SITE PLAN AND TRAFFIC ADVISORY REVIEW COMMITTEE
Internal Staff Meeting
Minnesota Valley Room, First Floor, Intergovernmental Center
****

1. **SITE PLAN ITEMS**

1. CY26-26

Request of ISG, on behalf of the owner, for a preliminary and final plat review of Hiniker Parkway Subdivision. The subject property is described as Lot 2, Block 1, Hiniker Pond Park; Outlots A, B, and C, Axis Subdivision, and that part of Government Lot Two (2), Section 1, Township 108 North, Range 27 West, described as follows: Commencing at the northeast corner of Government Lot Two (2) thence South 00 degrees, 2 minutes, 28 seconds East along the east line of Government Lot Two (2), a distance of 1159.22 feet to the point of beginning; thence due West 415 feet; thence due South 2 feet more or less to the Northerly boundary of Butterworth Street; thence easterly along the Northerly boundary of Butterworth Street, a distance of approximately 415 feet more or less to a point directly south of the point of beginning; thence northerly approximately 8.2 feet more or less to the point of beginning; All that part of Government Lot 2 in Section 1, Township 108 North, Range 27 West, described as: Commencing at a found iron pipe monument designating the Northeast Corner of Government Lot 2; thence South 88 degrees 46 minutes 20 seconds West (assumed bearing along the north line of Government Lot 2), a distance of 813.93 feet; thence South 01 degrees 13 minutes 40 seconds East, 182.13 feet; thence continuing South 01 degrees 13 minutes 40 seconds East, 17.87 feet; thence North 88 degrees 46 minutes 20 seconds East and parallel with the north line of Government Lot 2, a distance of 64.00 feet to the point of beginning of the tract to be described; thence South 74 degrees 40 minutes 42 seconds East, 90.04 feet; thence North 01 degrees 13 minutes 40 seconds West, 26.71 feet; thence South 88 degrees 46 minutes 20 seconds West and parallel with the north line of Government Lot 2, a distance of 89.86 feet to the point of beginning.

2. CY27-26

Request of Amanda Furnas of Mankato Chemical Health, with permission of the property owner, for a conditional use permit to allow a medical clinic in the R-1, one-family dwelling zoning district, to serve adults seeking treatment and support for substance use and co-occurring mental health concerns. The subject property is described as an approximately 1.77 acre parcel located in the west half of the southeast quarter of Section 17, Township 108 Range 26, Blue Earth County (114 Pohl Road).

3. CY28-26

Request of The Factor Group, with permission of the property owner, for a preliminary and final plat review of River Bluff Cottages, and for an amendment to a previously approved Planned Unit Development. The subject property is described as Outlot A, Sibley Parkway (Blue Earth County PID R010813101049).

4. CY29-30

Request of ERM on behalf of CenterPoint Energy, the property owner, for a final plat review of Centerpoint Energy Mankato First Addition, and for a conditional use permit to allow for a hydrogen facility that uses energy from a 1 megawatt on-site solar panel array on a property zoned M-2, Heavy Industrial. The subject property is described as part of the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West; AND, part of the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West; AND, a tract of land located in the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West; AND, part of a parcel lying within the Southeast Quarter of the Northwest Quarter, Section 5, Township 108 North, Range 26 West, all located in the City of Mankato, Blue Earth County (2400 N. Riverfront Drive, BE County PID's R010905176004, R010905176003, R010905176002, R010905176001).

5. CYV04-26

Request of Generation Properties, on behalf of the property owner Tony Baumann, for a variance from Chapter 10, Article II, Division 8, Sec.10-271 of the Mankato City Code to decrease the corner side yard setback from ten feet (10') to five feet, four inches (5'4") in the O-R, Office Residential, zoning district. The variance is being requested in order to allow for the construction of a new, attached deck. The property is described as the south 40' of the east 73.75 feet, Lot 6, Block 19, Map of Mankato subdivision, Blue Earth County (502 N. 2nd Street).

6.

*****SITE PLAN AND TRAFFIC ADVISORY COMMITTEE REVIEW ONLY. Administrative Land Combination to allow for a new residential facility in Groh Farms.**

7.

*****SITE PLAN AND TRAFFIC ADVISORY REVIEW COMMITTEE ONLY. Administrative lot split for Miller Creek 1st Addition.**

8.

*****SITE PLAN AND TRAFFIC ADVISORY COMMITTEE REVIEW ONLY. Request of Mankato Motorsports for a review of a parking lot expansion at 140 St. Andrews Drive.**

2. **TRAFFIC ITEMS**

Site Plan and Traffic Advisory Review Committee **1. 1.**

Meeting Date: 06/09/2026

Title

CY26-26

Request of ISG, on behalf of the owner, for a preliminary and final plat review of Hiniker Parkway Subdivision. The subject property is described as Lot 2, Block 1, Hiniker Pond Park; Outlots A, B, and C, Axis Subdivision, and that part of Government Lot Two (2), Section 1, Township 108 North, Range 27 West, described as follows: Commencing at the northeast corner of Government Lot Two (2) thence South 00 degrees, 2 minutes, 28 seconds East along the east line of Government Lot Two (2), a distance of 1159.22 feet to the point of beginning; thence due West 415 feet; thence due South 2 feet more or less to the Northerly boundary of Butterworth Street; thence easterly along the Northerly boundary of Butterworth Street, a distance of approximately 415 feet more or less to a point directly south of the point of beginning; thence northerly approximately 8.2 feet more or less to the point of beginning; All that part of Government Lot 2 in Section 1, Township 108 North, Range 27 West, described as: Commencing at a found iron pipe monument designating the Northeast Corner of Government Lot 2; thence South 88 degrees 46 minutes 20 seconds West (assumed bearing along the north line of Government Lot 2), a distance of 813.93 feet; thence South 01 degrees 13 minutes 40 seconds East, 182.13 feet; thence continuing South 01 degrees 13 minutes 40 seconds East, 17.87 feet; thence North 88 degrees 46 minutes 20 seconds East and parallel with the north line of Government Lot 2, a distance of 64.00 feet to the point of beginning of the tract to be described; thence South 74 degrees 40 minutes 42 seconds East, 90.04 feet; thence North 01 degrees 13 minutes 40 seconds West, 26.71 feet; thence South 88 degrees 46 minutes 20 seconds West and parallel with the north line of Government Lot 2, a distance of 89.86 feet to the point of beginning.

Applicant

ISG, on behalf of the owner, is the applicant.

Request

The request is for the review of the preliminary and final plat of Hiniker Parkway Subdivision.

Location

The subject property is legally described as Lot 2, Block 1, Hiniker Pond Park; Outlots A, B, and C, Axis Subdivision, and that part of Government Lot Two (2), Section 1, Township 108 North, Range 27 West, described as follows: Commencing at the northeast corner of Government Lot Two (2) thence South 00 degrees, 2 minutes, 28 seconds East along the east line of Government Lot Two (2), a distance of 1159.22 feet to the point of beginning; thence due West 415 feet; thence due South 2 feet more or less to the Northerly boundary of Butterworth Street; thence easterly along the Northerly boundary of Butterworth Street, a distance of approximately 415 feet more or less to a point directly south of the point of beginning; thence northerly approximately 8.2 feet more or less to the point of beginning; All that part of Government Lot 2 in Section 1, Township 108 North, Range 27 West, described as: Commencing at a found iron pipe monument designating the Northeast Corner of Government Lot 2; thence South 88 degrees 46 minutes 20 seconds West (assumed bearing along the north line of Government Lot 2), a distance of 813.93 feet; thence South 01 degrees 13 minutes 40 seconds East, 182.13 feet; thence continuing South 01 degrees 13 minutes 40 seconds East, 17.87 feet; thence North 88 degrees 46 minutes 20 seconds East and parallel with the north line of Government Lot 2, a distance of 64.00 feet to the point of beginning of the tract to be described; thence South 74 degrees 40 minutes 42 seconds East, 90.04 feet; thence North 01 degrees 13 minutes 40 seconds West, 26.71 feet; thence South 88 degrees 46 minutes 20 seconds West and parallel with the north line of Government Lot 2, a distance of 89.86 feet to the point of beginning.

Existing Land Use

The property is the location of the future Hiniker Parkway street and also includes Hiniker Pond Park.

Zoning

The areas included in the plat are zoned R-3, limited multiple family dwelling district, and B-2, general business district.

Environmentally Sensitive Areas

There is the existing Hiniker Pond and associated wet areas located in the platted areas.

Public Utilities

The plat is being presented in order to accommodate a new city street. There are no structures proposed in conjunction with the platting.

Review

The City of Mankato is requesting a preliminary and final plat review of Hiniker Parkway Subdivision. The subject property is described as Lot 2, Block 1, Hiniker Pond Park; Outlots A, B, and C, Axis Subdivision, and that part of Government Lot Two (2), Section 1, Township 108 North, Range 27 West, described as follows: Commencing at the northeast corner of Government Lot Two (2) thence South 00 degrees, 2 minutes, 28 seconds East along the east line of Government Lot Two (2), a distance of 1159.22 feet to the point of beginning; thence due West 415 feet; thence due South 2 feet more or less to the Northerly boundary of Butterworth Street; thence easterly along the Northerly boundary of Butterworth Street, a distance of approximately 415 feet more or less to a point directly south of the point of beginning; thence northerly approximately 8.2 feet more or less to the point of beginning; All that part of Government Lot 2 in Section 1, Township 108 North, Range 27 West, described as: Commencing at a found iron pipe monument designating the Northeast Corner of Government Lot 2; thence South 88 degrees 46 minutes 20 seconds West (assumed bearing along the north line of Government Lot 2), a distance of 813.93 feet; thence South 01 degrees 13 minutes 40 seconds East, 182.13 feet; thence continuing South 01 degrees 13 minutes 40 seconds East, 17.87 feet; thence North 88 degrees 46 minutes 20 seconds East and parallel with the north line of Government Lot 2, a distance of 64.00 feet to the point of beginning of the tract to be described; thence South 74 degrees 40 minutes 42 seconds East, 90.04 feet; thence North 01 degrees 13 minutes 40 seconds West, 26.71 feet; thence South 88 degrees 46 minutes 20 seconds West and parallel with the north line of Government Lot 2, a distance of 89.86 feet to the point of beginning.

The intent of the plat is to realign the current curved configuration of Hiniker Parkway right of way to be a straight street, and to provide an area for storm water retention ponding. The plat proposes two lots in the new one-block subdivision. Lot 1, Block 1 is the location of the existing Hiniker Pond; Lot 2 is a 1.64 acre parcel located to the west of Hiniker Parkway. The remaining .81 acre is proposed to be dedicated for right of way, which will accommodate a new street, Hiniker Parkway, and a storm water retention pond.

Attachments

General Location Map

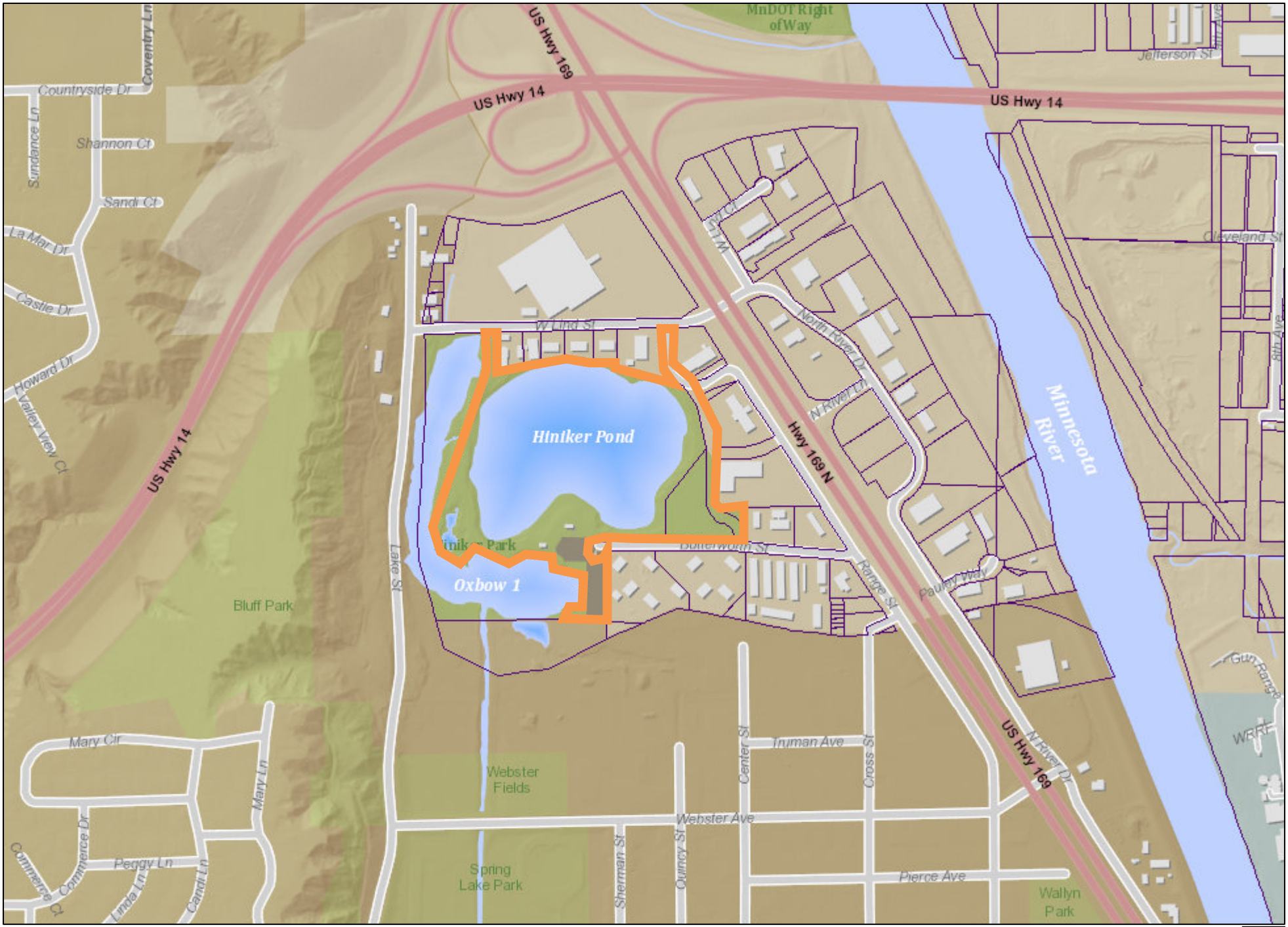
Aerial Plan

Preliminary Plat

Final Plat

Hiniker Plans

General Location Map



Date: June 2026

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.

N

Aerial Map



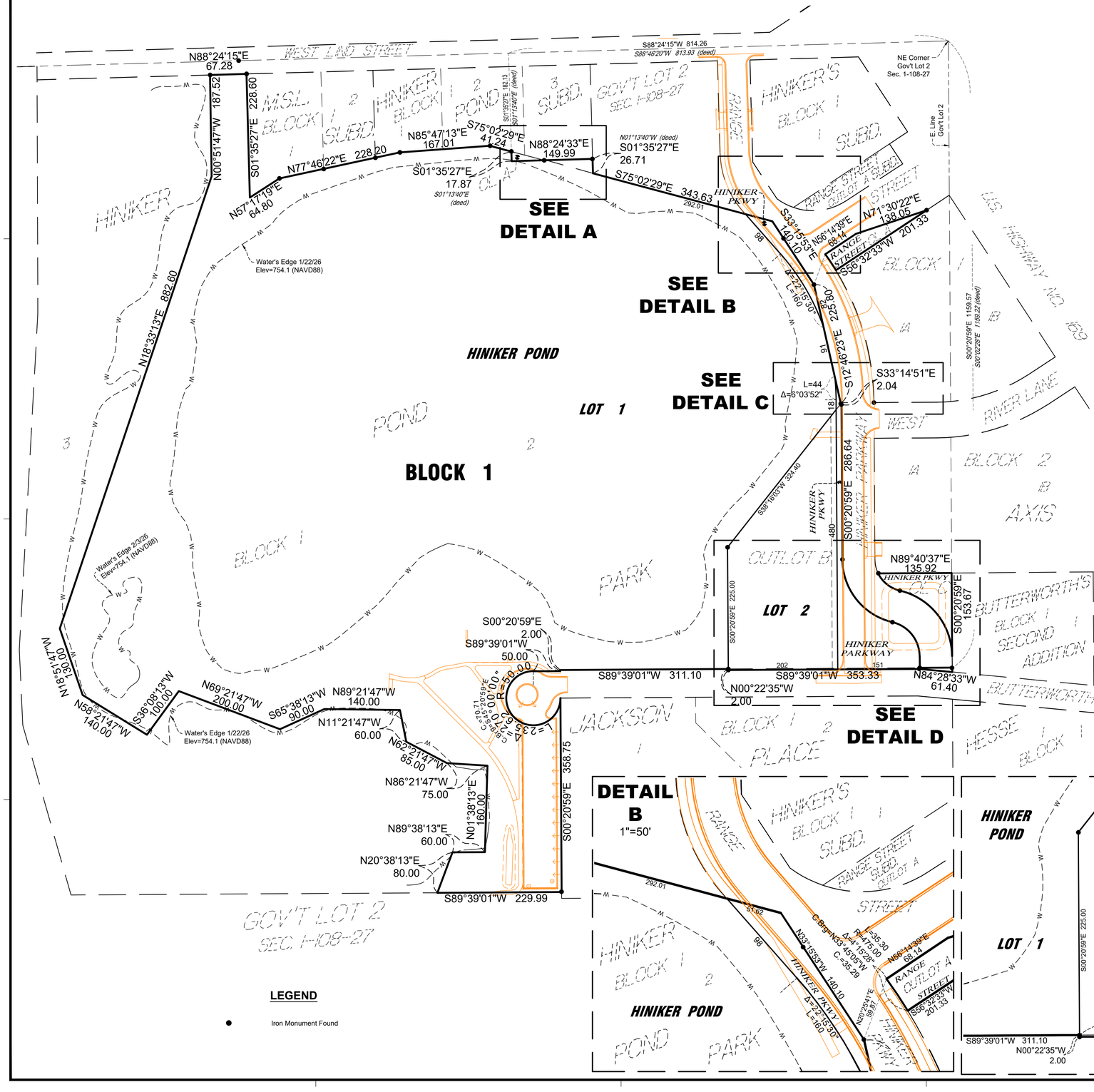
Date: June 2026

Author:

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N

HINIKER PARKWAY SUBDIVISION



EXISTING LEGAL DESCRIPTION:
(per client)

Lot 2, Block 1, Hiniker Pond Park, City of Mankato, Blue Earth County, Minnesota.

AND

Outlots A, B and C, Axis, City of Mankato, Blue Earth County, Minnesota.

AND

That part of Government Lot Two (2), Section 1, Township 108 North, Range 27 West, described as follows: Commencing at the northeast corner of Government Lot Two (2) thence South 00 degrees, 2 minutes, 28 seconds East along the east line of Government Lot Two (2), a distance of 1159.22 feet to the point of beginning; thence due West 415 feet; thence due South 2 feet more or less to the Northerly boundary of Butterworth Street; thence easterly along the Northerly boundary of Butterworth Street, a distance of approximately 415 feet more or less to a point directly south of the point of beginning; thence northerly approximately 8.2 feet more or less to the point of beginning.

AND

All that part of Government Lot 2 in Section 1, Township 108 North, Range 27 West, described as:
Commencing at a found iron pipe monument designating the Northeast Corner of Government Lot 2; thence South 88 degrees 46 minutes 20 seconds West (assumed bearing along the north line of Government Lot 2), a distance of 813.93 feet; thence South 01 degrees 13 minutes 40 seconds East, 182.13 feet; thence continuing South 01 degrees 13 minutes 40 seconds East, 17.87 feet; thence North 88 degrees 46 minutes 20 seconds East and parallel with the north line of Government Lot 2, a distance of 64.00 feet to the point of beginning of the tract to be described; thence South 74 degrees 40 minutes 42 seconds East, 90.04 feet; thence North 01 degrees 13 minutes 40 seconds West, 26.71 feet; thence South 88 degrees 46 minutes 20 seconds West and parallel with the north line of Government Lot 2, a distance of 89.86 feet to the point of beginning.

BENCHMARK:
Top nut fire hydrant located on south side of West Lind Street, 75'± west of Range Street. Elev=769.79 (NAVD88)

FLOOD ZONE:
The surveyed premises shown on this survey map is in Flood Zone X (areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less that 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood), according to Flood Insurance Rate Map Community Panel Nos. 27013C0084F & 27013C0092F, published by the Federal Emergency Management Agency, effective date February 22, 2024.

NOTES:

1. Orientation of this bearing system is based upon the plat of Axis.

2. Proposed site improvements are shown in orange on this sheet.

ISG

N

0 100 200
SCALE IN FEET

I HEREBY CERTIFY THAT THIS SURVEY, PLAN, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

RYAN E. KOTTHOFF

DATE 5/26/26 LIC. NO. 61565

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PROJECT

CITY OF MANKATO

HINIKER PARKWAY

MANKATO MINNESOTA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-33609
FILE NAME	33609 PPLAT
DRAWN BY	KH
DESIGNED BY	---
REVIEWED BY	---
ORIGINAL ISSUE DATE	5/26/26
CLIENT PROJECT NO.	-

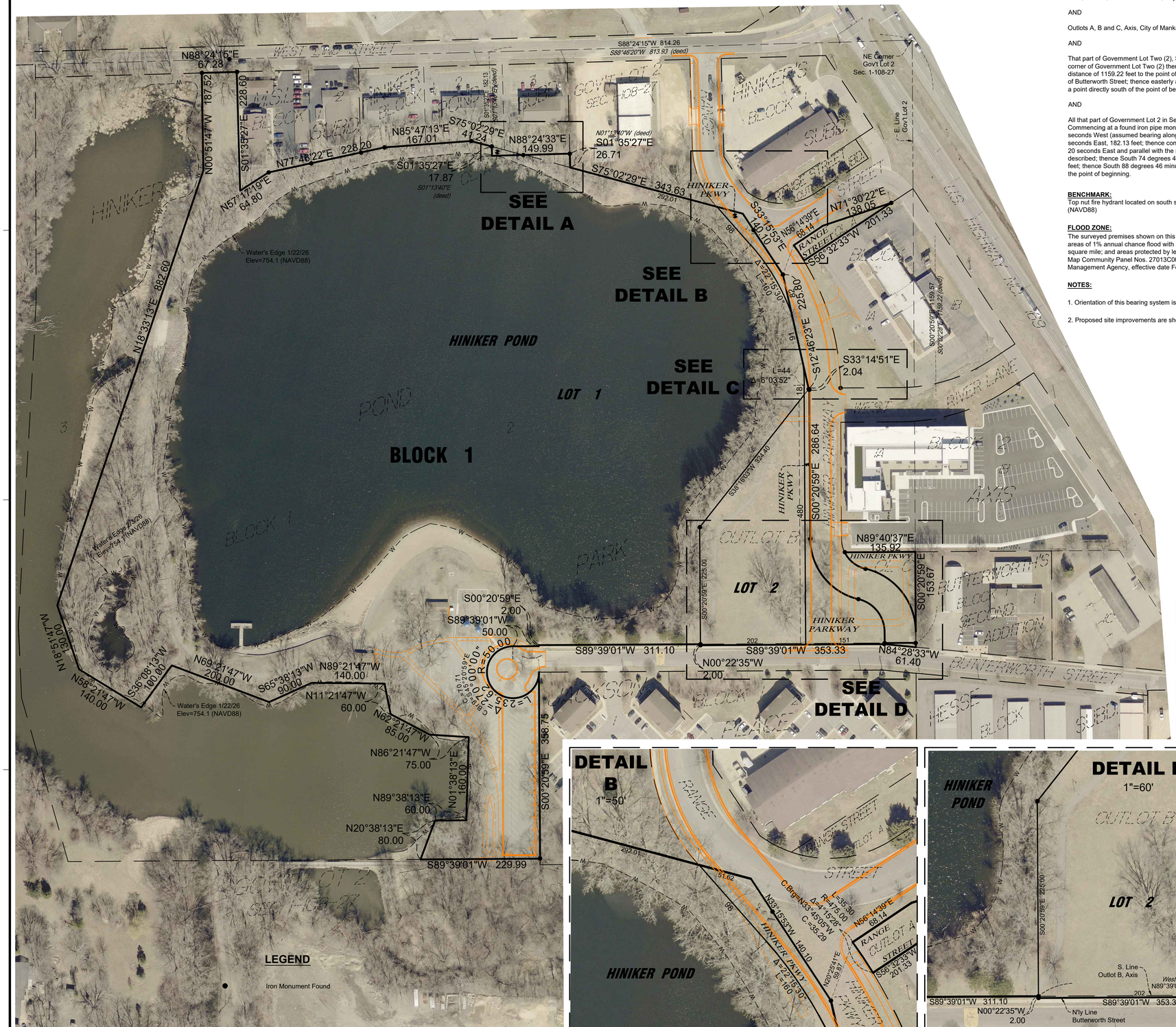
TITLE

PRELIMINARY PLAT

SHEET

1 OF 3

HINIKER PARKWAY SUBDIVISION



EXISTING LEGAL DESCRIPTION:
(per client)

Lot 2, Block 1, Hiniker Pond Park, City of Mankato, Blue Earth County, Minnesota.

AND

Outlots A, B and C, Axis, City of Mankato, Blue Earth County, Minnesota.

AND

That part of Government Lot Two (2), Section 1, Township 108 North, Range 27 West, described as follows: Commencing at the northeast corner of Government Lot Two (2) thence South 00 degrees, 2 minutes, 28 seconds East along the east line of Government Lot Two (2), a distance of 1159.22 feet to the point of beginning; thence due West 415 feet; thence due South 2 feet more or less to the Northerly boundary of Butterworth Street; thence easterly along the Northerly boundary of Butterworth Street, a distance of approximately 415 feet more or less to a point directly south of the point of beginning; thence northerly approximately 8.2 feet more or less to the point of beginning.

AND

All that part of Government Lot 2 in Section 1, Township 108 North, Range 27 West, described as:
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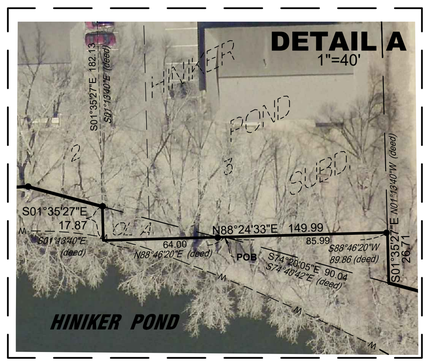
BENCHMARK:
Top nut fire hydrant located on south side of West Lind Street, 75'± west of Range Street. Elev=769.79 (NAVD88)

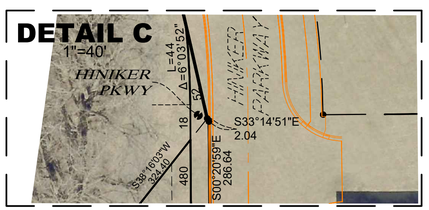
FLOOD ZONE:
The surveyed premises shown on this survey map is in Flood Zone X (areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less that 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood), according to Flood Insurance Rate Map Community Panel Nos. 27013C0084F & 27013C0092F, published by the Federal Emergency Management Agency, effective date February 22, 2024.

