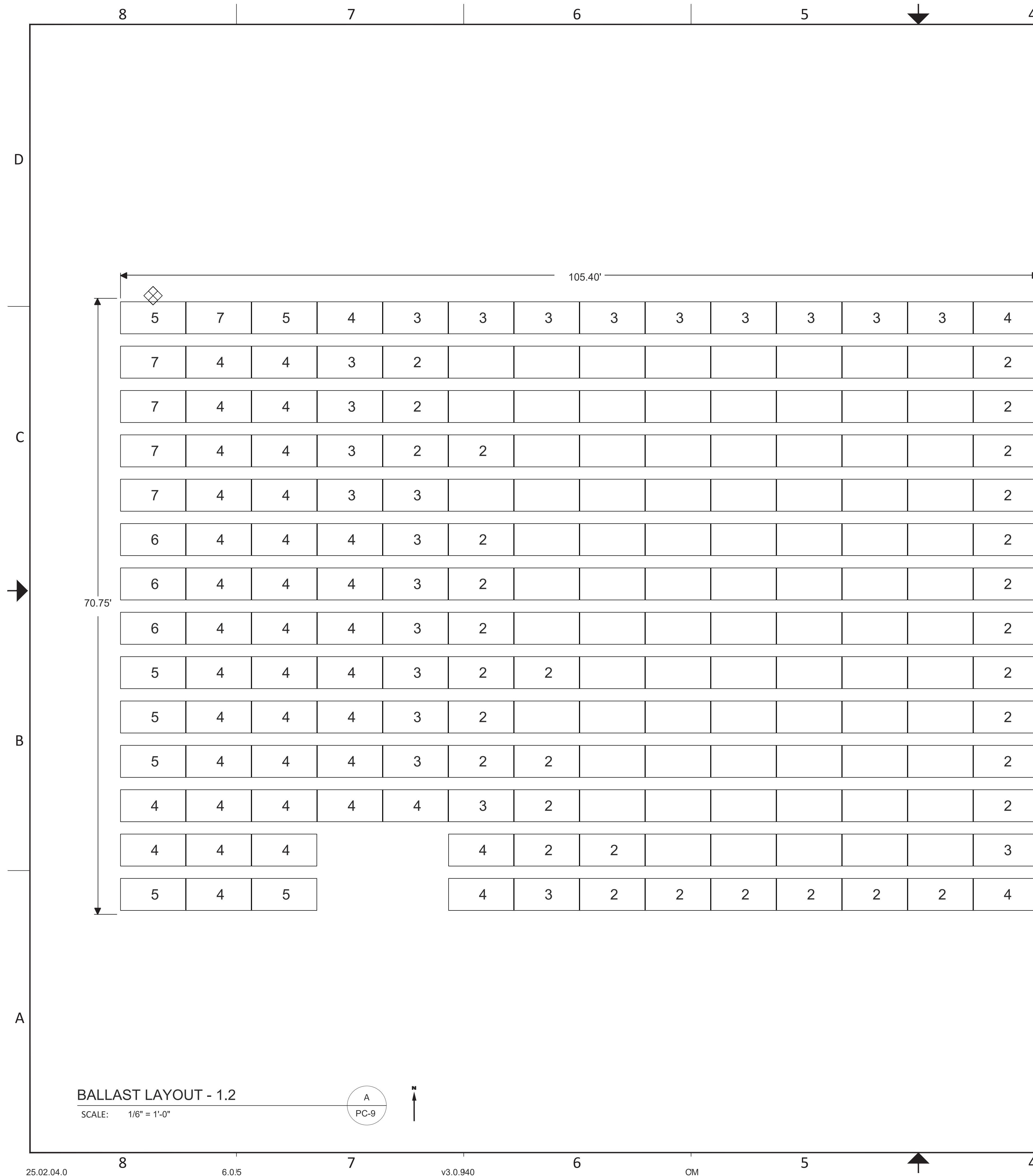
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ASSEMBLY QUANTITIES	
ASSEMBLY	QTY
NORTH ASSEMBLY	16
SOUTH ASSEMBLY	16
MIDDLE ASSEMBLY	298
NORTH SOUTH ASSEMBLY	0

SCALE:  ORIGINAL SIZE 36"X24" SHEET SIZE ARCH "D"	
PREPARED FOR: McKinstry	
PROJECT: Blue Earth County Public Works Building	
LOCATION: 19505 Stoltzman Road, Mankato, Mankato Township, MN 56001, USA	
SHEET TITLE: BALLAST LAYOUT - 1.1	
REVISION: 5	SHEET: PC-8

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Print Name Mark A. Tryon

Signature 

Date 05/21/2025

ARRAY 1.2		ROOF INFORMATION
ROOF HEIGHT (FT)		28.00
PARAPET HEIGHT (FT)		1.0
ROOF TILT (DEG)		1
ROOF TYPE		EPDM
SPECIFICATIONS		
NUMBER OF MODULES		192
MODULE POWER (W)		550
ARRAY OUTPUT (Kw)		105.6
ARRAY AZIMUTH		180
PART QUANTITIES		
ITEM		QTY
Base		412
Module Connector		384
Rail		512
Cam		384
Cam Claw		384
Deflector		192
Ballast Block		381
Mechanical Attachment		1
LOADING DETAILS		
SINGLE MODULE WT (LB)		70.1
SINGLE CMU WT (LB)		32.6
TOTAL ARRAY WT (LB)		29027
ARRAY AREA (SQ. FT)		7307
ARRAY LOAD (PSF)		3.97

ASSEMBLY QUANTITIES	
ASSEMBLY	QTY
NORTH ASSEMBLY	28
SOUTH ASSEMBLY	28
MIDDLE ASSEMBLY	328
NORTH SOUTH ASSEMBLY	0

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05/21/2025



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2	Revised Layout	RH		2025-03-12
3	Revised Layout and Module	AG		2025-03-28
4	Revised DT Layout	DH		2025-04-11
5	Revised Ballast Map Layout	RH		2025-04-23
REV	DESCRIPTION	PREP	CHECK	DATE



PREPARED FOR:

McKinstry

PROJECT:

Blue Earth County Public
Works Building

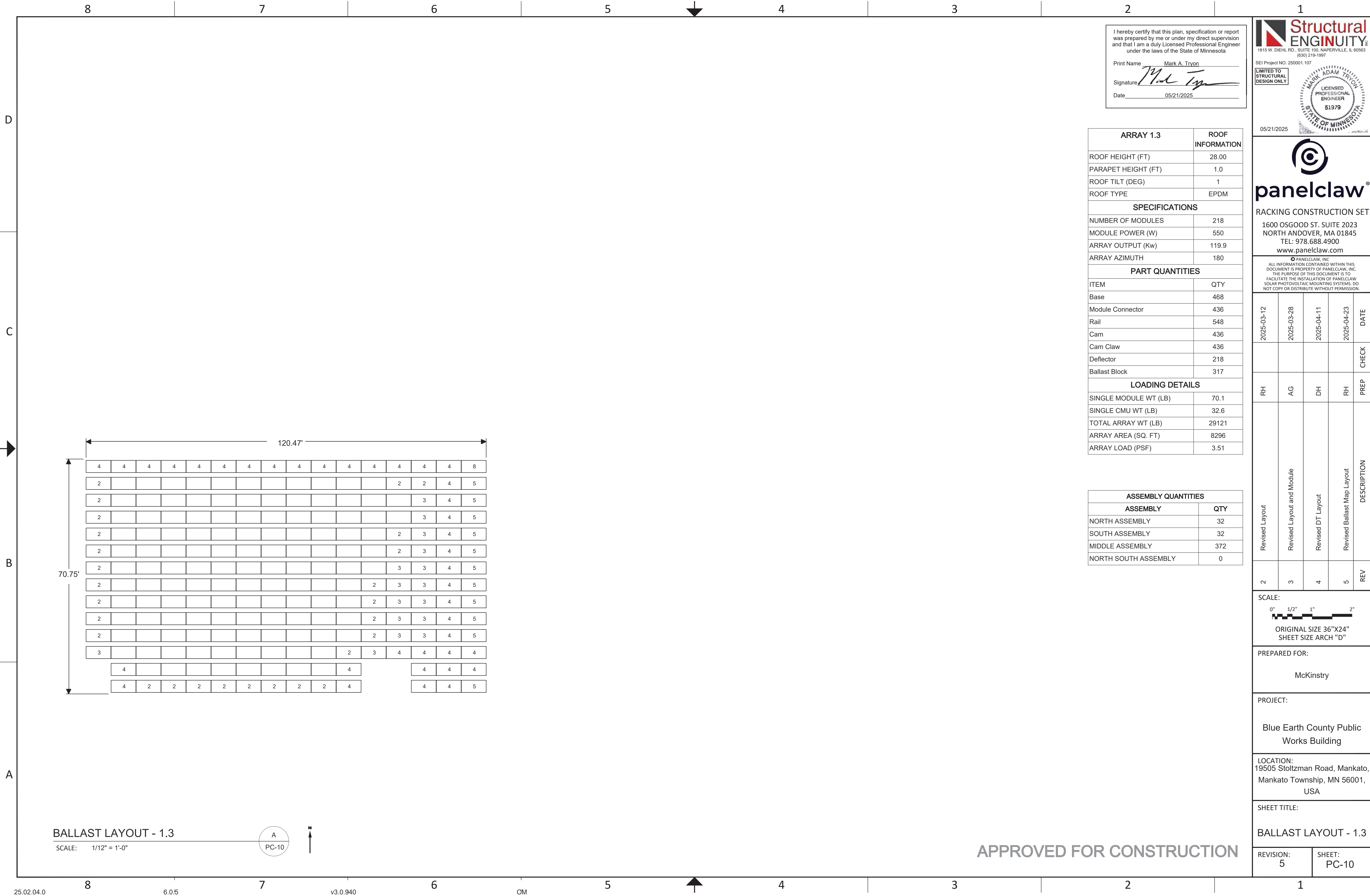
LOCATION:
19505 Stoltzman Road, Mankato,
Mankato Township, MN 56001,
USA

SHEET TITLE:

BALLAST LAYOUT - 1.2

REVISION: 5	SHEET: PC-9
----------------	----------------

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Print Name Mark A. Tryon

Signature *Mark A. Tryon*

Date 05/21/2025

ARRAY 1.3	ROOF INFORMATION
ROOF HEIGHT (FT)	28.00
PARAPET HEIGHT (FT)	1.0
ROOF TILT (DEG)	1
ROOF TYPE	EPDM
SPECIFICATIONS	
NUMBER OF MODULES	218
MODULE POWER (W)	550
ARRAY OUTPUT (Kw)	119.9
ARRAY AZIMUTH	180
PART QUANTITIES	
ITEM	QTY
Base	468
Module Connector	436
Rail	548
Cam	436
Cam Claw	436
Deflector	218
Ballast Block	317
LOADING DETAILS	
SINGLE MODULE WT (LB)	70.1
SINGLE CMU WT (LB)	32.6
TOTAL ARRAY WT (LB)	29121
ARRAY AREA (SQ. FT)	8296
ARRAY LOAD (PSF)	3.51

ASSEMBLY QUANTITIES	
ASSEMBLY	QTY
NORTH ASSEMBLY	32
SOUTH ASSEMBLY	32
MIDDLE ASSEMBLY	372
NORTH SOUTH ASSEMBLY	0



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				CHECK
RH	AG	DH	RH	PREP
Revised Layout	Revised Layout and Module	Revised DT Layout	Revised Ballast Map Layout	DESCRIPTION
2	3	4	5	REV

SCALE:

0" 1/2" 1" 2"

ORIGINAL SIZE 36"X24"
SHEET SIZE ARCH "D"

PREPARED FOR:

McKinstry

PROJECT:

Blue Earth County Public
Works Building

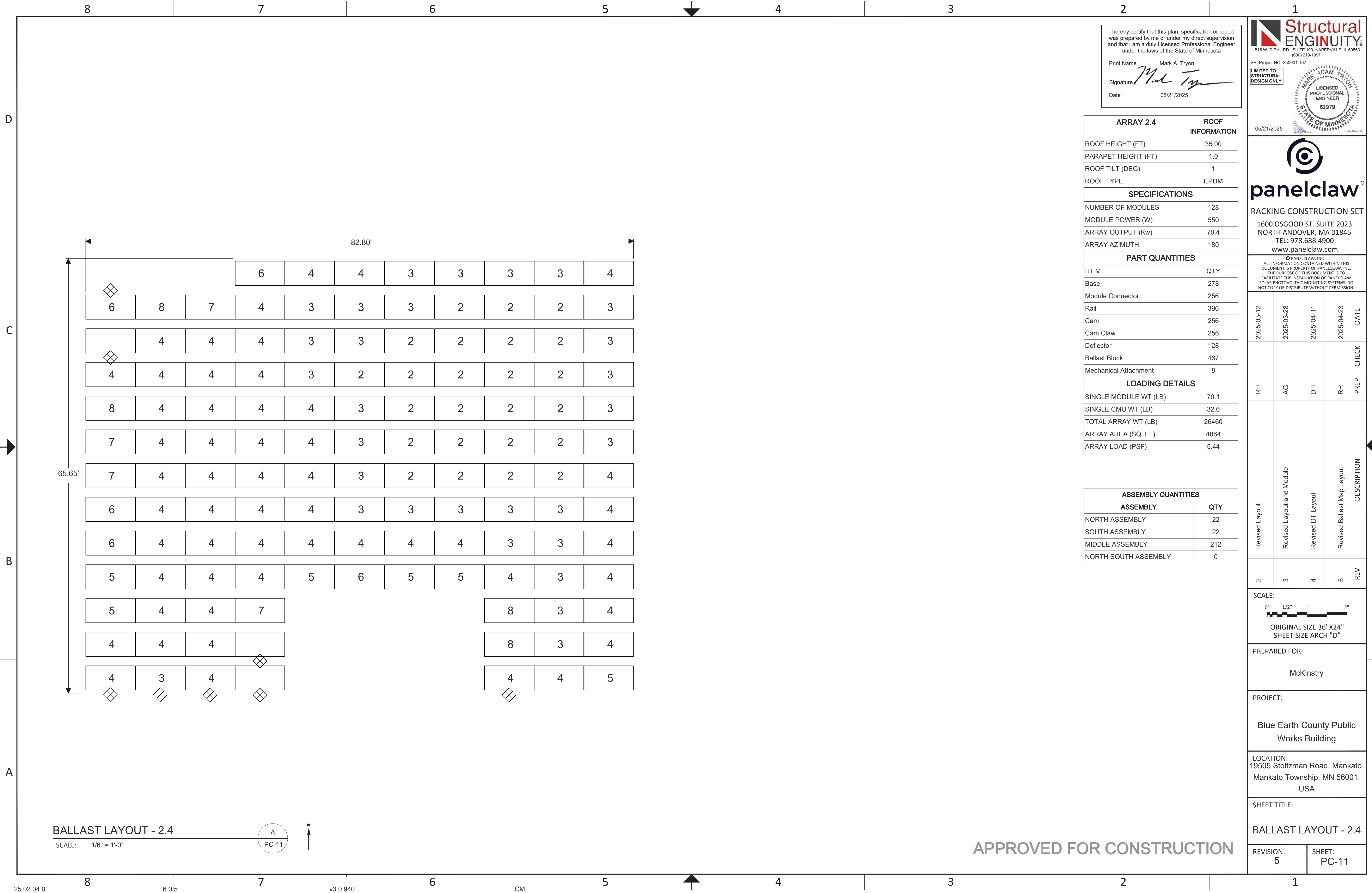
LOCATION:

19505 Stoltzman Road, Mankato,
Mankato Township, MN 56001,
USA

SHEET TITLE:

BALLAST LAYOUT - 1.3

REVISION:	SHEET:
5	PC-10



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Print Name Mark A. Tryon

Signature *Mark A. Tryon*

Date 05/21/2025

ARRAY 2.4	ROOF INFORMATION
ROOF HEIGHT (FT)	35.00
PARAPET HEIGHT (FT)	1.0
ROOF TILT (DEG)	1
ROOF TYPE	EPDM
SPECIFICATIONS	
NUMBER OF MODULES	128
MODULE POWER (W)	550
ARRAY OUTPUT (Kw)	70.4
ARRAY AZIMUTH	180
PART QUANTITIES	
ITEM	QTY
Base	278
Module Connector	256
Rail	396
Cam	256
Cam Claw	256
Deflector	128
Ballast Block	467
Mechanical Attachment	8
LOADING DETAILS	
SINGLE MODULE WT (LB)	70.1
SINGLE CMU WT (LB)	32.6
TOTAL ARRAY WT (LB)	26460
ARRAY AREA (SQ. FT)	4864
ARRAY LOAD (PSF)	5.44

ASSEMBLY QUANTITIES	
ASSEMBLY	QTY
NORTH ASSEMBLY	22
SOUTH ASSEMBLY	22
MIDDLE ASSEMBLY	212
NORTH SOUTH ASSEMBLY	0



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RH	AG	DH	RH	PREP
Revised Layout	Revised Layout and Module	Revised DT Layout	Revised Ballast Map Layout	DESCRIPTION
2	3	4	5	REV

SCALE:

0" 1/2" 1" 2"

ORIGINAL SIZE 36"X24"

SHEET SIZE ARCH "D"

PREPARED FOR:

McKinstry

PROJECT:

Blue Earth County Public Works Building

LOCATION:

19505 Stoltzman Road, Mankato, MN 56001, USA

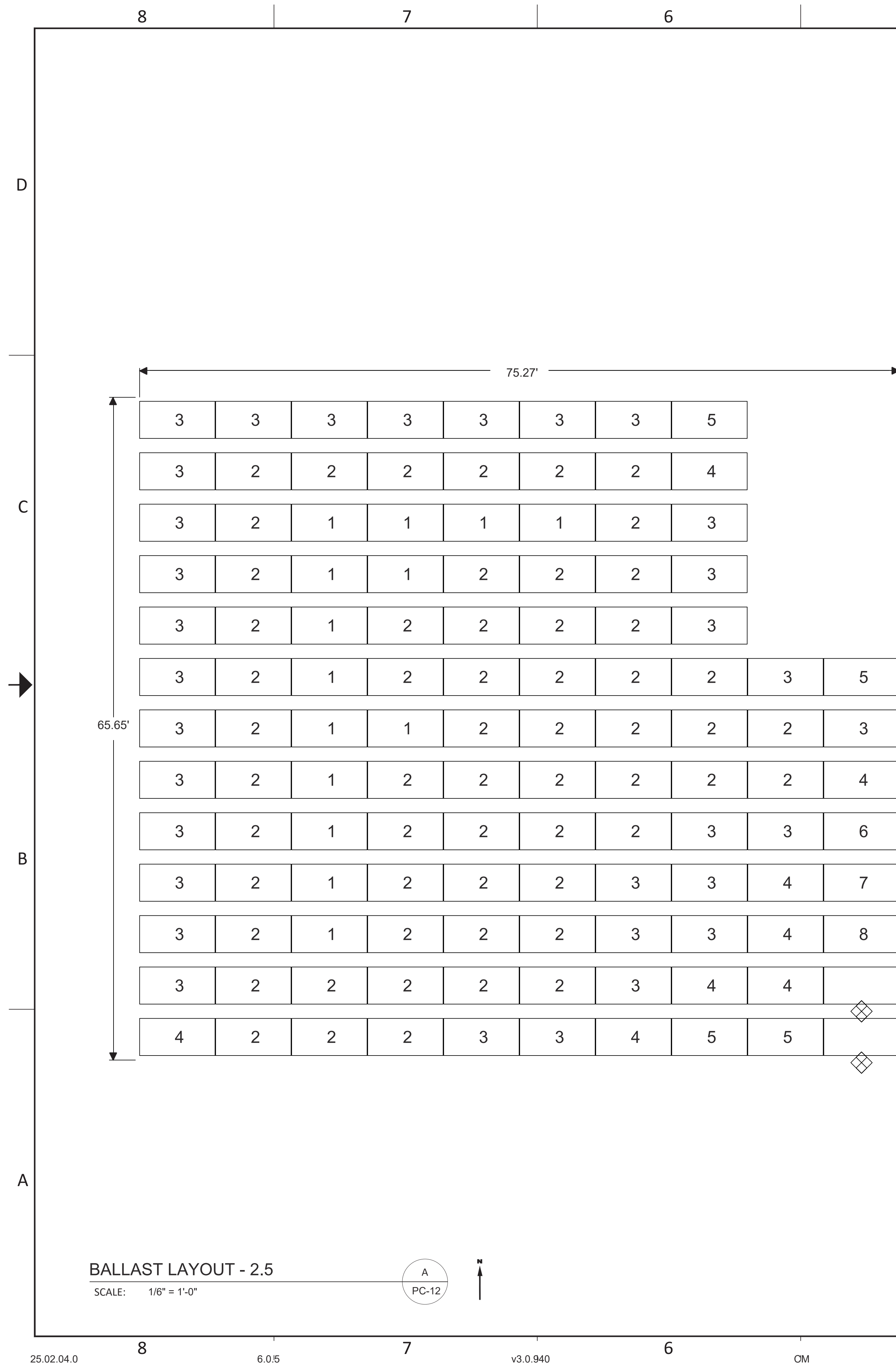
SHEET TITLE:

BALLAST LAYOUT - 2.4

REVISION: 5

SHEET: PC-11

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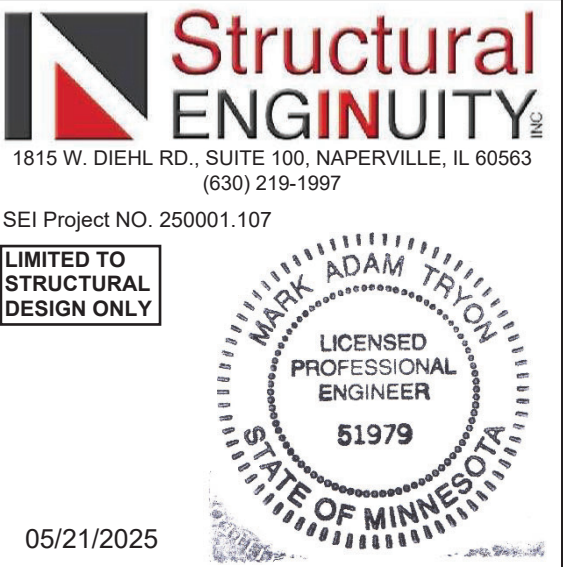
Print Name Mark A. Tryon

Signature 

Date 05/21/2025

ARRAY 2.5		ROOF INFORMATION
ROOF HEIGHT (FT)		35.00
PARAPET HEIGHT (FT)		1.0
ROOF TILT (DEG)		1
ROOF TYPE		EPDM
SPECIFICATIONS		
NUMBER OF MODULES		120
MODULE POWER (W)		550
ARRAY OUTPUT (Kw)		66
ARRAY AZIMUTH		180
PART QUANTITIES		
ITEM		QTY
Base		260
Module Connector		240
Rail		366
Cam		240
Cam Claw		240
Deflector		120
Ballast Block		297
Mechanical Attachment		2
LOADING DETAILS		
SINGLE MODULE WT (LB)		70.1
SINGLE CMU WT (LB)		32.6
TOTAL ARRAY WT (LB)		20173
ARRAY AREA (SQ. FT)		4562
ARRAY LOAD (PSF)		4.42

ASSEMBLY QUANTITIES	
ASSEMBLY	QTY
NORTH ASSEMBLY	20
SOUTH ASSEMBLY	20
MIDDLE ASSEMBLY	200
NORTH SOUTH ASSEMBLY	0

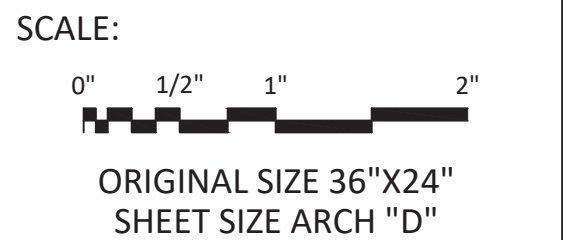


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5	Revised Ballast Map Layout	RH	2025-04-23
REV	DESCRIPTION	PREP	DATE



PREPARED FOR:

McKinstry

PROJECT:

Blue Earth County Public
Works Building

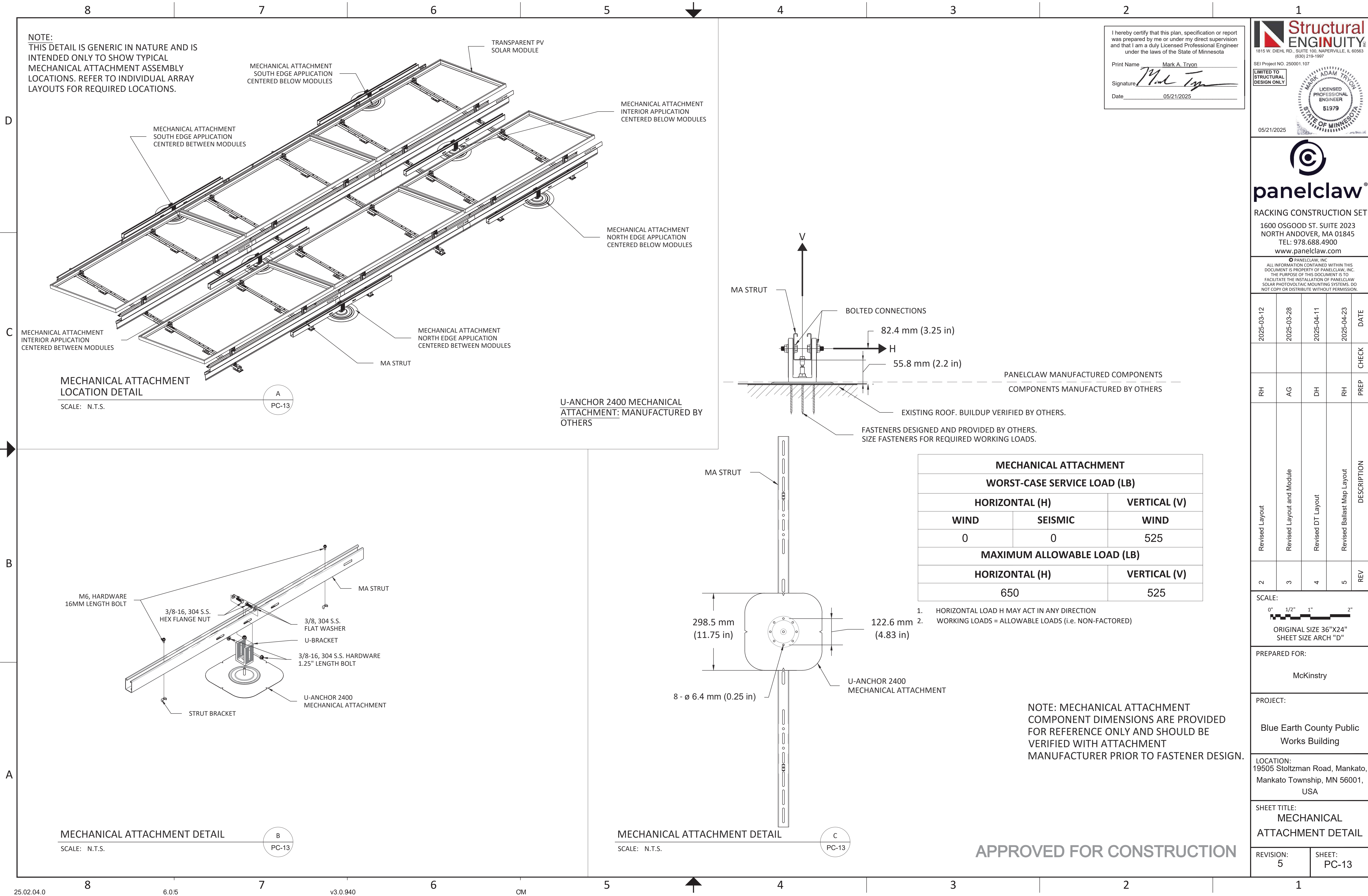
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Mankato Township, MN 56001,
USA

SHEET TITLE:

BALLAST LAYOUT - 2.5

REVISION: 5	SHEET: PC-12
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Signature *Mark A. Tryon*

Date 05/21/2025

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SCALE:
0" 1/2" 1" 2"
ORIGINAL SIZE 36"X24"
SHEET SIZE ARCH "D"

PREPARED FOR:
McKinstry

PROJECT:
Blue Earth County Public Works Building

LOCATION:
19505 Stoltzman Road, Mankato, Mankato Township, MN 56001, USA

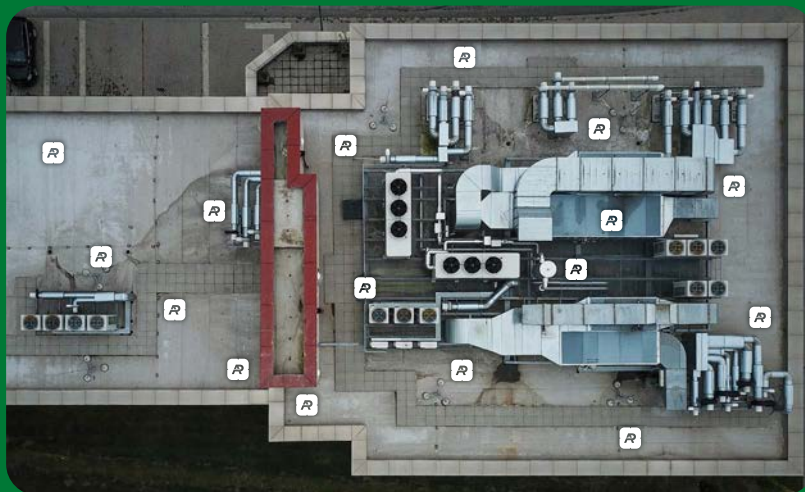
SHEET TITLE:
MECHANICAL ATTACHMENT DETAIL

REVISION: 5
SHEET: PC-13



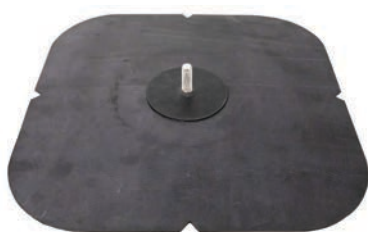
**ANCHOR
PRODUCTS®**
Connections That Last

The U2400-EPDM is a lightweight rooftop attachment system that is leak-proof by design. It is accepted by major roofing manufacturers and is included in their warranties. The U-Anchor membrane is matched to any EPDM roof, manufacturer, and color, making it versatile for any EPDM project.



U-ANCHOR®

U2400-EPDM



Front



Back

Product Description

The U2400-EPDM is a lightweight rooftop attachment system consisting of a U-Anchor 2000 Series plate and cover membrane. The cover membrane is self-adhered, factory cut, and installed in the field. The U2400-EPDM provides a positive, watertight, manufacturer accepted attachment for mechanically attached or fully adhered EPDM single-ply membranes.

The U2400-EPDM secures rooftop equipment quickly, safely, and effectively.

U-Anchor Advantages

- Extremely strong
- Lightweight
- Fast installation – installs in less than five minutes
- Can be installed on any surface from flat on the roof to vertical on a parapet wall
- Completely watertight when properly installed

Equipment Attachment

- The U2400-EPDM is attached by fastening through the roofing assembly into the structural decking with 2-8 approved fasteners. The membrane cover is then adhere over the plate and around the perimeter to the roof membrane. Fastener selection is dictated by the system assembly, deck type, and the project engineer.
- To securely mount your rooftop equipment to the U-Anchor, after it is installed, the connection nut must be fastened to approximately 20-25 lbf-ft. Use a calibrated torque wrench during the installation to ensure appropriate results are achieved. Excessive torque may damage the U-Anchor.
- **Material Compatibility:**
The U-Anchor bolt is stainless steel and all attachments provided by Anchor Products are tested as a system and designed to be compatible. Refer to installation instructions and the specified roofing material manufacturer requirements before installing.

Manufacturer's Warranty

- **Anchor Products Warranty**
Standard 20-Year Limited Material Only Warranty



**ANCHOR
PRODUCTS®**
Connections That Last



**ANCHOR
PRODUCTS®**
Connections That Last

Make the right choice for rooftop attachments with the U-Anchor. It's a one-of-a-kind attachment for commercial rooftop equipment securement.



Codes & Approvals



FM 4481 - Anchors for roof mounted equipment

FM Approval with selected membranes

Testing

- Results are based on plate performance only.
Ultimate Load - Shear: 4293 lbs.
Ultimate Load - Tension: 2712 lbs.
- Tested in accordance with FM 4481 Section 4.1 over 1/2" Steel. Assembly specific results may vary. Please contact Anchor Products® directly for additional testing results and information.
- The shear value is obtained by testing at the base of the bolt. Account for the moment force of any attachment that increases the height of the connection point.

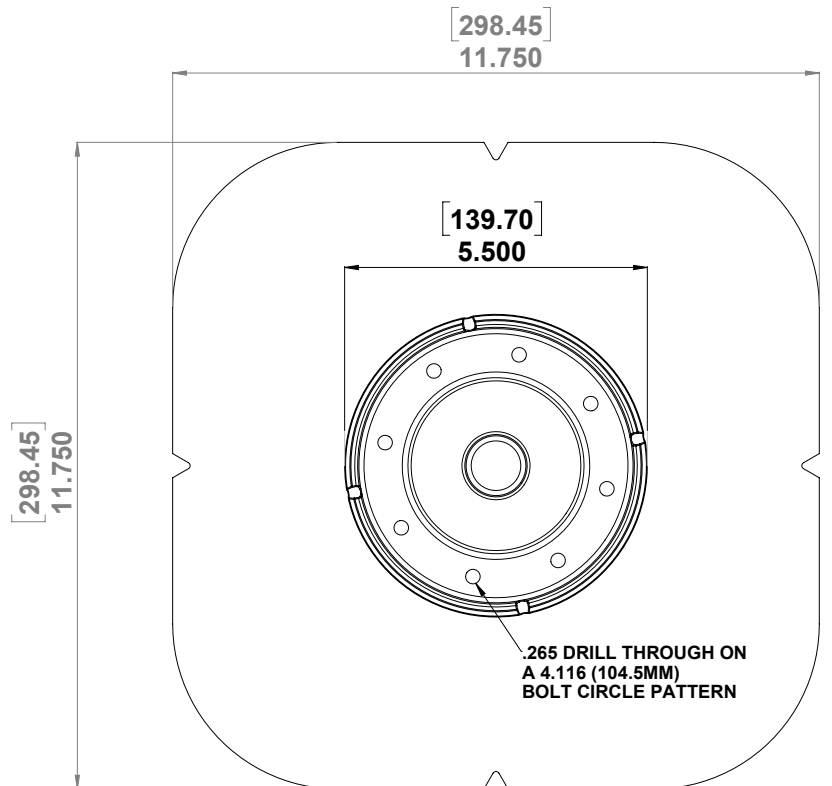
Product Specs

- **Bolt**
3/8"-16 x 1-3/8" Bolt*
Material Type: 304 Stainless Steel
- **Plate**
Diameter: 5.5"
Fastener Hole Diameter: 0.265" (8 holes)
Fastener Hole Pattern: 4.125" Diameter
Material Thickness: 0.047"
Material Type: G90 Galvanized Steel
- **Cover Membrane**
Manufacturer: Brand and Non-Brand Specific
Color: White (Other colors available)
Length: 11.75" Width: 11.75"
Thickness: Approx. 60 mils
- **Patents**
Visit www.anchorp.com/resources/patents

Packaging Specs

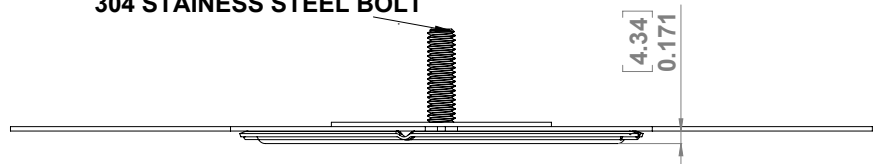
- Sold Individually OR Full Box Quantity
- Individual Weight: Approx. 0.9 lbs.
- Full Box Quantity: 10 units
- Box Weight: Approx. 10.6 lbs.
- Box Dimensions: 17" x 17" x 5"
- Full Pallet Quantity: 36 boxes
- Pallet Dimensions: 40" x 48" x 42"

U2400-EPDM Dimensional Drawing



3/8-16 X 1-3/8"
304 STAINLESS STEEL BOLT

PLATE THICKNESS ONLY



Click Here



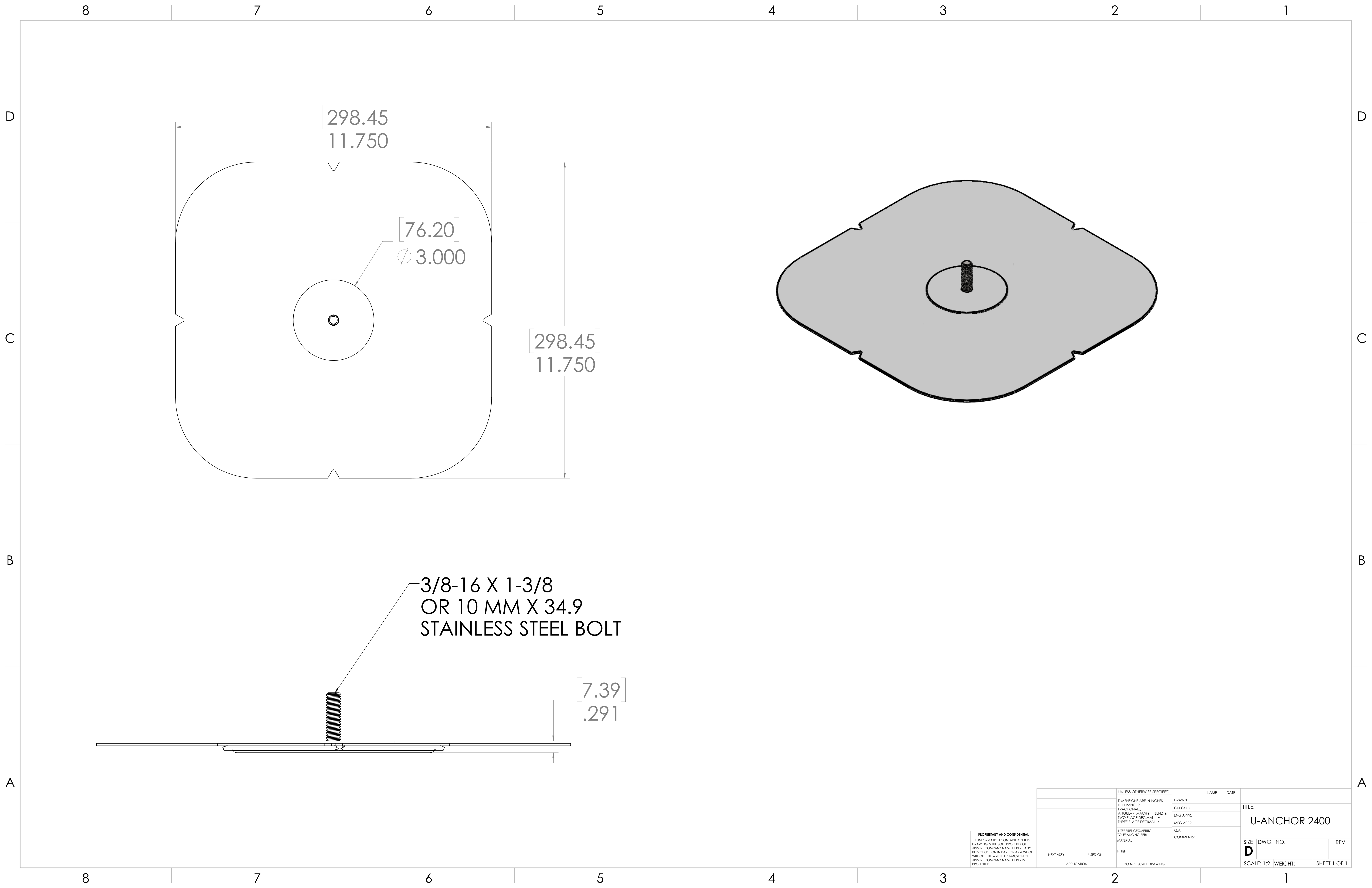
[For Warranty Information](#)



Call Us Now!
888-575-2131

anchorp.com

*Specified bolt option is standard. Custom options may be available for additional charge. Lead times may apply depending on roofing manufacturer and product availability.