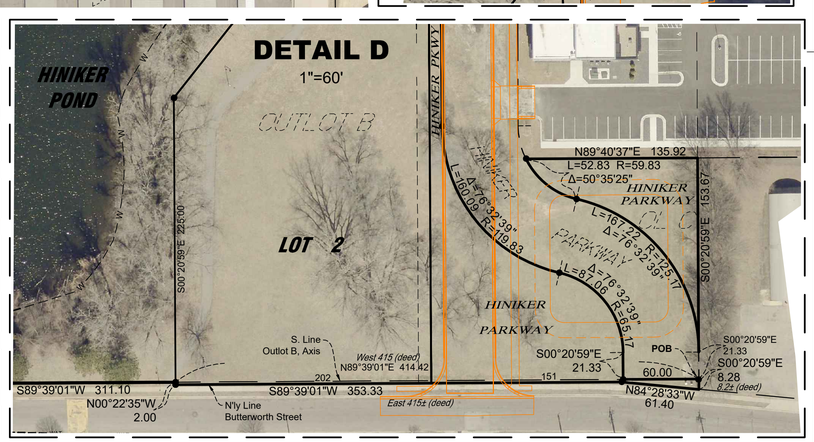
NOTES:

1. Orientation of this bearing system is based upon the plat of Axis.

2. Proposed site improvements are shown in orange on this sheet.









I HEREBY CERTIFY THAT THIS SURVEY, PLAN, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

RYAN E. KOTTHOFF

DATE 5/26/26 LIC. NO. 61565

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PROJECT

CITY OF MANKATO

HINIKER PARKWAY

MANKATO MINNESOTA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-33609
FILE NAME	33609 PPLAT
DRAWN BY	KH
DESIGNED BY	---
REVIEWED BY	---
ORIGINAL ISSUE DATE	5/26/26
CLIENT PROJECT NO.	-

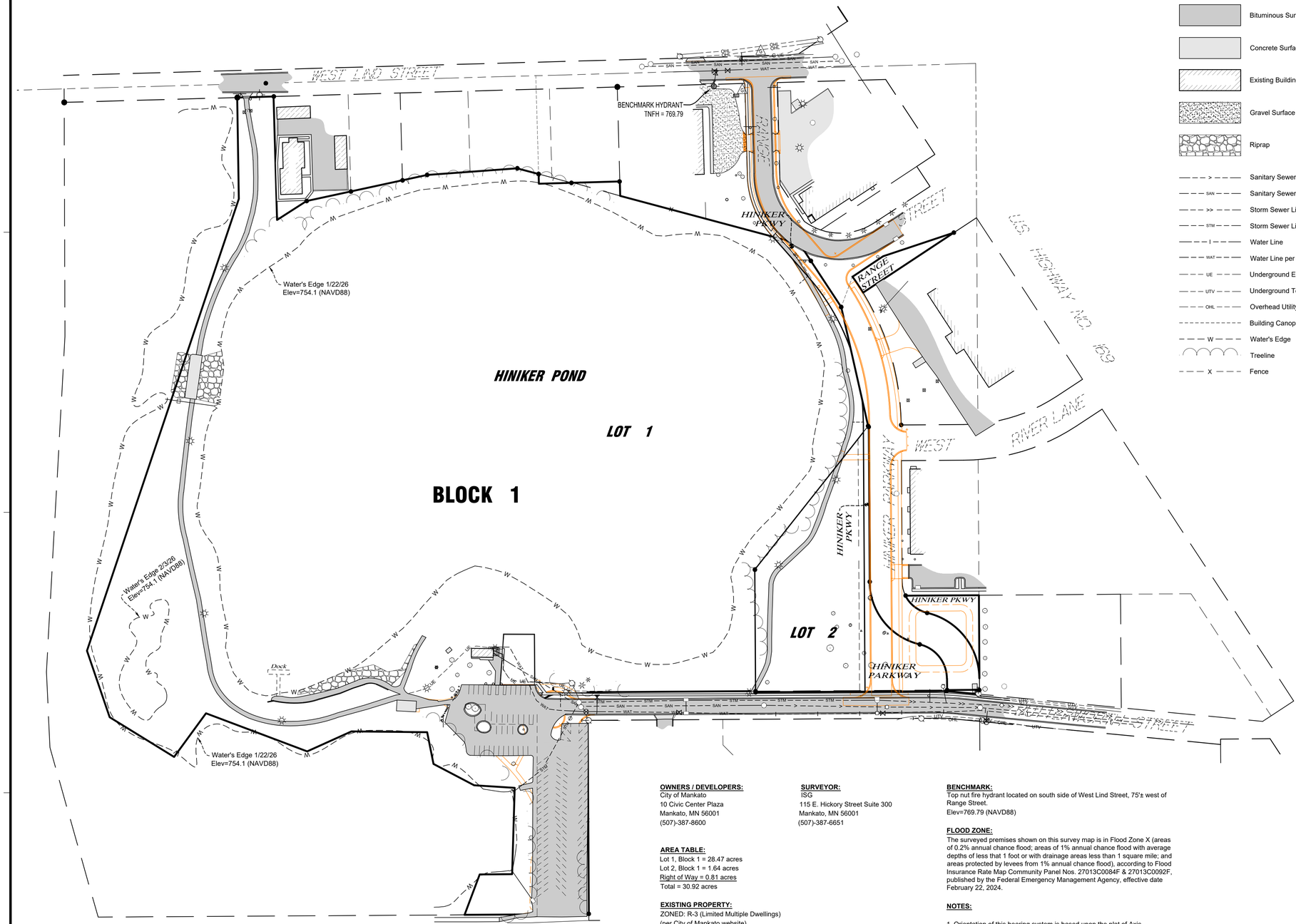
TITLE

PRELIMINARY PLAT

SHEET

2 OF 3

HINIKER PARKWAY SUBDIVISION



LEGEND

Bituminous Surface	Iron Monument Found
Concrete Surface	Electric Meter
Existing Building	Utility Vault
Gravel Surface	Light Pole
Riprap	Transformer
Sanitary Sewer Line	Utility Pedestal
Sanitary Sewer Line per City Mapping	Utility Pole/Guy Wire
Storm Sewer Line	Curb Stop
Storm Sewer Line per City Mapping	Hydrant
Water Line	Water Valve
Water Line per City Mapping	Manhole/Catch Basin
Underground Electric Line	Flared End Section/Apron
Underground Television Line	Mailbox
Overhead Utility Line	Post
Building Canopy Or Deck Line	Sign
Water's Edge	Coniferous Tree
Treeline	Deciduous Tree
Fence	Stump
	Rock/Boulder
	Utility Marker

N

0 100 200

SCALE IN FEET

OWNERS / DEVELOPERS:
City of Mankato
10 Civic Center Plaza
Mankato, MN 56001
(507)-387-8600

SURVEYOR:
ISG
115 E. Hickory Street Suite 300
Mankato, MN 56001
(507)-387-6651

BENCHMARK:
Top nut fire hydrant located on south side of West Lind Street, 75'± west of Range Street.
Elev=769.79 (NAVD88)

AREA TABLE:
Lot 1, Block 1 = 28.47 acres
Lot 2, Block 1 = 1.64 acres
Right of Way = 0.81 acres
Total = 30.92 acres

FLOOD ZONE:
The surveyed premises shown on this survey map is in Flood Zone X (areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less that 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood), according to Flood Insurance Rate Map Community Panel Nos. 27013C0084F & 27013C0092F, published by the Federal Emergency Management Agency, effective date February 22, 2024.

EXISTING PROPERTY:
ZONED: R-3 (Limited Multiple Dwellings)
(per City of Mankato website)

Setbacks
Front - 25 feet
Rear - One and two-family dwellings 25 feet
All other principal buildings and uses: 25 percent of lot depth, provided the yard is a minimum of 25 feet or a maximum of 75 feet.
Side - One and two-family dwellings 6 feet
All other principal buildings and uses: ten percent of lot width, provided the side yard is a minimum of 10 feet or a maximum of 30 feet.

NOTES:

1. Orientation of this bearing system is based upon the plat of Axis.

2. Snow and ice were present on this site during the field survey and may have made some physical features not visible.

3. Proposed site improvements are shown in orange on this sheet.

ISG

I HEREBY CERTIFY THAT THIS SURVEY, PLAN, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

RYAN E. KOTTHOFF

DATE 5/26/26 LIC. NO. 61565

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PROJECT

CITY OF MANKATO

HINIKER PARKWAY

MANKATO MINNESOTA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-33609
FILE NAME	33609 PPLAT
DRAWN BY	KH
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ORIGINAL ISSUE DATE	5/26/26
CLIENT PROJECT NO.	-

TITLE

PRELIMINARY PLAT

SHEET

3

OF 3

HINIKER PARKWAY SUBDIVISION

KNOW ALL PERSONS BY THESE PRESENTS: That the City of Mankato, a Minnesota municipal corporation, owner of the following described property:

Lot 2, Block 1, Hiniker Pond Park, City of Mankato, Blue Earth County, Minnesota.

AND

Outlots A, B and C, Axis, City of Mankato, Blue Earth County, Minnesota.

AND

That part of Government Lot Two (2), Section 1, Township 108 North, Range 27 West, described as follows: Commencing at the northeast corner of Government Lot Two (2) thence South 00 degrees, 2 minutes, 28 seconds East along the east line of Government Lot Two (2), a distance of 1159.22 feet to the point of beginning; thence due West 415 feet; thence due South 2 feet more or less to the Northerly boundary of Butterworth Street; thence easterly along the Northerly boundary of Butterworth Street, a distance of approximately 415 feet more or less to a point directly south of the point of beginning; thence northerly approximately 8.2 feet more or less to the point of beginning.

AND

All that part of Government Lot 2 in Section 1, Township 108 North, Range 27 West, described as:

Commencing at a found iron pipe monument designating the Northeast Corner of Government Lot 2; thence South 88 degrees 46 minutes 20 seconds West (assumed bearing along the north line of Government Lot 2), a distance of 813.93 feet; thence South 01 degrees 13 minutes 40 seconds East, 182.13 feet; thence continuing South 01 degrees 13 minutes 40 seconds East, 17.87 feet; thence North 88 degrees 46 minutes 20 seconds East and parallel with the north line of Government Lot 2, a distance of 64.00 feet to the point of beginning of the tract to be described; thence South 74 degrees 40 minutes 42 seconds East, 90.04 feet; thence North 01 degrees 13 minutes 40 seconds West, 26.71 feet; thence South 88 degrees 46 minutes 20 seconds West and parallel with the north line of Government Lot 2, a distance of 89.86 feet to the point of beginning.

Has caused the same to be surveyed and platted as **HINIKER PARKWAY SUBDIVISION** and does hereby dedicate to the public, for public use, the public ways and/or the drainage and utility easements as created by this plat.

In witness whereof said City of Mankato, a Minnesota municipal corporation, has caused these presents to be signed by its proper officer this _____ day of _____, 20_____.

_____ _____
Mayor City Manager

State of _____

County of _____

This instrument was acknowledged before me on _____, 20_____ by _____, Mayor of the City of Mankato, and by _____, City Manager, of City of Mankato, a Minnesota municipal corporation.

_____(sign)

_____(print)
Notary Public _____
My Commission Expires _____

SURVEYOR'S CERTIFICATE

I, Ryan E. Kotthoff, do hereby certify that this plat was prepared by me or under my direct supervision; that I am a duly Licensed Land Surveyor in the State of Minnesota; that this plat is a correct representation of the boundary survey; that all mathematical data and labels are correctly designated on this plat; that all monuments depicted on this plat have been or, will be correctly set within one year; that all water boundaries and wet lands, as defined in Minnesota Statutes, Section 505.01, Subd. 3, as of the date of this certificate are shown and labeled on this plat; and all public ways are shown and labeled on this plat.

Dated this _____ day of _____, 20_____.

_____
Ryan E. Kotthoff, Licensed Land Surveyor
Minnesota License No. 61565

State of Minnesota
County of Blue Earth

This instrument was acknowledged before me on _____, 20_____ by Ryan E. Kotthoff, Licensed Land Surveyor.

_____
Kent A. Hays
Notary Public, Minnesota
My Commission Expires Jan. 31, 2030

MANKATO PLANNING COMMISSION

Be it known that on this _____ day of _____, 20_____, the Planning Commission of the City of Mankato did duly review this plat of **HINIKER PARKWAY SUBDIVISION**.

_____ _____
Chair Person Secretary

CITY COUNCIL, CITY OF MANKATO, MINNESOTA

This plat of **HINIKER PARKWAY SUBDIVISION**, was approved and accepted by the City Council of the City of Mankato, Minnesota at a regular meeting thereof held this _____ day of _____, 20_____, and said plat is in compliance with the provisions of Minnesota Statutes, Section 505.03, Subd. 2.

_____ _____
Mayor Clerk

TITLE OPINION

I, _____ , Licensed Attorney, State of Minnesota, do hereby certify that the owners as indicated hereon represent all ownership interest in the land encompassed by this plat.

_____
Licensed Attorney

BLUE EARTH COUNTY PROPERTY AND ENVIRONMENTAL RESOURCES

I hereby certify that there are no delinquent taxes and/or delinquent special assessments, that the current taxes have ben paid and that the transfer has been entered on the land described herein on the _____ day of _____, 20_____.

_____
Blue Earth County Property and Environmental Resources Director

COUNTY RECORDER, BLUE EARTH COUNTY, MINNESOTA

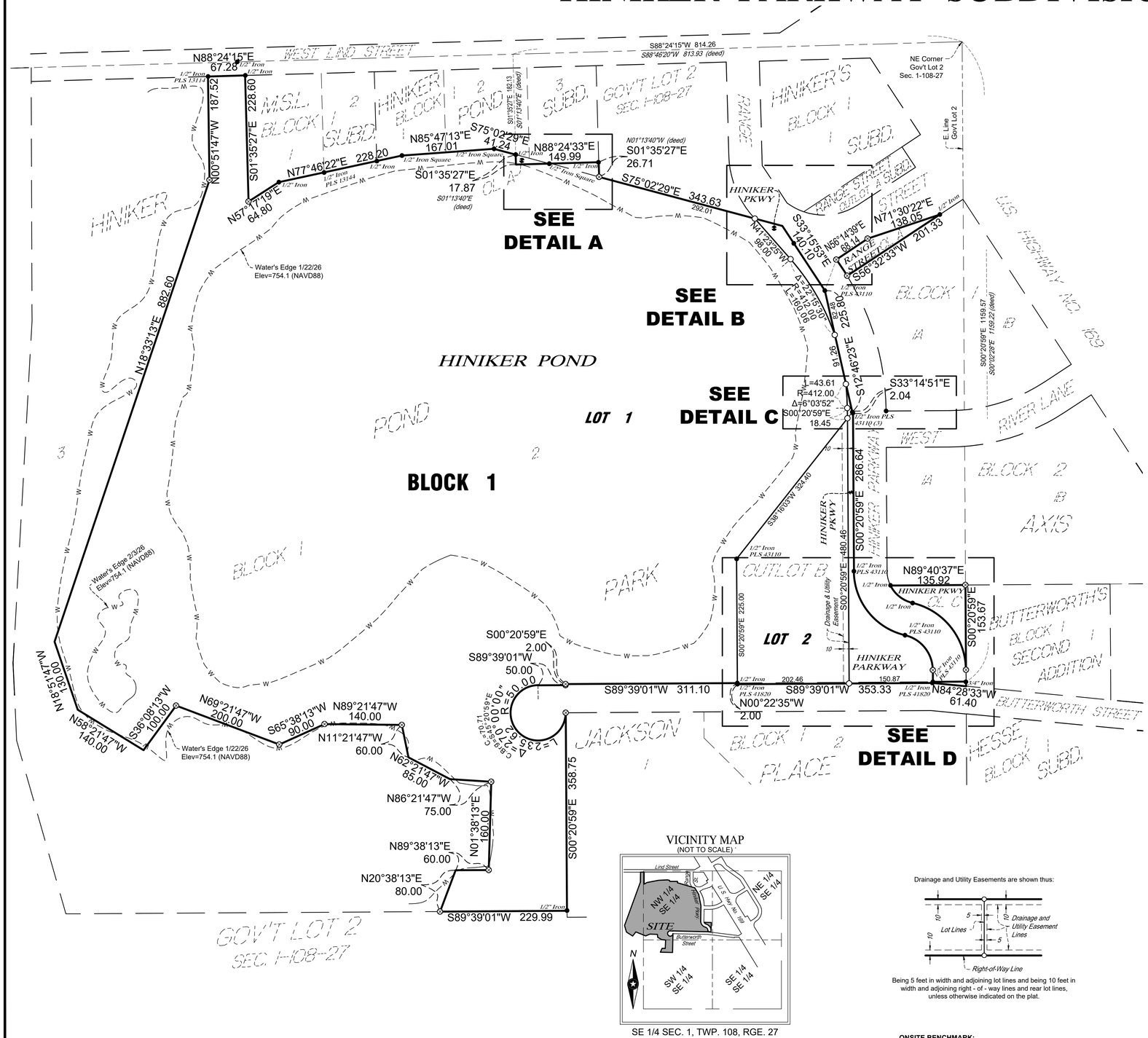
I hereby certify that this plat of **HINIKER PARKWAY SUBDIVISION** was filed in the office of the County Recorder for public record on this _____ day of _____, 20_____, at _____ o'clock _____.M. and was duly filed in Book _____ of Plats, page _____, as Document No. _____.

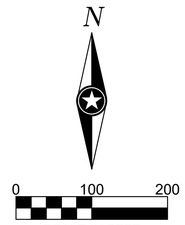
_____
Blue Earth County, County Recorder

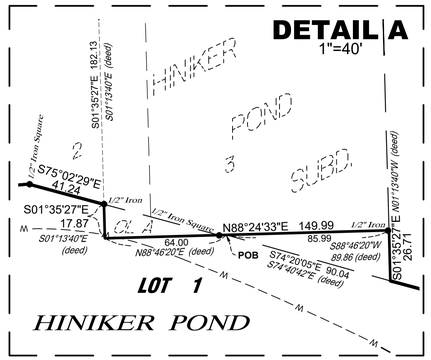
ISG

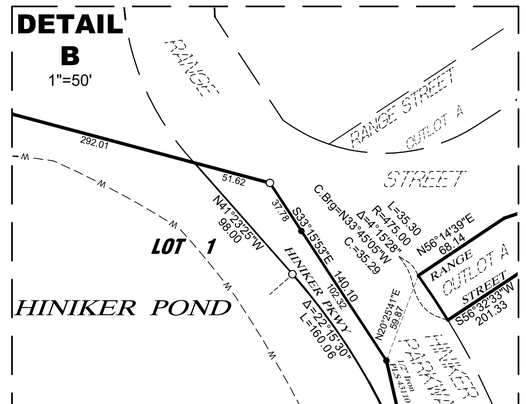
JOB # 33609 DATE: 5/28/26

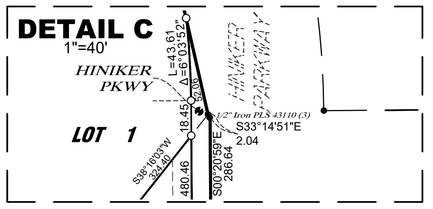
HINIKER PARKWAY SUBDIVISION

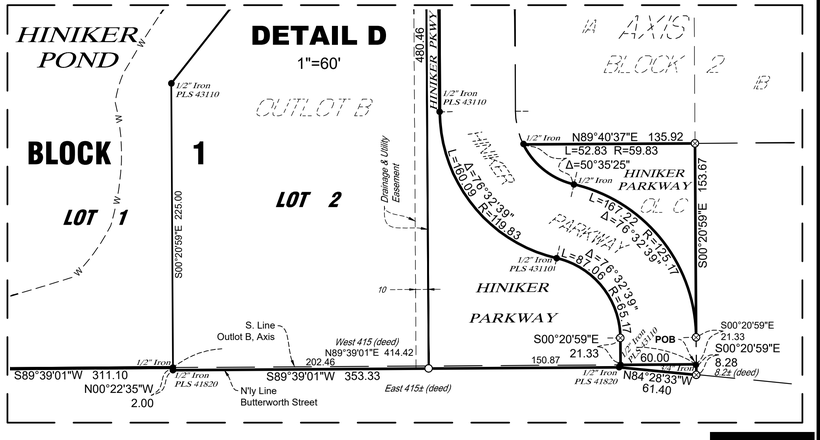












LEGEND

- ● Iron Monument Found
- ⊗ Indicates 1/2" DIA. Iron Monument Set With Plastic Cap Marked By ISG, PLS No. 61565 to be set before time of recording.
- ○ Indicates 1/2" DIA. Iron Monument Set With Plastic Cap Marked By ISG, PLS No. 61565 to be set within one year of recording.

VICINITY MAP
(NOT TO SCALE)

SE 1/4 SEC. 1, TWP. 108, RGE. 27
Blue Earth County, Minnesota

Drainage and Utility Easements are shown thus:

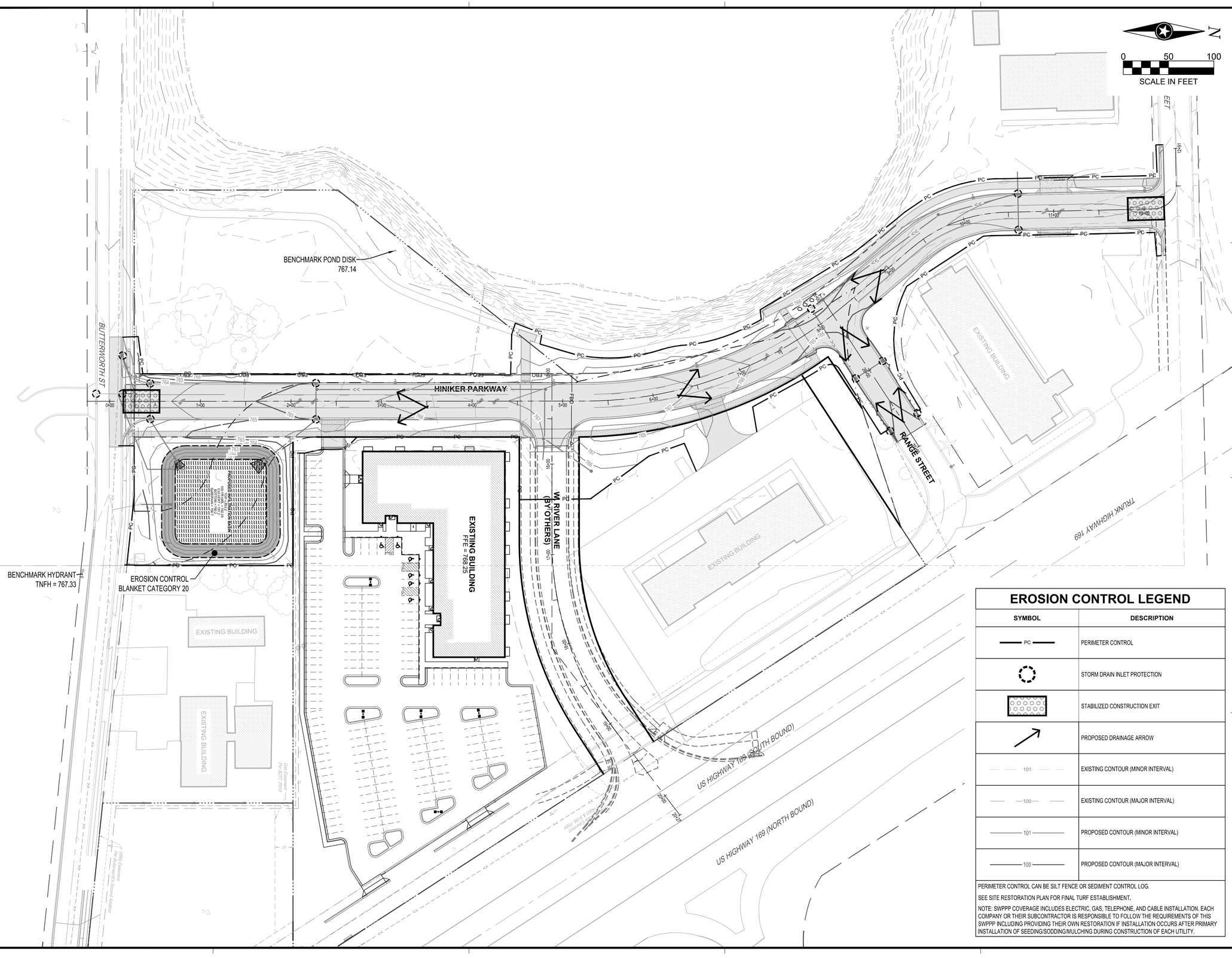
Being 5 feet in width and adjoining lot lines and being 10 feet in width and adjoining right - of - way lines and rear lot lines, unless otherwise indicated on the plat.

ONSITE BENCHMARK:
Top nut fire hydrant located on south side of West Lind Street, 75'± west of Range Street. Elev=769.79 (NAVD88)

OFFSITE BENCHMARK:
MnDOT monument VALVE MN013. Elev=783.92 (NAVD88)

ISG

JOB # 33609 DATE: 5/26/26



EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION
PC	PERIMETER CONTROL
	STORM DRAIN INLET PROTECTION
	STABILIZED CONSTRUCTION EXIT
	PROPOSED DRAINAGE ARROW
101	EXISTING CONTOUR (MINOR INTERVAL)
100	EXISTING CONTOUR (MAJOR INTERVAL)
101	PROPOSED CONTOUR (MINOR INTERVAL)
100	PROPOSED CONTOUR (MAJOR INTERVAL)

PERIMETER CONTROL CAN BE SILT FENCE OR SEDIMENT CONTROL LOG.

SEE SITE RESTORATION PLAN FOR FINAL TURF ESTABLISHMENT.

NOTE: SWPPP COVERAGE INCLUDES ELECTRIC, GAS, TELEPHONE, AND CABLE INSTALLATION. EACH COMPANY OR THEIR SUBCONTRACTOR IS RESPONSIBLE TO FOLLOW THE REQUIREMENTS OF THIS SWPPP INCLUDING PROVIDING THEIR OWN RESTORATION IF INSTALLATION OCCURS AFTER PRIMARY INSTALLATION OF SEEDING/SODDING/MULCHING DURING CONSTRUCTION OF EACH UTILITY.

ISG

City of MANKATO
Leading the way...

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.

NATHAN J. HERMER

DATE 03/10/26 LIC. NO. 54848

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PROJECT

CITY OF MANKATO

HINIKER PARKWAY

MANKATO MINNESOTA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-26886
FILE NAME	26886 SWPPP
DRAWN BY	LHH/BJK
DESIGNED BY	LHH/NJH/BJK
REVIEWED BY	NJH
ORIGINAL ISSUE DATE	03/10/26
CLIENT PROJECT NO.	11206

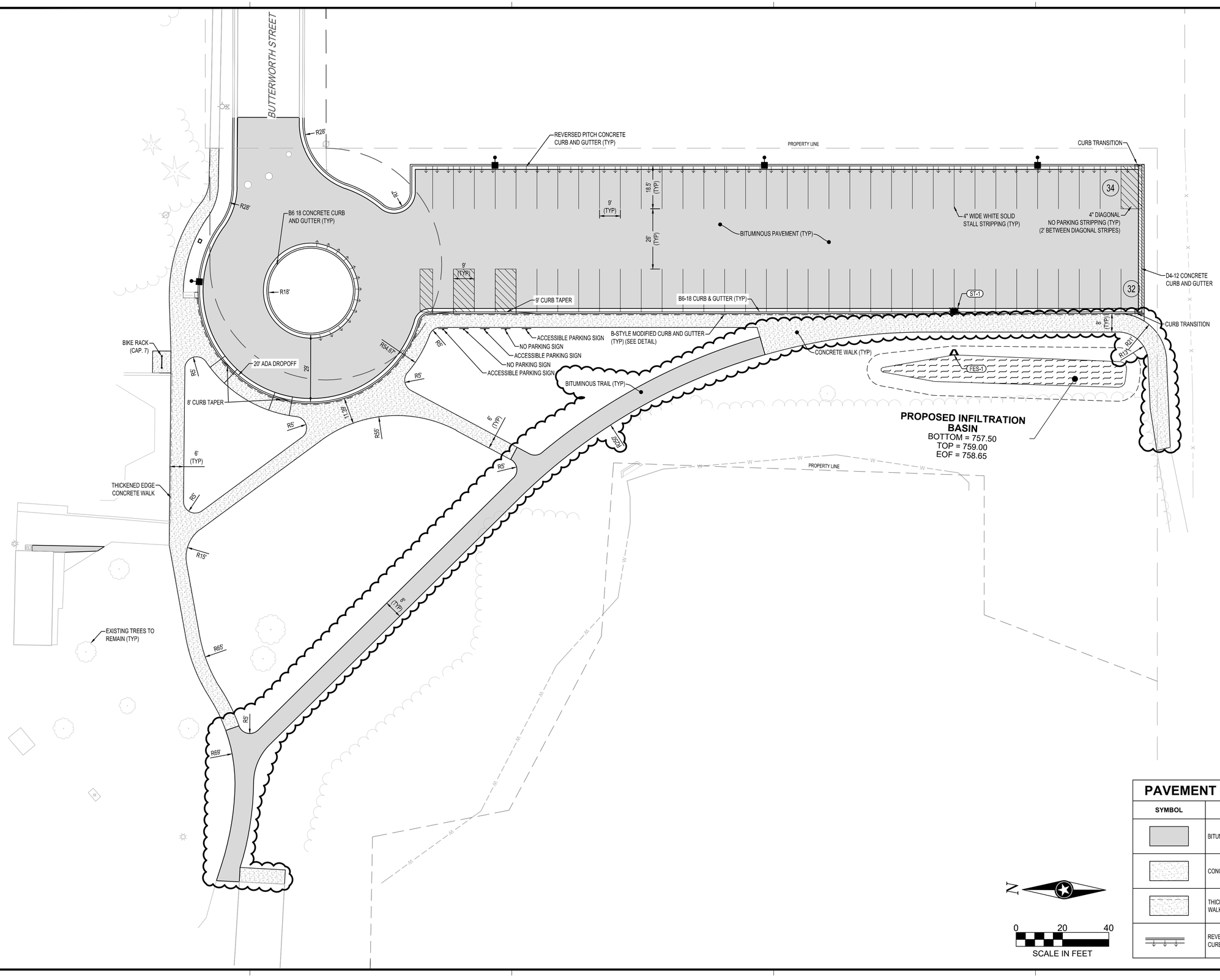
TITLE

SWPPP

SHEET

10

OF 47



PAVEMENT LEGEND

SYMBOL	DESCRIPTION
	BITUMINOUS PAVEMENT
	CONCRETE WALK
	THICKENED EDGE CONCRETE WALK
	REVERSE PITCH CONCRETE CURB AND GUTTER

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PROJECT

CITY OF MANKATO HINIKER POND PARK PARKING LOT

MANKATO MINNESOTA

REVISION SCHEDULE

DATE	DESCRIPTION	BY
03/19/26	ADDENDUM #1	BJK

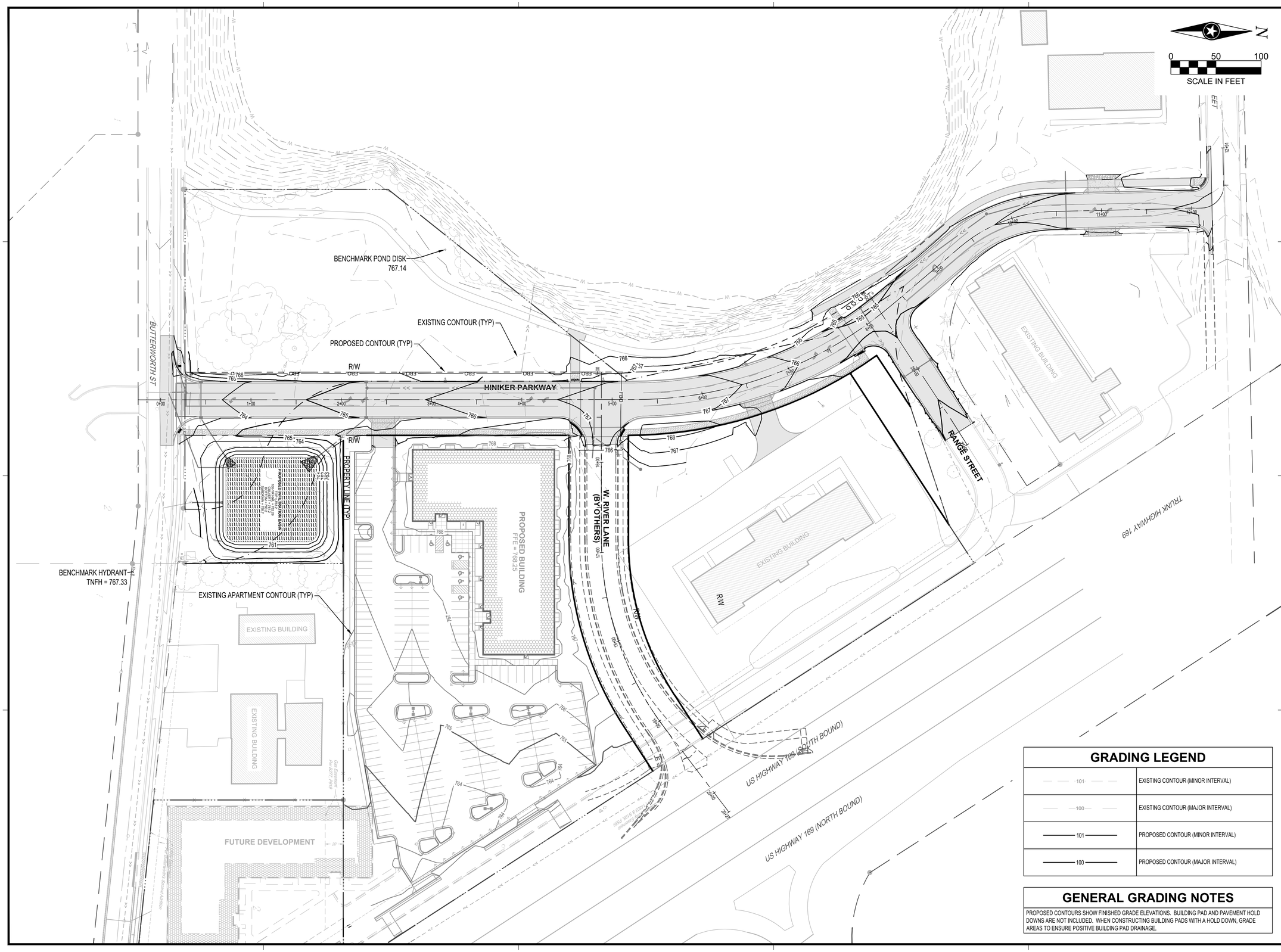
PROJECT NO.	25-33422
FILE NAME	33422-C3-SITE
DRAWN BY	BJK
DESIGNED BY	BJK
REVIEWED BY	NJH
ORIGINAL ISSUE DATE	03/10/26
CLIENT PROJECT NO.	11207

TITLE

SITE PLAN

SHEET

39



GRADING LEGEND

101	EXISTING CONTOUR (MINOR INTERVAL)
100	EXISTING CONTOUR (MAJOR INTERVAL)
101	PROPOSED CONTOUR (MINOR INTERVAL)
100	PROPOSED CONTOUR (MAJOR INTERVAL)

GENERAL GRADING NOTES

PROPOSED CONTOURS SHOW FINISHED GRADE ELEVATIONS. BUILDING PAD AND PAVEMENT HOLD DOWNS ARE NOT INCLUDED. WHEN CONSTRUCTING BUILDING PADS WITH A HOLD DOWN, GRADE AREAS TO ENSURE POSITIVE BUILDING PAD DRAINAGE.

ISG

City of MANKATO
Leading the way...

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PROJECT

CITY OF MANKATO

HINIKER PARKWAY

MANKATO MINNESOTA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-26886
FILE NAME	26886 GRADE
DRAWN BY	LHH/BJK
DESIGNED BY	LHH/NJH/BJK
REVIEWED BY	NJH
ORIGINAL ISSUE DATE	03/10/26
CLIENT PROJECT NO.	11206

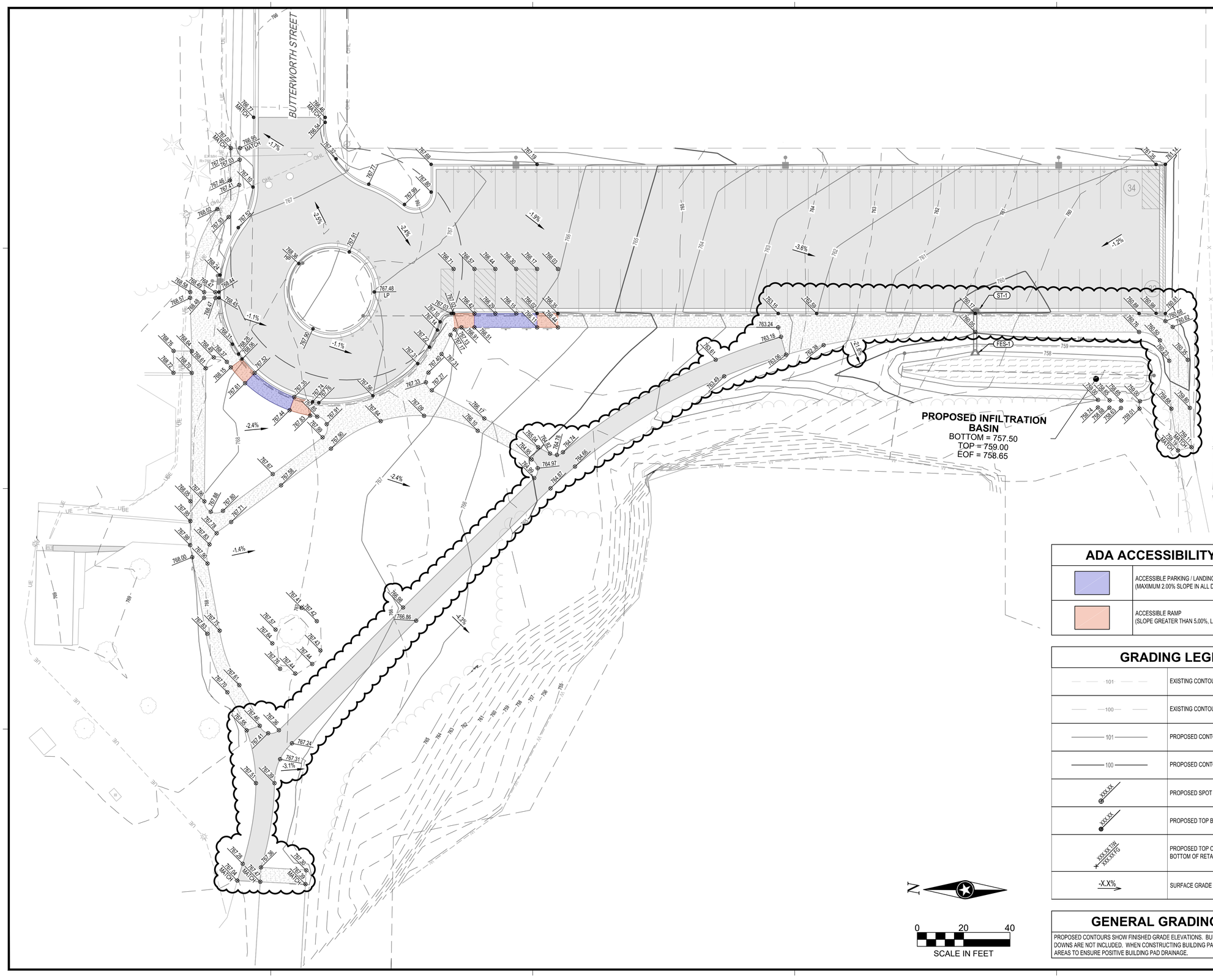
TITLE

OVERALL GRADING PLAN

SHEET

19

OF 47



ADA ACCESSIBILITY LEGEND

	ACCESSIBLE PARKING / LANDING AREA (MAXIMUM 2.00% SLOPE IN ALL DIRECTIONS)
	ACCESSIBLE RAMP (SLOPE GREATER THAN 5.00%, LESS THAN 8.33%)

GRADING LEGEND

101	EXISTING CONTOUR (MINOR INTERVAL)
100	EXISTING CONTOUR (MAJOR INTERVAL)
101	PROPOSED CONTOUR (MINOR INTERVAL)
100	PROPOSED CONTOUR (MAJOR INTERVAL)
XXX.XX	PROPOSED SPOT ELEVATION
XXX.XX	PROPOSED TOP BACK OF CURB SPOT ELEVATION
XXX.XX TW XXX.XX FG	PROPOSED TOP OF RETAINING WALL (T/W) AND BOTTOM OF RETAINING WALL (B/W)
-X.X%	SURFACE GRADE / DIRECTION

GENERAL GRADING NOTES

PROPOSED CONTOURS SHOW FINISHED GRADE ELEVATIONS. BUILDING PAD AND PAVEMENT HOLD DOWNS ARE NOT INCLUDED. WHEN CONSTRUCTING BUILDING PADS WITH A HOLD DOWN, GRADE AREAS TO ENSURE POSITIVE BUILDING PAD DRAINAGE.

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PROJECT

CITY OF MANKATO HINIKER POND PARK PARKING LOT

MANKATO MINNESOTA

REVISION SCHEDULE

DATE	DESCRIPTION	BY
03/19/26	ADDENDUM #1	BJK

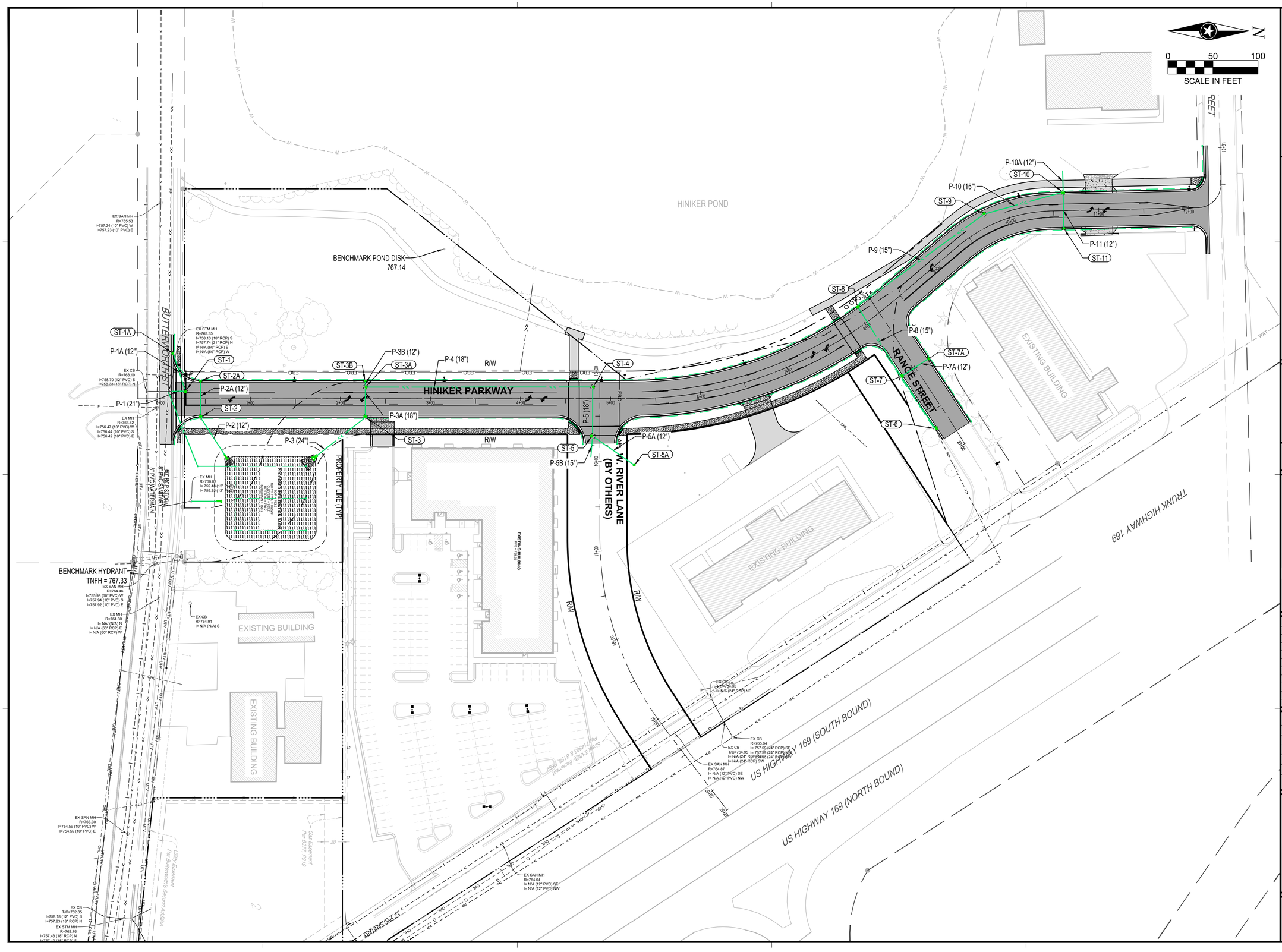
PROJECT NO.	25-33422
FILE NAME	33422-C4-GRADE
DRAWN BY	BJK
DESIGNED BY	BJK
REVIEWED BY	NJH
ORIGINAL ISSUE DATE	03/10/26
CLIENT PROJECT NO.	11207

TITLE

GRADING PLAN

SHEET

41



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PROJECT

CITY OF MANKATO

HINIKER PARKWAY

MANKATO MINNESOTA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-26886
FILE NAME	26886 UTILITY
DRAWN BY	LHH/BJK
DESIGNED BY	LHH/NJH/BJK
REVIEWED BY	NJH
ORIGINAL ISSUE DATE	03/10/26
CLIENT PROJECT NO.	11206

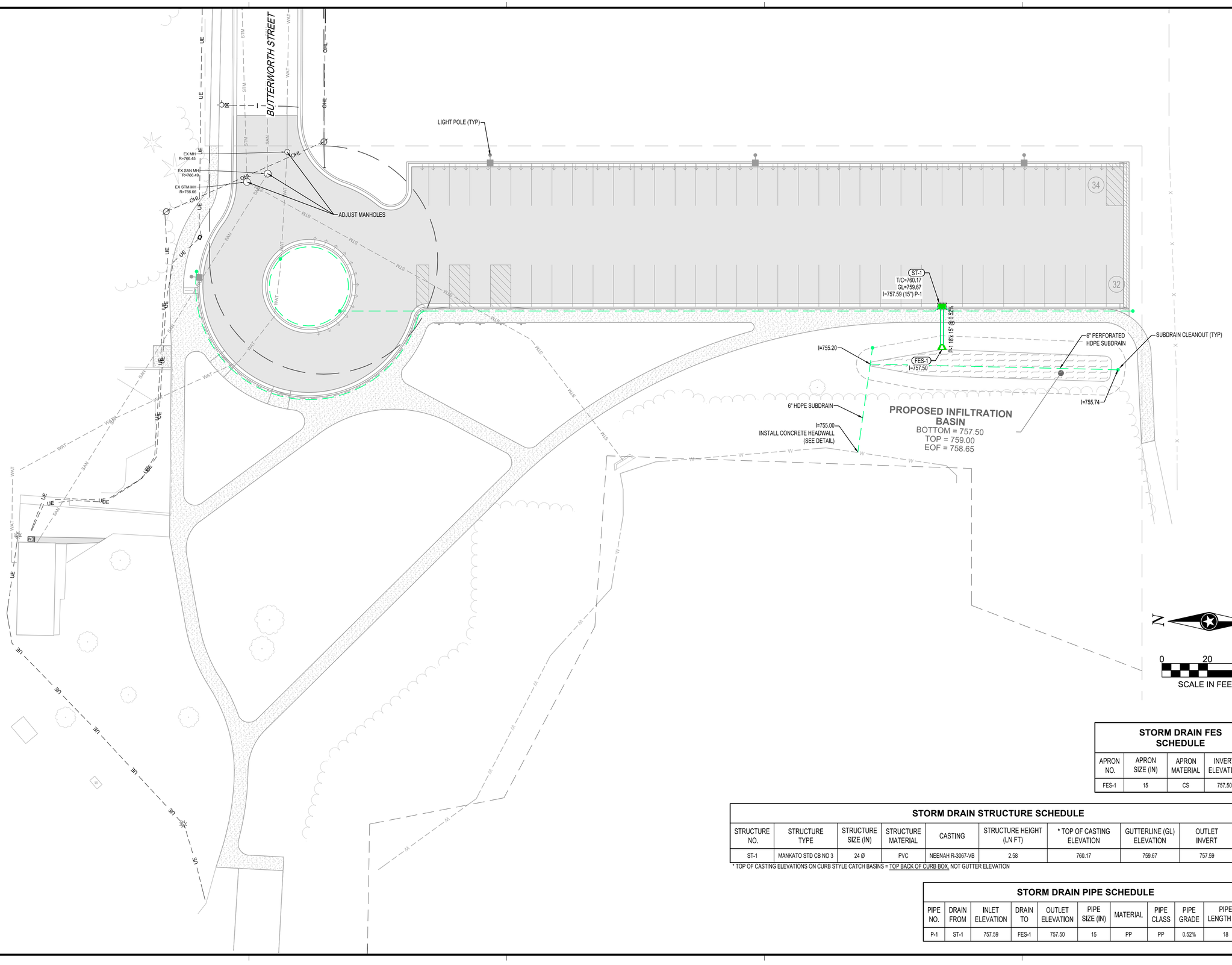
TITLE

OVERALL UTLITY PLAN

SHEET

12

OF 47



STORM DRAIN FES SCHEDULE

APRON NO.	APRON SIZE (IN)	APRON MATERIAL	INVERT ELEVATION	PIPE NO.
FES-1	15	CS	757.50	P-1

STORM DRAIN STRUCTURE SCHEDULE

STRUCTURE NO.	STRUCTURE TYPE	STRUCTURE SIZE (IN)	STRUCTURE MATERIAL	CASTING	STRUCTURE HEIGHT (LN FT)	* TOP OF CASTING ELEVATION	GUTTERLINE (GL) ELEVATION	OUTLET INVERT	OUTLET PIPE
ST-1	MANKATO STD CB NO 3	24 Ø	PVC	NEENAH R-3067-VB	2.58	760.17	759.67	757.59	P-1

* TOP OF CASTING ELEVATIONS ON CURB STYLE CATCH BASINS = TOP BACK OF CURB BOX, NOT GUTTER ELEVATION

STORM DRAIN PIPE SCHEDULE

PIPE NO.	DRAIN FROM	INLET ELEVATION	DRAIN TO	OUTLET ELEVATION	PIPE SIZE (IN)	MATERIAL	PIPE CLASS	PIPE GRADE	PIPE LENGTH (FT)
P-1	ST-1	757.59	FES-1	757.50	15	PP	PP	0.52%	18

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DATE 03/10/26 LIC. NO. 54848

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PROJECT

CITY OF MANKATO HINIKER POND PARK PARKING LOT

MANKATO MINNESOTA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-33422
FILE NAME	33422-C3-UTILITY
DRAWN BY	BJK
DESIGNED BY	BJK
REVIEWED BY	NJH
ORIGINAL ISSUE DATE	03/10/26
CLIENT PROJECT NO.	11207

TITLE

UTILITY PLAN

SHEET

40

Site Plan and Traffic Advisory Review Committee **1. 2.**

Meeting Date: 06/09/2026

Title

CY27-26

Request of Amanda Furnas of Mankato Chemical Health, with permission of the property owner, for a conditional use permit to allow a medical clinic in the R-1, one-family dwelling zoning district, to serve adults seeking treatment and support for substance use and co-occurring mental health concerns. The subject property is described as an approximately 1.77 acre parcel located in the west half of the southeast quarter of Section 17, Township 108 Range 26, Blue Earth County (114 Pohl Road).

Applicant

Amanda Furnas of Mankato Chemical Health, with permission of the property owner, is the applicant.

Request

The applicant is seeking a conditional use permit to operate a medical clinic in the R-1, one family dwelling, zoning district.

Location

The subject property is located at 114 Pohl Road and is legally described that part of the West half of the Southeast Quarter of Section 17, Township 108 North, Range 26 West, described as follows: Commencing at the point of intersection of the West line of said Southeast Quarter with the South line of Glenwood Avenue in the City of Mankato; thence South 53 degrees, 17 minutes East along the South line of Glenwood Avenue; a distance of 116.4 feet; thence South 64 degrees 11 minutes East along the South line of Glenwood Avenue; a distance of 207.4 feet to a place of beginning; thence continuing along the same line, a distance of 270 feet to the center line of the “Pohl” road, thence South 6 degrees 39½ minutes West along said center line a distance of 362.4 feet; thence North 81 degrees 47 minutes West, a distance 203.4 feet; thence due North parallel with the West line of said Southeast Quarter, a distance of 448.5 feet to the place of beginning.
.

Existing Land Use

Hope Interfaith Center, a church and spiritual center, will remain in the building and continue operating, primarily on weekends, for its ongoing spiritual and community-based services.

Zoning

The subject property is zoned R-1, one-family dwelling district.

Environmentally Sensitive Areas

The northern portion of the subject property contains bluffs, ravines, woodlands, and a stream.

Public Utilities

The property is served by public utilities, which will continue.

Review

The applicant, Amanda Furnas of Mankato Chemical Health, with permission of the property owner, is seeking a conditional use permit to allow the operation of a licensed outpatient Substance Use Disorder (SUD) treatment center, Mankato Chemical Health at 114 Pohl Road.

In the Mankato City Code, medical clinics are considered a conditional use in this R-1, one-family dwelling, zoning district.

The applicant's narrative states that no residential components are planned. Therefore, no one will be living at the property. The use proposes to provide professional healthcare services to adults seeking treatment and support for substance use and co-occurring mental health concerns. Services delivered will be by licensed and credentialed professionals in a structured outpatient setting.

The applicant indicates that the current occupant, Hope Interfaith Center, a church and spiritual center, will remain in the building and continue to utilize designated space, primarily on weekends.

The applicant's submitted information states that the exterior work will include the construction of a fence, and upgrades to exterior lighting. The applicant has indicated that the signage will be in the same place as the current signage. The exterior of the facility is proposed to be painted white with black window accents and black gutters and cedar accents, and stucco repair is planned.

The applicant further clarifies that the floor plans for the structure will not change.