U-ANCHOR INSTALLATION

U2400 - EPDM Roof Membranes

The following instructions are meant to be utilized by an experienced and professional roofing contractor using the proper equipment, techniques, and safety protocols – not just the average handyman. Each installation should always follow the specified roofing manufacturer's written specification.



STEP 1 (Optional)

Using the manufacturer recommended brand of water sealant, apply a continuous bead to the bottom surface of the U-Anchor Plate. The bead must run over each fastening hole of the plate.



STEP 2

Align the U-Anchor according to the engineered design. Most designs are transferred to the roof surface with chalk lines.

**Avoid using Permanent chalk - such as red chalk.*



STEP 3

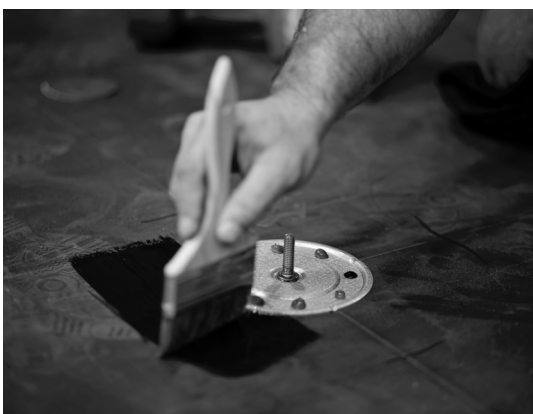
Install the U-Anchor Plate using the correct type and quantity of fasteners specified by your design professional.





STEP 4

Temporarily install the cover membrane and mark the perimeter of the U-Anchor cover membrane.



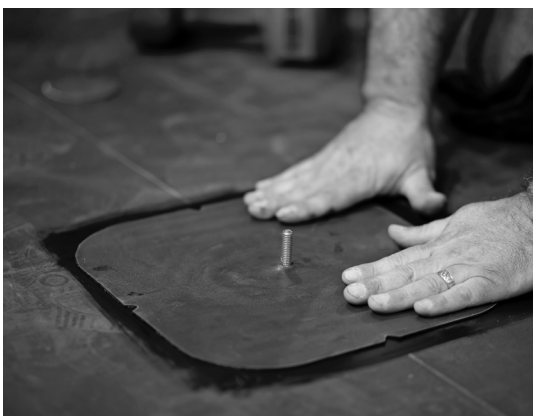
STEP 5

Remove the cover membrane. Apply the EPDM primer to the marked off area of the roof and over the plate. Allow the primer to dry enough to be tacky to touch.

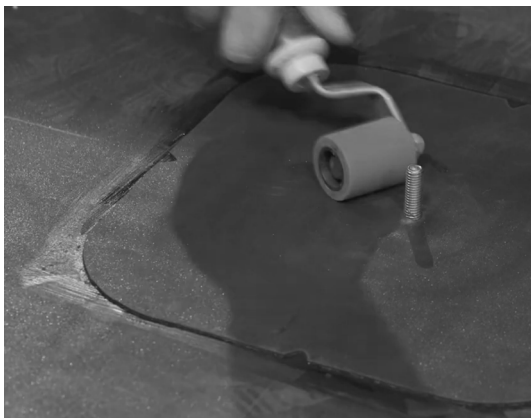


STEP 6

Remove the release liner from the cover membrane. Gently curl the membrane edges up and push the bolt through the center hole opening of the cover membrane.



Prior to pushing the membrane down to the primed roof surface, ensure the cover membrane is aligned properly. Once properly aligned, pressed down firmly to the roof surface with your hands to adhere the primed EPDM surface without any wrinkles or air pockets.



STEP 7

With a 2-inch-wide roller, roll the cover membrane to achieve proper bonding to the roof.



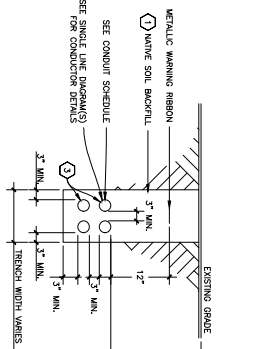
STEP 8

Apply the manufacturer recommended seam sealant per the roofing manufacturer's specification.



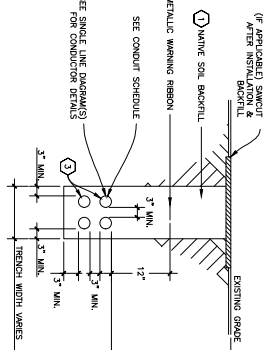
STEP 9

Finally, install the Separation Disk prior to installing any additional hardware. It is not required to adhere this in place as this is only used to protect the materials underneath and not for waterproofing. However, this can be adhered into place if desired.



TRENCH SECTION FOR NON-VEHICLE TRAFFIC LOCATIONS

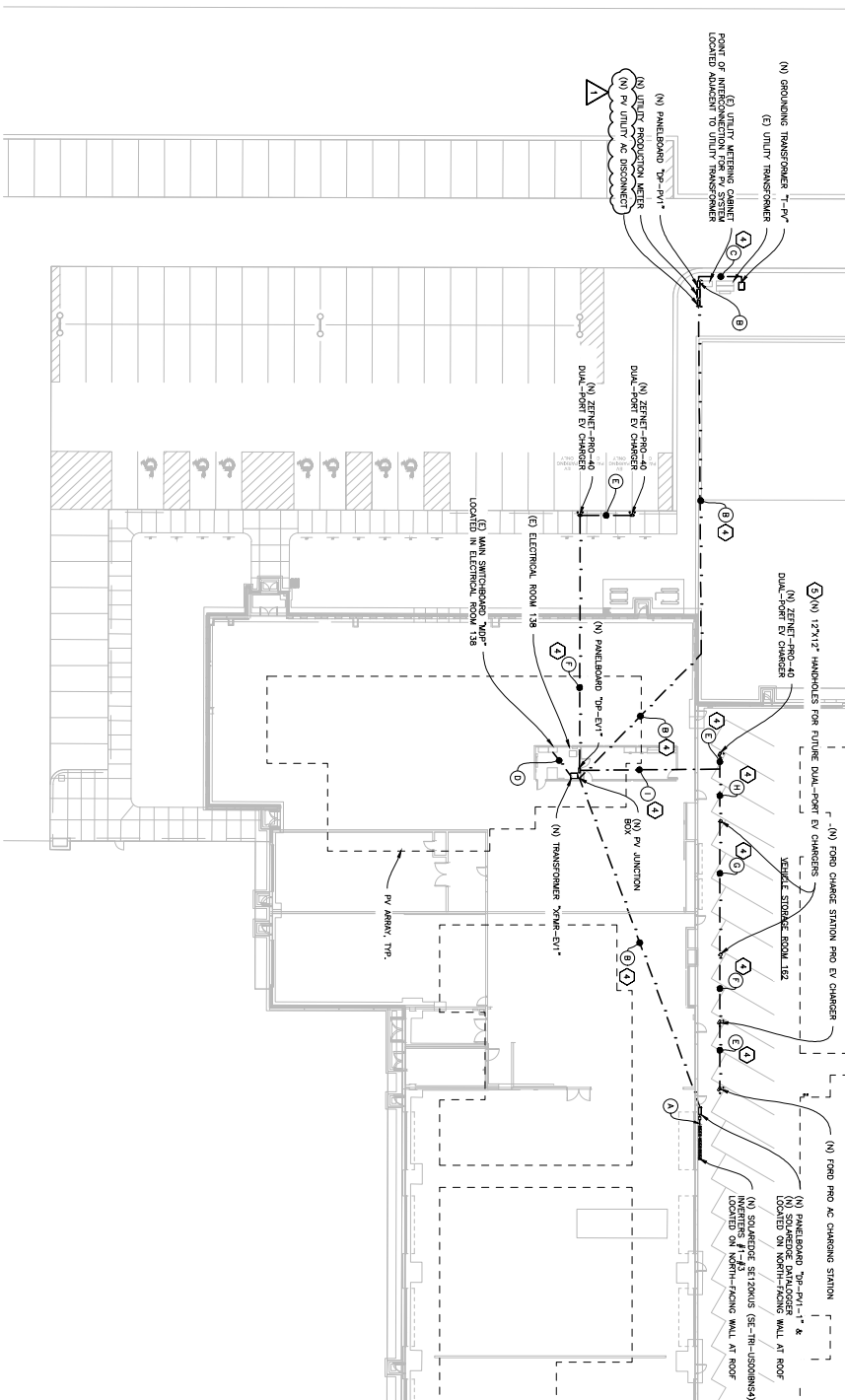
SCALE: NTS



TRENCH SECTION FOR VEHICLE TRAFFIC LOCATIONS

SCALE: NTS

VT -



③ TRENCH AND CONDUIT ROUTE DETAIL

(X) SEE CONDUIT SCHEDULE FOR DETAILS

GENERAL NOTES

- [illegible]

KEYNOTES

1. THE RETURN OF THE FRENCH RECEIVING COMBAT OR DIRECT-SUPPORTED COMBAT VEHICLES, TANKS, CANNON, MISSILES, AND OTHER ARMED EQUIPMENT TO THE FRENCH SUPPLY AND SUPPORT VEHICLES, TANKS, CANNON, MISSILES, AND OTHER ARMED EQUIPMENT SHALL BE DONE ON A PROTECTIVE LAYER OF WHITE-TAN-PAINTED STEEL OR ALUMINUM SHEET, 1/8" THICK, 4' X 8' IN SIZE, OR OTHER STATED EQUIPMENT SHALL BE LAYED, REPORTED, AND/OR LIT IN INCHES OF CONTOUR/ANGLE SHALL BE FREE OF MATERIALS THAT WILL DAMMER THE CONTOUR OF THE COMBAT/VEHICLE. THE EQUIPMENT SHALL NOT BE USED WITHIN 6 INCHES OF THE COMBAT/VEHICLE.
2. CONTRACTORS TO PREPARE DESIGNED MATN FOR DO COMBATORS FOR DO KENOTE #2 ON SHEET E-401
3. COMBATERS SHALL BE STUCKED TWO HIGH WALKING SURF DUCT BANK INSTRUCTIONS.
4. COMBATERS ARE PROHIBITED FROM CONDUCTING BY BUILDING COMBATERS TO BE PROHIBITED FROM CONDUCTING BY BUILDING COMBATERS ROUTES IN THE FIELD AND EXTEND COMBAT TO SOLAR PV
5. TURN UP (1) EMPTY COMBAT AT EACH HANDLE AND CAP FOR FUTURE

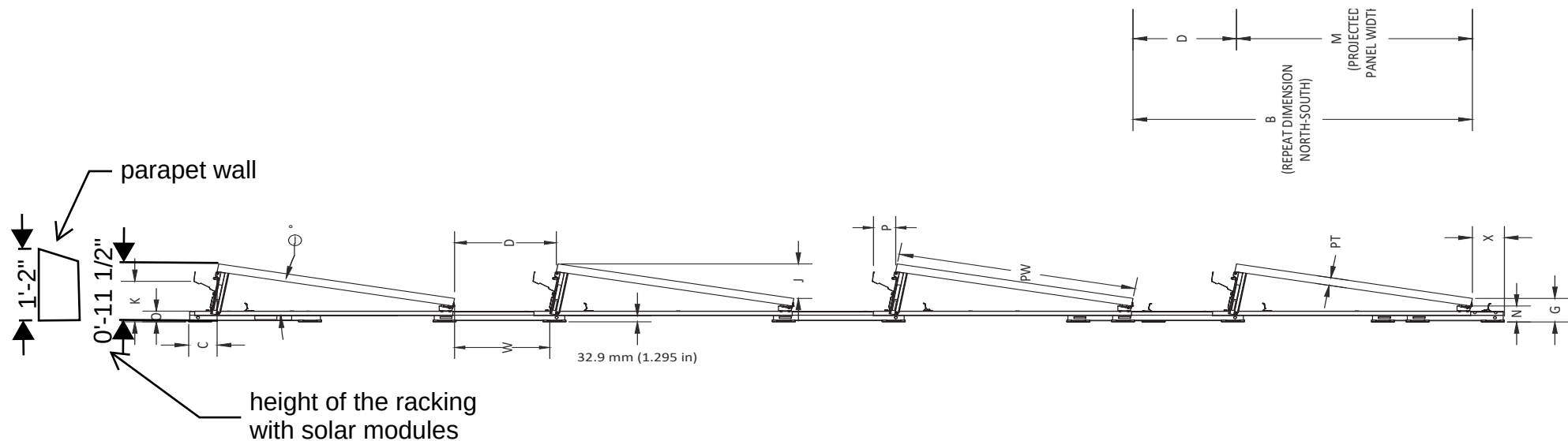
CONDUIT SCHEDULE	
CALLOUT	CONDUIT (2)
A	(3) 2.00" AC POWER (1) 1.00" CDM
B	(2) 3.00" AC POWER
C	(1) 1.25" AC POWER
D	(1) 2.00" AC POWER
E	(1) 3.00" AC POWER
F	(2) 1.00" AC POWER
G	(3) 1.00" AC POWER
H	(4) 1.00" AC POWER
I	(3) 1.00" AC POWER

NOTES: COMPARED TO LISTED CONDUIT SCHEDULES
 1. ALL CONDUITS SHALL BE RATED FOR NON-VEHICLE
 2. ALL CONDUITS SHALL BE RATED FOR 90°C TEMPERATURES

TRENCH REQUIRES VEHICLE OR NON-VEHICLE DEPTHS.



0'-0" 20'-0" 40'-0"
SCALE: 1" = 20'-0"



RAIL DETAIL

SCALE: NTS



INSTALLATION MEASUREMENTS					
UNITS		AEBE	S	L	CAM SPACING*
	mm	486	1246	1050	53
	inches	19 1/8	49 1/16	41 5/16	2 1/8

*CAM SPACING SHOWN ON ASSEMBLIES PAGE.

MODULE DIMENSIONS				
UNITS		PL	PW	PT
	mm	2278	1134	35
	inches	89.69	44.65	1.38

INSTALLED ARRAY DIMENSIONS																		
UNITS		A	B	C	D	G	J	K	M	N	O	P	R	W	X	Theta (DEG)	D/J (#:1)	G.C.R.*
	mm	2296	1553	121	433	116	177	209	1120	81	59	92	516	407	137	8.99	2.44	0.73
	inches	90.39	61.13	4.75	17.03	4.56	6.97	8.23	44.10	3.20	2.31	3.61	20 5/16	16.03	5.39	8.99	2.44	0.73

* G.C.R. = (PW) / B

REV.	DATE	DESCRIPTION
0	07/01/25	PERMIT SUBMITTAL
1	07/28/25	UTILITY COMMENTS

McKinstry
McKinstry
1600 UTICA AVE S 9TH FLOOR,
OFFICE NO. 134
ST. LOUIS PARK, MN 55416
P: (763) 767-0304

SITE PLAN
19505 STOLTZMAN ROAD
MANKATO TOWNSHIP, MN 56001

PROJECT NAME	BLUE EARTH COUNTY PUBLIC WORKS FACILITY
DESIGNER	MCCALMONT ENGINEERING
DRAWN BY	J. BAGLIETTO
CHECKED BY	N. LOVGREN
DATE	03/10/2025
SCALE	E-100.500
PLANT DATE	07/28/2025
PROJECT NAME	MCCALMONT
PROJECT NUMBER	ME-1234-02766
SHEET SIZE	24" X 36"

Professional Engineer
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
Signature: *[Signature]*
Title: Professional Engineer, Aaron McCalmont
Date: 07/28/2025 License Number: 58593

STOLTZMAN ROAD (CSAH 16)

195TH STREET (CSAH 90)

01 SITE PLAN

SCALE: 1" = 50'-0"

MODULE COUNTS AND RATINGS PER ARRAY

ARRAY	TYPE	MODULE TYPE	MODULE DIMENSIONS	MODULE RATING	AZIMUTH	TILT	MODULES	PV OPTIMIZER STRINGS	SPARE MODULES	TOTAL MODULES	KWDC	KWAC
ARRAY 1	ROOFTOP	JA SOLAR JAM72D30-550/MB	89.69"x44.65"x1.38"	550W	180°	10°	192	8	0	192	105.60KWDC	360.00KWAC
ARRAY 2	ROOFTOP	JA SOLAR JAM72D30-550/MB	89.69"x44.65"x1.38"	550W	180°	10°	218	8	0	218	119.90KWDC	
ARRAY 3	ROOFTOP	JA SOLAR JAM72D30-550/MB	89.69"x44.65"x1.38"	550W	180°	10°	165	7	0	165	90.75KWDC	
ARRAY 4	ROOFTOP	JA SOLAR JAM72D30-550/MB	89.69"x44.65"x1.38"	550W	180°	10°	128	11	0	128	70.40KWDC	
ARRAY 5	ROOFTOP	JA SOLAR JAM72D30-550/MB	89.69"x44.65"x1.38"	550W	180°	10°	120		0	120	66.00KWDC	
MODULES PER PV OPTIMIZER STRING				23 - 26	TOTALS		823	34	0	823	452.65KWDC	360.00KWAC

GENERAL NOTES

- (823) JA SOLAR JAM72D30-550/MB 550W MODULES.
- (3) SOLAREGE SE120KUS (SE-TRI-US00IBNS4) INVERTERS.
- (823) SOLAREGE C65IU OPTIMIZERS.
- PANELCLAW CLAWFRPLUS 10 DEGREE MODULE RACKING.
- CONTRACTOR TO ENSURE THAT THE PHOTOVOLTAIC ARRAY AND ASSOCIATED EQUIPMENT MEET FIRE CODE.
- INVERTERS COMPLY WITH RAPID SHUTDOWN PER NEC ART. 690.12.
- REFERENCE STRUCTURAL DRAWINGS FOR ARRAY DIMENSIONS.
- EQUIPMENT LABELS SHALL BE IN ACCORDANCE WITH NEC 690 AND XCEL ENERGY STANDARDS.
- A PERMANENT PLAQUE OR DIRECTORY SHALL BE INSTALLED PROVIDING THE LOCATION OF THE AC DISCONNECTING MEAN IF NOT WITHIN 10' OF THE MAIN SERVICE IN COMPLIANCE WITH NEC 690.56(B).
- ALL XCEL ENERGY EQUIPMENT IS 24/7 UNESCORTED KEYLESS ACCESS.
- NO OVERHEAD POWER LINES IN THE VICINITY.