Attachments

General Location Map

Aerial Plan

Plans

Narrative

General Location Map



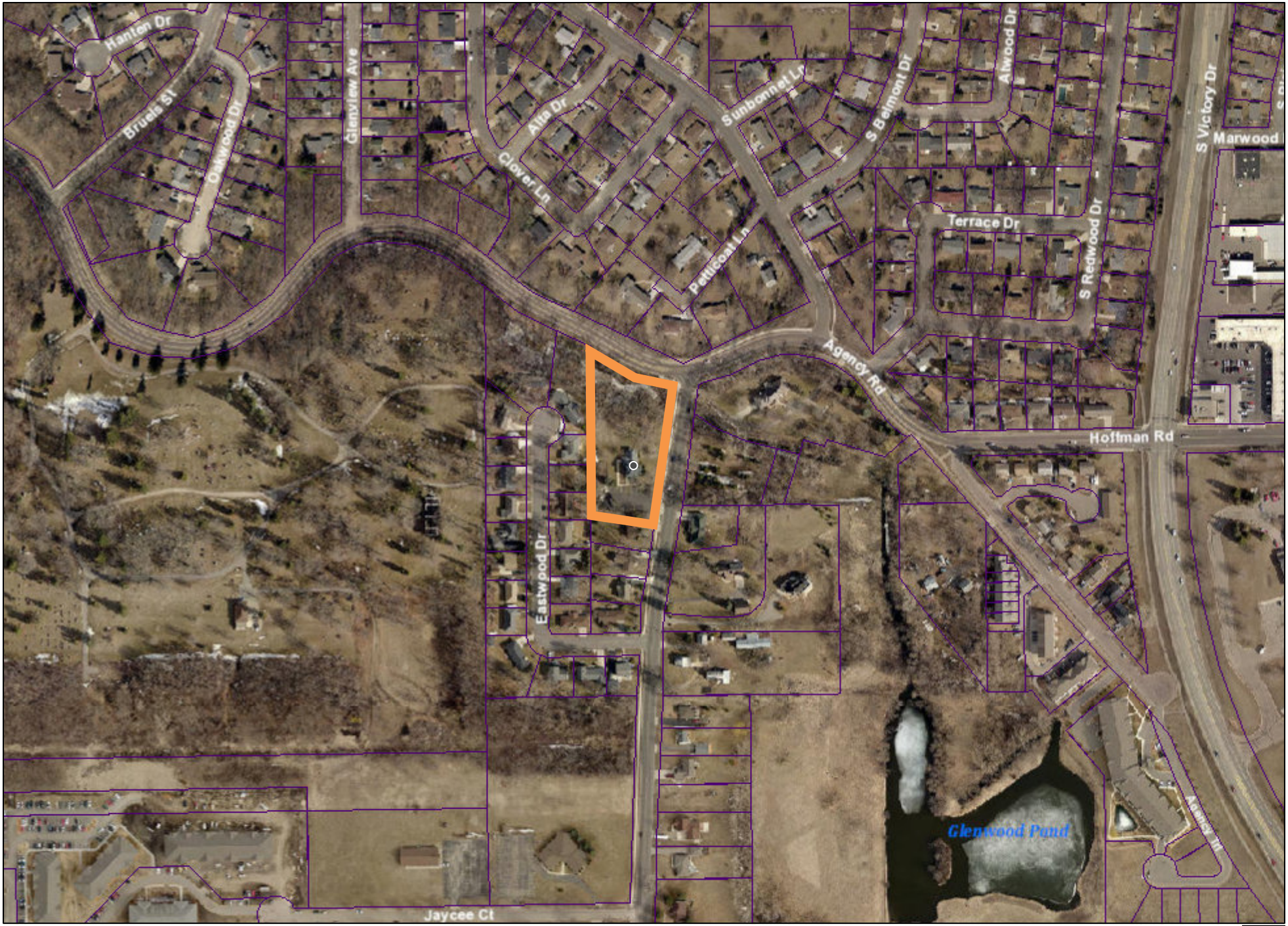
Date: June 2026

Author:

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N

Aerial Map



Date: June 2026

Author:

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N



Privacy Fence
(to be built, will apply for permit)

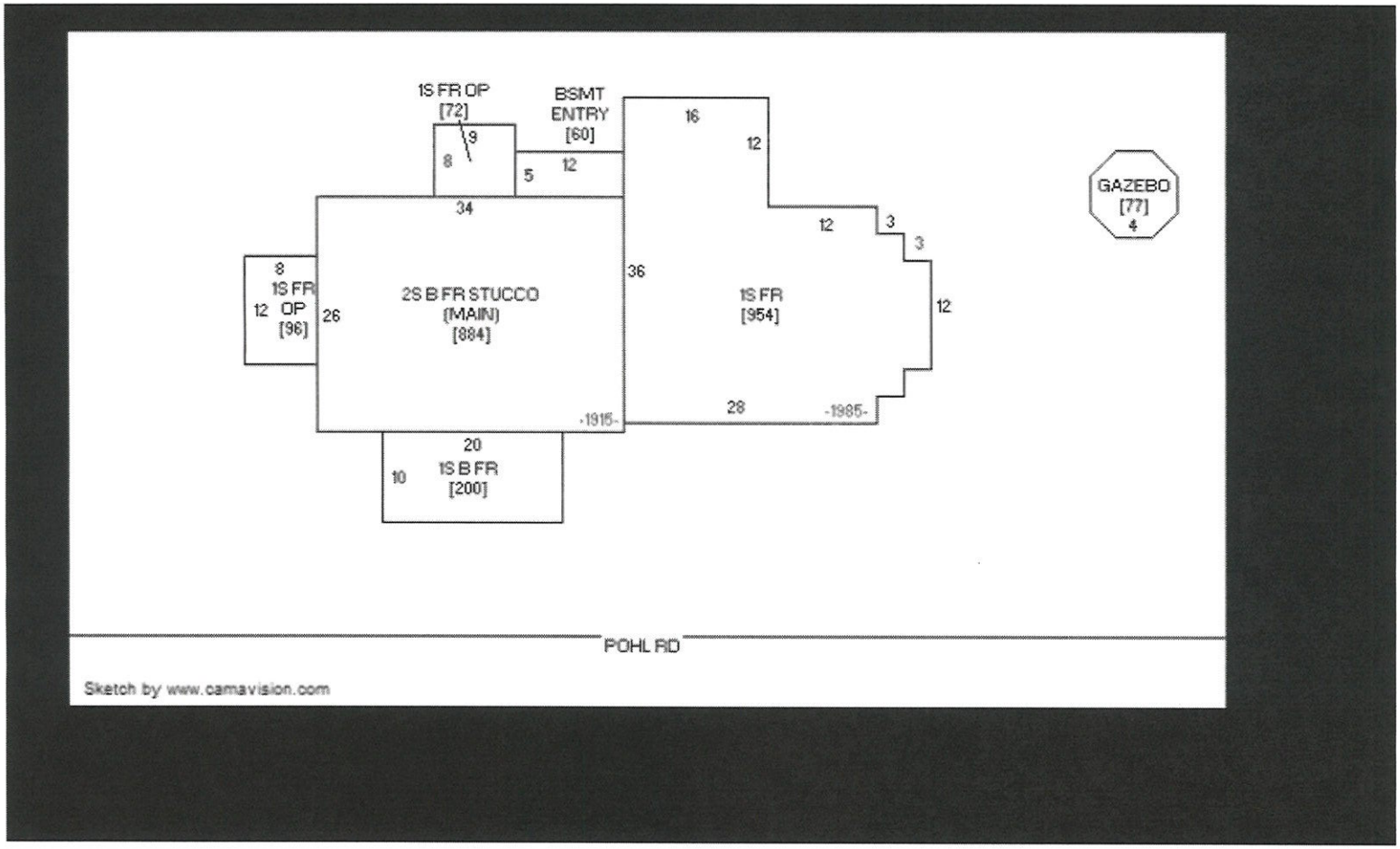
Parking Lot:
Stays the same

Lighting:
Stays the same, will change out fixtures.

Signage will be in the same place as existing sign for Hope Interfaith Center.



floor plan does not change



Exterior - painted white, Stucco repair, black window accents, black gutters, cedar accents



Conditional Use Permit Application

1. General Description of the Proposed Conditional Use

The subject property at 114 Pohl Road, Mankato MN, is currently owned and occupied by Hope Interfaith Center, which operates under an existing Conditional Use Permit for use as a church and spiritual center. Hope Interfaith Center currently provides spiritual services, counseling, and small gatherings at the property. As part of the proposed arrangement, Hope Interfaith Center will remain in the building and continue to utilize designated space, primarily on weekends, for its ongoing spiritual and community-based activities.

JAF Properties LLC will formally purchase and close on the property at 114 Pohl Rd on 5/29/26 and is requesting approval for a Conditional Use Permit to operate a licensed Outpatient Substance Use Disorder (SUD) treatment center. (Mankato Chemical Health). This is not a residential program and no one will live in the property.

The proposed use will provide professional healthcare services to adults seeking treatment and support for substance use and co-occurring mental health concerns. Services will be delivered by licensed and credentialed professionals in a structured outpatient setting and may include:

- Comprehensive substance use assessments
- Individual counseling
- Group counseling
- Intensive Outpatient Programming (IOP)
- Relapse prevention education
- Family education and support
- Coordination with medical and psychiatric providers
- Medication management partnerships with qualified providers
- Holistic services such as mindfulness, nutrition education, acupuncture, and wellness-based recovery support

The facility is licensed by the Minnesota Department of Human Services under Minnesota Statutes Chapter 245G.

Operational Characteristics

- **Client Population:** Adults receiving outpatient treatment services
- **Hours of Operation:** Primarily weekday business hours, with some early morning or evening appointments as needed
- **Staffing:** Licensed Alcohol and Drug Counselors (LADC), mental health professionals, and administrative staff
- **Traffic Impact:** Comparable to other professional office or healthcare uses
- **Parking:** Existing onsite parking is sufficient to accommodate staff and client visits
- **Noise and Activity:** Minimal; services occur in private offices and group rooms in a quiet, clinical environment
- **Exterior Changes:** No significant exterior modifications are proposed beyond standard signage, landscaping, maintenance, painting exterior, and a privacy fence (to be built)

Compatibility with Surrounding Area

The proposed use is consistent with other healthcare, counseling, and community service uses. The facility will operate as a professional office and treatment center, generating limited traffic and no industrial activity, odors, or noise. The use promotes public health and safety by expanding access to treatment and recovery services for community members.
The proposed operation will not negatively affect neighboring properties and is expected to enhance the community by providing needed healthcare services in a safe, supportive, and professionally managed environment.

---

2. Variance Statement

No variance is requested as part of this application.
The proposed use is permitted through the Conditional Use Permit process and is intended to comply with all applicable zoning, parking, building, and safety requirements.
If, during review by City staff, any specific dimensional or site-related requirements are identified that cannot be met under the existing zoning regulations, the applicant understands that a separate variance application may be required.
At this time, however, the applicant is not aware of any need for a variance.

Site Plan and Traffic Advisory Review Committee **1. 3.**

Meeting Date: 06/09/2026

Title

CY28-26

Request of The Factor Group, with permission of the property owner, for a preliminary and final plat review of River Bluff Cottages, and for an amendment to a previously approved Planned Unit Development. The subject property is described as Outlot A, Sibley Parkway (Blue Earth County PID R010813101049).

Applicant

The applicant is The Factor Group on behalf of the property owner.

Request

River Bluff Cottages, LLC. is seeking approval of a preliminary and final plat for River Bluff Cottages, which is a one lot, one block subdivision located along Sible Parkway near the northern end of Rogers Street.

The lot is 4.53 acres and received approval in 2022, and 2024.

The previous approvals, as with the current submission, contained 20 units of residential development.

The applicant is also seeking an amended planned unit development which allows a common, private driveway, among other considerations. Updates to the current submission for the planned unit development include updates to the architectural plans, updated engineering including a grading plan, stormwater memo, updated drainage and other updated development details.

Location

The subject property is described as Outlot A, Sibley Parkway (Blue Earth County PID R010813101049).

Existing Land Use

The subject property is an undeveloped outlot.

Zoning

The property is zoned R-2, One- and two-Family dwelling district.

Environmentally Sensitive Areas

The Minnesota River is located to the north of the subject property.

Public Utilities

The site has access to public utilities via Sibley Parkway and Rogers Street.

City Code

Mankato City Code pertaining to the R-2, One and Two Family Dwelling District may be viewed at the following link:
https://library.municode.com/mn/mankato/codes/code_of_ordinances?nodeId=PTIICOOR_CH10LAUSDE_ARTIIREDI_DIV4OMIDWDI

Mankato City Code section 10.93 Planned Unit Developments, can be found at the following link:
https://library.municode.com/mn/mankato/codes/code_of_ordinances?nodeId=CH10LAUSZO_PTXADEN_S10.93PLUNDE

Mankato City Code section 10.98 Amendments, can be found at the following link:
https://library.municode.com/mn/mankato/codes/code_of_ordinances?nodeId=CH10LAUSZO_PTXADEN_S10.98AM

Review

River Bluff Cottages, LLC. is seeking approval of a preliminary and final plat for River Bluff Cottages, which is a one lot, one block subdivision located along Sible Parkway near the northern end of Rogers Street.

The lot is 4.53 acres and received approval in 2022 and 2024.

The previous approvals, as with the current submission, contained 20 units of residential development.

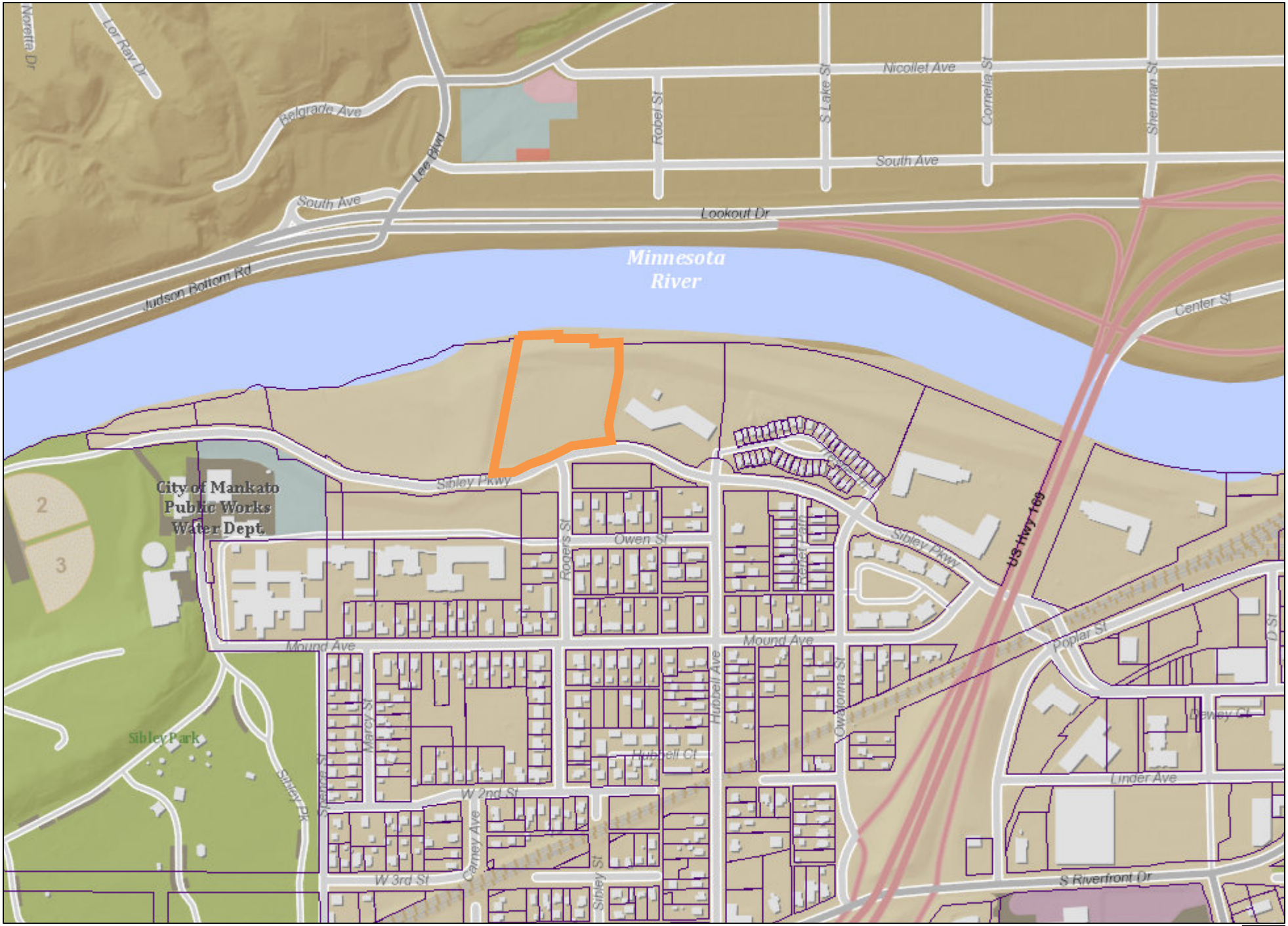
The applicant is also seeking an amended planned unit development which allows a common, private driveway, among other considerations. Updates to the current submission for the planned unit development include updates to the architectural plans, updated engineering including a grading plan, stormwater memo, updated drainage and other updated development details.

Attachments

General Location Map

Aerial Plan
Preliminary Plat
Final Plat
Grading and Site Plan
Architectural Plans
Drainage Report
Vehicle Movement Plan
Rendering
Project Narrative

General Location Map



Date: June 2026

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.

N

Aerial Location Map



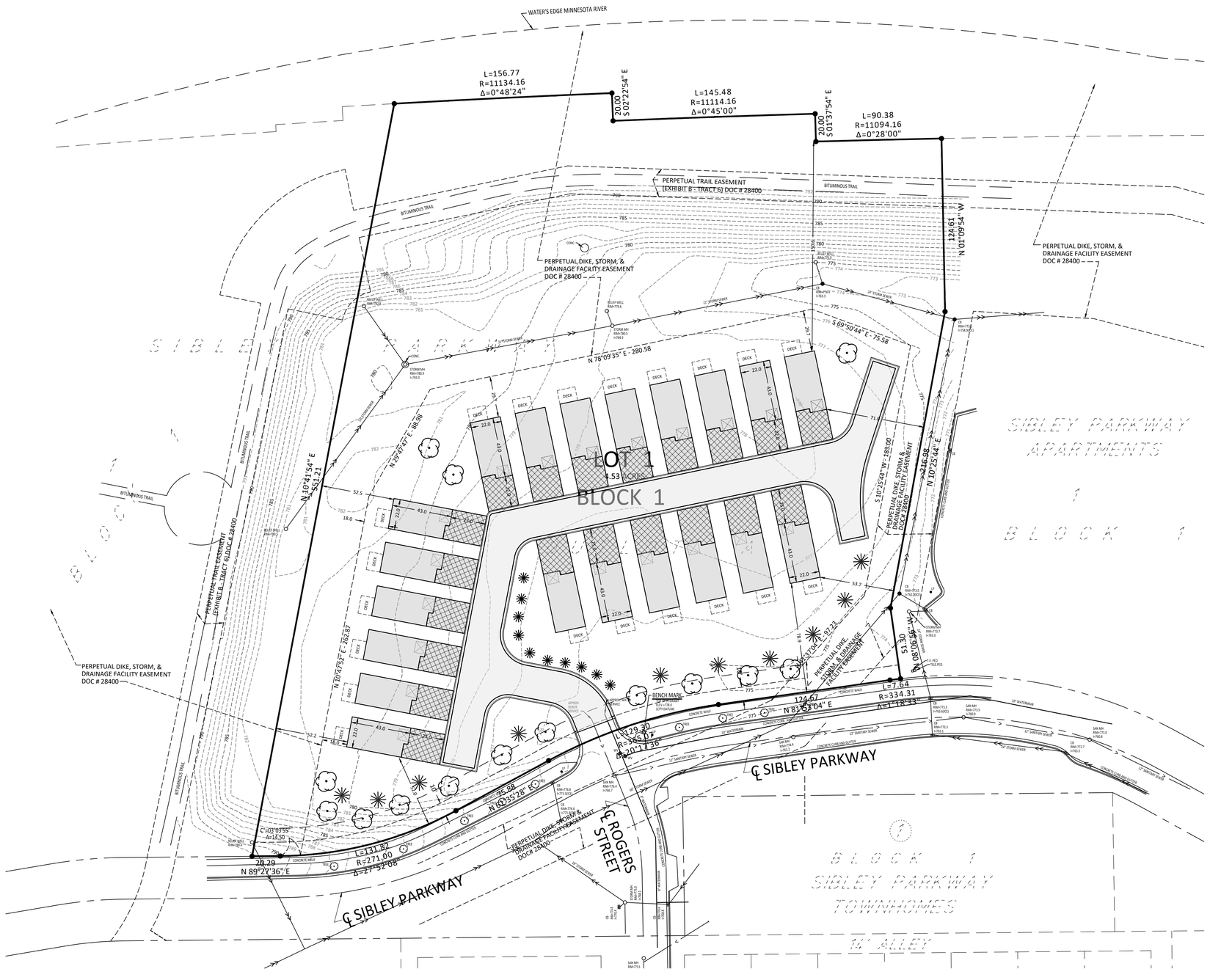
Date: June 2026

Author:

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N

MINNESOTA RIVER



0 40 80

SCALE IN FEET

UTILITY & SITE DATA

All Zoning, Setback, and Flood Zone information was obtained from the City of Mankato Code. For detailed zoning information and specific interpretation of code requirements, contact the City of Mankato.

ZONING:
Subject property - M-2 Heavy Industrial District
Proposed to Re-zone to R-2, One- and Two-Family Dwelling District

SETBACKS:

Front	
Main and Accessory Building	30 feet
Parking Areas	30 feet
Side	
Main and Accessory Buildings	6 feet
Parking Areas	3 feet
Rear	
Main and Accessory Building	25% of the lot depth (min. 25 feet to max. 75 feet)
Parking Areas	3 feet

Lot Area (minimum) = 8,000 sq.ft. for each unit over 6 units.
Lot Width (minimum) = 60 feet
Ground Coverage by all structures (maximum) = 30%
Building Height (maximum) = 35 feet (main) & 20 feet (accessory)

PROJECT INFORMATION

Lot Size = 197,327 sqft (4.53 acres)
Required Lot Area = 144,000 sq.ft. (6,000 sqft per dwelling unit)
Lot Coverage by all Structures = 9.3% (18,320 sqft)
Units per acre = 4.42 units per acre
Building Height = 27'-4"

Parking Stalls Provided = 40 (2 surface stalls per unit plus a garage stall for 1 additional vehicles)

SURVEYOR'S CERTIFICATION

I hereby certify that this survey, plan, or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Michael M. Eichers
License Number 46564

05/26/2026
Date

RIVER BLUFF COTTAGES

PRELIMINARY PLAT/PUD PLAN
MANKATO, MINNESOTA

OUTLOT A, SIBLEY PARKWAY

BOLTON & MENK
1960 PREMIER DRIVE
MANKATO, MINNESOTA 56001
(507) 625-4171

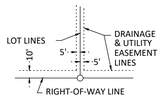
FOR: RIVER BLUFF TOWNHOMES, LLC
DEMARS CONSTRUCTION

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RIVER BLUFF COTTAGES

LEGEND

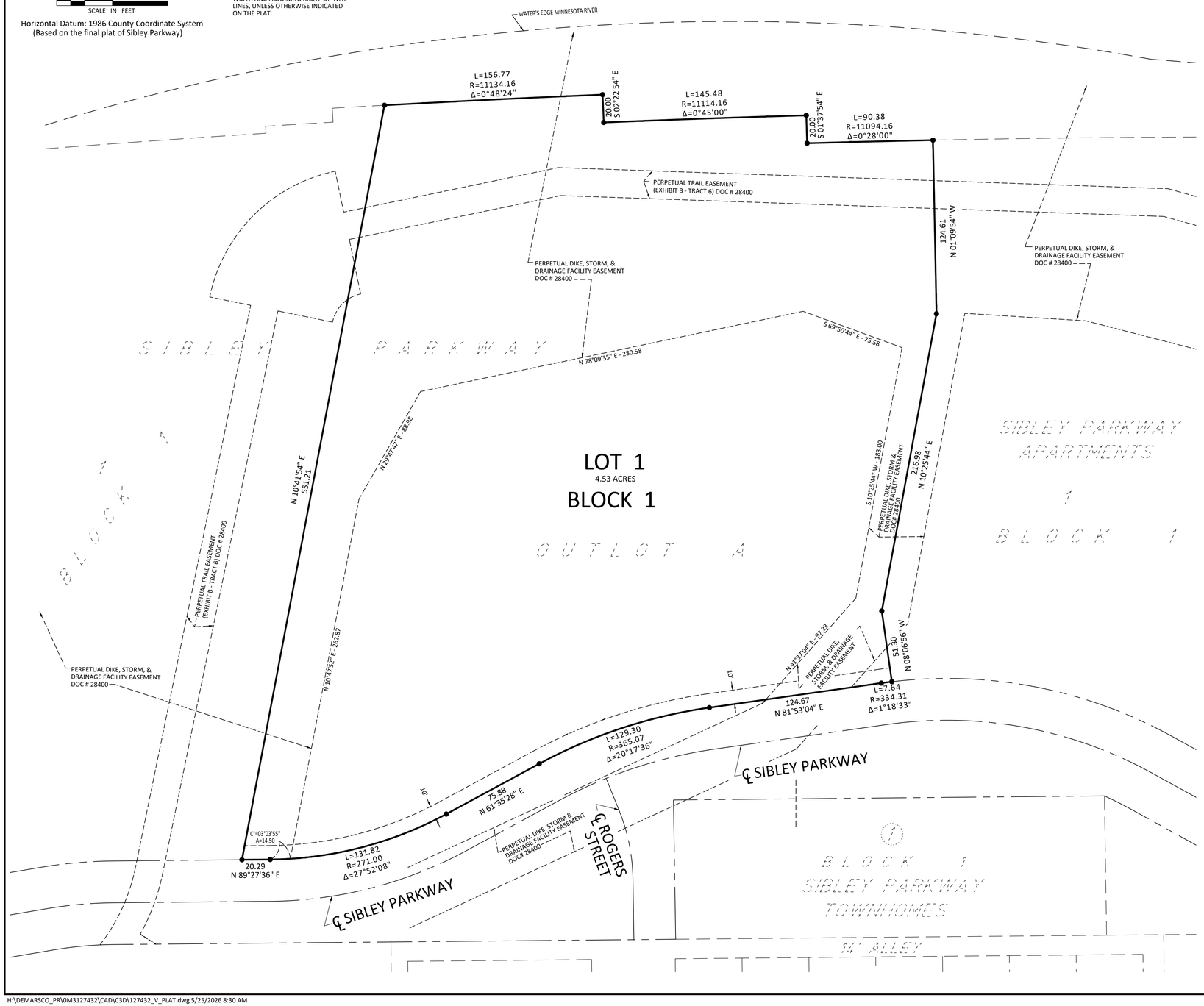
- ○ 3/4" IRON PIPE MONUMENT SET MARKED BY LIC. NO. 46564
- ● MONUMENT FOUND



BEING 5 FEET IN WIDTH AND ADJOINING LOT LINES AND BEING 10 FEET IN WIDTH AND ADJOINING RIGHT-OF-WAY LINES, UNLESS OTHERWISE INDICATED ON THE PLAT.

0 40 80
SCALE IN FEET

Horizontal Datum: 1986 County Coordinate System
(Based on the final plat of Sibley Parkway)



INSTRUMENT OF DEDICATION

KNOW ALL PERSON BY THESE PRESENT: That River Bluff Cottages, LLC, a Minnesota limited liability company, owners of the following described property to wit:

Outlot A, Sibley Parkway, according to the plat thereof on file and of record with the Blue Earth County Recorder. Containing 4.53 acres.

Has caused the same to be surveyed and platted as RIVER BLUFF COTTAGES, and does hereby dedicate to the public for public use the drainage and utility easements as created by this plat.

In witness whereof said River Bluff Cottages, LLC, a Minnesota limited liability company, has caused these present to be signed by its proper officer this _____ day of _____ , 2026.

River Bluff Cottages, LLC

_____
Max DeMars, chief manager

NOTARY CERTIFICATES

State of Minnesota
County of Blue Earth

The foregoing instrument was acknowledged before me this _____ day of _____ , 2026 by Max DeMars, Chief Manager of River Bluff Cottages, LLC, a Minnesota limited liability company.

_____
_____ , Notary Public
Notary Public-Minnesota,
My Commission Expires _____

SURVEYOR'S CERTIFICATE

I, Michael M. Eichers, do hereby certify that this plat was prepared by me or under my direct supervision; that I am a duly Licensed Land Surveyor in the State of Minnesota; that this plat is a correct representation of the boundary survey; that all mathematical data and labels are correctly designated on this plat; that all monuments depicted on this plat have been, or will be correctly set within one year; that all water boundaries and wet lands, as defined in Minnesota Statutes, Section 505.01, Subd. 3, as of the date of this certificate are shown and labeled on this plat; and all public ways are shown and labeled on this plat.

Dated this _____ day of _____ , 2026.

_____
Michael M. Eichers, Licensed Land Surveyor
Minnesota License No. 46564

State of Minnesota
County of Blue Earth

The foregoing Surveyor's Certificate was acknowledged before me this ____ day of _____ , 2026, by Michael M. Eichers, a Licensed Land Surveyor.

_____
Nathan P Myhra, Notary Public
Notary Public-Minnesota
My Commission Expires Jan. 31, 2028

APPROVALS

Be it known that on this the ____ day of _____ , 202__ , the Planning Commission of the City of Mankato did duly review this plat of RIVER BLUFF COTTAGES.

_____ _____
Chair person: Secretary:

Be it known that on this the ____ day of _____ , 202__ , the City Council of the City of Mankato did duly approve this plat of RIVER BLUFF COTTAGES.

_____ _____
Mayor: Clerk:

TITLE OPINION

I, Stacey Jones, Licensed Attorney, State of Minnesota, do hereby certify that the owner as indicated hereon represents all ownership interest in the land encompassed by this plat.

_____
Stacey Jones, Licensed Attorney

BLUE EARTH COUNTY PROPERTY AND ENVIRONMENTAL RESOURCES

I hereby certify that there are no delinquent taxes and/or delinquent special assessments, that the current taxes have been paid and that the transfer has been entered on the land described herein on the _____ day of _____ , 2026.

_____
Blue Earth County Property and
Environmental Resources Director

COUNTY RECORDER

I hereby certify that this instrument was filed in my office for record on this, the ____ day of _____ , 2026, at ___o'clock, _.m., and that it was duly recorded on _____ Plats, Number _____.

_____
County Recorder

FINAL PLAT
PENDING FINAL REVIEW
(05-25-2026)

THIS PLAT PREPARED BY BOLTON & MENK, INC.

RELIEF WELL
RELIEF WELL
RELIEF WELL
RELIEF WELL
RELIEF WELL
TIE-IN AT DIKE EASEMENT
TIE-IN AT DIKE EASEMENT
TIE-IN AT DIKE EASEMENT
TIE-IN AT DIKE EASEMENT
TIE-IN AT DIKE EASEMENT
UNIT 1 GFE=782.0
UNIT 2 GFE=782.0
UNIT 3 GFE=782.0
UNIT 4 GFE=782.3
UNIT 5 GFE=782.6
UNIT 6 GFE=783.0
UNIT 7 GFE=781.7
UNIT 8 GFE=781.4
UNIT 9 GFE=781.0
UNIT 10 GFE=780.6
UNIT 11 GFE=780.2
UNIT 12 GFE=779.9
UNIT 13 GFE=779.6
UNIT 14 GFE=779.3
UNIT 15 GFE=781.4
UNIT 16 GFE=781.0
UNIT 17 GFE=780.6
UNIT 18 GFE=780.2
UNIT 19 GFE=779.9
UNIT 20 GFE=779.6
B618 DWY CURB
B618 DWY CURB
B618 DWY CURB
B618 DWY CURB
EP: 11+00.00
EP: 8+00.00
EP: 2+00.00
BP: 0+00.00
BP: 1+42.99
BP: 9+00.00
PC: 9+55.98
PT: 5+10.88
HAMMERHEAD TURNAROUND ALIGNMENT
ENTRANCE ALIGNMENT
ROAD CENTERLINE ALIGNMENT
SIBLEY PARKWAY
ROGERS STREET
15.69%
7.23%
11.26%
10.80%
6.88%
4.52%
11.46%
11.23%
21.63%
9.09%
8.88%
8.07%
8.84%
6.20%
774
775
776
777
778
779
780
781
782
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00

LEGEND

GENERAL DRAINAGE DIRECTION, MIN 1.0% IN BETWEEN TOWNHOMES

CURB NOTE:
B618 CURB AND GUTTER IS PROPOSED FOR THE ROADWAY, DRIVEWAY KNOCKDOWN IS DENOTED AS "B618 DWY CURB" ON THE PLAN FOR BOUNDING AREA. THE DROPPED CURB HEIGHT CAN BE CARRIED THROUGH BETWEEN DRIVEWAYS.

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H:\DEMARSCO_PR\M312743\2\CAD\C3D\127432C301.dwg 5/24/2024 10:41:43 AM

HORZ. SCALE 0 25 50 FEET

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.
NOT FOR CONSTRUCTION
ALEC W. PIETZ, P.E.
LIC. NO. 59617 DATE XX/XX/XXXX

BOLTON & MENK

1960 PREMIER DRIVE
MANKATO, MINNESOTA 56001
Phone: (507) 625-4171
Email: Mankato@bolton-menk.com
www.bolton-menk.com

DESIGNED	AWP
DRAWN	AWP
CHECKED	NM
CLIENT PROJ. NO.	0M3.127432

NO.	ISSUED FOR	DATE

RIVER BLUFF TOWNHOMES, LLC
RIVER BLUFF TOWNHOMES
GRADING PLAN
CENTERLINE & TOWNHOME GRADING OVERVIEW

SHEET C3.01

RIVER BLUFF COTTAGES

A B B R E V I A T I O N S

ADJ	ADJUSTABLE
AFF	ABOVE FLOOR FINISH
AL	ALUMINUM
ACT	ACOUSTICAL CEILING TILE
ACP	ACOUSTICAL CEILING PANEL
BL	BRICK LEDGE
BITUM	BITUMINOUS
BLDG	BUILDING
BRG	BEARING
C	CONDUIT
CAB	CABINET
CB	CATCH BASIN
CH	COAT HOOK
CI	CAST IRON
CJ	CONTROL JOINT
CKT	CIRCUIT
CPT	CARPET
℄	CENTER LINE
CLG	CEILING
CL	CLOSET
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONTR	CONTRACTOR
CORR	CORRIDOR
CRS	COURSE
CTR	COUNTER
DS	DOWNSPOUT
DTL	DETAIL
DWG	DRAWING
EL	ELEVATION
ELEC	ELECTRIC
ELEV	ELEVATOR
EQUIP	EQUIPMENT
EXIST	EXISTING
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
	W/ FIRE EXTINGUISHER
FIN	FINISHED
FLR	FLOOR
FNDTN	FOUNDATION
FUT	FUTURE
GA	GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GYP BRD	GYP BD
GWB	GYPSUM WALL BOARD
HC	HANDICAPPED
HDR	HEADER
HM	HOLLOW METAL
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
IE	INVERT
INSUL	INSULATION
I.C.	IN CONTRACT
LAV	LAVATORY
LL	LOWER LEVEL
MFG	MANUFACTURING
MH	MANHOLE
MO	MASONRY OPENING
MTD	MOUNTED
MTG	MOUNTING
N.I.C.	NOT IN CONTRACT
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OVHD	OVERHEAD DOOR
PL	POLE
PT	PAINT
PTD	PAINTED
R.C.	ROOF CONDUCTOR
R.D.	ROOF DRAIN
REF	REFRIGERATOR
R.I.	ROUGH IN
R.O.	ROUGH OPENING
SAN	SANITARY SEWER
SDS	SOAP DISPENSER
SH	SHELF
ST	STORM SEWER
STL	STEEL
STR	STRUCTURAL
SS	STAINLESS STEEL
SUSP	SUSPENDED
T/C	TOP OF CONCRETE
TDS	TOWEL DISPENSER
TEL	TELEPHONE
T/S	TOP OF STEEL
TLT	TOILET
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD
W/	WITH
WC	WATER CLOSET
WM	WATER MAIN
WWF	WELDED WIRE FABRIC

S H E E T I N D E X

T1	TITLE SHEET
1.1	FLOOR PLANS
1.2	ROOF PLAN, DOOR SCHEDULE, WINDOW SCHEDULE
1.3	EXTERIOR ELEVATIONS
1.4	SECTIONS
1.5	SECTIONS
1.6	CABINET ELEVATIONS, ENLARGED KITCHEN PLAN
1.7	FLOOR FINISH PLANS, ROOM FINISH SCHEDULE
1.8	LIGHTING PLANS, LIGHTING SCHEDULE

GENERAL NOTES:

- ALL TRUSSES ARE TO BE ENGINEERED AND INSTALLED ACCORDING TO TRUSS MANUFACTURER
- TRUSS LAYOUTS TO BE VERIFIED BEFORE CONSTRUCTION
- TRUSS MANUFACTURER TO VERIFY HEADER/BEAM SIZES AND POINT LOADS WHERE GIRDERS EXERT CONCENTRATED LOADS
- ALL MICRO LAM BEAMS, GIRDER TRUSS SIZES AND LOCATIONS ARE TO BE STRUCTURALLY ENGINEERED AND VERIFIED PRIOR TO CONSTRUCTION
- ALL BONUS ROOMS TO BE VERIFIED BY TRUSS MANUFACTURER PRIOR TO CONSTRUCTION
- SOLID BEARING REQUIRED FOR ALL BEAMS AND HEADERS
- IRC CODE STATES ALL WALLS OVER 10'-0" IN HEIGHT REQUIRE ENGINEERING. ENGINEERING PROVIDED BY OTHERS.
- WHEN NARROW WALL CONSTRUCTION IS REQUIRED, THE METHOD IS TO BE VERIFIED BY THE BUILDER
- TYPICAL CEILING PLATE HEIGHT IS 8'-1⅛" UNLESS NOTED. REFER TO BUILDING AND WALL SECTIONS.
- 42" MINIMUM DEPTH REQUIRED FOR ALL NON-HEATED FROST FOOTINGS
- #6 REBAR @ 6'-0" O.C. AND WITHIN 12'-0" FROM CORNER
- #4 REBAR CONTINUOUS FOR FOOTING REINFORCEMENT
- VAPOR RETARDER REQUIRED UNDER ALL CONCRETE SLABS IN HABITABLE AREAS
- ANCHOR BOLTS @ 6'-0" O.C.
- 30" MINIMUM REQUIRED WIDTH @ TOILET LOCATIONS

CONSTRUCTION NOTES:

- WINDOWS TO BE CAULKED AND TAPED
- SILL SEALER TO BE INSTALLED UNDER ALL SILL PLATES
- SEALED CONTINUOUS AIR AND VAPOR BARRIER TO BE INSTALLED ON WARM SIDE OF EXTERIOR WALLS, WITH ALL JOINTS, OPENINGS AND PENETRATIONS SEALED IN A PERMANENT MATTER
- PENETRATION IN THE RIM JOIST OR WALLS BY SUB-CONTRACTORS TO BE SEALED
- UNSUPPORTED SHEATHING JOINTS TO BE SEALED ON EXTERIOR OF JOINT
- AIR BARRIER ON EXTERIOR OF HOME TO BE WITH J-BLOCKS OR SOLID WOOD BLOCK FOR PENETRATIONS
- ATTIC ACCESS TO BE SEALED WITH SPRAY TEXTURE OR CAULK
- 92% SEALED COMBUSTION FURNACE
- CENTRALIZED EXHAUST SYSTEM
- DIRECT VENT GAS WATER HEATER
- MAXIMUM 300 CFM ON ANY ONE APPLIANCE
- SMOKE DETECTORS REQUIRED IN COMMON AREA AND ALL BEDROOMS
- HOUSE/GARAGE COMMON WALLS AND CEILINGS TO BE SHEETROCKED WITH ⅝" SHEETROCK FOR FIRE PROECTION
- SAFETY GLAZING REQUIRED FOR ALL GLASS WITHIN 18" OF THE FLOOR
- SAFETY GLAZING REQUIRED FOR ALL GLASS WITHIN 24" ARC SWING OF DOORS
- SAFETY GLAZING REQUIRED FOR ALL GLASS WITHIN STAIRWELLS

CONSULTANTS

PROJECT INFO

RIVER BLUFF COTTAGES

MARK	DATE	DESCRIPTION
1	–	–

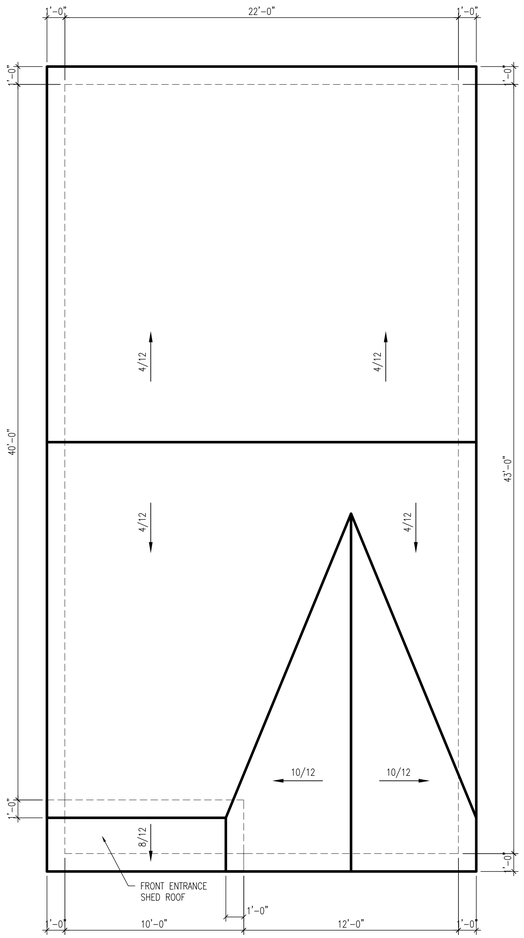
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DATE:	05-26-26
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CHK'D BY:	SAK
COPYRIGHT:	–

SHEET TITLE

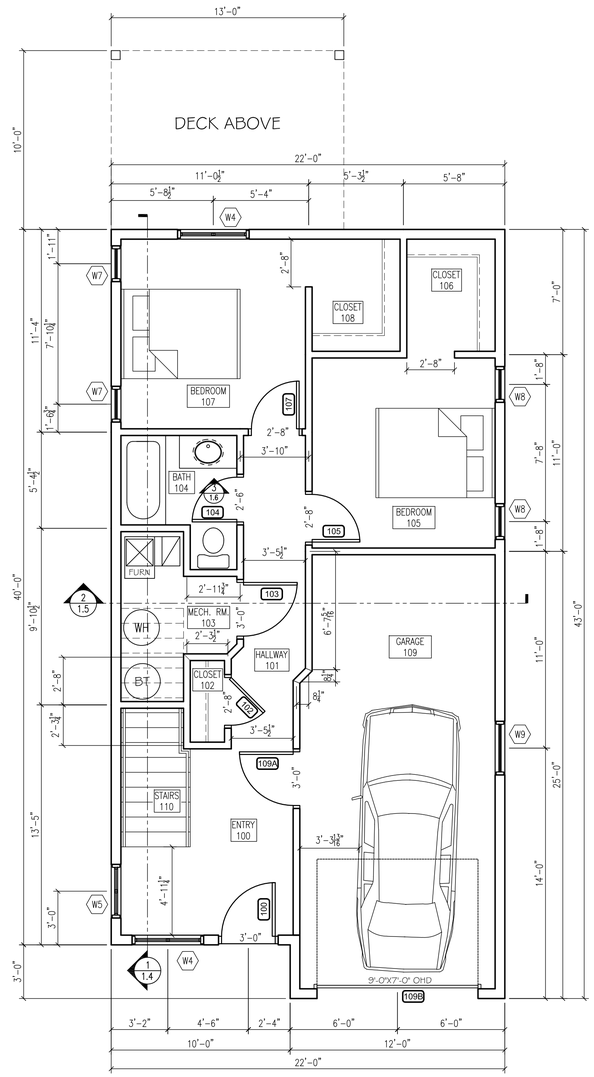
TITLE SHEET ,SHEET INDEX, ABBREVIATIONS, CONSTRUCTION NOTES

T1

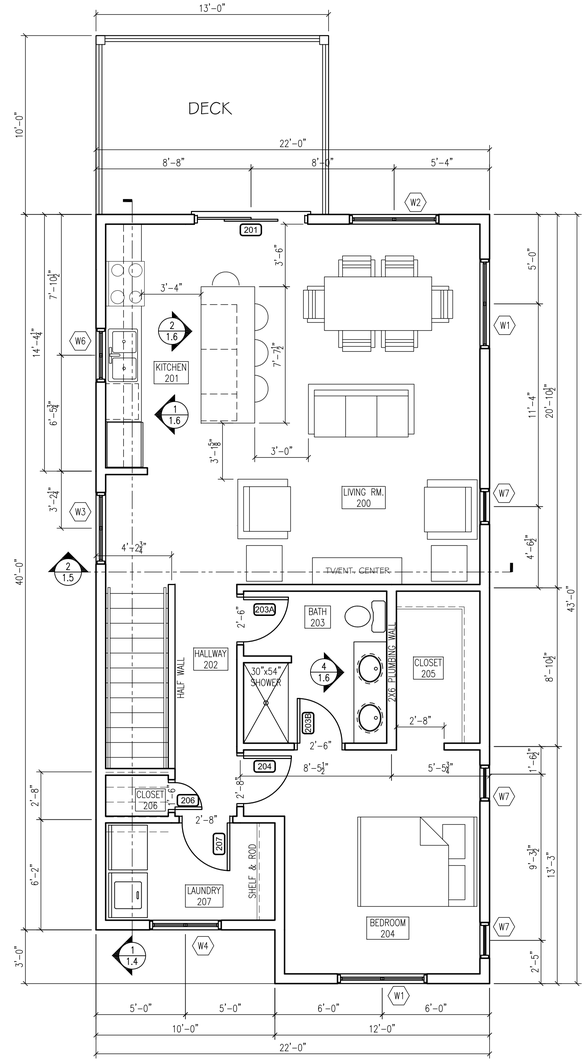
SHEET 1 OF 9



3 ROOF PLAN
SCALE: $\frac{1}{4}$"= 1'-0"



1 MAIN FLOOR PLAN
SCALE: $\frac{1}{4}$"= 1'-0"



2 UPPER FLOOR PLAN
SCALE: $\frac{1}{4}$"= 1'-0"

CONSULTANTS

PROJECT INFO

RIVER BLUFF COTTAGES

MARK	DATE	DESCRIPTION
A	-	-

PROJECT NO: ----
DATE: 05-26-26
DRAWN BY: SAK
CHK'D BY: SAK
COPYRIGHT: -

SHEET TITLE

FLOOR PLANS
ROOF PLAN

1.1

SHEET 2 OF 9

DOOR SCHEDULE - TYPICAL PER UNIT

NUMBER	RATING	DOOR						FRAME							HARDWARE	REMARKS
		TYPE	MATERIAL	WIDTH	HEIGHT	THICKNESS	GLASS	TYPE	MATERIAL	DEPTH	HEAD	JAMB	SILL	GLASS		
100		A	FIBERGLASS	3'-0"	6'-8"	1-3/4"	TEMP	2	WOOD	-	-	-	-	-	-	①②
102		C	MDF	2'-8"	6'-8"	1-3/4"		2	WOOD	-	-	-	-	-	-	①
103	60 MIN.	C	MDF	3'-0"	6'-8"	1-3/4"	-	2	WOOD	-	-	-	-	-	-	①
104	-	D	MDF	2'-8"	6'-8"	1-3/8"	-	1	WOOD	-	-	-	-	-	-	①②
105	-	D	MDF	2'-8"	6'-8"	1-3/8"	-	1	WOOD	-	-	-	-	-	-	①②
106	-	G	MDF	2'-6"	6'-8"	1-3/8"	-	1	WOOD	-	-	-	-	-	-	①
107	-	G	MDF	2'-8"	6'-8"	1-3/8"	-	1	WOOD	-	-	-	-	-	-	①②
108	-	G	MDF	2'-6"	6'-8"	1-3/8"	-	1	WOOD	-	-	-	-	-	-	①
109A	-	B	FIBERGLASS	3'-0"	6'-8"	1-3/8"	-	1	WOOD	-	-	-	-	-	-	①
109B	-	E	STEEL	8'-0"	7'-0"	1-3/8"	-	1	STEEL	-	-	-	-	-	-	
201	-	D	VINYL	6'-0"	6'-8"	1-3/8"	-	1	VINYL	-	-	-	-	-	-	①②
203A	-	C	MDF	2'-6"	6'-8"	1-3/8"	-	1	WOOD	-	-	-	-	-	-	①②
203B	-	C	MDF	2'-6"	6'-8"	1-3/8"	-	1	WOOD	-	-	-	-	-	-	①②
204	-	C	MDF	2'-8"	6'-8"	1-3/8"	-	1	WOOD	-	-	-	-	-	-	①②
206	-	C	MDF	1'-6"	6'-8"	1-3/8"	-	1	WOOD	-	-	-	-	-	-	①
207	-	C	MDF	2'-8"	6'-8"	1-3/8"	-	1	WOOD	-	-	-	-	-	-	①

ABBREVIATIONS LEGEND

ALUM	ALUMINUM
EXIST	EXISTING
INSUL	INSULATION
HM	HOLLOW METAL
MDF	MEDIUM DENSITY FIBER
STL	STEEL
TEMP	TEMPERED GLASS
WDSC	WOOD-SOLID CORE
WD	WOOD

GENERAL NOTES

1. ALL INTERIOR DOORS TO BE PREFINISHED 2 PANEL WHITE
2. ALL INTERIOR DOOR CASING TO BE 2-1/4" WIDTH AND PREFINISHED WHITE

REMARKS

① ALL INTERIOR DOOR HARDWARE TO BE MATTE BLACK KNOBS.

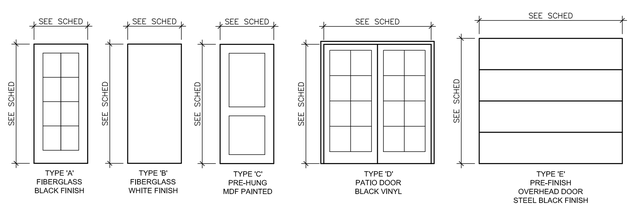
② HARDWARE TO INCLUDE PRIVACY SETTING.

FIXTURE & FINISH SUMMARY

DESCRIPTION	SYMBOL	MANUFACTURER	STYLE	COLOR	SIZE	OTHER
FLOORING						
LVP	LVP	PHILADELPHIA COMMERCIAL/5TH & MAIN	ALBA RESERVE 20/5M329	OHLONE OAK-02027	7X48	
LVT	LVT	EMSER TILE	EMCORE LVP	HYLTON, IVORY, MATTE	12X24	
CARPET 1	CPT-1	PHILADELPHIA COMMERCIAL	ENGRAIN	ORGANIC-00505	12' ROLL	
CARPET 2	CPT-2	SHAW/5E907 GOOD MOVE II	5E907	720 WINTER DUNES	12' ROLL	
BASE MATERIAL						
WOOD BASE	B1		FLAT BASE	PRIMED/PAINT IN FIELD	3/8"X3-1/4"	
CASING MATERIAL						
WOOD CASING	C1		FLAT BASE	PRIMED/PAINT IN FIELD	7/16"X2-1/4"	
PAINT						
PAINT - WALLS	P1	SHERWIN WILLIAMS		MINDFUL GRAY/244-C2		
PAINT - INTERIOR DOORS	P2	SHERWIN WILLIAMS		PURE WHITE/255-C1		
PAINT - BASE & CASING (WOOD)	P3	SHERWIN WILLIAMS		PURE WHITE/255-C1		
PAINT - CEILING	P4	SHERWIN WILLIAMS		MINDFUL GRAY/244-C2		
PAINT - LAP SIDING	P5	SHERWIN WILLIAMS				
PAINT - PANELS	P6	SHERWIN WILLIAMS				
PAINT - ACCENT COLOR	P7	SHERWIN WILLIAMS				
PLUMBING						
KITCHEN FAUCET	PF-1	SPS/PIONEER-MOTEGI SERIES	2MT260-MB	MATTE BLACK		
BATH FAUCET	PF-2	SPS/OLYMPIA-I2V SERIES	L-7522B	MATTE BLACK		
SHOWER TRIM SET	PF-3	SPS/OLYMPIA-I2V SERIES	T-2385	MATTE BLACK		
LIGHTING						
BATHROOM VANITY	L1	MENARDS/PATRIOT LIGHTING - 4 VANITY LIGHT		BLACK	24" WIDE	36" VANITIES
BATHROOM VANITY	L2	MENARDS/PATRIOT LIGHTING - 2 OR 3 LIGHT		BLACK	12X24	POWDER BATH
KITCHEN PENDANTS	L3	MENARDS/Z-LITE 3 LIGHT		MATTE BLACK	12" WIDE	
BEDROOM CEILING FAN	L4	MENARDS/HUNTER PRESTO 52" FAN		MATTE BLACK	52"-3 BLADE	
CABINETS						
KITCHEN CABINETS		FGT	MW-01	MERCURY WHITE SHAKER		
BATH CABINETS		FGT	MB-12	MERCURY BLUE SHAKER		
COUNTERTOPS						
KITCHEN COUNTERTOPS	CT-1	Q-QUARTZ		FROST WHITE		
BATHROOM VANITIES	VT-1	WOLF CULTURED MARBLE	FLUSH RECTANGLE BOWL	COTTON WHITE		
HARDWARE						
CABINET HARDWARE		AMAZON/RAVINTE	RAVINTE	MATTE BLACK		

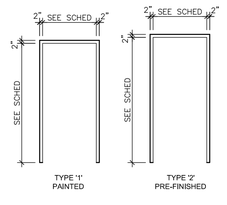
ROOM FINISH SCHEDULE - TYPICAL PER HOUSE

ROOM	FLOOR	BASE	WALLS								CEILING		REMARKS
			NORTH		EAST		SOUTH		WEST				
			MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	HEIGHT	
ENTRY 100	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
HALLWAY 101	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
CLOSET 102	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
MECH RM. 103	CONC	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
BATH 104	LVT	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
BEDROOM 105	CPT-2	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
CLOSET 106	CPT-2	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
BEDROOM 107	CPT-2	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
CLOSET 108	CPT-2	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
GARAGE 109	CONC	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
LIVING ROOM 200	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
KITCHEN 201	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
HALLWAY 202	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
BATH 203	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
BEDROOM 204	CPT-2	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
CLOSET 205	CPT-2	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
CLOSET 206	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
LAUNDRY 207	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②



DOOR TYPES

1/4" = 1'-0"



FRAME TYPES

1/4" = 1'-0"

WINDOW SCHEDULE

WINDOW DESIG.	MATERIAL	R.O. WIDTH	R.O. HEIGHT	FUNCTION	INTERIOR FINISH	EXTERIOR FINISH		REMARKS
W1	VINYL	5'-0"	4'-0"	CASEMENT	BLACK	BLACK		①②③④⑤
W2	VINYL	5'-0"	4'-0"	PICTURE	BLACK	BLACK		①②③④
W3	VINYL	4'-0"	4'-0"	CASEMENT	BLACK	BLACK		①②③④
W4	VINYL	4'-0"	3'-6"	CASEMENT	BLACK	BLACK		①②③④⑤
W5	VINYL	3'-0"	3'-6"	CASEMENT	BLACK	BLACK		①②③④
W6	VINYL	3'-0"	3'-0"	CASEMENT	BLACK	BLACK		①②③④
W7	VINYL	2'-0"	4'-0"	PICTURE	BLACK	BLACK		①②③④
W8	VINYL	2'-0"	4'-0"	CASEMENT	BLACK	BLACK		①②③④⑤
W9	VINYL	3'-0"	1'-6"	AWNING	BLACK	BLACK		①②③④