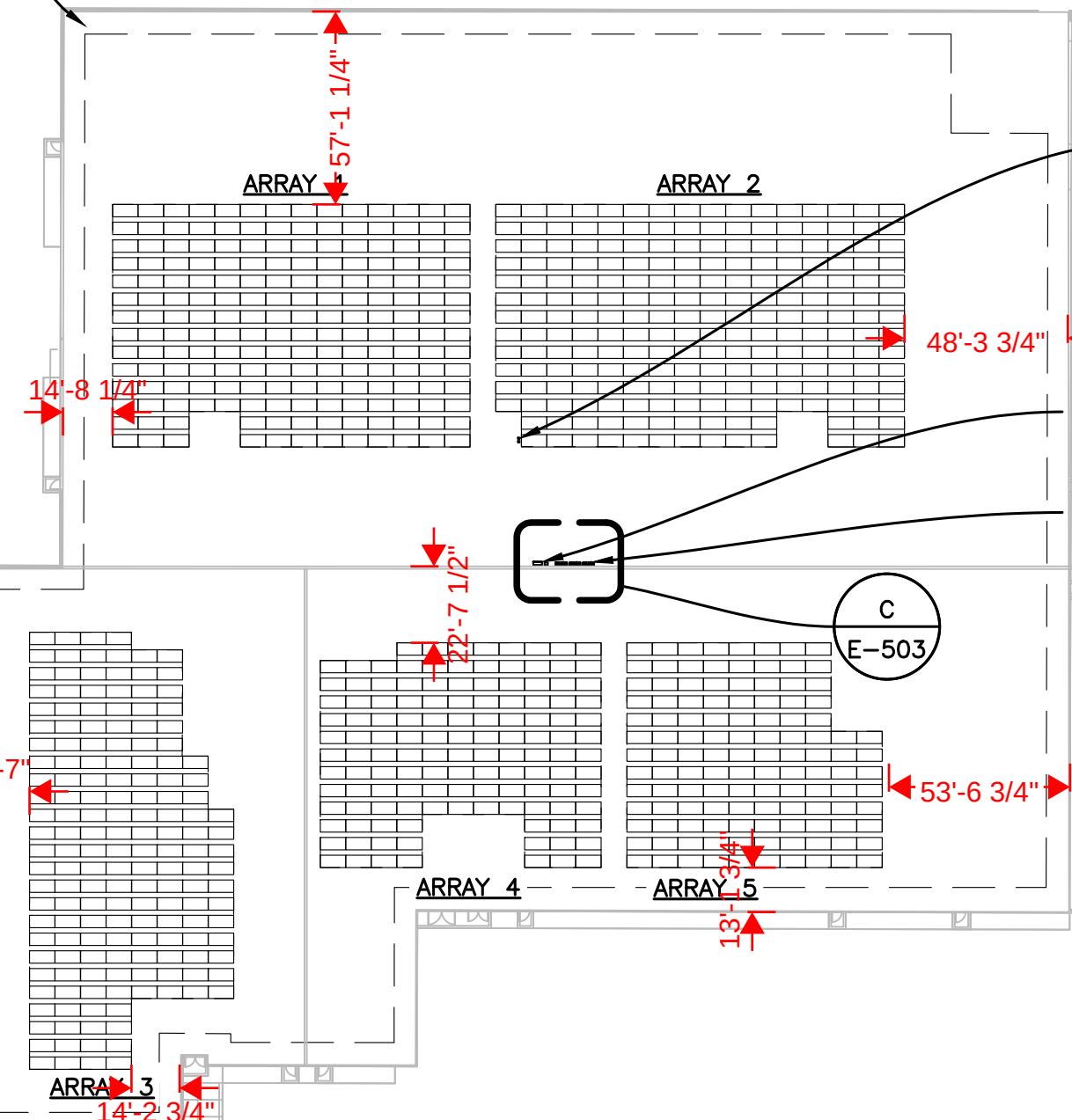
KEYNOTES

- LOCATED ON NORTH-FACING WALL AT ROOF.
- CONTRACTOR TO ENSURE IRRADIANCE SENSOR HAS A CLEAR AND UNOBSTRUCTED VIEW OF THE SKY, FREE FROM ANY OBJECTS THAT COULD CAST SHADOWS OR BLOCK SUNLIGHT.



(E) UTILITY TRANSFORMER
(E) UTILITY METERING CABINET
POINT OF INTERCONNECTION FOR PV SYSTEM
LOCATED ADJACENT TO UTILITY TRANSFORMER
(N) UTILITY PRODUCTION METER
(N) PV UTILITY AC DISCONNECT

6' FIRE SETBACK, TYP.



(N) IRRADIANCE SENSOR, (N) AMBIENT TEMPERATURE SENSOR & (N) MODULE TEMPERATURE SENSOR
(N) PANELBOARD "DP-PV1-1" & (N) SOLAREGE DATALOGGER
(N) SOLAREGE SE120KUS (SE-TRI-US00IBNS4) INVERTERS #1-#3

(N) PANELBOARD "DP-PV1"
(N) UTILITY PRODUCTION METER
(N) PV UTILITY AC DISCONNECT

(N) GROUNDING TRANSFORMER "T-PV"
(E) UTILITY TRANSFORMER
(E) UTILITY METERING CABINET
POINT OF INTERCONNECTION FOR PV SYSTEM
LOCATED ADJACENT TO UTILITY TRANSFORMER

POINT OF INTERCONNECTION PLAN

SCALE: 1/4" = 1'-0"

Three Phase Inverter with Synergy Technology

For the 277/480V Grid for North America

SE80KUS / SE100KUS / SE110KUS / SE120KUS



Powered by unique pre-commissioning process for rapid system installation

- Pre-commissioning feature for automated validation of system components and wiring during the site installation process and prior to grid connection
- Easy 2-person installation with lightweight, modular design (each inverter consists of 2 or 3 Synergy units and 1 Synergy Manager)
- Independent operation of each Synergy unit enables higher uptime and easy serviceability
- Built-in thermal sensors detect faulty wiring, ensuring enhanced protection and safety
- Built-in arc fault protection and rapid shutdown
- Built-in PID mitigation for maximized system performance
- Monitored* and field-replaceable surge protection devices, to better withstand surges caused by lightning or other events
- Built-in module-level monitoring with Ethernet or cellular communication for full system visibility

*Applicable only for DC and AC SPDs

/ Three Phase Inverter with Synergy Technology

For the 277/480V Grid for North America

SE80KUS / SE100KUS / SE110KUS / SE120KUS

MODEL NUMBER	SE80KUS	SE100KUS	SE110KUS	SE120KUS	UNITS
	SExxK-USx8lxxxx				
APPLICABLE TO INVERTERS WITH PART NUMBER					
OUTPUT					
Rated AC Active Output Power	80000	100000	110000	120000	W
Maximum AC Apparent Output Power	80000	100000	120000	120000	VA
AC Output Line Connections	3W + PE, 4W + PE				
Supported Grids	WYE: TN-C, TN-S, TN-C-S, TT, IT; Delta: IT				
AC Output Voltage Minimum-Nominal-Maximum ⁽¹⁾ (L-N)	244 – 277 – 305				Vac
AC Output Voltage Minimum-Nominal-Maximum ⁽¹⁾ (L-L)	422.5 – 480 – 529				Vac
AC Frequency Min-Nom-Max ⁽¹⁾	59.5 – 60 – 60.5				Hz
Maximum Continuous Output Current (per Phase, PF=1)	96.5	120	144.3		Aac
GFDI Threshold	1				A
Utility Monitoring, Islanding Protection, Configurable Power Factor, Country Configurable Thresholds	Yes				
Total Harmonic Distortion	≤ 3				%
Power Factor Range	±0.85 to 1				
INPUT					
Maximum DC Power (Module STC) Inverter / Synergy Unit	140000 / 70000	175000 / 58300	210000 / 70000		W
Transformer-less, Ungrounded	Yes				
Maximum Input Voltage DC+ to DC-	1000				Vdc
Operating Voltage Range	850 – 1000				Vdc
Maximum Input Current	2 x 48.25	3 x 40	3 x 48.25		Adc
Reverse-Polarity Protection	Yes				
Ground-Fault Isolation Detection	167kΩ sensitivity per Synergy Unit ⁽²⁾				
CEC Weighted Efficiency	98.5				%
Nighttime Power Consumption	< 8	< 12			W
ADDITIONAL FEATURES					
Supported Communication Interfaces ⁽³⁾	2 x RS485, Ethernet, Wi-Fi (optional), Cellular (optional)				
Smart Energy Management	Export Limitation				
Inverter Commissioning	With the SetApp mobile application using built-in Wi-Fi access point for local connection				
Arc Fault Protection	Built-in, User Configurable (According to UL1699B)				
Photovoltaic Rapid Shutdown System	NEC 2014 – 2023, built-in				
PID Rectifier	Nighttime, built-in				
RS485 Surge Protection (ports 1+2)	Type II, field replaceable, integrated				
AC, DC Surge Protection	Type II, field replaceable, integrated				
DC Fuses (Single Pole)	25A, integrated				
DC SAFETY SWITCH					
DC Disconnect	Built-in				
STANDARD COMPLIANCE					
Safety	UL1699B, UL1741, UL1741 SA, UL1741 SB, UL1998, CSA C22.2#107.1, Canadian AFCI according to T.I.L. M-07				
Grid Connection Standards	IEEE 1547-2018, Rule 21, Rule 14 (HI)				
Emissions	FCC part 15 class A				

(1) For other regional settings please contact SolarEdge support.

(2) Where permitted by local regulations.

(3) For specifications of the optional communication options, visit the [Communication product page](#) or the [Knowledge Center](#) to download the relevant product datasheet.

/ Three Phase Inverter with Synergy Technology

For the 277/480V Grid for North America

SE80KUS / SE100KUS / SE110KUS / SE120KUS

MODEL NUMBER		SE80KUS	SE100KUS	SE110KUS	SE120KUS	UNITS
APPLICABLE TO INVERTERS WITH PART NUMBER		SExxK-USx8lxxxx				
INSTALLATION SPECIFICATIONS						
Number of Synergy Units per Inverter		2	3			
Ac Max Conduit Size		2 ½"				in
Max AWG Line / PE		4/0 / 1/0				
DC Max Conduit Size		1 x 3"; 2 x 2"				in
DC Input Inverter/ Synergy Unit	Multi-input (SExxK-USxxxxZ4)	8 / 4 pairs; 6-12 AWG	12 / 4 pairs; 6-12 AWG			
	Combined input (SExxK-USxxxxW4)	2 pairs / 1 pair, Max 2 AWG; copper or aluminum	3 pairs / 1 pair, Max 2 AWG; copper or aluminum			
Dimensions (H x W x D)		Synergy Unit: 22 x 12.9 x 10.75 / 558 x 328 x 273 Synergy Manager: 14.17 x 22.4 x 11.6 / 360 x 560 x 295				in / mm
Weight		Synergy Unit: 70.4 / 32 Synergy Manager: 39.6 / 18				lb / kg
Operating Temperature Range		-40 to +140 / -40 to +60 ⁽⁴⁾				°F / °C
Cooling		Fan (user replaceable)				
Noise		< 67				dBA
Protection Rating		NEMA 3R				
Mounting		Brackets provided				

(4) For power de-rating information refer to the [Temperature Derating Technical Note for North America](#).

SolarEdge is a global leader in smart energy technology. By leveraging world-class engineering capabilities and with a relentless focus on innovation, SolarEdge creates smart energy solutions that power our lives and drive future progress.

SolarEdge developed an intelligent inverter solution that changed the way power is harvested and managed in photovoltaic (PV) systems. The SolarEdge DC optimized inverter maximizes power generation while lowering the cost of energy produced by the PV system.

Continuing to advance smart energy, SolarEdge addresses a broad range of energy market segments through its PV, storage, EV charging, UPS, and grid services solutions.

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Cautionary Note Regarding Market Data and Industry Forecasts: This brochure may contain market data and industry forecasts from certain third-party sources. This information is based on industry surveys and the preparer's expertise in the industry and there can be no assurance that any such market data is accurate or that any such industry forecasts will be achieved. Although we have not independently verified the accuracy of such market data and industry forecasts, we believe that the market data is reliable and that the industry forecasts are reasonable.



DEEP BLUE 3.0

Mono

550W MBB Bifacial Mono PERC
Half-cell Double Glass Module
JAM72D30 525-550/MB Series

Introduction

Assembled with 11BB bifacial PERCUM cells and half-cell configuration, these double glass modules have the capability of converting the incident light from the rear side together with the front side into electricity, providing higher output power, lower temperature coefficient, less shading loss, as well as enhanced tolerance for mechanical loading.



Higher output power



More reliable, more stable
power generation



Less shading effect

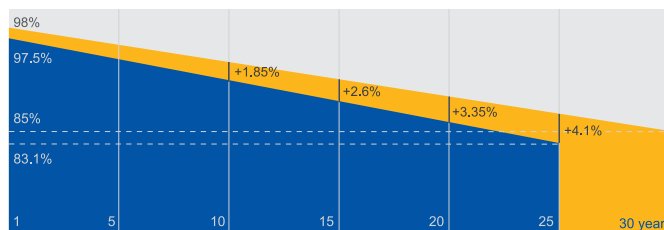


Lower temperature coefficient

Superior Warranty

- 12-year product warranty
- 30-year linear power output warranty

0.45% Annual Degradation
Over 30 years



■ Bifacial double glass module linear power warranty

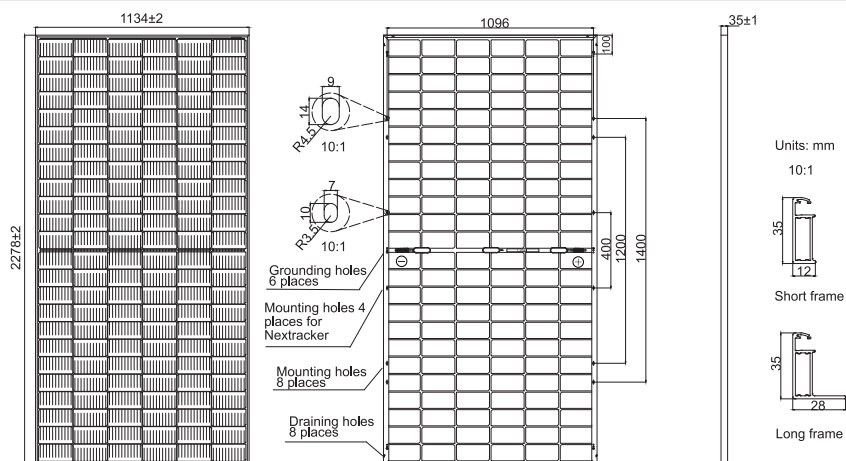
■ Standard module linear power warranty

Comprehensive Certificates

- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC TS 62941: 2016 Terrestrial photovoltaic (PV) modules – Guidelines for increased confidence in PV module design qualification and type approval



MECHANICAL DIAGRAM



Remark: customized frame color and cable length available upon request

SPECIFICATIONS

Cell	Mono
Weight	31.8kg±3%
Dimensions	2278±2mm×1134±2mm×35±1mm
Cable Cross Section Size	4mm² (IEC), 12 AWG(UL)
No. of cells	144(6×24)
Junction Box	IP68, 3 diodes
Connector	MC4-EVO2
Cable Length (Including Connector)	Portrait:300mm(+)/400mm(-); Landscape:1300mm(+)/1300mm(-)
Front Glass/Back Glass	2.0mm/2.0mm
Packaging Configuration	31pcs/Pallet 589pcs/40HQ Container

ELECTRICAL PARAMETERS AT STC

TYPE	JAM72D30 -525/MB	JAM72D30 -530/MB	JAM72D30 -535/MB	JAM72D30 -540/MB	JAM72D30 -545/MB	JAM72D30 -550/MB
Rated Maximum Power(Pmax) [W]	525	530	535	540	545	550
Open Circuit Voltage(Voc) [V]	49.15	49.30	49.45	49.60	49.75	49.90
Maximum Power Voltage(Vmp) [V]	41.15	41.31	41.47	41.64	41.80	41.96
Short Circuit Current(Isc) [A]	13.65	13.72	13.79	13.86	13.93	14.00
Maximum Power Current(Imp) [A]	12.76	12.83	12.90	12.97	13.04	13.11
Module Efficiency [%]	20.3	20.5	20.7	20.9	21.1	21.3
Power Tolerance	0~+5W					
Temperature Coefficient of Isc(α_{Isc})	+0.045%/°C					
Temperature Coefficient of Voc(β_{Voc})	-0.275%/°C					
Temperature Coefficient of Pmax(γ_{Pmp})	-0.350%/°C					
STC	Irradiance 1000W/m², cell temperature 25°C, AM1.5G					

Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer.They only serve for comparison among different module types.

ELECTRICAL CHARACTERISTICS WITH 10% SOLAR IRRADIATION RATIO

OPERATING CONDITIONS

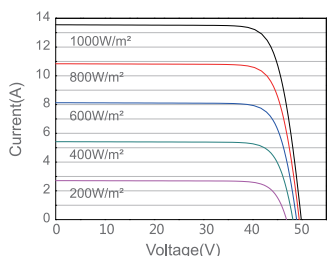
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*For NexTracker installations, Maximum Static Load, Front is 2400Pa while Maximum Static Load, Back is 2400Pa.

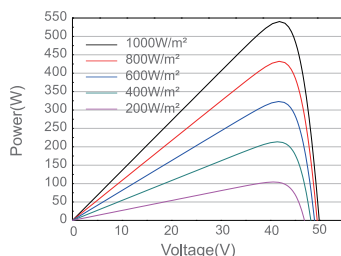
$$^{**}\text{Bifaciality} = P_{\text{max, rear}} / \text{Rated } P_{\text{max, front}}$$

CHARACTERISTICS

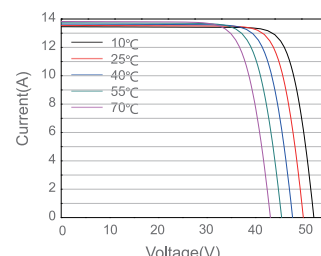
Current-Voltage Curve JAM72D30-540/MB



Power-Voltage Curve JAM72D30-540/MB



Current-Voltage Curve JAM72D30-540/MB



Distributed Energy Resource Interconnection Pre-Application Data Report- MinnesotaDate: 1/28/2025**Requestor Contact Information**

Company Name: MCKINSTRY

Contact Name: KATE PEARSON

Address: _____

Phone #: 4439047632

Email: kathryns@mckinstry.com

Project Information:

Project Name: Blue Earth County Public Works Building

DER Nameplate Rating: 360 kW DER Type: Solar PV

Number of phases: Three Phase Service Voltage: 277/480

Stand-alone Generator? No Existing DER? New DER(s)

Location of Existing DER: _____

County of Existing DER: _____

Proposed Point of Common Coupling

Street Address: _____

City/State/Zip Code: , Minnesota

County: Blue Earth

Cross Streets: Soltzman Road and Hawthorn Road

Latitude: 44.10905314

Longitude: -94.00815237

Meter #: _____ Utility Equipment #: 3117119.1

Other Identifying Info: _____

Xcel Energy has identified the substation/area bus, bank or circuit likely to serve the proposed Point of Common Coupling (PCC). This selection by Xcel Energy does not necessarily indicate, after application of the screens and/or study, that this would be the circuit the project ultimately connects to.

Pre-Application Reports will only include pre-existing data and do not obligate Xcel Energy to conduct a study or other analysis of the proposed DER in the event that data is not available. If Xcel Energy cannot complete all or some of a Pre-Application Report due to lack of available data, Xcel Energy will provide the Interconnection Customer with a Pre-Application Report that includes the data that is available.

The provision of information on "Available Capacity" does not imply that an interconnection up to this level may be completed without impacts since there are many variables studied as part of the interconnection review process. The distribution system is dynamic and subject to change and data provided in the Pre-Application Report may become outdated at the time of submission of the complete Interconnection Application. Xcel Energy will, in good faith, include data in the Pre-Application Report that represents the best available information at the time of reporting.

The gray highlighted data in the gray highlighted fields below are “Confidential Information”, are non-public, and are subject to the Confidentiality provisions in MN DIP section 5.9, as well as the confidentiality provisions contained in the signed Pre-Application Report Request Form.

Please refer to the Public DER Queue available at www.xcelenergy.com/HowToInterconnect to review the current queue at the below Feeder. Please note that queues with many projects On Hold will have long duration before any study results will be available.

Substation

Substation Name:	Sibley Park	Transformer Absolute Min Loading (MVA):	5.168
Substation Transformer:	SIP_TR02	Existing Generation (MW):	0.05
Transformer Rating (MVA):	30.611	Total Queued Generation (MW):	1.04
Transformer Peak Loading (MVA):	22.397	Available Transformer Generation Capacity*:	28.971 MVA
Transformer Daytime Min Loading (MVA):	5.629	Circuit distance from PCC to Substation (feet):	36,976
LTC or Regulator:	LTC		

Feeder

Feeder Name:	SIP072	Feeder Voltage (kV):	13.80
Feeder Rating at head end (MVA):	12.553	Existing Generation on feeder (MW):	0.00
Feeder Peak Loading at head end (MVA):	7.756	Total Queued Generation on feeder (MW):	0.01
Feeder Daytime Min Loading at head end (MVA):	1.964	Available Feeder Generation Capacity at the head end*:	11.993 MVA
Absolute Feeder Min Loading at head end (MVA):	1.649		

Point of Interconnection

Nominal Voltage at PCC (kV):	7.97	Number of phases:	1
Spot/Grid Network, or Radial Feeder:	Radial	If not 3-phase, circuit distance to 3-phase:	15,724

*Assumes existing generation operating at 0.95 power factor and is calculated based on 80% Equipment Rating + DML. This value does not account for other potential impacts that could be identified with a more detailed review or study.

The gray highlighted data in the gray highlighted fields below are “Confidential Information”, are non-public, and are subject to the Confidentiality provisions in MN DIP section 5.9, as well as the confidentiality provisions contained in the signed Pre-Application Report Request Form.

Protective Devices and Regulators between Site and Substation

Device	Size/Type
Recloser	35H
Recloser	70L
Recloser	400L

Conductor between Site and Substation

Conductor Type	Rating (Amps)	Total Length, ft*
ML_OH_336_ACSR	565	13413
ML_OH_336_AL	560	5216
ML_UG_750_AL	505	1901
ML_OH_4/0_CU	560	394
ML_OH_4_ACSR	150	328
2P_OH_336_ACSR	565	191
2P_OH_6A_CUWD	140	7549
2P_OH_4_ACSR	150	101
2P_OH_336_AL	560	2605
1P_OH_2_ACSR	260	215
1P_OH_336_ACSR	705	4795
1P_OH_4_ACSR	200	268

**Total length represents the total footage of all instances of a particular conductor size. The presented data is not necessarily in any particular order, nor does it indicate that the conductor is segmented in any particular way. The data represents the overall conductor lengths to be used in determining the overall impedance between the site and the substation.*

Other existing or known constraints, including, but not limited to, short circuit interrupting capacity issues, power quality or stability issues, capacity constraints:

- Initiate Application
- Initial Engineering ...
- Supplemental Revi...
- System Impact Stu...
- Facilities Study
- Interconnection Ag...
- Design and Constr...
- Metering and Testing
- Permission to Oper...

Interconnection Application
(/?sort=06137817)06137817
(https://xcelenergy.my.site.com/Renewables/a87VX000000L3PV)

+ Follow

Submit Proposed Modifications

Withdraw

Program Type
Distributed Generation

Product
MN - DG > 40 kW and < 1000 k...

Address
19505 STOLTZMAN RD

City
MANKATO

Case #: 06137817
Status: Initiate Application
Step: In Review
Sub-Step: Review Missing Information
App Owner: Your application is being re-reviewed for completeness. If anything is missing, Xcel Energy will notify you within 5 business days. Xcel Energy: Perform Completeness Review.

Actions

Finalized Actions

Milestones

Completed Milestones

Application Details

ACTION NAME	DESCRIPTION	STATUS	RESPONSIBLE PARTY	REQUIRED?	ACTION
-------------	-------------	--------	-------------------	-----------	--------

Please see Milestones tab for deadline.

Approval History (10+) (/Renewables/s/relatedlist/a87VX000000L3PV/ProcessSteps)							
10+ items • Sorted by Is Pending • Updated 2 minutes ago							
Step Na...	Date	Status	Assigned To	Actual Appr...	Comments		
1	AE & PM ...	7/31/2025 3:19 PM	Pending	Spencer Dorio...	Spencer Dorio...		
2	PM Appro...	7/31/2025 3:19 PM	Approved	Jasmin Koco (/...	Jasmin Koco (/...	This application has been approved.	
3	PM Appro...	7/31/2025 3:19 PM	No Response	Spencer Dorio...	Jasmin Koco (/...	Labels and Witness Test Procedure will need to be provided to the TSM for these requirements.	
4	Approval...	7/29/2025 8:09 AM	Submitted	Kate Pearson (/...	Kate Pearson (/...		
5	PM Appro...	7/29/2025 8:07 AM	No Response	Jasmin Koco (/...	Spencer Dorio...		
6	PM Appro...	7/29/2025 8:07 AM	Rejected	Spencer Dorio...	Spencer Dorio...	This application has been rejected for the for the following reasons: Energy storage declaration is missing	
7	Approval...	7/29/2025 7:54 AM	Submitted	Kate Pearson (/...	Kate Pearson (/...		
8	PM Appro...	7/24/2025 12:45 AM	No Response	Spencer Dorio...	Jasmin Koco (/...		

						This application has been rejected. Please correct the fol
						One-Line: 3.2 - Application case number assigned to the project. M numbers in future applications may lead to rejection. 3.4 - For systems larger than 250 kW, a signature from a Minnesota is required.Please include a signature and da 3.8 -The main service meter voltage and number of pha winding configuration and voltages.The main service m phase. Please update the oneline 3.10 -The AC Voltage of DER System. Missing, please inc 3.12 - Phases of inverters (single or three-phase inverte 3.21 - A visible-open type, lockable, and readily accessib isolating the DER from the utility source labeled "Utility AC Disconnect," or similar shall be shown. Please ensure described as 'visible-open type, lockable, and readily acc
9	PM Appro...	7/24/2025 12:45 AM	Rejected	Josh Guck (/Re...	Jasmin Koco (/...	
10	Complete...	7/18/2025 12:40 PM	Approved	MN-WI Progra...	MN-WI Progra...	Approved. HT
						View All
(/Renewables/s/interconnection-application/related/a87VX000000L3PV/ProcessSteps)						

[Screen Results \(0\) \(/Renewables/s/relatedlist/a87VX000000L3PV/Screen_Results_r\)](#)

Checks (10+) (/Renewables/s/relatedlist/a87VX000000L3PV/Checks_r)							
10+ items • Sorted by Requirement Not Met • Updated a minute ago							
Check Name	Action Name	Type	Label	Description	Requirement		
1 CHK-3408513 ...	Site Plan	Contact Infor...	4.1	Customer Name			▼
2 CHK-3408514 ...	Site Plan	Contact Infor...	4.2	Installation premise address			▼
3 CHK-3408515 ...	Site Plan	Contact Infor...	4.3	Installer name & contact information			▼
4 CHK-3408516 ...	Site Plan	Contact Infor...	4.4	Application OID, SRC, or case number as...			▼
5 CHK-3408517 ...	Site Plan	Contact Infor...	4.5	Building(s) and streets shall be labelled			▼
6 CHK-3408518 ...	Site Plan	Contact Infor...	4.6	Compass direction (indicate North)			▼
7 CHK-3408519 ...	Site Plan	Electrical Com...	4.7	Main service entrance, all meter locations...			▼
8 CHK-3408520 ...	Site Plan	Electrical Com...	4.7.1	Distance shall be noted between meterin...			▼
9 CHK-3408521 ...	Site Plan	Electrical Com...	4.7.2	For dedicated power production facilities:...			▼
10 CHK-3408522 ...	Site Plan	Electrical Com...	4.8	The Production Meter and AC Disconnect ...			▼
							View All
(/Renewables/s/interconnection-application/related/a87VX000000L3PV/Checks_r)							

Create A New Post

* (required) Topic

--None--

* (required) Question

☐ Include attachment?

Next

Sort by:

Most Recent Activity

Search this feed...

Kate Pearson (/Renewables/s/profile/0054O0000098f5uQAA) (McKinstry)

19h ago (/Renewables/s/feed/0D5VX00000kUnYm0AK)

Good afternoon,
Can you explain what we need to update for the application to be completed and move to the next step? I am not seeing anything to update anywhere.Thank you!

Engineering/Technical

(/Renewables/s/topic/0TO4O000000IToIWAG/)

1 comment 2 views

Like

Comment

Kate Pearson (/Renewables/s/profile/0054O0000098f5uQAA) (McKinstry)

19 hours ago

There is no energy storage for this project. What is the "Energy Storage Declaration"?

Application Information

State	Track
Minnesota	Fast Track
New or Modified DER	DER Type
New DER(s)	Solar PV
DG Generator Type	Energy Storage System Included
PV/Inverter	No
AC Active Power Nameplate Rating (kW)	System Capacity kW
250.000	452.650
System Capacity (kWh)	DER will be used for the following
535,218.005	Net Metering Self-Supply
Existing DG Size (AC kW)	New Construction
	☒

Jasmin Koco (/Renewables/s/profile/005VX000009WFzdYAG) (Xcel Energy)

19h ago (/Renewables/s/feed/0D5VX00000kUUpX0AW)

requested approval for this interconnection application.The approval is at step 5 of 7.

Like

Comment

Write a comment...

Kate Pearson (/Renewables/s/profile/0054O0000098f5uQAA) (McKinstry)

July 29, 2025 at 8:09 AM (/Renewables/s/feed/0D5VX00000kD5Pe0AK)

Like

Comment

Write a comment...

Kate Pearson (/Renewables/s/profile/0054O0000098f5uQAA) (McKinstry)

July 29, 2025 at 7:54 AM (/Renewables/s/feed/0D5VX00000kDMrb0AG)

Like

Comment

Write a comment...

MN-WI Program Admin (/Renewables/s/profile/005KZ000001AcDcYAK) (Xcel Energy)

July 18, 2025 at 12:40 PM (/Renewables/s/feed/0D5VX00000jDapm0AC)

requested approval for this interconnection application.The approval is at step 2 of 7.



Like



Comment



Write a comment...



[Kate Pearson \(/Renewables/s/profile/0054O0000098f5uQAA\)](#) (McKinstry) requested approval for this interconnection application. The approval is at step 1 of 7.
[July 18, 2025 at 8:41 AM \(/Renewables/s/feed/0D5VX00000jBp8l0AC\)](#)



Like



Comment



Write a comment...



[Spencer Doriot \(/Renewables/s/profile/0054O000009jiCiQAI\)](#) (Xcel Energy Services Inc.) requested approval for this interconnection application. The approval is at step 1 of 7.
[July 18, 2025 at 8:28 AM \(/Renewables/s/feed/0D5VX00000jC4kM0AS\)](#)



Like



Comment



Write a comment...



[Kate Pearson \(/Renewables/s/profile/0054O0000098f5uQAA\)](#) (McKinstry)
[July 11, 2025 at 11:05 AM \(/Renewables/s/feed/0D5VX00000iWlyg0AC\)](#)



See attached for image of Check sent on 7/9/2025.



[Deposits/Fees/True-ups](#)

[\(/Renewables/s/topic/0TO4O00000lTobWAG/\)](#)

2 comments 3 views



Like



Comment

More comments

1 of 2



[Callie Walsh \(/Renewables/s/profile/0050B000007sZ8CQAU\)](#) (Xcel Energy)
15 days ago



The checks sent on 6/18 (Check # 114 and 115) were received and deposited. I will void/shred check #119 which is a duplicate. Thanks!

Like



Write a comment...



[Kate Pearson \(/Renewables/s/profile/0054O0000098f5uQAA\)](#) (McKinstry)
[May 2, 2025 at 10:53 AM \(/Renewables/s/feed/0D5VX00000cltdW0AS\)](#)



Good morning,

We are filling out an interconnection application for a 453kWdc; 360kWac rooftop solar array for the Blue Earth County new Public Works Facility. This building is a new construction and has the following account number and premise number from Xcel:

APPLICATION OID: 06137817

ACCOUNT: 51-0014913914-7

PREMISES NUMBER: 305306375

[Expand Post](#)



(/Renewables/s/topic/0TO4O000000IToWWAW/)

 Like

 Comment

1 of 22



→

@ Kate Pearson (/Renewables/s/profile/005400000098f5uQAA) (McKinstry) Please see page 67 for information on the witness test procedure, there is an example as well. CW



Like



Write a comment...



Kate Pearson (/Renewables/s/profile/005400000098f5uQAA) (McKinstry) requested approval for this interconnection application. The approval is at step 1 of 7.
[July 15, 2025 at 7:04 AM \(/Renewables/s/feed/0D5VX00000inSI0AM\)](#)



 Like



 Comment



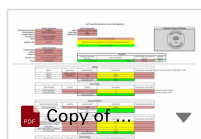
Write a comment...



1

June 12, 2025 at 12:24 PM (/Renewables/s/feed/0D5VX00000fv8Aw0AI)

See attached for stamped load analysis calc.



[\(/Renewables/s/topic/0TO4O000000IToWWAW/\)](/Renewables/s/topic/0TO4O000000IToWWAW/)

 Like

 Comment



►

@Kate Pearson (/Renewables/s/profile/005400000098f5uQAA) (McKinstry) Please proceed. CW

Like



Write a comment...

[er_data & privacy/privacy_policy_and_customer_data_access](#)

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NOTE:
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STATE OF MINNESOTA.

BRYAN M. PETZEL

DATE 01/27/25 LIC. NO. 53191

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PROJECT

**BLUE EARTH
COUNTY
PUBLIC WORKS
FACILITY**

MANKATO TOWNSHIP MINNESOTA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY
09/25/24	ADDENDUM 4	AAQ
10/02/24	ADDENDUM 5	AAQ
01/27/25	PROPOSAL REQUEST 10	AAQ