GENERAL NOTES

1. GRILLES IN GLASS
2. CLEAR, LOW E GLASS
3. EXTENSION JAMBS AS NEEDED FOR 2X6 EXTERIOR WALL FRAMING
4. WINDOW CASINGTO BE 2-1/4" WIDTH AND PREFINISHED WHITE
5. WINDOW TO MEET EGRESS REQUIREMENTS

CONSULTANTS

PROJECT INFO

RIVER BLUFF
COTTAGES

MARK	DATE	DESCRIPTION
1.	10-3-24	OVERALL DESIGN CHANGES

PROJECT NO: -----

DATE: 05-26-26

DRAWN BY: SAK

CHK'D BY: SAK

COPYRIGHT: -

SHEET TITLE

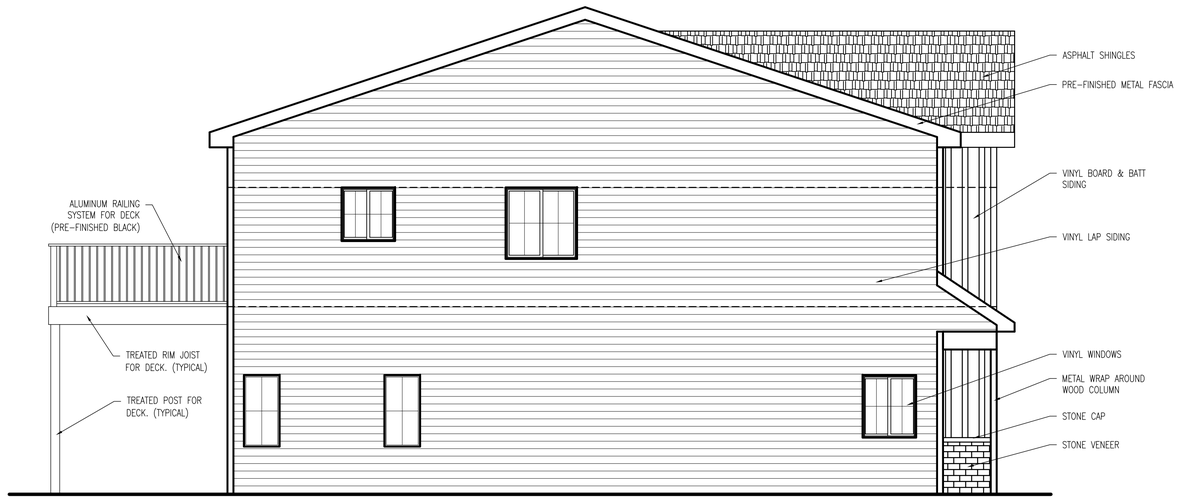
SCHEDULES
ROOF PLAN
DOOR/FRAME TYPES

1.2

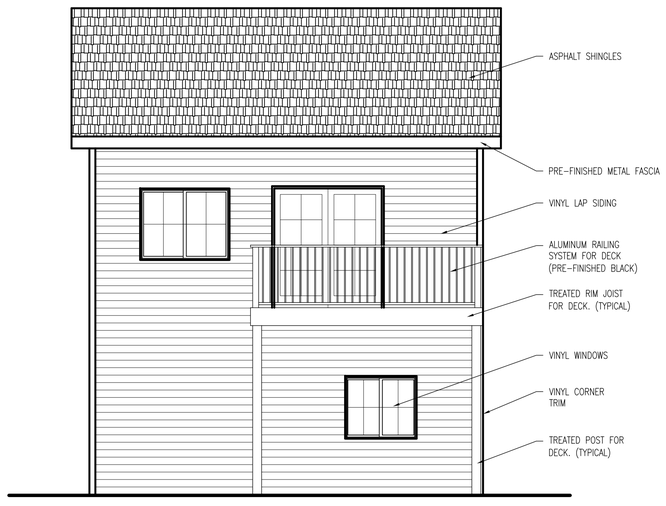
SHEET 3 OF 9



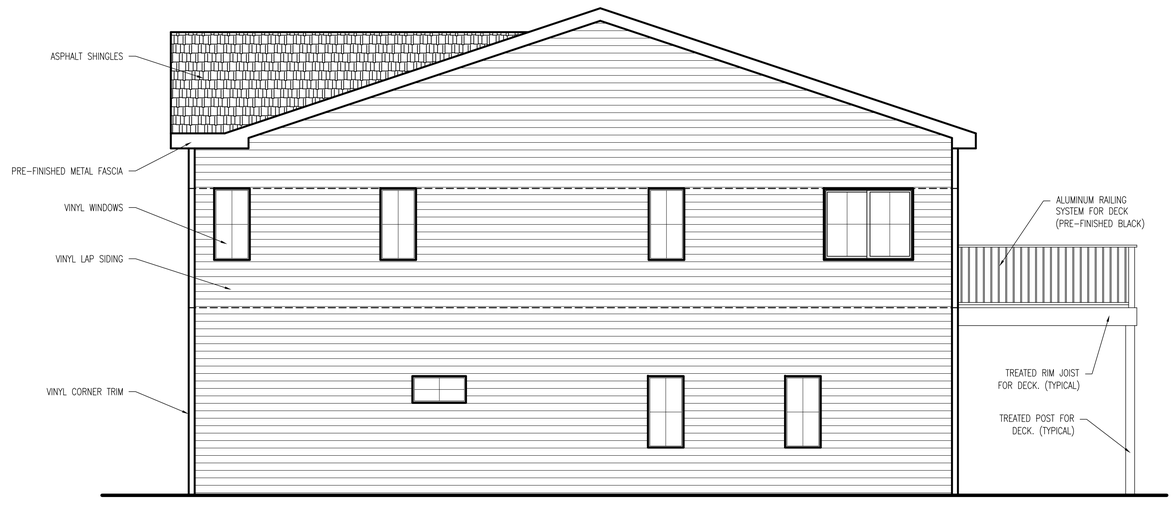
1 FRONT ELEVATION
SCALE: $\frac{1}{4}$"= 1'-0"



2 LEFT ELEVATION
SCALE: $\frac{1}{4}$"= 1'-0"



3 BACK ELEVATION
SCALE: $\frac{1}{4}$"= 1'-0"



4 RIGHT ELEVATION
SCALE: $\frac{1}{8}$"= 1'-0"

CONSULTANTS

PROJECT INFO

RIVER BLUFF COTTAGES

MARK	DATE	DESCRIPTION
1	-	-

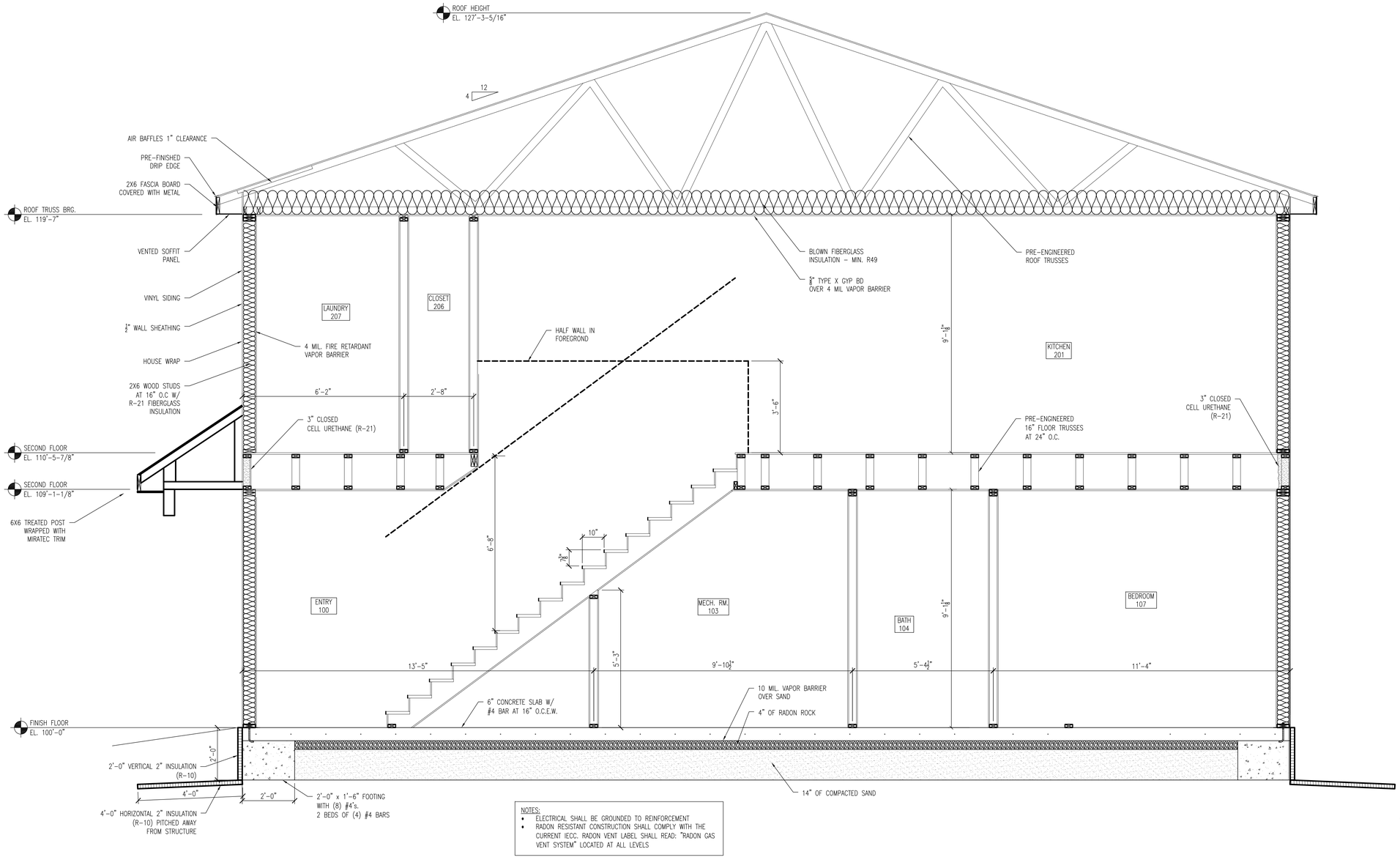
PROJECT NO: -----
DATE: 05-26-26
DRAWN BY: SAK
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SHEET TITLE

EXTERIOR ELEVATIONS

1.3

SHEET 4 OF 9



NOTES:
- ELECTRICAL SHALL BE GROUNDED TO REINFORCEMENT
- RADON RESISTANT CONSTRUCTION SHALL COMPLY WITH THE CURRENT IECC. RADON VENT LABEL SHALL READ: "RADON GAS VENT SYSTEM" LOCATED AT ALL LEVELS

1 HOUSE SECTION
SCALE: 1/2"= 1'-0"

CONSULTANTS

PROJECT INFO

RIVER BLUFF COTTAGES

MARK	DATE	DESCRIPTION
1	-	-

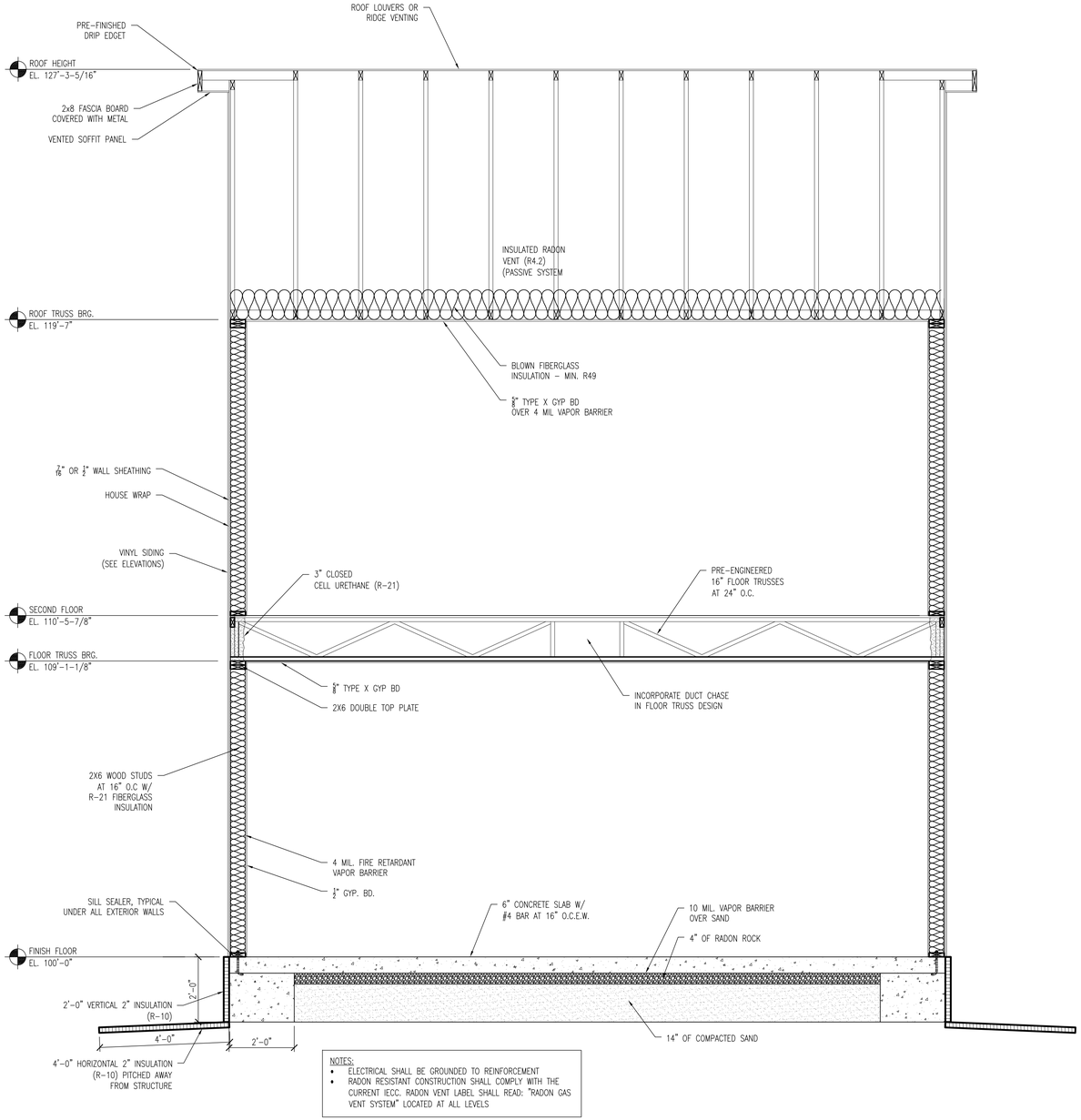
PROJECT NO: ----
DATE: 05-26-26
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SHEET TITLE

BUILDING SECTION

1.4

SHEET 5 OF 9



NOTES:
- ELECTRICAL SHALL BE GROUNDED TO REINFORCEMENT
- RADON RESISTANT CONSTRUCTION SHALL COMPLY WITH THE CURRENT IECC. RADON VENT LABEL SHALL READ: "RADON GAS VENT SYSTEM" LOCATED AT ALL LEVELS

1 HOUSE SECTION
SCALE: 1/2" = 1'-0"

CONSULTANTS

PROJECT INFO

RIVER BLUFF COTTAGES

MARK	DATE	DESCRIPTION
2.	-	-

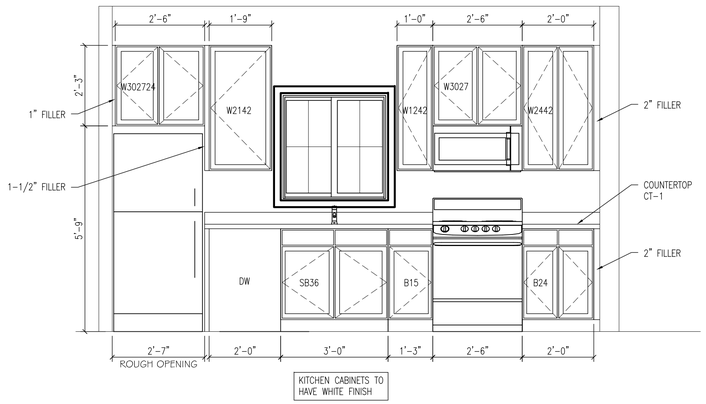
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DATE: 05-26-26
DRAWN BY: SAK
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SHEET TITLE

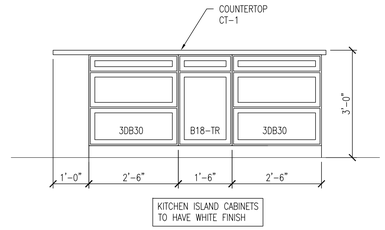
BUILDING SECTION
WALL SECTION

1.5

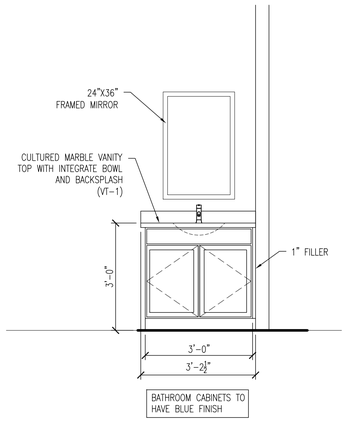
SHEET 6 OF 9



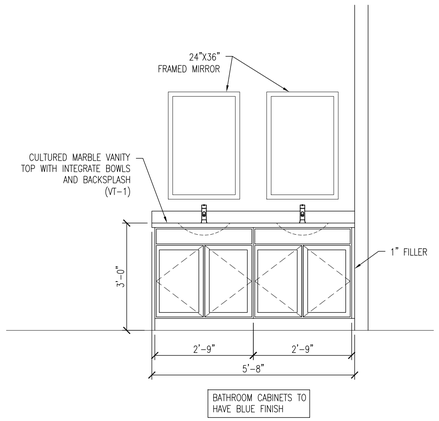
1 ENLARGED KITCHEN PLAN
SCALE: $\frac{1}{2}$"= 1'-0"



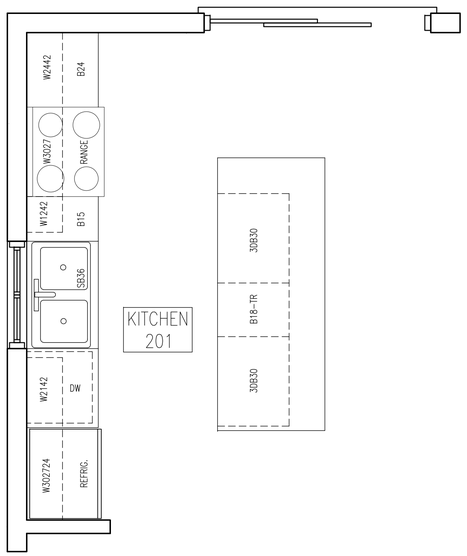
2 ENLARGED KITCHEN PLAN
SCALE: $\frac{1}{2}$"= 1'-0"



3 BATHROOM ELEVATION
SCALE: $\frac{1}{2}$"= 1'-0"



4 ENLARGED KITCHEN PLAN
SCALE: $\frac{1}{2}$"= 1'-0"



5 ENLARGED KITCHEN PLAN
SCALE: $\frac{1}{2}$"= 1'-0"

CONSULTANTS

PROJECT INFO

RIVER BLUFF
COTTAGES

MARK	DATE	DESCRIPTION
1	-	-

PROJECT NO: ----
DATE: 05-26-26
DRAWN BY: SAK
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SHEET TITLE

CABINETS ELEVATIONS,
ENLARGED KITCHEN PLAN,

1.6

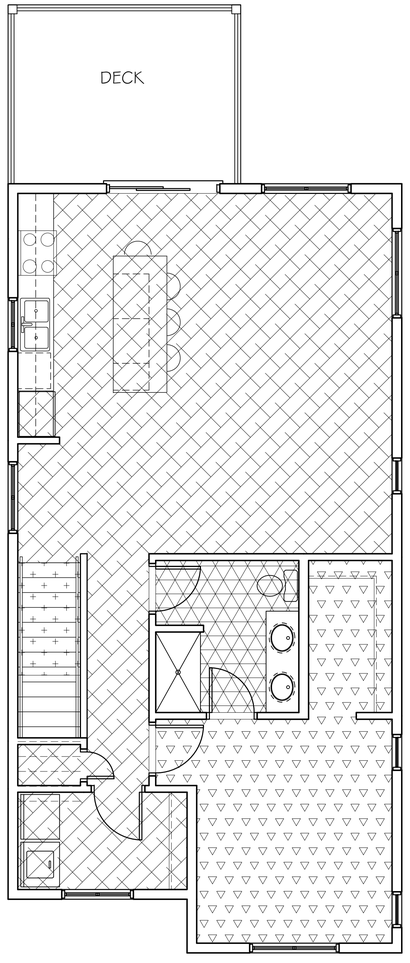
SHEET 7 OF 9

ROOM FINISH SCHEDULE - TYPICAL PER HOUSE

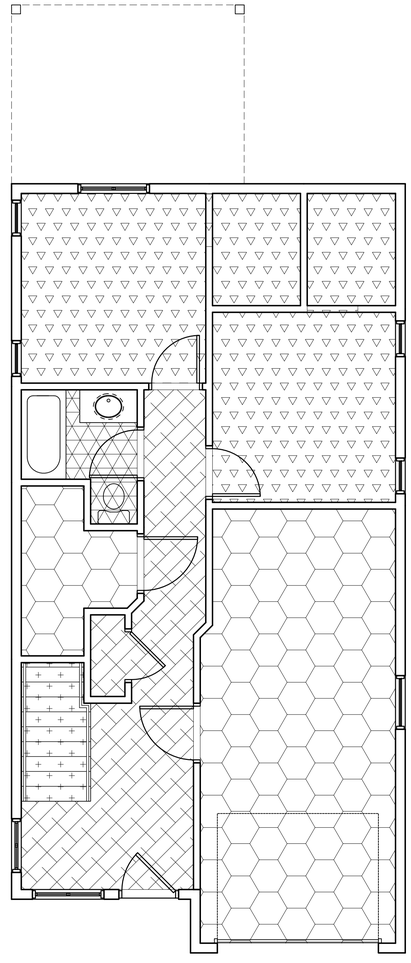
ROOM	FLOOR	BASE	WALLS								CEILING		REMARKS
			NORTH		EAST		SOUTH		WEST				
			MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	HEIGHT	
ENTRY 100	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
HALLWAY 101	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
CLOSET 102	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
MECH RM. 103	CONC	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
BATH 104	LVT	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
BEDROOM 105	CPT-2	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
CLOSET 106	CPT-2	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
BEDROOM 107	CPT-2	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
CLOSET 108	CPT-2	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
GARAGE 109	CONC	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
LIVING ROOM 200	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
KITCHEN 201	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
HALLWAY 202	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
BATH 203	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
BEDROOM 204	CPT-2	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
CLOSET 205	CPT-2	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
CLOSET 206	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②
LAUNDRY 207	LVP	WD	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	P-1	GYP BD	9'-1 1/8"	①②

FLOORING LEGEND

- LVP
- LVT
- CARPET 1 (CPT 1)
- CARPET 2 (CPT 2)
- CONCRETE



1 MAIN LEVEL - FLOORING PLAN
SCALE: 1/4" = 1'-0"



2 UPPER LEVEL - FLOORING PLAN
SCALE: 1/4" = 1'-0"

CONSULTANTS

PROJECT INFO

RIVER BLUFF
COTTAGES

MARK	DATE	DESCRIPTION
1	-	-

PROJECT NO: ----
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SHEET TITLE

FINISH PLANS
ROOM FINISH SCHEDULE
FLOORING LEGEND

1.7

SHEET 8 OF 9

BOLTON & MENK
Real People. Real Solutions.

1960 Premier Drive
Mankato, MN 56001-5900

Ph: (507) 625-4171
Fax: (507) 625-4177
Bolton-Menk.com

Stormwater Memorandum

Date: May 28, 2024

To: Michael McCarty, P.E. – City of Mankato

Cc: Mark Konz – City of Mankato

From: Alec Pietz, P.E. – Senior Project Engineer

Subject: River Bluff Townhomes
River Bluff Townhomes, LLC
BMI Project No.: 0M3.127432

I. Project Introduction

The following memorandum provides a summary and analysis of the hydrology and stormwater management for the proposed River Bluff Townhomes in Mankato, Minnesota. The proposed project includes the construction of pavement and infrastructure to accommodate townhome buildings. The project is located along Sibley Parkway on the south side of the Minnesota River. The property contains numerous dike and drainage easements with a major storm sewer system present and was a former industrial laydown property that has since undergone reclamation prior to this proposed development. The SCS TR-20 hydrology method was utilized in Autodesk Storm and Sanitary Analysis (SSA) 2019 for the project. NOAA Atlas 14 rainfalls for Mankato, Minnesota and MSE 3 distribution curves were used to develop rainfall events. Although additional storm events were used in the stormwater modeling, the 2-yr (2.87”), 5-yr (3.61”), 10-yr (4.29”), and 100-yr (7.21”) events are reported for relevant data in this report. This project was designed in accordance with the City of Mankato Grading Manual.

The location of the project is illustrated by the attached ***Figure 1***.

II. Existing Conditions

Figure 2 shows the existing drainage patterns and characteristics.

The property currently exists as a grass lot with a total approximate drainage area of 4.7 acres that discharges by overland flow to storm sewer within dike and drainage easements and some to adjacent property to the east. As mentioned, the property was historically an impervious industrial laydown site prior to reclamation and for the purposes of this report is the basis of existing conditions. The existing peak flow rates for this drainage area are:

Existing Condition Peak Flow Rates (cfs)				
Location	**2-yr**	**5-yr**	**10-yr**	**100-yr**
ADJ CB	1.14	1.44	1.72	2.90
EX CB 1	9.65	12.21	14.56	24.56
EX CB 2	2.27	2.88	3.43	5.79
EX CB 3	3.78	4.78	5.70	9.63
EX CB 4	1.30	1.64	1.96	3.31
Total	**18.14**	**22.95**	**27.37**	**46.19**

The proposed development must not exceed these peak rates.

III. Proposed Development

As previously mentioned, the proposed development includes site improvements that will accommodate new townhome buildings. These improvements greatly reduce the pre-reclamation impervious area. Due to an abundance of elevation difference throughout the site, a 100-year storm is conveyed in the proposed storm sewer.

Peak flows from the site for the design storms were modeled and are tabulated below:

Proposed Condition Peak Flow Rates (cfs)				
Location	**2-yr**	**5-yr**	**10-yr**	**100-yr**
ADJ CB	0.37	0.56	0.74	1.54
EX CB 1 (OVERLAND)	1.11	1.64	2.13	4.32
EX CB 1 (STORM CONNECTION)	5.84	7.77	9.36	12.40
EX CB 2	1.14	1.71	2.26	4.71
EX CB 3	2.08	3.07	4.03	8.23
EX CB 4	0.58	0.86	1.13	2.33
Total	**11.12**	**15.61**	**19.65**	**33.53**
Existing Peak Rate	18.14	22.95	27.37	46.19

The proposed peak flows do not exceed the overall existing peak rate along with each individual location.

Figure 3 attached with this memo shows the drainage areas and routing throughout the site.

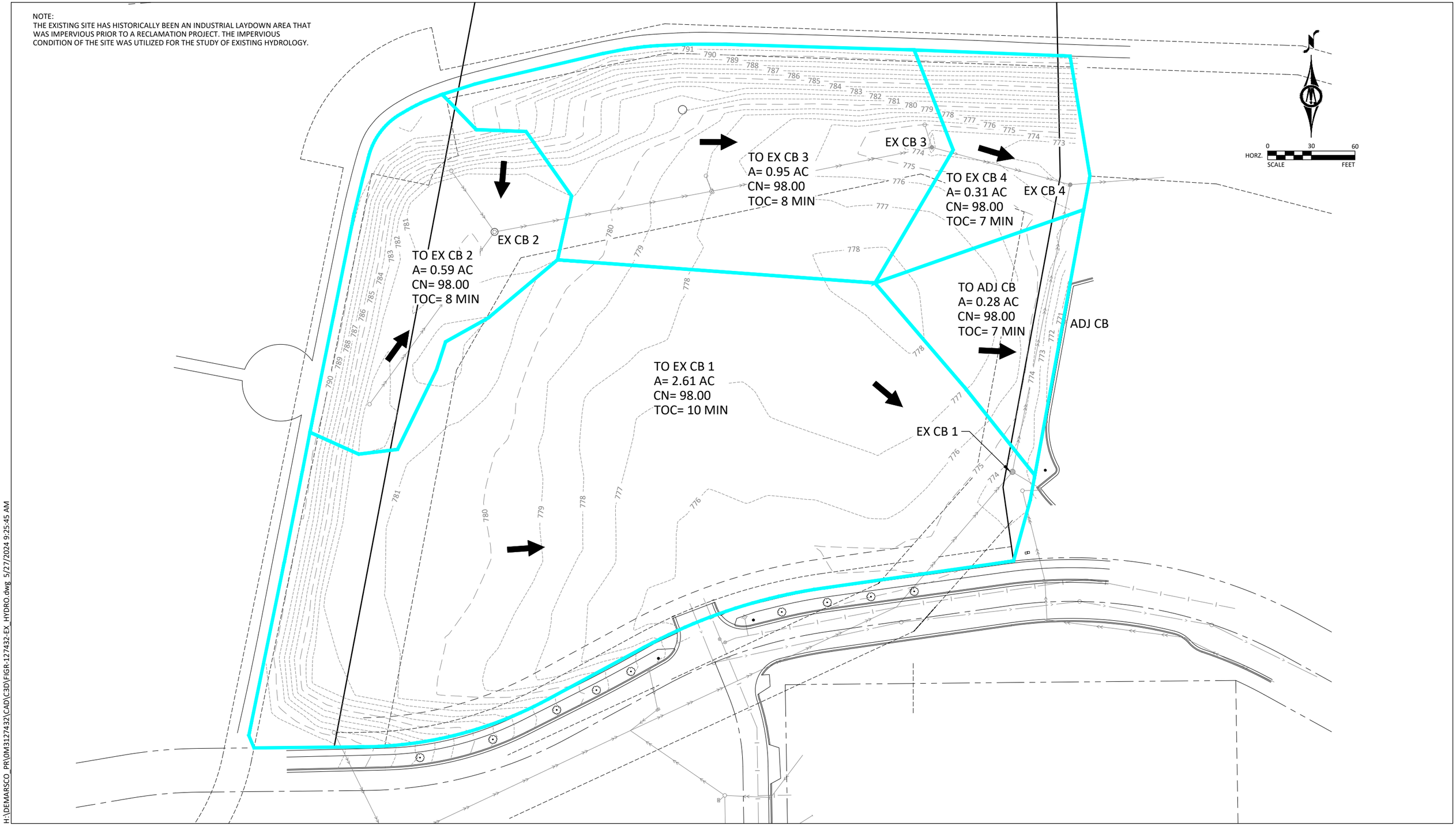
Erosion and sediment control best management practices will be implemented as shown in the Erosion & Sediment Control Plan in the construction documents to mitigate construction stormwater runoff and potential pollution. These will be in conformance with the City of Mankato Grading Manual.

Please review the provided information and Civil construction documents and feel free to contact Alec Pietz, P.E. at Alec.Pietz@bolton-menk.com or 507-625-4171 ext. 3310.



H:\DEMARSCO PR\0M3127432\CAD\C3D\FIGR-127432-LOCATION.dwg 5/27/2024 9:27:11 AM

NOTE:
THE EXISTING SITE HAS HISTORICALLY BEEN AN INDUSTRIAL LAYDOWN AREA THAT WAS IMPERVIOUS PRIOR TO A RECLAMATION PROJECT. THE IMPERVIOUS CONDITION OF THE SITE WAS UTILIZED FOR THE STUDY OF EXISTING HYDROLOGY.



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RIVER BLUFF TOWNHOMES

MANKATO, MINNESOTA

FIRE TRUCK TURNING MOVEMENT & SNOW MANAGEMENT

MAY 2024

BOLTON & MENK



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River Bluff Cottages

Administrative Documents

Page 2	Planning Department Cover Letter
Page 3	Updated Submission Narrative
Page 5	Summary of Updates Since Prior Approval Memorandum
Page 7	2024 Submission

May 26, 2026

City of Mankato

Community Development Department
10 Civic Center Plaza
Mankato, MN 56001

Re: River Bluff Cottages – Updated Submission Materials
Outlot A, Sibley Parkway
PID: R010813101049

To City Staff,

River Bluff Cottages, LLC respectfully submits updated development materials associated with the previously approved River Bluff Cottages Planned Unit Development, Preliminary Plat, and Final Plat approvals.

The River Bluff Cottages project is a previously approved residential Planned Unit Development located along Sibley Parkway adjacent to the Minnesota River corridor. The original Planned Unit Development was approved in 2022, and the project later received amended Planned Unit Development, Preliminary Plat, and Final Plat approvals in 2024.

The purpose of the current submission is to provide updated architectural plans and supporting engineering documentation associated with the continued advancement of the project.

The updated plans remain substantially consistent with the development framework previously reviewed and approved by the City of Mankato.

Please contact us if additional information or supporting materials are required during the review process.

Sincerely,

Joe Richter
Factor Development
Authorized Development Representative
River Bluff Cottages, LLC

River Bluff Cottages

Updated Submission Narrative

City of Mankato

2026 Resubmittal Package

Project Background

River Bluff Cottages is a previously approved residential Planned Unit Development (PUD) located on Outlot A, Sibley Parkway, in the City of Mankato, Minnesota. The property is located north of Sibley Parkway, west of Highway 169, and adjacent to the Minnesota River.

The original Planned Unit Development for the property was approved by the City of Mankato in 2022. In 2024, the project returned to the City for review and approval of an amended Planned Unit Development, Preliminary Plat, and Final Plat associated with updated development plans.

The 2024 approval included:

- Amended Planned Unit Development approval
- Preliminary Plat approval
- Final Plat approval
- Approval of a 20-unit residential cottage-style development
- Private internal roadway access identified as Rogers Trail
- Associated grading, drainage, landscaping, and utility coordination

The applicant is now submitting updated architectural and supporting development materials associated with the previously approved River Bluff Cottages development.

Project Description

The proposed development consists of a 20-unit residential cottage community arranged around a privately maintained internal roadway system connected to Sibley Parkway.

The development is designed to provide a high-quality residential environment that complements the surrounding neighborhood while incorporating significant open space, landscaping, and coordinated site design.

The project site contains approximately 4.53 acres and includes existing drainage, dike, trail, and utility easements associated with the Minnesota River corridor and surrounding infrastructure.

The development includes:

- 20 residential cottage units
- Private internal roadway system

- Individual garages and driveway parking
- Shared green space and landscaped common areas
- Fire access hammerhead turnaround
- Stormwater management infrastructure
- Coordinated grading and drainage improvements

Requested Action

The applicant respectfully requests review and approval of the updated development materials associated with the previously approved River Bluff Cottages Planned Unit Development, Preliminary Plat, and Final Plat approvals.

River Bluff Cottages

Summary of Updates Since Prior Approval

City of Mankato

2026 Resubmittal Memorandum

Project Overview

River Bluff Cottages is a previously approved residential Planned Unit Development located on Outlot A, Sibley Parkway, within the City of Mankato, Minnesota.

The original Planned Unit Development associated with the property was approved by the City of Mankato in 2022. In 2024, the project returned to the City for review and approval of an amended Planned Unit Development, Preliminary Plat, and Final Plat associated with updated development plans.

Development Summary

Previously approved project characteristics that remain consistent include:

- 20-unit residential development
- Rogers Trail private drive access
- Shared open-space concept
- Similar parking configuration
- Existing roadway circulation framework
- Stormwater management coordination
- Fire access and emergency circulation

Architectural Updates

Updated architectural plans refine and modernize the architectural appearance, building layouts, elevations, material selections, and interior configurations associated with the previously approved development concept.

The updated plans do not substantially alter:

- Site access locations
- Overall project density
- Traffic circulation patterns
- Stormwater management intent
- Easement coordination
- Emergency access configuration

Civil Engineering & Infrastructure Updates

Updated engineering materials include:

- Grading Plan
- Stormwater Memorandum
- Drainage Routing Exhibits
- Fire Truck Turning Movement Exhibit
- Snow Management Exhibit
- Landscaping Plan

Consistency with Prior Approvals

The applicant believes the updated development materials remain substantially consistent with the development framework previously reviewed and approved by the City of Mankato.

River Bluff Cottages

July 2024 Submission

Request of River Bluff Cottages, LLC for a preliminary and final plat review of River Bluff Cottages, and for an amendment to the previously approved Planned Unit Development. The subject property is described as Outlot A, Sibley Parkway (Blue Earth County PID R010813101049).

The anticipated date of City Council action is July 8, 2024.

Applicant

The applicant is Riverbluff Cottages, LLC.

Request

The applicant is requesting the review of a preliminary and final plat of River Bluff Cottages, and for an amendment to the previously approved Planned Unit Development.

Location

The property is described as Outlot A, Sibley Parkway (Blue Earth County PID R010813101049).

Zoning

The property is zoned R-2, One- and Two-Family Dwelling District.

Environmentally Sensitive Areas

The Minnesota River is located to the north of the subject property.

Public Utilities

The site has access to public utilities via Sibley Parkway and Rogers Street.

City Code

Mankato City Code section 10.14, R-2 One- and Two- Family Dwelling District, can be found at the following link:
https://library.municode.com/mn/mankato/codes/code_of_ordinances?nodeId=CH10LAUSZO_PTIIREDI_S10.14OMIDWDI

Mankato City Code section 10.62, P-I Planned Industrial District can be found at the following link:
https://library.municode.com/mn/mankato/codes/code_of_ordinances?nodeId=CH10LAUSZO_PTVIIINDI_S10.62PIPLINDI

Mankato City Code section 10.64, M-2 Heavy Industrial District can be found at the following link:
https://library.municode.com/mn/mankato/codes/code_of_ordinances?nodeId=CH10LAUSZO_PTVIIINDI_S10.64HEINDI

Mankato City Code Section 11.05, Design Standards, can be found at the following link:
https://library.municode.com/mn/mankato/codes/code_of_ordinances?nodeId=CH11SUDEREPL_S11.05DEST

Mankato City Code section 10.93 Planned Unit Developments, can be found at the following link:
https://library.municode.com/mn/mankato/codes/code_of_ordinances?nodeId=CH10LAUSZO_PTXADEN_S10.93PLUNDE

Mankato City Code section 10.98 Amendments, can be found at the following link:
https://library.municode.com/mn/mankato/codes/code_of_ordinances?nodeId=CH10LAUSZO_PTXADEN_S10.98AM

Site Plan Review Comments

The Site Plan and Traffic Advisory Committee met on June 11, 2024 and submitted the following comments were sent ot the applicants and their response is italicized:

1. There is a lack of green space for onsite recreation especially in a residential setting. – *with this revised PUD we have reduced the building footprint and created more green space on site. This area can be used for outside recreation and gathering space.*
2. The interior roadway will be privately owned and maintained. As association document will be required to address construction, maintenance, and repair. – *Noted. The association documents will be prepared and presented to the City of Mankato at the time of permitting.*
3. Any parking on the street needs to conform to fire lane restrictions. Overhang of emergency vehicles beyond the wheel base needs to be contained within the private roadway for turning movements. - *Noted*
4. Provide driveway grade to public safety to determine impacts on emergency vehicles. – *The grade is provided on sheet C3.02 (refer to the "Entrance Alignment" profile) and the plan view on sheet C3.01. The profile shows two vertical curves and a maximum grade of 7.5% for ~25-ft of roadway.*
5. Development agreement will have to be addressed between the developer and the current owner, or successor, to decide which party receives TIF. At this time, under the development agreement Rehof will retain and receive the tax increment. - *Noted*
6. Have they considered a private street name? Addresses will be single digits. – *Noted. Owner would like to request the private drive to be called "Rogers Trail".*
7. Applicant shall provide a refuse plan for the development. – *Noted. Refuse will be taken care at each cottage with their own container.*
8. Although the developer understands the property is not subject to the 25% Rental Density Ordinance, it is however subject to R-2 rental standards regarding occupancy and shall have the limited occupancy of two unrelated or a family. – *Noted*
9. Please update the plans to represent the height of the building at the mean height level between eaves. – *Noted. See updated front building elevation.*

Review

The applicant is requesting the review of a preliminary and final plat of River Bluff Cottages, and for an amendment to the previously approved Planned Unit Development.

Preliminary and Final Plat

The proposed River bluff Townhomes subdivision contains one lot and one block. The parcel is 4.53 acres and is located between the Minnesota River and Sibley Parkway. No new public streets or right-of-way dedication is proposed with the plat. The parcel encompasses several existing easements for dike, storm, drainage, and trail purposes. These easements will remain on the subject parcel and the concept plans for 20 townhomes do not show encroachments into said easement areas. The City's relief wells are noted on the plans and are covered with the existing easements on the site.

Parkland dedication occurred during the platting of Sibley Parkway when Lot 1, Block 1 of Sibley Parkway was dedicated to the City of Mankato for open space purposes.

Preliminary and Final Plat

The proposed River bluff Townhomes subdivision contains one lot and one block. The parcel is 4.35 acres and is located between the Minnesota River and Sibley Parkway. No new public street or right-of-way dedication is proposed with the plat. The parcel contains several existing easements for dike, storm, drainage, and trial purposes. These easements will remain on the subject parcel and the concept plans for 20 townhomes do not show encroachments into said easement areas. The City's relief wells are noted on the plans and are covered with the existing easements on the site.

Parkland dedication occurred during the platting of Sibley Parkway when Lot 1, Block 1 of Sibley parkway was dedicated to the City of Mankato for open space purposes.

Planned Unit Development

As part of the approval of the Sibley Parkway subdivision development, a planned unit development was required for development. The applicant is now requesting to amend the previously approved planned unit development.

With the planned unit development, the applicant has requested flexibility from the 25% rental density ordinance for the proposed development and is requesting that the development is not subject to the City's rental density standard. Mankato City Code Section 5.42, Subd. 20 states that not more than twenty-five (25) percent (rounded up) of the lots on any block shall be eligible to obtain a rental license or to be licensed as a rental property. A planned unit development is intended to encourage the efficient use of land and resources, to promote greater efficiency in public and utility services and to encourage innovation in the planning and building of all types of development and in exchange for providing public benefits, the Code allows flexibility. In this case, the proposed development provided the follow:

- The proposed development preserves the characteristics of the surrounding developments. Adjoining property to the south is existing single-family homes

(R-2 single family homes) and adjoining the property to the north is the Minnesota River and to the east is an apartment building.

- The proposed project is planned on re-developed property (formerly the Hanson Concrete Plant).
- The proposed project is near other residential zoning districts and is in line with the character of the City.
- The proposed development will create a pleasing environment to the surrounding neighborhoods. The proposed development is designed to provide the residents of the development open space for gathering.
- The proposed development will provide market-rate housing for the area.
- The development is in line with the planned re-development of the former Hanson Concrete Plant.

The applicant is proposing to construct 20 single family homes on the 4.53-acre parcel. The proposal achieves the required 2.0-acre minimum area required in Chapter 10.93 of the Mankato City Code for a planned unit development in the R-2 zoning district.

The homes are proposed as slab-on-grade single family homes.

The site plan shows 20 buildings sharing an access point on Sibley Parkway and sharing open and common areas within the development. A hammerhead turnaround area is shown on the easterly side of the subdivision where emergency vehicles and service vehicles will have sufficient room to maneuver around. As noted in the conditions, an updated truck turning movement will need to be provided to the city at time of building permit submittal in the form of turning wheel radius.

Parking standards for the proposed development achieve Mankato City Code requirements. Off-street parking for one-and-two family rental properties requires 2 parking stalls for each dwelling unit. Each proposed townhome includes 2 surface stalls and 2 stalls within the garage.

Floor plans submitted for the development show a ground floor containing tandem parking garage space, mechanical room and storage, and stairs. The main floor shows the main entry area, living room area, a kitchen, bonus room, powder bathroom, closet space, and a staircase. The top floor shows 3 bedrooms, 2 bathrooms, laundry, and closet space. The plans also depict a deck and a covered patio area below the deck. The deck and patio are not shown to encroach into the easement areas.

Exterior finish renderings show vertical siding in a white color and a stone veneer. All exterior lighting shall achieve Mankato City Code criteria.

The landscaping plan shows green space around the subject development. The plan proposes 20, 6' evergreen trees and 14, 2" sugar maple trees. Mankato City Code criteria for a planned unit development states that common open space within a planned unit development must be used for amenity or recreational purposes and that motor vehicle

parking areas and traffic corridors shall not be considered an approved use of common open space. The uses authorized for the common open space must be approved to the scale and character of the planned unit development, and consider the planned unit development's size, density, topography, and number and type of structures to be provided. The Code goes on to clarify that the common open space must be suitably improved for its intended use. Common open space containing natural features worthy of preservation may be left unimproved. The development plan must coordinate the improvement of the common open space and the construction of the permitted structures within the planned unit development. Staff recommends that the easement areas be maintained in a natural state, prairie grass, or in a manner acceptable to the Army Corp of Engineers. Staff recommends that in the grassy open area of the development a sidewalk connection be made to the trail on Sibley Parkway and that a gazebo or other development gathering area, sized appropriately, for said development be incorporated for a gathering area for the planned unit development residents.

As per the Mankato City Code for planned unit developments, all land shown on the approved development plan as common open space must be conveyed to trustees provided in the indenture establishing an association or similar organization for the maintenance of the planned unit development. Staff has recommended a condition which requires the documentation for the establishment of said association to be provided to the City at the time of building permit for the development. A recommendation has also been included that requests the submittal of a snow removal plan to demonstrate that the snow storage will not be placed in the fire truck turning area, nor will it be placed to potentially block access to the easement areas.

Findings

Staff respectfully submits the following findings of fact for the preliminary and final plat:

1. General Requirements
    1. The site is designed in conformance with the location and widths of streets, the general drainage situation, lot sizes and arrangement.
    2. A grading and drainage plan has been submitted for review by the public works staff.
    3. The Minnesota River is located to the North of the subject property and there are no noted encroachments into the existing areas.
2. Streets
    1. The applicant will not construct any new public streets, rather a driveway will provide access to the development from the already developed Sibley Parkway.
    2. The applicant shall construct a private street to serve the subdivision and assign it the name "Rogers Trial".
3. Easements
    1. The plat maintains the existing drainage, storm, dike and trail easements.
    2. The plat provides the standard easements required in Chapter 11 of the Mankato City Code.

4. Block Standards
    1. The proposed block layout conforms to the previously approved Sibley Parkway subdivision.
5. Lot Standards
    1. The subject parcel is not a corner lot and is not subject to extra width or depth for those purposes.
    2. The proposed lot depicts a development that achieves a front yard setback of 30'.
    3. The side lot lines are as established on the previous Sibley Parkway plat.
    4. The subject development is a double frontage lot and is not, thus, subject to said standards.
    5. The subject parcel conforms to the parking standards in Chapter 10 of the code.
    6. The lot abuts a watercourse and drainage water and is designed to accommodate the existing easements which protect those areas. A condition is included with this approval that, prior to work occurring, the Army Corp of Engineers provide their consent to said development.
6. Public Sites and Open Spaces
    1. Open space was dedicated as part of the Sibley Parkway development.

Staff respectfully submits the following findings of fact for the amended Planned Unit Development:

1. The development for the planned unit development will conform to the approved development plan; including all proposed covenants, easements, conditions of approval, and other provisions relating onto the bulk, location, and density of permitted structures, accessory structures, parking, and other public facilities.
2. A condition is included with the approval that requires that all land shown on the approved development plan.

Staff respectfully submits the following findings for the amended planned unit development:

1. The planned unit development satisfies the intent of the City of Mankato ordinance and does not jeopardize public health, safety, or welfare.
2. The development of the planned unit development will conform to the approved development plan; including all proposed covenants, easements, conditions of approval, and other provisions relating to the bulk, location, and density of permitted structures, accessory structures, parking, and other public facilities.
3. A condition is included with the approval that requires that all land shown on the approved development plan as common open space must be conveyed to trustees provided in the indenture establishing the association or similar organization for the maintenance of the planned unit development.
4. A condition of approval is included for the development of the open space for use of the residents, and no common open space may be put to any use not specified in the approved development plan.

5. The development identifies public benefits, which allows for flexibility from the 25% rental density ordinance.

Recommendation

Staff recommends the approval of the preliminary plat and final plat.

Staff recommends the approval of a planned unit development with the following conditions:

1. The proposed buildings shall be constructed as approved.
2. The development's rental licenses will be limited occupancy; occupancy will be limited to a family or no more than 2 unrelated adults.
3. Applicants shall receive approval from the Army Corp of Engineers for the project prior to the submission of a building permit for the project.
4. The easement areas shall be clearly delineated onsite by a surveyor licensed to do work in the State of Minnesota, and protected using BMP's. BMP's shall be in place prior to construction occurring and a pre-construction meeting with the developer, contractor and City staff will be required prior to construction occurring.
5. The private driveway/street shall be given the name "Rogers Trail" for addressing purposes. The applicant shall install private signage to the specifications provided by the City of Mankato, and the signage shall be installed prior to the issuance of a building permit and shall remain in place and be verified on the final certificate of occupancy.
6. The proposed hammer-head areas shall be clearly identified as a fire accessway only and shall be clearly designated as a no-parking area.
7. Applicant shall provide a refuse plan for the subdivision.
8. The applicant shall provide a snow removal plan. If snow storage is proposed onsite, the plan should depict snow storage areas not in the hammerhead or truck turning area nor in the easement areas.
9. A sidewalk trail connection and a gazebo or other similar gathering feature be included in the planned unit development as an amenity.
10. All exterior light fixtures shall achieve Mankato City Code lighting standards including, but not limited to, full-cut fully shielded light fixtures and a photometric plan shall be submitted demonstrating no more than 1/2 foot candle lighting levels at the property line.
11. All land shown on the approved development plan as common open space must be conveyed to trustees provided in the indenture establishing an association or similar organization for the maintenance of the planned unit development. Applicant shall submit documentation of said association to the City at the time of request for the first building permit for the development.
12. Prior to occupancy, the applicant shall obtain rental licenses for each unit intended for rental purposes.
13. Applicant will need to submit a turning wheel radius for emergency vehicles at the time of building permit submittal.

Site Plan and Traffic Advisory Review Committee **1. 4.**

Meeting Date: 06/09/2026

Title

CY29-30

Request of ERM on behalf of CenterPoint Energy, the property owner, for a final plat review of Centerpoint Energy Mankato First Addition, and for a conditional use permit to allow for a hydrogen facility that uses energy from a 1 megawatt on-site solar panel array on a property zoned M-2, Heavy Industrial. The subject property is described as part of the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West; AND, part of the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West; AND, a tract of land located in the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West; AND, part of a parcel lying within the Southeast Quarter of the Northwest Quarter, Section 5, Township 108 North, Range 26 West, all located in the City of Mankato, Blue Earth County (2400 N. Riverfront Drive, BE County PID's R010905176004, R010905176003, R010905176002, R010905176001).

Applicant

The applicant is ERM, on behalf of CenterPoint Energy.

Request

The applicant is requesting a final plat review of Centerpoint Energy Mankato First Addition, and a conditional use permit to allow for a hydrogen facility that uses energy from a 1 megawatt onsite solar panel array on a property zoned M-2, Heavy Industrial.

Location

The subject property is described as part of the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West; AND, part of the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West; AND, a tract of land located in the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West; AND, part of a parcel lying within the Southeast Quarter of the Northwest Quarter, Section 5, Township 108 North, Range 26 West, all located in the City of Mankato, Blue Earth County (2400 N. Riverfront Drive, BE County PID's R010905176004, R010905176003, R010905176002, R010905176001).

Existing Land Use

The subject property is currently in use by CenterPoint Energy Minnesota, as an industrial use. The subject property also includes a portion of agricultural land used for row cropping.

Zoning

The subject property is currently zoned M-2, Heavy Industrial District.

Other Board or Commission

The Planning Commission reviewed the preliminary plat at their February 25th, 2026, meeting. Final action on that request occurred at the March 9th, 2026, City Council meeting.

Environmentally Sensitive Areas

There are multiple wetlands located on the subject property. One wetland area was delineated on the southern property boundary. A second wetland was noted to be centrally located on the southern half of the site, directly east of the railroad track termination. The third wetland was delineated along the southwestern property boundary, just north of the railroad track as shown on the proposed preliminary plat.

The applicant proposes no impacts to the three delineated wetland areas depicted on the approved preliminary plat.

Public Utilities

The subject property is currently served by public utilities.

Review

The applicant, ERM, on behalf of CenterPoint Energy, is requesting a final plat review of CenterPoint Energy Mankato First Addition, and a conditional use permit to allow for a hydrogen facility that uses energy from a 1 megawatt onsite solar panel array on a property zoned M-2, Heavy Industrial. The subject property is located at 2400 N. Riverfront Drive.

The Preliminary Plat of "CenterPoint Energy Mankato First Addition" was approved by the Planning Commission at their February 25th, 2026, meeting. Followed by City Council approval at their March 9th, 2026, meeting.

The applicant is seeking to plat the subject property in order to further develop the property in two construction phases, with a solar array and a green hydrogen production & storage facility. As the site preparations and power supply (the solar array) for the hydrogen power facility are regulatorily required to be in place prior to the hydrogen facility itself, construction will be separated into two phases. Phase 1 will include site preparation, installation of erosion and sediment controls, initial grading, and installation of the Solar Array. Phase 2 will include hydrogen production and storage facility construction, final grading, and site stabilization. Additionally, the applicant attests that Best Management Practices (BMPs) will be implemented throughout all phases to prevent sediment discharge and protect water quality.

Phase 1 is scheduled to commence in the 3rd quarter of 2026 and Phase 2 is anticipated in the 4th quarter of 2026, although the applicant notes that the intended timeline may be subject to change due to typical development impediments.

Final Plat:

The proposed Final Plat mirrors the approved Preliminary Plat, as it proposes the creation of a one-lot, one-block, subdivision containing approximately 14.83 acres. As the property is currently unplatted, subdivision approval is required to bring the parcels into conformance with City subdivision regulations and to support current and future development on the site. Of note, there are no new public dedications proposed with the plat.

The proposed final plat depicts 10' standard drainage and utility easements around the subject parcel.

The approved preliminary plat showed multiple wetlands located on the subject property. The applicant has received a Notice of Decision for a "no-loss" decision under Minnesota Rule 8420.0415. Subpart A. Based on this finding, the proposal will not impact existing wetlands located on the subject property.