PROJECT NO. 20-24553

FILE NAME 24553 C3-SITE

DRAWN BY AAQ/AMS

DESIGNED BY AAQ/AMS/BMP

REVIEWED BY BMP/BAH

ORIGINAL ISSUE DATE 08/30/2024

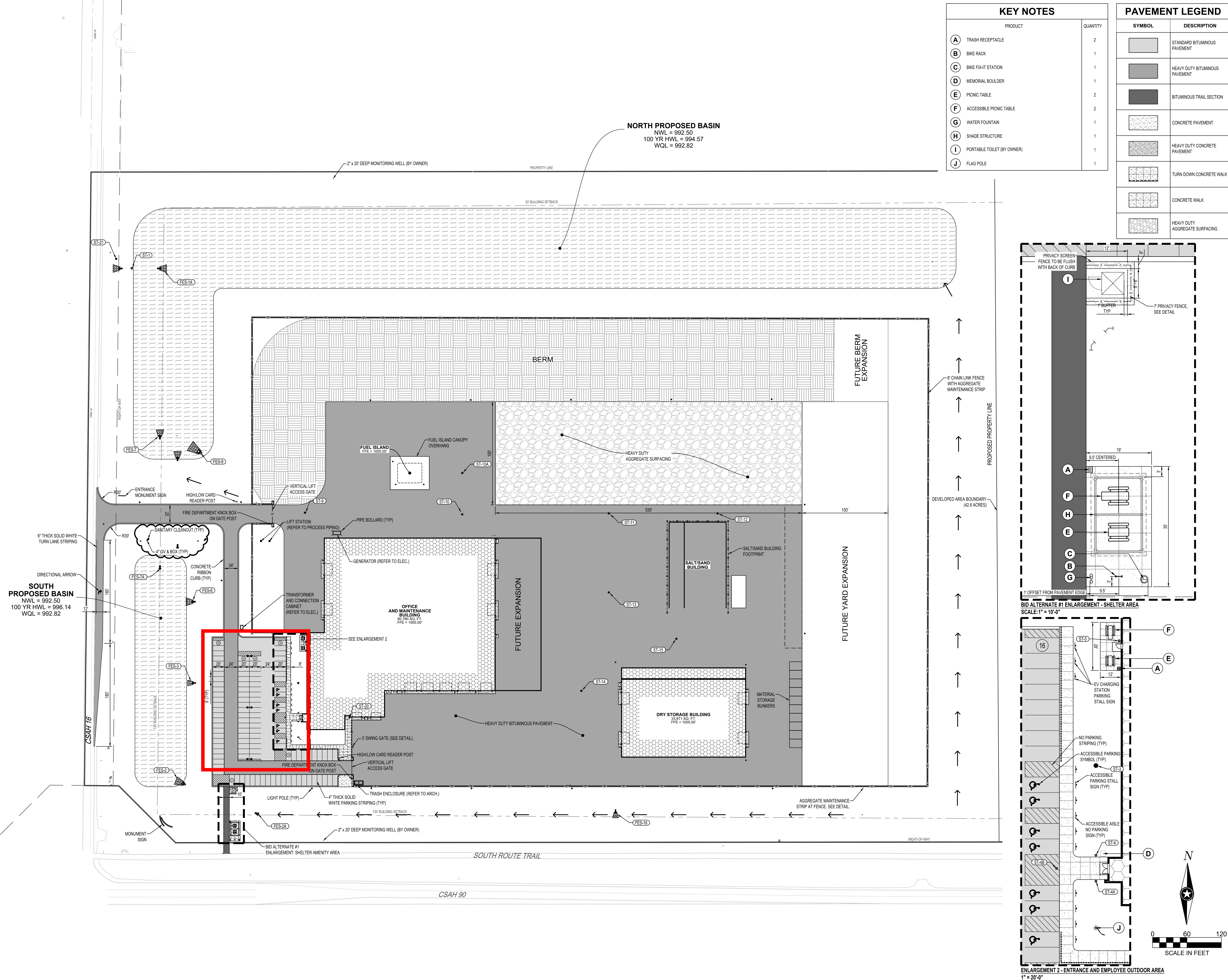
CLIENT PROJECT NO. -

TITLE

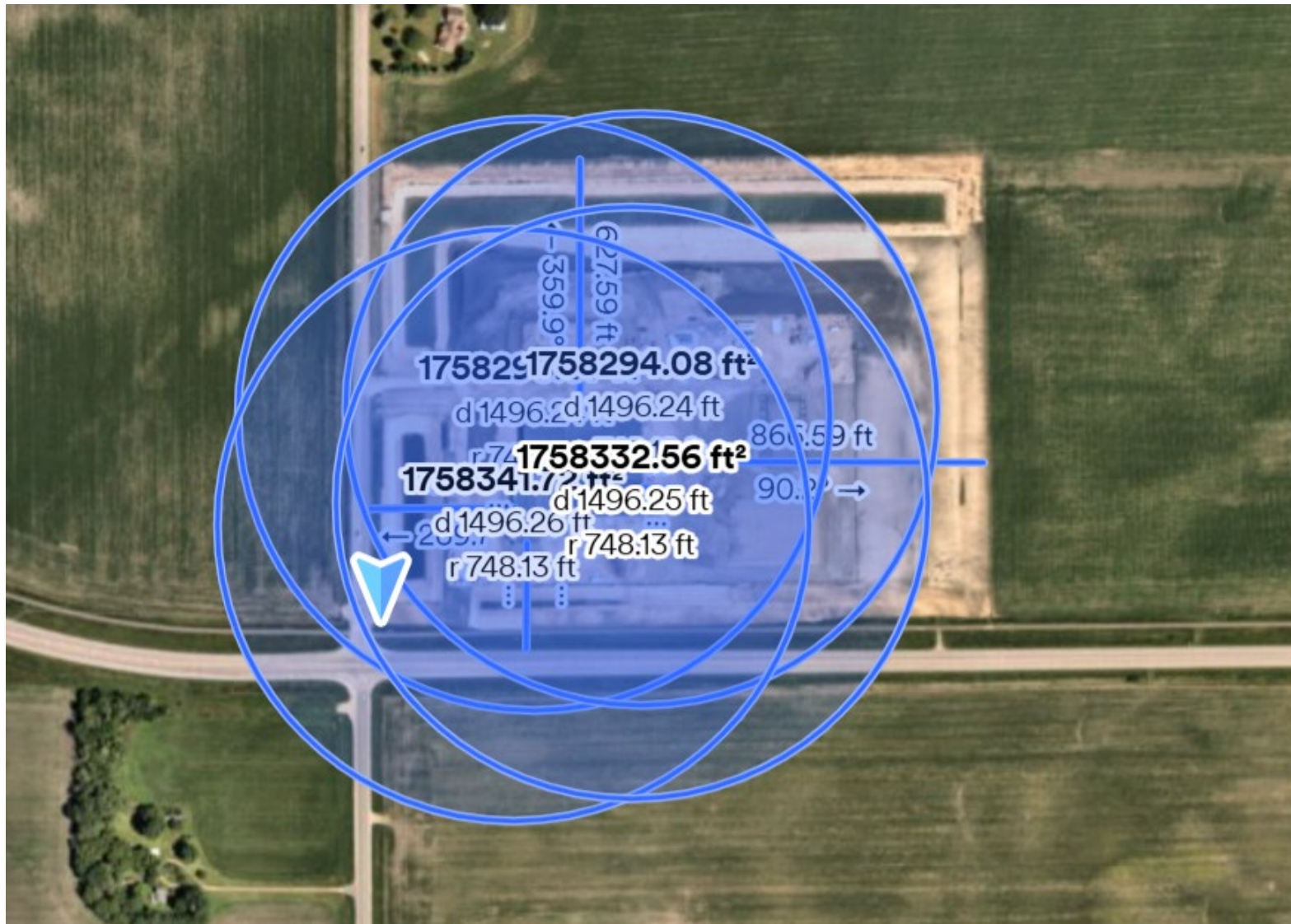
SITE PLAN

SHEET

C3-10



750 Feet radius from all four corners of the Solar Arrays



Setbacks



Ground Eye View- 6 feet height







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DATE 08/30/24 LIC. NO. 49451

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JEREMY P. WIESEN

DATE 08/30/24 LIC. NO. 49451

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PROJECT

BLUE EARTH COUNTY PUBLIC WORKS FACILITY

MANKATO TOWNSHIP MINNESOTA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO. 20-24553

FILE NAME 24553 ARCH R22

DRAWN BY JLE

DESIGNED BY JPW

REVIEWED BY JPW

ORIGINAL ISSUE DATE 08/16/2024

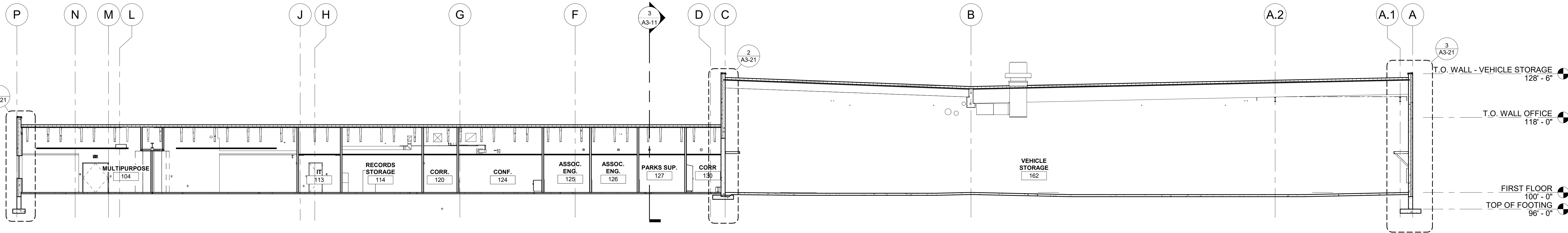
CLIENT PROJECT NO.

TITLE

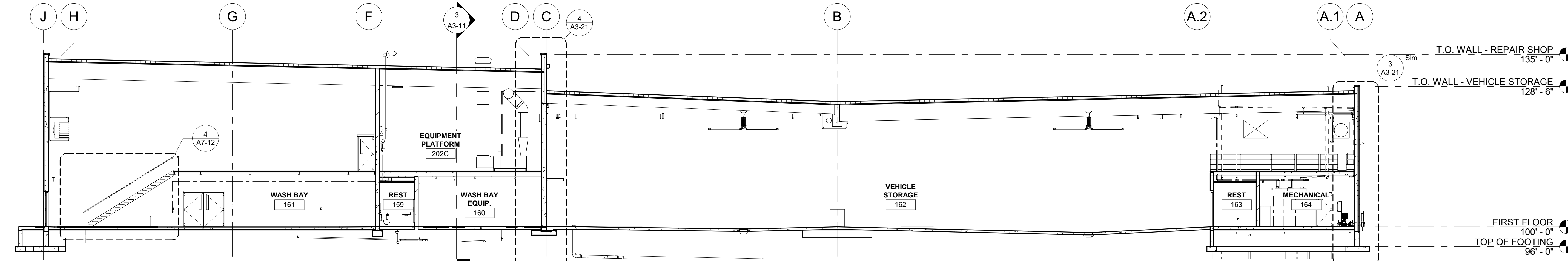
BUILDING SECTIONS

SHEET

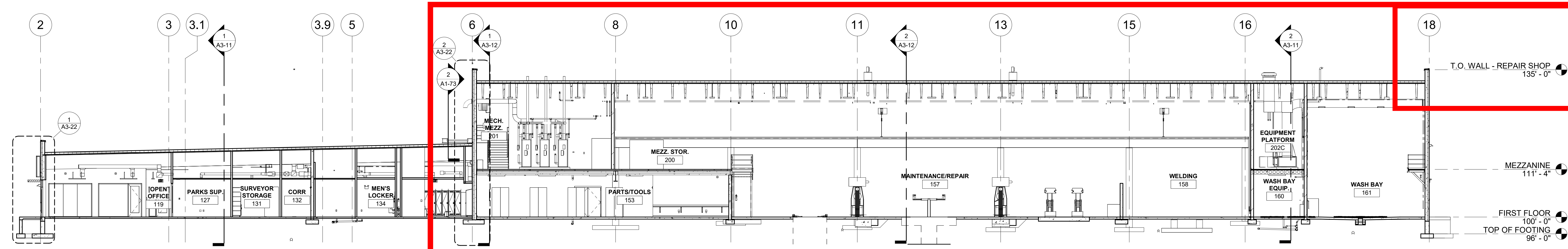
A3-11



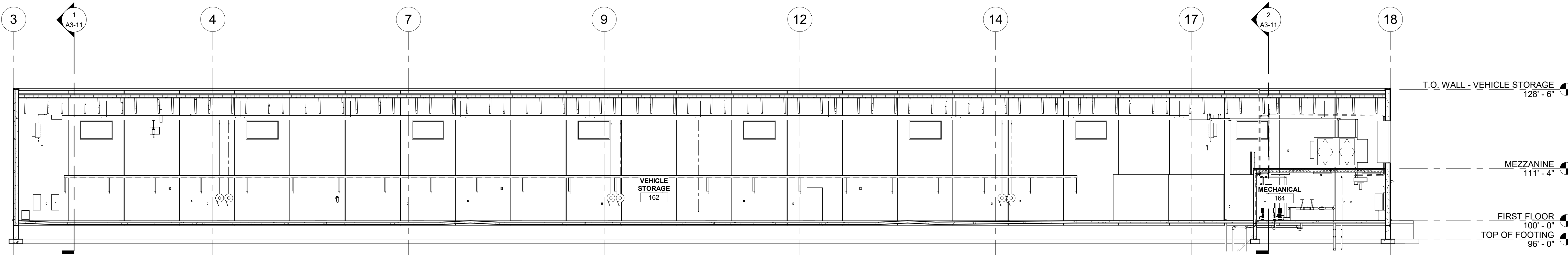
1 BUILDING SECTION
3/32" = 1'-0"



2 BUILDING SECTION
3/32" = 1'-0"



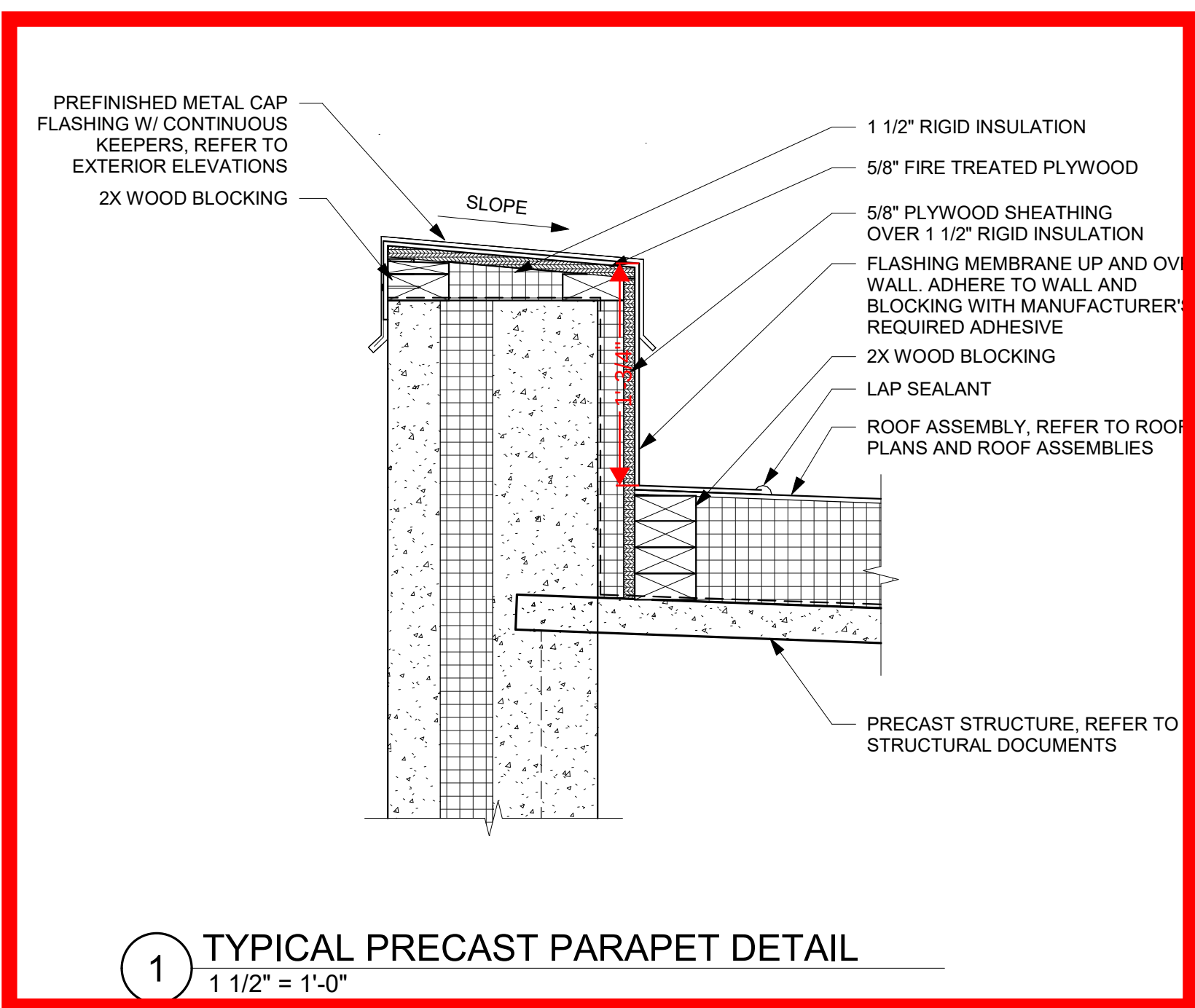
3 BUILDING SECTION
3/32" = 1'-0"



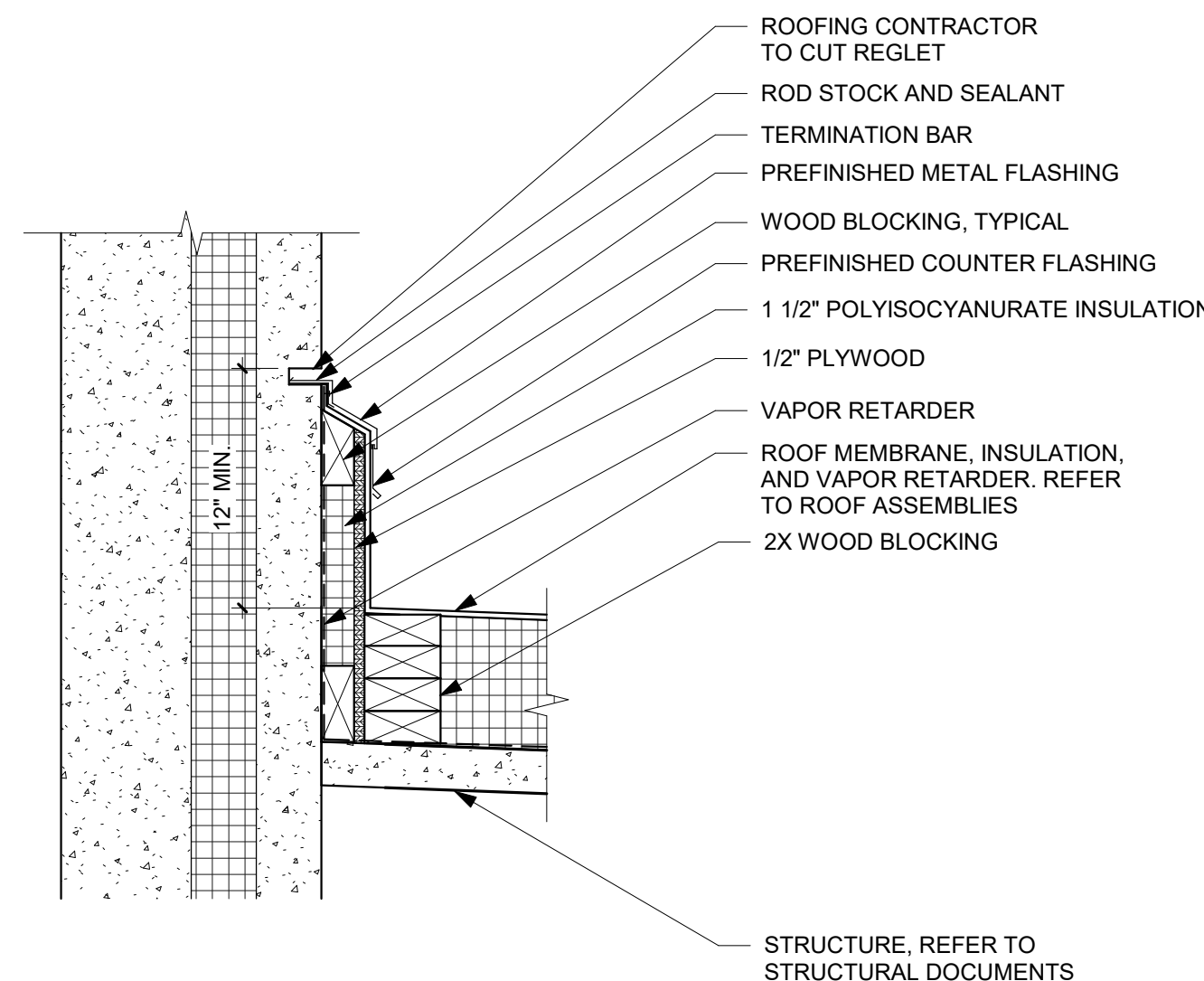
4 BUILDING SECTION
3/32" = 1'-0"

REFERENCE SCALE
0 1/4" 1/2" 1" 2"

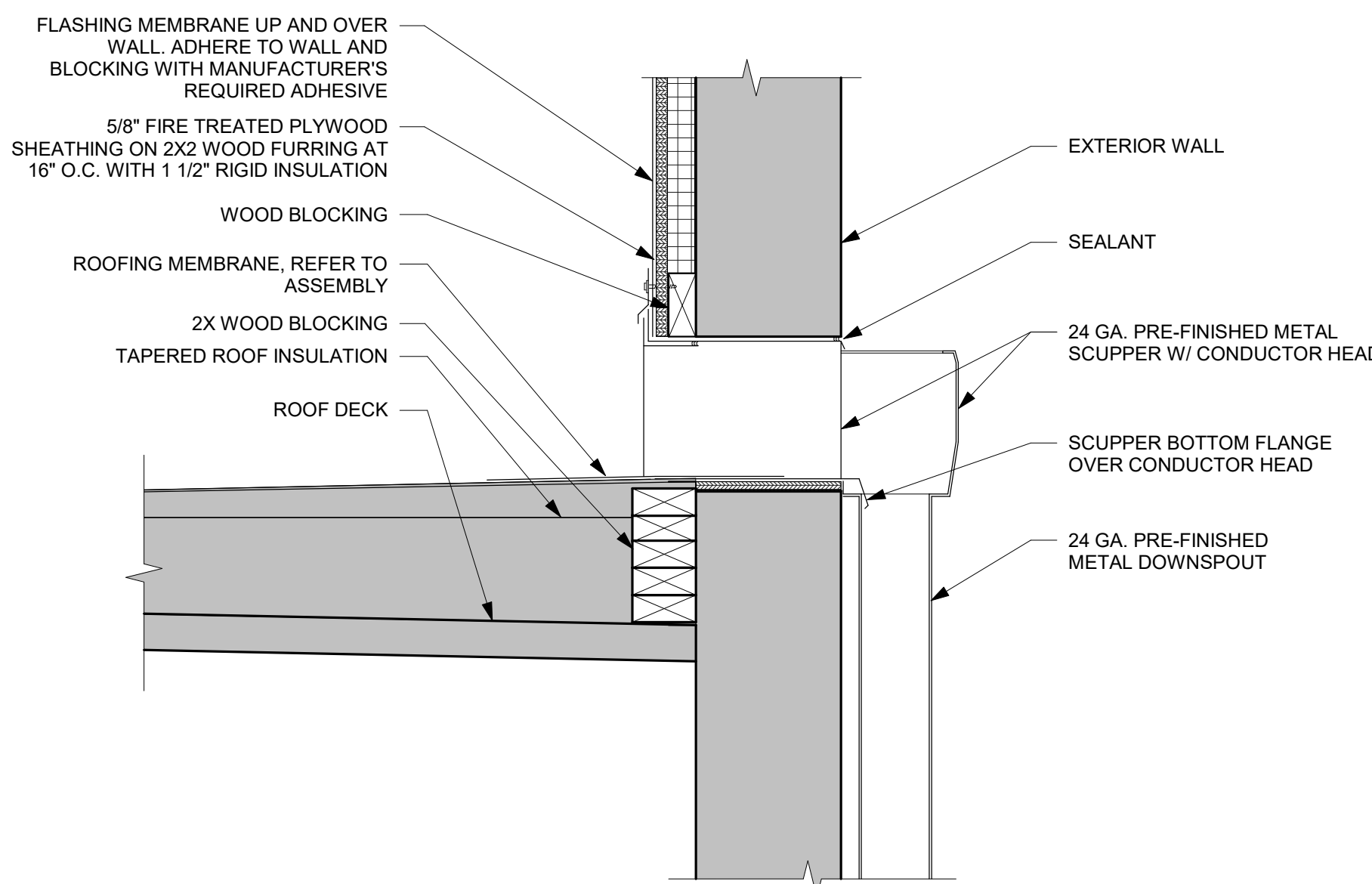
8/29/2024 5:43:13 PM



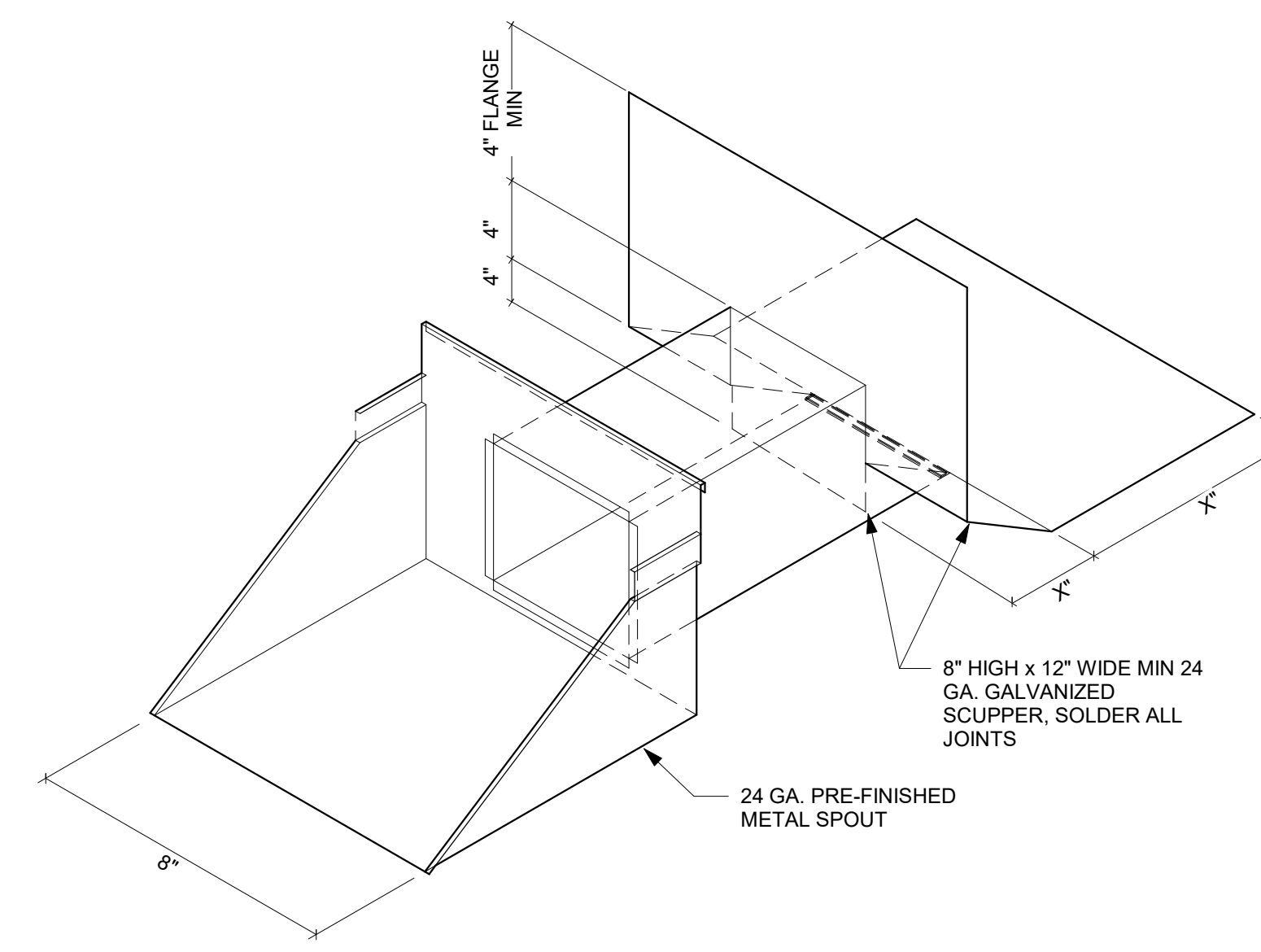
1 TYPICAL PRECAST PARAPET DETAIL



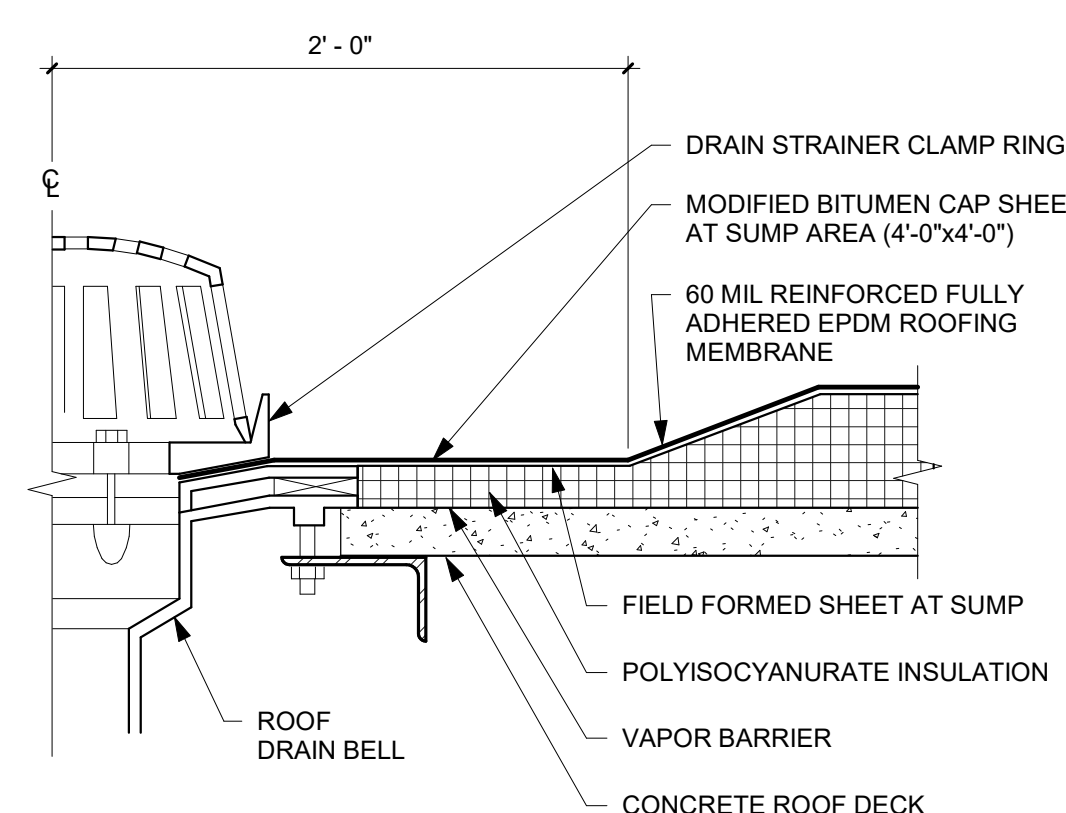
2 ROOF TERMINATION AT PRECAST WALL
1 1/2" = 1'-0"



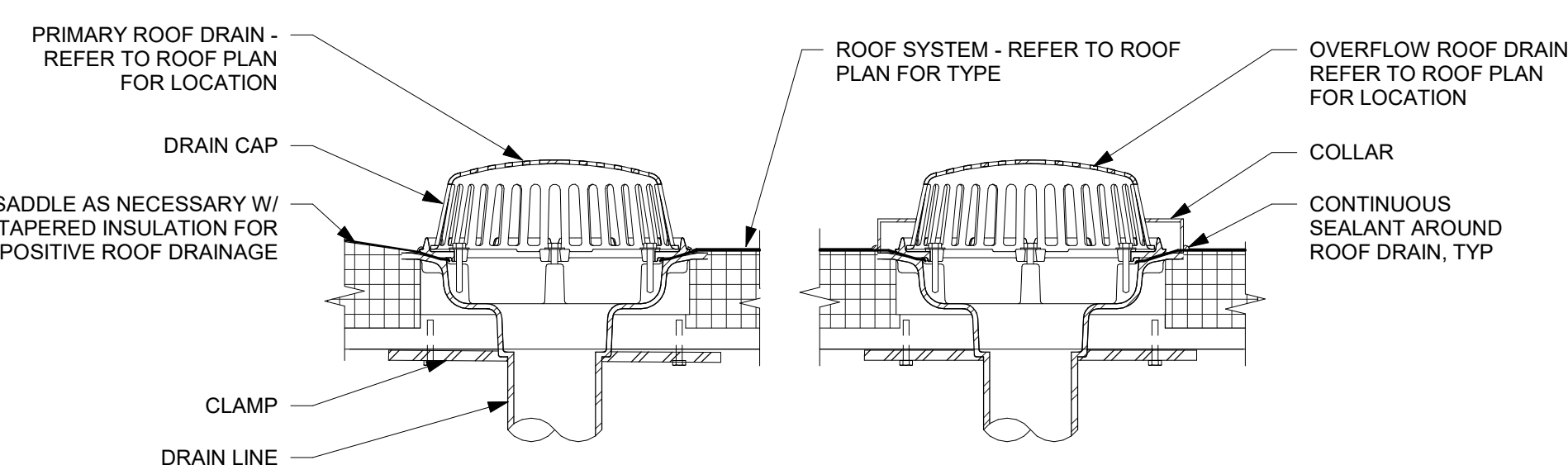
3 SCUPPER DETAIL
1 1/2" = 1'-0"



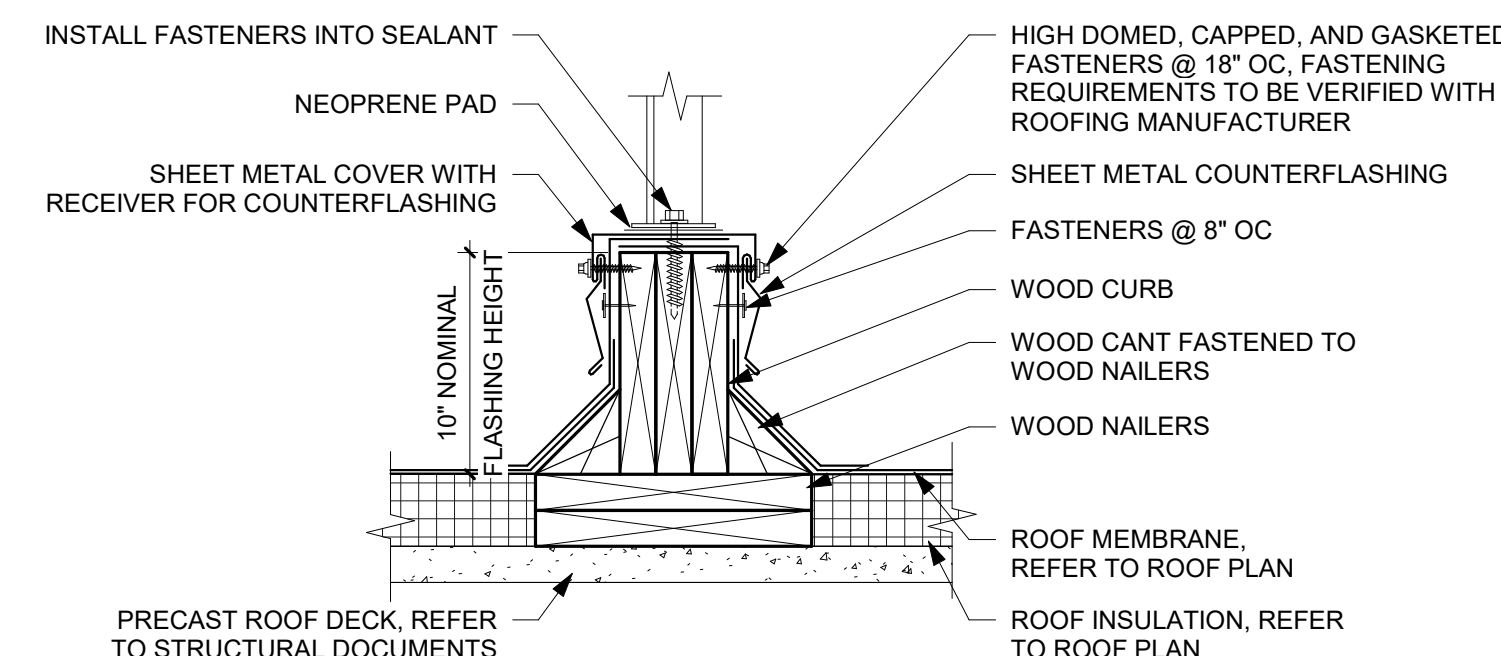
4 SCUPPER ISOMETRIC DETAIL
1 1/2" = 1'-0"



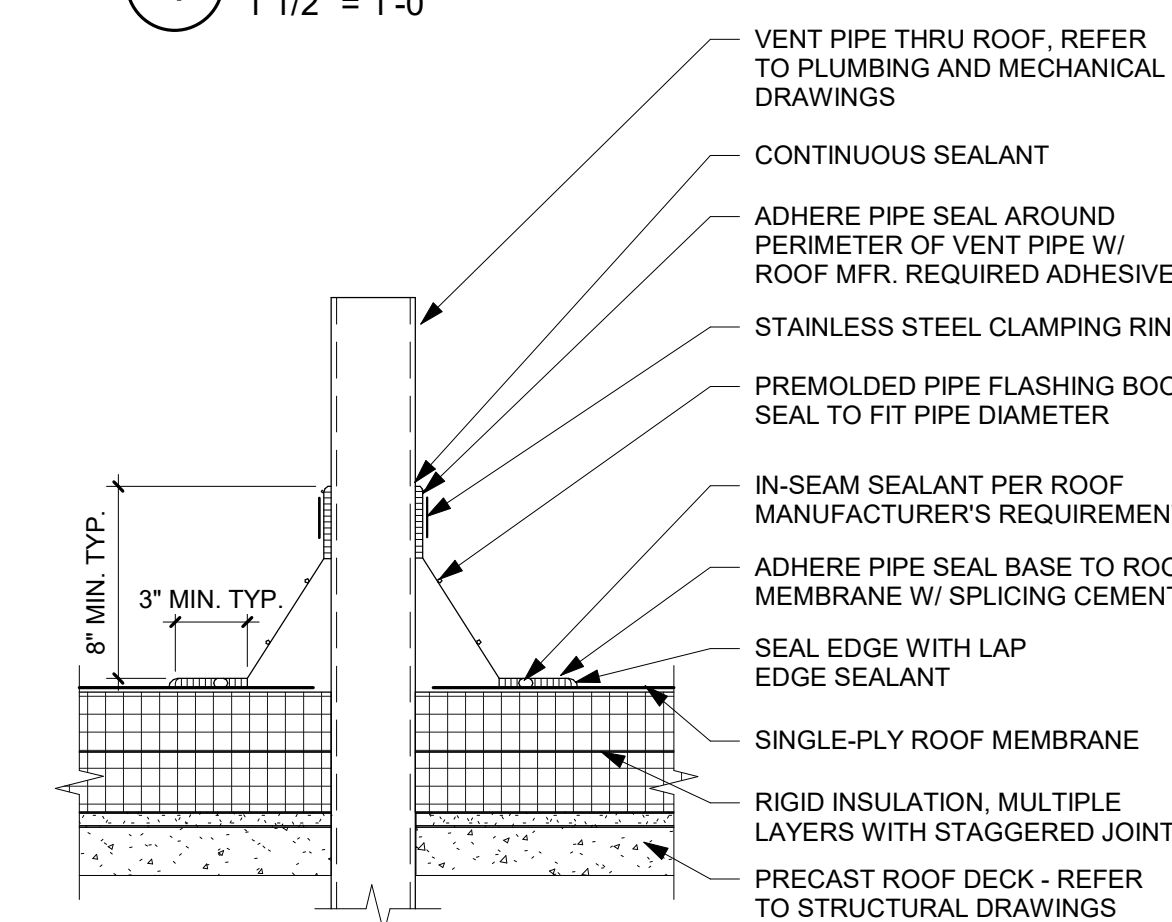
5 ROOF DRAIN DETAIL
1 1/2" = 1'-0"



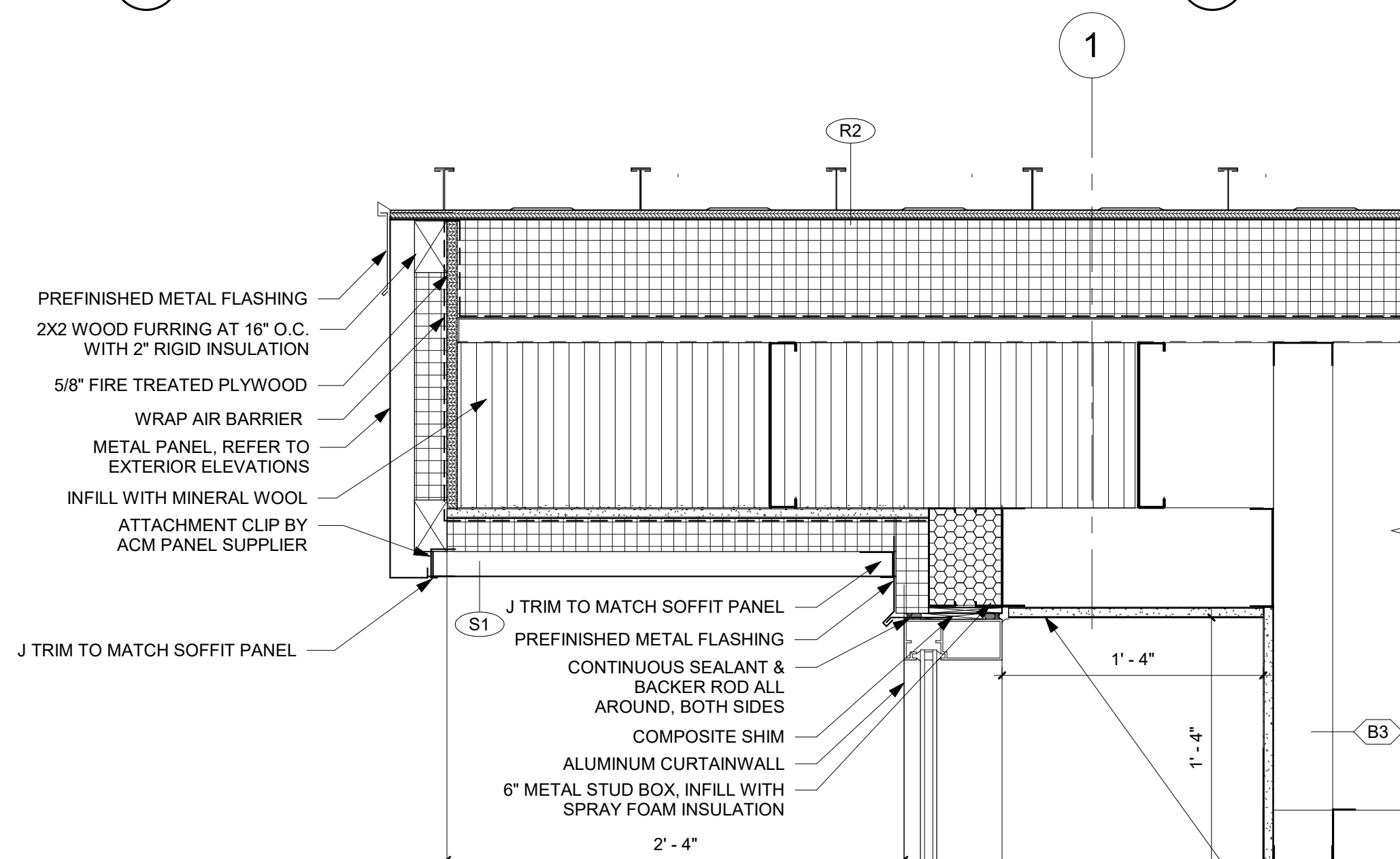
6 ROOF DRAIN DETAIL
1 1/2" = 1'-0"



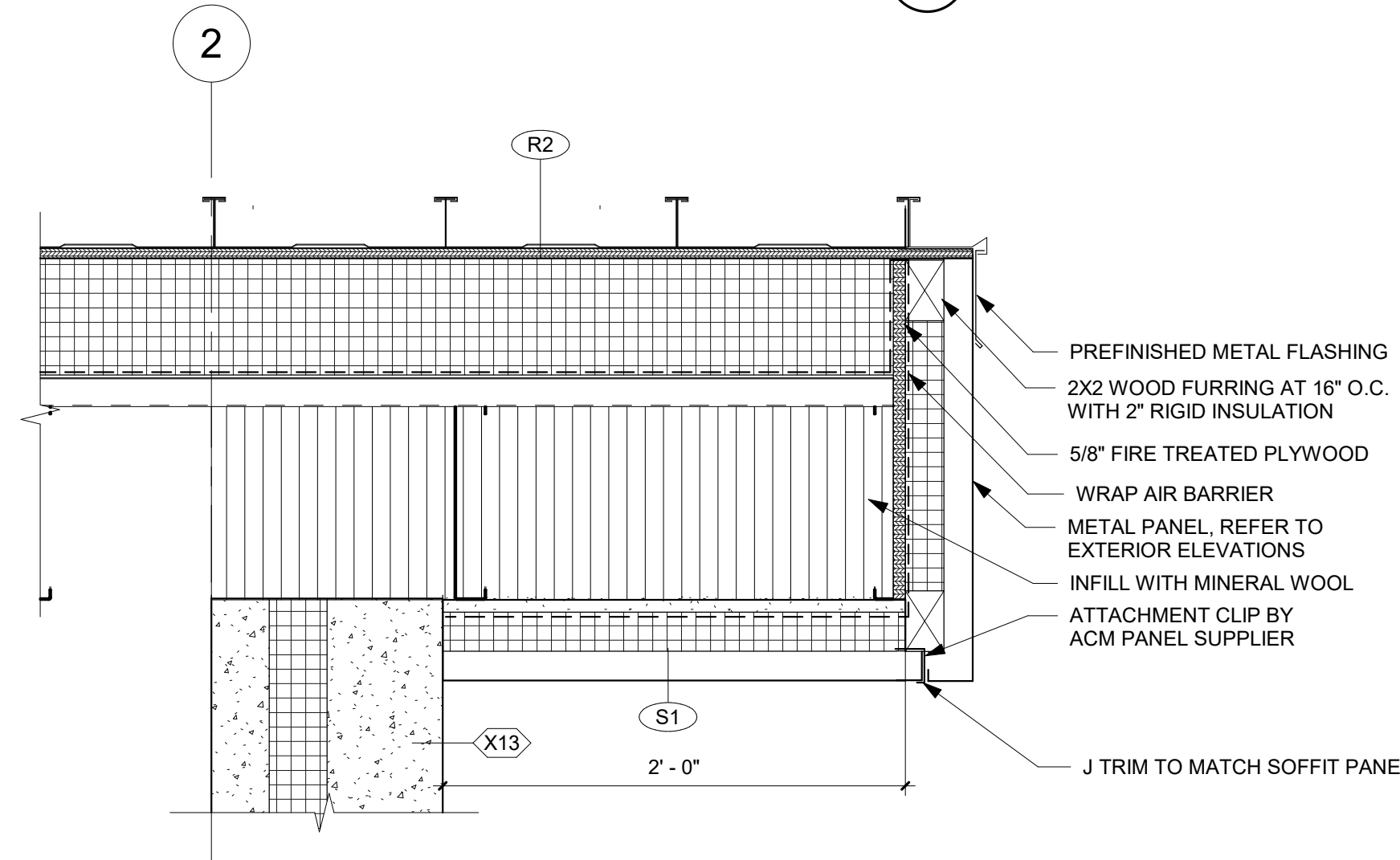
7 ROOF TOP EQUIPMENT CURB DETAIL
1 1/2" = 1'-0"



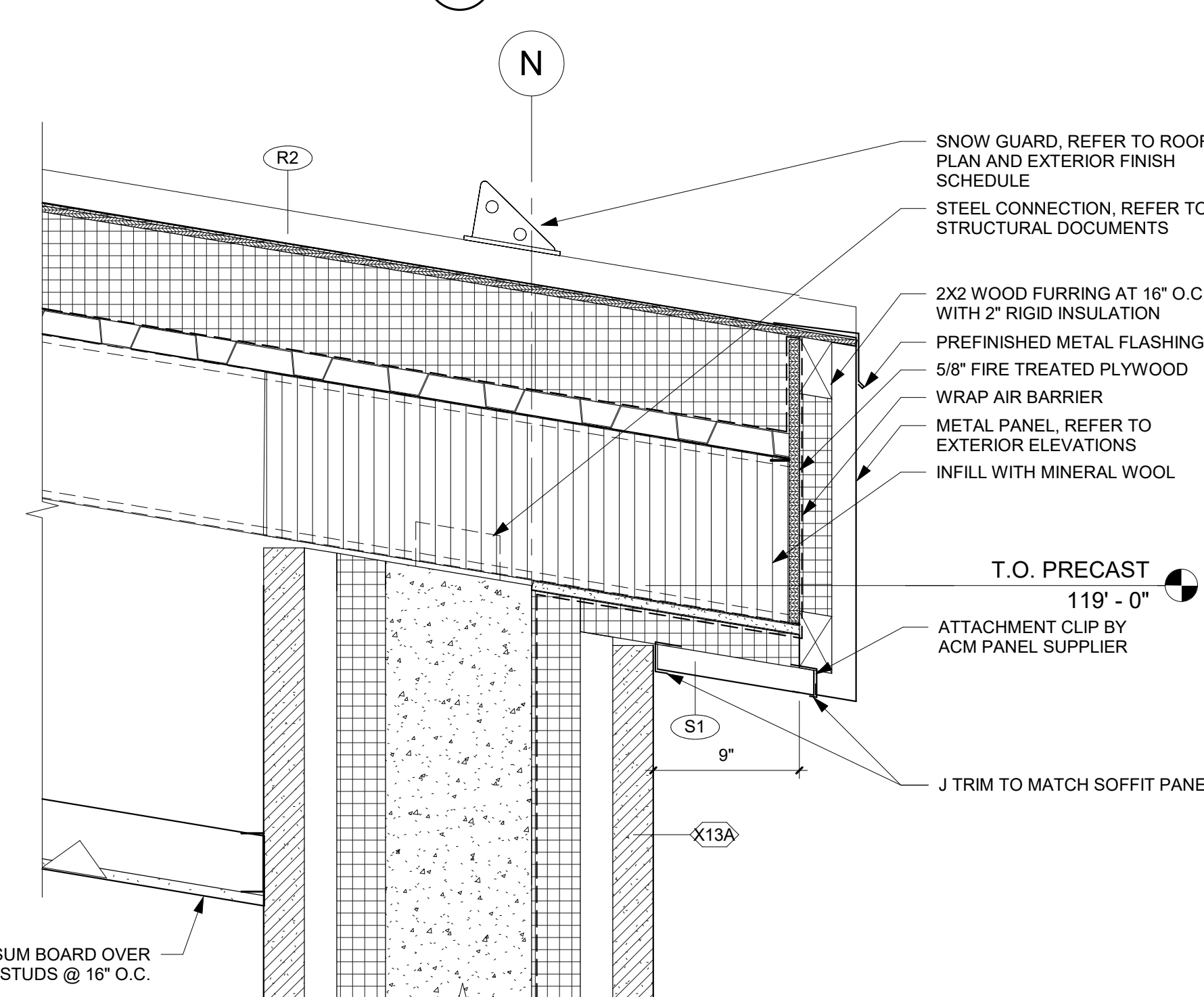
8 VENT PIPE FLASHING
1 1/2" = 1'-0"



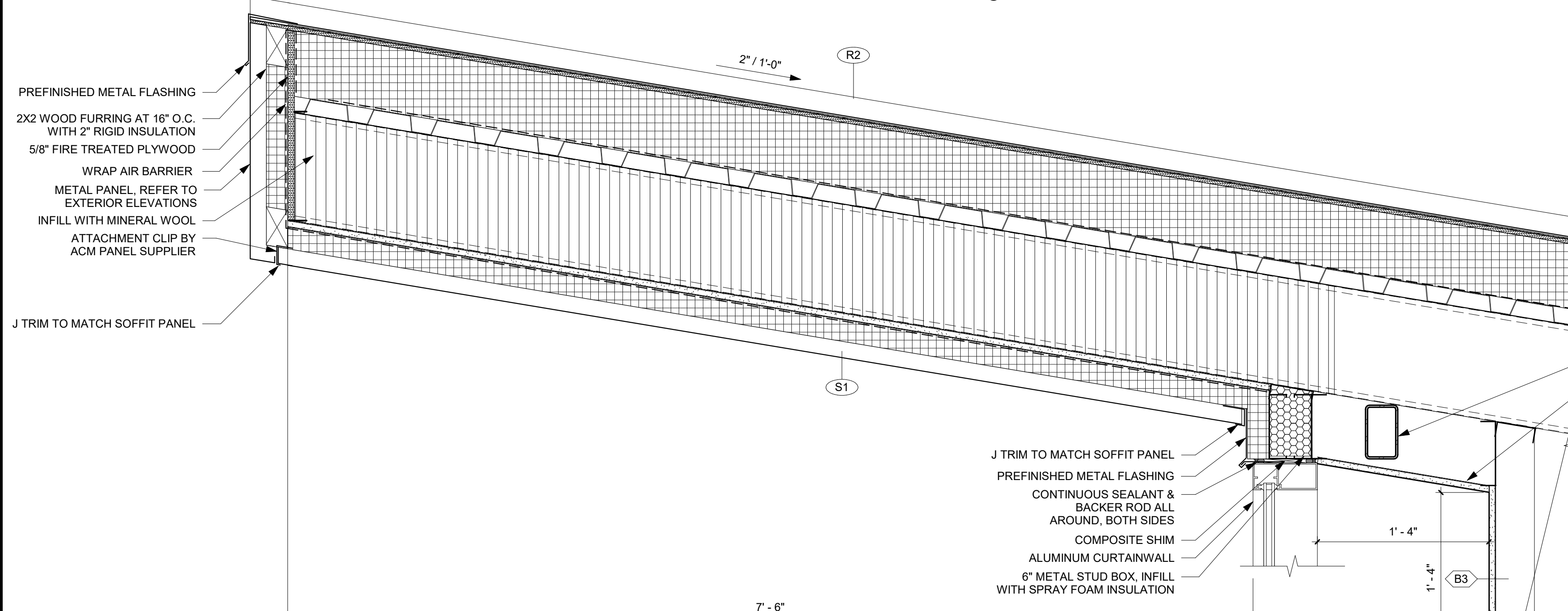
9 VESTIBULE ROOF DETAIL
1 1/2" = 1'-0"



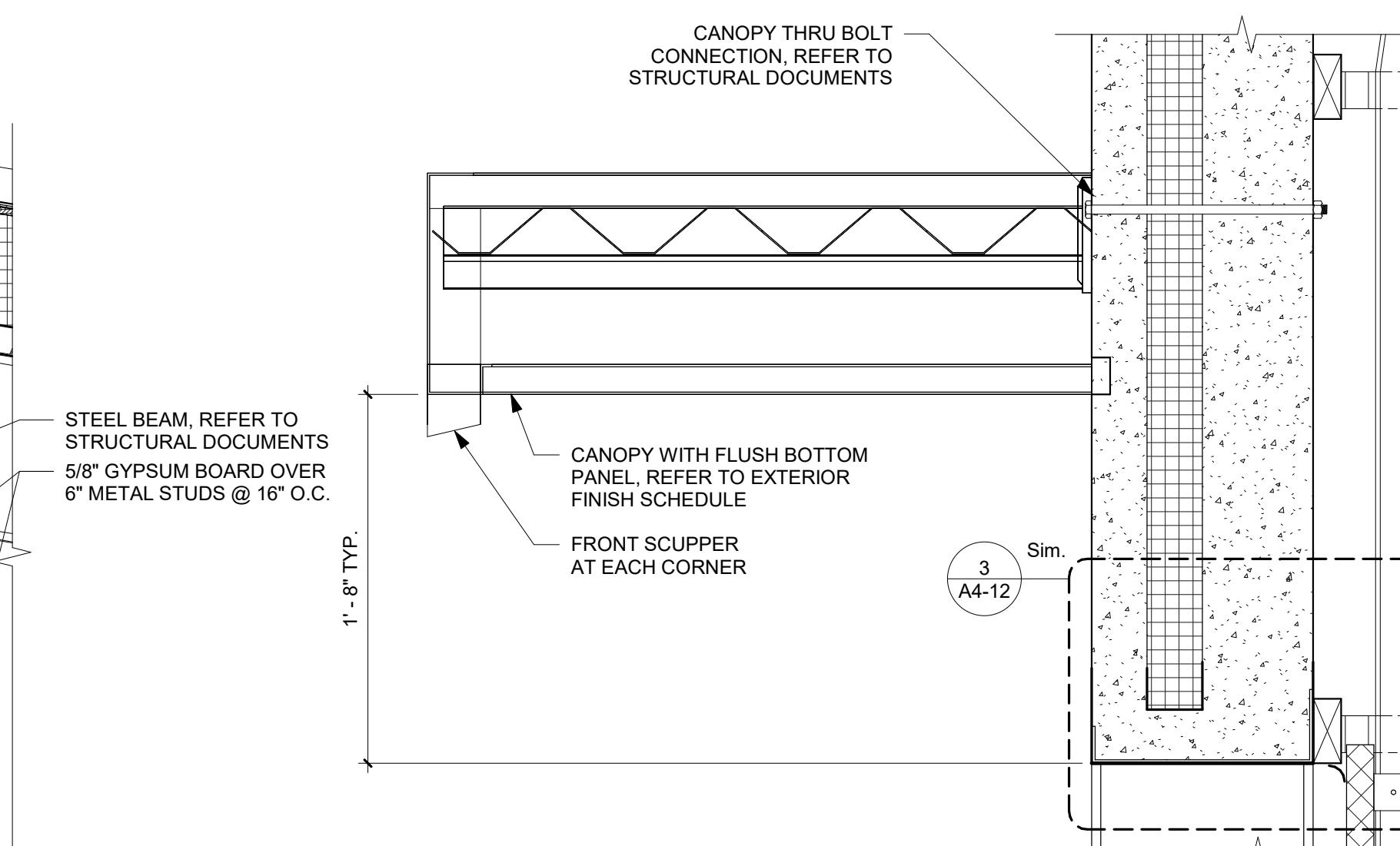
10 VESTIBULE ROOF DETAIL
1 1/2" = 1'-0"



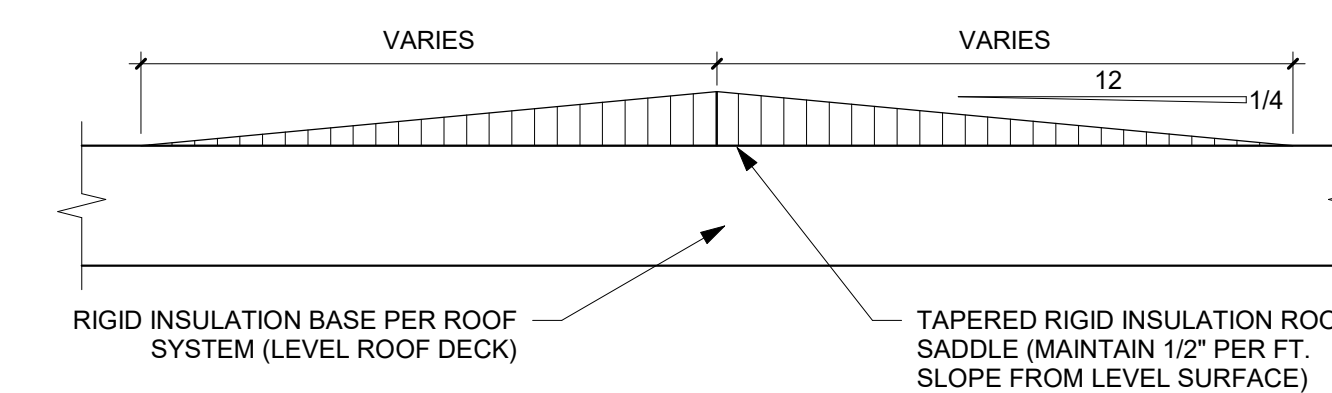
11 VESTIBULE ROOF DETAIL
1 1/2" = 1'-0"



12 VESTIBULE ROOF DETAIL



13 PRE-ENGINEERED CANOPY SECTION
1 1/2" = 1'-0"



14 ROOF SADDLE DETAIL
1 1/2" = 1'-0"

A1-72