Private Access Easement:

The proposed plat area is subject to a private Access Easement Agreement with the property owner of the adjacent agricultural field. This access agreement allows said adjacent property owner direct access through the subject property in order to access and farm their adjacent portion of property. CenterPoint Energy states that they are coordinating with the owner of the private easements to ensure continued access is provided between North Riverfront Drive and the property immediately west of CenterPoint’s subject property.

As was noted with the Preliminary Plat, because the property was never platted previously, payment in lieu of

parkland dedication is required in the amount of $45,973, which shall be submitted prior to affixing signatures to the Final Plat.

Conditional Use Permit:
The requested Conditional Use Permit contains two interconnected components, the solar panel array and the hydrogen power facility.
The applicant states that the proposed project will include a hydrogen power facility that utilizes renewable energy, in the form of an onsite 1 megawatt (MW) solar panel array, to split water into hydrogen and oxygen.

The applicant has provided an Emergency Vehicle Access & Hydrant Coverage plan, which displays the City's largest fire engine circulating throughout the site as well as the coverage distance of each onsite hydrant.

The applicant does not propose any modifications to site access, or parking/loading areas. The applicant states that the proposed project is an unmanned facility, requiring monthly, quarterly, and annual routine maintenance by 1–3 trained personnel. They also assert that any construction-related disruptions will be minor and temporary.

Hydrogen Facility:
The proposed hydrogen production and storage facility will be installed within the existing gravel area located east of the existing onsite propane tanks. The proposed 2,208 square foot (24'x92') building largely reflects the existing structures on the subject property, with proposed exterior metal siding and a standing seam metal roof. Provided floor plans show a large open area for plant equipment as well as a small office space and a restroom. Additional hydrogen plant process equipment is shown to be installed north and east of the proposed building. An outdoor aggregate containment structure is also noted with the proposal.

The hydrogen facility will consist of the electrolyzer, balance of plant, water treatment system, blending infrastructure, and compression and storage systems. The hydrogen facility is an unmanned facility that will operate continuously, except during occasional periods of scheduled maintenance. The facility will be monitored remotely 24/7 by trained staff at CenterPoint Energy’s Gas Control Center in Minneapolis.

Major components of the hydrogen facility include: RODI skid, water and oxygen separation skid, electrolyzer stack, power supply and rectifier skid, cooling systems, hydrogen handling and compression equipment, PLC control system, power distribution equipment, backup generator, Hydrogen gas compressor, and mobile hydrogen storage. The mobile hydrogen storage unit will have a maximum storage capacity of 146 kg of hydrogen at 6500 psi and is designed to be towed by commercial transport.

The proposed building for the hydrogen facility will require both water and sanitary municipal services. During normal continuous operation, the hydrogen facility is expected to consume approximately 2 gallons of water per minute (2,880 gallons/day or 86,400 gallons/month). The water treatment skid will discharge approximately 1 gallon of wastewater per minute, while the remaining gallon is consumed in the production of hydrogen (1,440 gallons/day or 43,200 gallons/month). For context, the proposed water usage is similar to other heavy industrial uses within Mankato and Mankato's Water Treatment plant is designed to treat up to 12 million gallons of water per day.*

The applicant states that the proposed hydrogen plant will be operated and maintained in a similar way to a comparable hydrogen blending facility operational in Minneapolis since 2022.

The applicant has provided a Photometric Plan for the proposed exterior safety lighting associated with the hydrogen facility.

Solar Array:
The solar panel array will consist of approximately 2,120 individual 590W panels on roughly 3.2 acres of land west of the current CenterPoint Energy facility at 2400 N. Riverfront Drive. Panels are proposed to sit approximately 8 feet above grade (at their highest point) and will be fixed with a 20-degree tilt to steel racking, which itself will be attached to steel-driven posts embedded into the soil. The panels themselves will be silicon-based with an anti-reflective coating to reduce glare. Aside from the panels themselves, the array will

include inverters, switchgear and a transformer. The applicant intends the solar panel array to be accessible through a locked gate near the southwestern corner of the property. The proposed cover plantings (ground cover) inside the solar array footprint will consist of a combination of low-growth natives and a pollinator-friendly seed mix. Maintenance of the site vegetation will be managed by a qualified third-party vendor that will ensure pollinator-friendly vegetation is maintained, and noxious weeds are removed.

The applicant proposes to erect a 7-foot-tall chain-link perimeter fence around the solar panel array in order to restrict access to the facility.

The onsite solar panel array is expected to operate on the property in the interim for a 25-year term. The applicant states that they are currently coordinating with Xcel Energy, regarding how the solar array will interact with the local grid when power production exceeds demand from the hydrogen facility.

A decommissioning plan estimate has been provided by the applicant that depicts the assumed costs of decommissioning the solar site if/when it is no longer utilized. The applicant acknowledges that they will be responsible for costs associated with decommissioning the system and restoring the site at the end of its service life / end of use. The solar panel array will be decommissioned, and the site restored to a condition comparable to its pre-conditional condition once the equipment reaches the end of its useful service life, unless a plan is submitted to the City of Mankato to "repower" the facility. A financial surety will be provided to the City of Mankato to ensure decommissioning of the equipment. The hydrogen facility can operate independently of the solar panel array and is not expected to be decommissioned alongside the solar array.

The applicant intends to screen the solar facility from public right-of-ways by planting six Blue Spruce along the southern property boundary. The applicant had attested that the existing berm area for the rail line provides screening of the panel and that excessive screening may reduce the effectiveness of the solar array. The applicant does not intend to remove any trees or existing vegetative screening with the proposed project.

Glare Study:
The applicant has provided a Glare Study for all proposed site improvements. Said Glare Study noted that the proposed solar array would create (9) locations for potential glare (see page 1 & 2). Specifically, "*glare with potential for temporary after-image*", also known as "flash blindness". The aforementioned Glare Study depicts both areas of potential green and yellow glare (defined on page 53). The applicant hired, Muska Electric, notes that yellow glare is of higher concern.

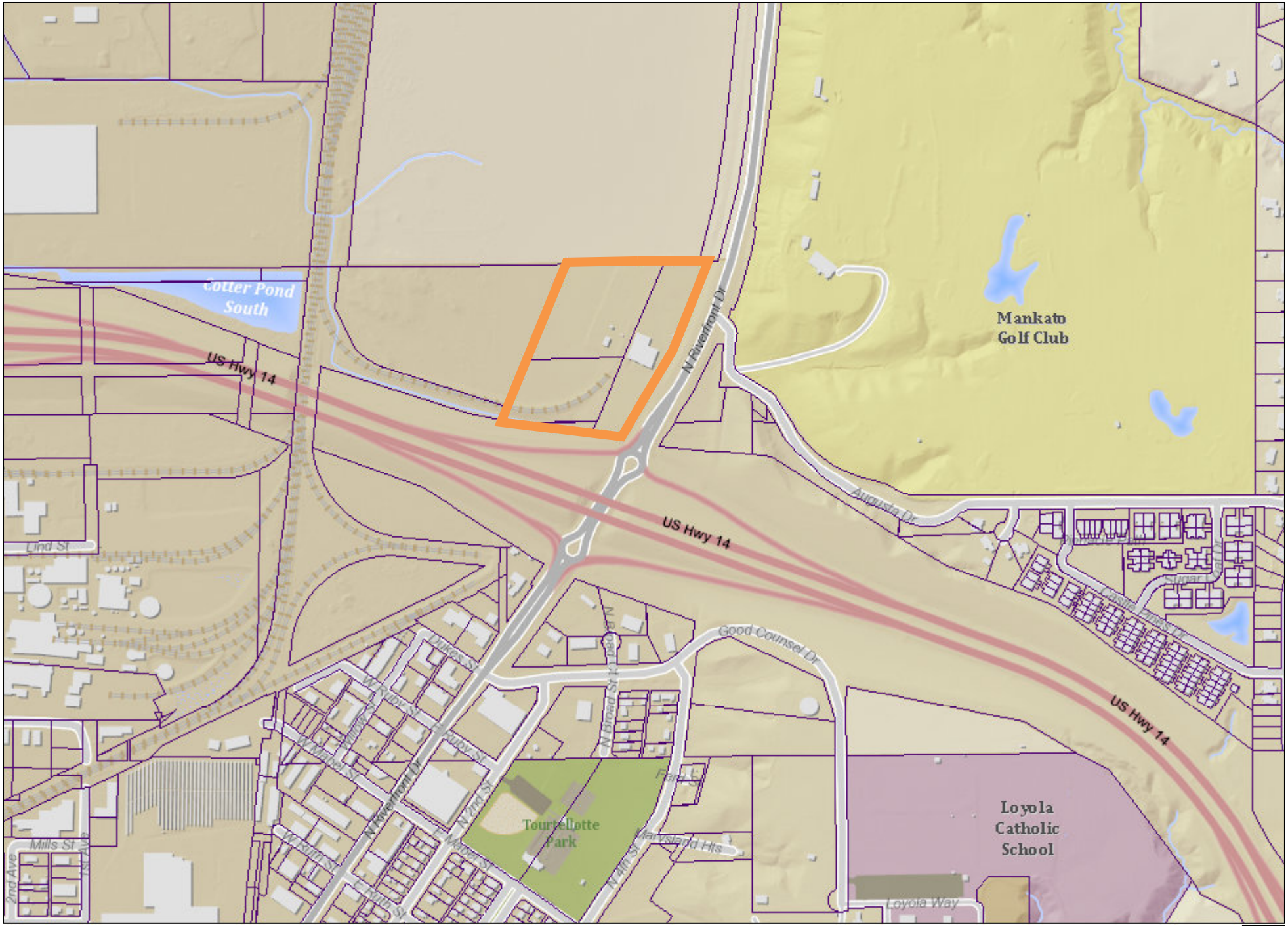
Noise Assessment:
The applicant has provided a pre-construction noise study/assessment of the proposed project. The applicant states that operational project noise levels were shown to be less than 50 dBA at the nearest residential and recreational property lines for both daytime and nighttime hours, which the applicant indicates achieves the MPCA limits noise levels for residential locations to 50 dBA or less during nighttime hours per (Minn. R. 7030.0040).

Attachments

General Location Map
Aerial
Approved Preliminary Plat
Final Plat
Site Plan
Site Plan - Hydrogen Plant
Exterior Elevations
Floor Plans
Renderings

Grading Plan
Utility Plan
Narrative
Project Detail Narrative
Screening Plan
Fire Access & Hydrant Coverage Plan
Existing Conditions
Plan Details
Photometric Plan
Misc Details
Wetland -NOD
Solar Decommissioning Estimate
NRHP Narrative
Glare Study
Noise Study
Drainage Study

General Location Map



Date: February 2026

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.

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Aerial Map



Date: February 2026

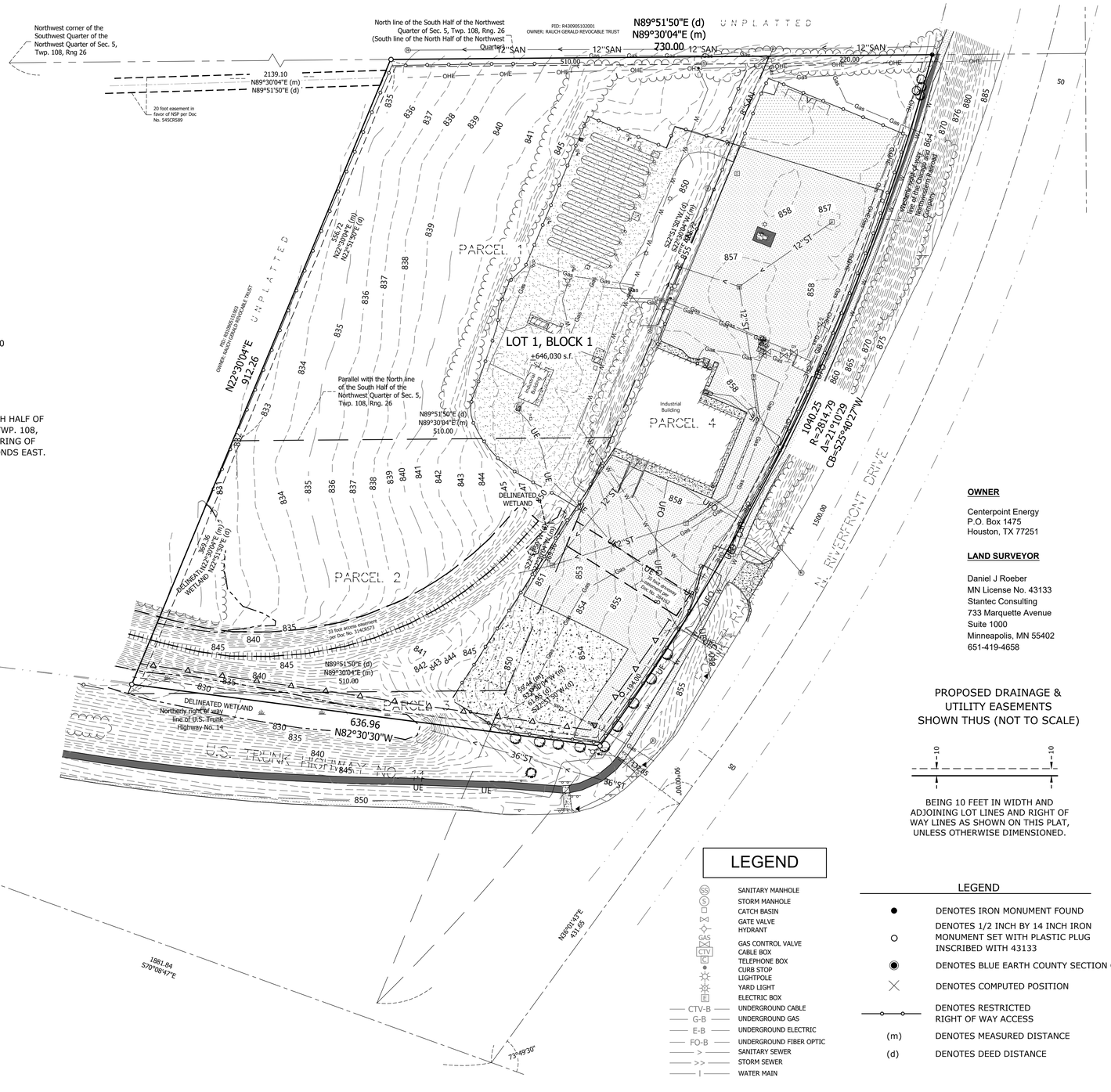
Author:

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.

N

THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE THE DRAWING. ANY ERRORS, OR OMISSIONS SHALL BE REPORTED TO STANTEC WITHOUT DELAY. THE COPYRIGHTS TO ALL DESIGNS AND DRAWINGS ARE THE PROPERTY OF STANTEC. REPRODUCTION OR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED BY STANTEC IS FORBIDDEN.

PRELIMINARY PLAT
of
CNP MANKATO FIRST ADDITION



0 80 160

GRAPHIC SCALE IN FEET
1 inch = 80 feet

BEARING ORIENTATION

BASED ON THE NORTH LINE OF THE SOUTH HALF OF THE NORTHWEST QUARTER OF SEC. 5, TWP. 108, RNG. 26, WHICH HAS AN ASSUMED BEARING OF SOUTH 89 DEGREES 51 MINUTES 50 SECONDS EAST.

OWNER

Centerpoint Energy
P.O. Box 1475
Houston, TX 77251

LAND SURVEYOR

Daniel J Roeber
MN License No. 43133
Stantec Consulting
733 Marquette Avenue
Suite 1000
Minneapolis, MN 55402
651-419-4658

PROPOSED DRAINAGE & UTILITY EASEMENTS SHOWN THUS (NOT TO SCALE)

10 10

BEING 10 FEET IN WIDTH AND ADJOINING LOT LINES AND RIGHT OF WAY LINES AS SHOWN ON THIS PLAT, UNLESS OTHERWISE DIMENSIONED.

LEGEND

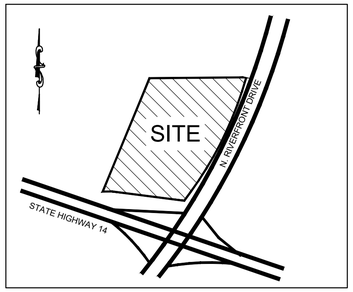
- SS — SANITARY MANHOLE
- S — STORM MANHOLE
- CB — CATCH BASIN
- GV — GATE VALVE
- HYDRANT
- GAS — GAS CONTROL VALVE
- CTV — CABLE BOX
- TELEPHONE BOX
- CURB STOP
- LIGHTPOLE
- YARD LIGHT
- ELECTRIC BOX
- CTV-B — UNDERGROUND CABLE
- G-B — UNDERGROUND GAS
- E-B — UNDERGROUND ELECTRIC
- FO-B — UNDERGROUND FIBER OPTIC
- > — SANITARY SEWER
- >> — STORM SEWER
- I — WATER MAIN

LEGEND

- ● — DENOTES IRON MONUMENT FOUND
- ○ — DENOTES 1/2 INCH BY 14 INCH IRON MONUMENT SET WITH PLASTIC PLUG INSCRIBED WITH 43133
- ◉ — DENOTES BLUE EARTH COUNTY SECTION CORNER
- × — DENOTES COMPUTED POSITION
- DENOTES RESTRICTED RIGHT OF WAY ACCESS
- (m) — DENOTES MEASURED DISTANCE
- (d) — DENOTES DEED DISTANCE

LOCATION MAP

NOT TO SCALE



LAND DESCRIPTION

PARCEL 1:
All that part of the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West described as: Commencing at the northwest corner of the Southwest Quarter of the Northwest Quarter of Section 5; thence North 89 degrees, 51 minutes, 50 seconds East (assumed bearing) along the North line of the South Half of the Northwest Quarter of Section 5, a distance of 2139.10 feet to a point 220.00 feet West of the westerly right-of-way line of the Chicago and Northwestern Railway Company, said point being the point of beginning; thence South 22 degrees, 51 minutes, 50 seconds West, 556.72 feet; thence South 89 degrees, 51 minutes, 50 seconds West and parallel with the North line of the South Half of the Northwest Quarter of Section 5, a distance of 510.00 feet; thence North 22 degrees, 51 minutes, 50 seconds East, 556.72 feet to a point on the North line of the South Half of the Northwest Quarter of Section 5; thence North 89 degrees, 51 minutes, 50 seconds East along said North line, 510.00 feet to the point of beginning.

PARCEL 2:

All that part of the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West described as: Commencing at the northwest corner of the Southwest Quarter of the Northwest Quarter of Section 5; thence North 89 degrees, 51 minutes, 50 seconds East (assumed bearing) along the North line of the South Half of the Northwest Quarter of Section 5, a distance of 2139.10 feet to a point 220.00 feet West of the westerly right-of-way line of the Chicago and Northwestern Railroad Company; thence South 22 degrees, 51 minutes, 50 seconds West, 556.72 feet to the point of beginning; thence continuing South 22 degrees, 51 minutes, 50 seconds West, 369.36 feet; thence South 89 degrees, 51 minutes, 50 seconds West and parallel with the North line of the South Half of the Northwest Quarter of Section 5, a distance of 510.00 feet; thence North 22 degrees, 51 minutes, 50 seconds East, 369.36 feet; thence North 89 degrees, 51 minutes, 50 seconds East and parallel with the North line of the South Half of the Northwest Quarter of Section 5, a distance of 510.00 feet to the point of beginning.

PARCEL 3:

A tract of land located in the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West, described as follows: A triangular tract of land lying northerly of the northerly right of way line of new Minnesota Trunk Highway No. 14 described as:
Commencing at the northwest corner of the Southwest Quarter of the Northwest Quarter of Section 5, Township 108 North. Range 26 West: thence North 89 degrees 51 minutes 50 seconds East (assumed bearing) along the North line of the South Half of the Northwest Quarter of Section 5, a distance of 2139.10 feet to a point 220.00 feet West of the westerly right of way line of the Chicago and Northwestern Railroad Company; thence South 22 degrees 51 minutes 50 seconds West, 926.08 feet to a found ½" I.D. iron pipe survey marker, said point being the point of beginning; thence continuing South 22 degrees 51 minutes 50 seconds West, 61.95 feet to a point on the northerly right of way line of new U.S. Trunk Highway No. 14; thence North 82 degrees 17 minutes 15 seconds West along said right of way line, 417.60 feet; thence North 89 degrees 51 minutes 50 seconds East 437.89 feet to the point of beginning.

PARCEL 4:

That part lying within the Southeast Quarter of the Northwest Quarter, Section 5, Township 108 North, Range 26 West of the parcel of land described as follows: Commencing at a point on the South line of the North Half of the Northwest Quarter of Section 5, in Township 108 North, Range 26, where the said line intersects the westerly line of the right-of-way the Chicago and North Western Railway Company and thence following in and on the westerly line of said railway right-of-way in a southerly and westerly direction distance of 1500 feet; thence in a straight line northerly and to a point on the south line of the North Half of the Northwest Quarter of Section 5, in Township 108 North of Range 26 West, 220 feet West from the point of commencement; thence east along said last mentioned line a distance of 220 feet to the point of commencement.

MISCELLANEOUS NOTES

1. The property described and easements shown hereon is the same as the property described in the title commitment, prepared by Commonwealth Land Title Insurance Company, (Issuing Agent, The Title Team), Commitment No. MA 250043, with a Commitment Date of November 7, 2025 at 7:00 AM.
2. The subject property contains ±14.83 acres (±646,030 square feet).
3. Topographic information shown provided by IMEG with a topographic survey date of October 21, 2025.
4. Wetlands shown per Wetland Delineation Report prepared by ERM dated October 9, 2025.
5. Current Zoning per City of Mankato (Blue Earth County) GIS map = M-2 Heavy Industrial.
6. Setback information provided by the City of Mankato:
   - 6.1. Setback - Impervious Parking/Storage:
     - 6.1.1. Front yard: 15 feet
     - 6.1.2. Side yard: 6 feet
     - 6.1.3. Rear yard: Not Required
     - 6.1.4. Transitional yard: NA
   - 6.2. Setback - Building:
     - 6.2.1. Front yard: 30 feet
     - 6.2.2. Side yard: 15 feet
     - 6.2.3. Rear yard: Not Required
     - 6.2.4. Transitional yard: NA

ITEMS CORRESPONDING TO SCHEDULE B

3 Easement dated June 23, 1949, recorded March 17, 1950, in Book 8, Page 369, as Document No. 216278.
a. Partial Release of Easement dated October 21, 2015, recorded December 1, 2015, as Document No. 545CR589. *(SHOWN ON SURVEY. DOES NOT AFFECT SUBJECT PROPERTY)*
4. Easement in Deed, dated September 29, 1945, recorded September 29, 1945, in Book 133, Page 293 as Document No. 199854. *(BLANKET EASEMENT SUBJECT TO PARCEL 4).*
5. Agreement dated July 30, 1970, recorded August 5, 1970, as Document No. Doc No. 284162. *(SUBJECT TO PARCEL 4. SHOWN ON SURVEY)*
6. Easement dated November 3, 1977, recorded November 3, 1977, as Document No. 316320. *(DOES NOT AFFECT SUBJECT PROPERTY AS IT APPEARS TO DESCRIBE AN AREA SOUTH OF NEW U.S. HIGHWAY 14).*
7. Agreement dated November 7, 1972, recorded August 3, 1990, as Document No. 314CR573. *(SHOWN ON SURVEY).*

Stantec
Minneapolis Office
733 Marquette Ave
Suite 1000
Minneapolis, MN 55402
Phone: 612-712-2000
Website:www.stantec.com

REVISION	DATE
Added Drainage & Utility Easement	Feb. 16, 2026
Update per City Comments	Feb. 22, 2026
Update Boundary	May 14, 2026
Update Wetlands	May 18, 2026

SURVEY BY :
DRAWN BY : DJR
DESIGNED BY :
CHECKED BY :
APPROVED BY :
DATE : JANUARY 26, 2026

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 LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: DANIEL J ROEBER
SIGNATURE:
DATE: JANUARY 26, 2026
LIC. NO. 43133

CNP MANKATO FIRST ADDITION
PRELIMINARY PLAT
CenterPoint Energy

193807564 V401
PROJECT NUMBER
193807564
SHEET NUMBER
V4.01

Plot Date: 05/19/2026 - 2:29pm
Drawing name: \\us029-spfs01\shared_projects\193807564\CAD\Dwg\193807564 V401.dwg
Xrefs: 193807564 IMEG_TOPO

CENTERPOINT ENERGY MANKATO FIRST ADDITION

KNOW ALL PERSONS BY THESE PRESENTS: That CenterPoint Energy Resources Corp d/b/a CenterPoint Energy Minnesota Gas, owner of the following described property situated in the County of Blue Earth, State of Minnesota, to wit:

All that part of the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West described as: Commencing at the northwest corner of the Southwest Quarter of the Northwest Quarter of Section 5; thence North 89 degrees, 51 minutes, 50 seconds East (assumed bearing) along the North line of the South Half of the Northwest Quarter of Section 5, a distance of 2139.10 feet to a point 220.00 feet West of the westerly right-of-way line of the Chicago and Northwestern Railway Company, said point being the point of beginning; thence South 22 degrees, 51 minutes, 50 seconds West, 556.72 feet; thence South 89 degrees, 51 minutes, 50 seconds West and parallel with the North line of the South Half of the Northwest Quarter of Section 5, a distance of 510.00 feet; thence North 22 degrees, 51 minutes, 50 seconds East, 556.72 feet to a point on the North line of the South Half of the Northwest Quarter of Section 5; thence North 89 degrees, 51 minutes, 50 seconds East along said North line, 510.00 feet to the point of beginning.
AND
All that part of the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West described as: Commencing at the northwest corner of the Southwest Quarter of the Northwest Quarter of Section 5; thence North 89 degrees, 51 minutes, 50 seconds East (assumed bearing) along the North line of the South Half of the Northwest Quarter of Section 5, a distance of 2139.10 feet to a point 220.00 feet West of the westerly right-of-way line of the Chicago and Northwestern Railroad Company; thence South 22 degrees, 51 minutes, 50 seconds West, 556.72 feet to the point of beginning; thence continuing South 22 degrees, 51 minutes, 50 seconds West, 369.36 feet; thence South 89 degrees, 51 minutes, 50 seconds West and parallel with the North line of the South Half of the Northwest Quarter of Section 5, a distance of 510.00 feet; thence North 22 degrees, 51 minutes, 50 seconds East, 369.36 feet; thence North 89 degrees, 51 minutes, 50 seconds East and parallel with the North line of the South Half of the Northwest Quarter of Section 5, a distance of 510.00 feet to the point of beginning.
AND
A tract of land located in the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West, described as follows: A triangular tract of land lying northerly of the northerly right of way line of new Minnesota Trunk Highway No. 14 described as:
Commencing at the northwest corner of the Southwest Quarter of the Northwest Quarter of Section 5, Township 108 North. Range 26 West: thence North 89 degrees 51 minutes 50 seconds East (assumed bearing) along the North line of the South Half of the Northwest Quarter of Section 5, a distance of 2139.10 feet to a point 220.00 feet West of the westerly right of way line of the Chicago and Northwestern Railroad Company; thence South 22 degrees 51 minutes 50 seconds West, 926.08 feet to a found ½'' I.D. iron pipe survey marker, said point being the point of beginning; thence continuing South 22 degrees 51 minutes 50 seconds West, 61.95 feet to a point on the northerly right of way line of new U.S. Trunk Highway No. 14; thence North 82 degrees 17 minutes 15 seconds West along said right of way line, 417.60 feet; thence North 89 degrees 51 minutes 50 seconds East 437.89 feet to the point of beginning.
AND
That part lying within the Southeast Quarter of the Northwest Quarter, Section 5, Township 108 North, Range 26 West of the parcel of land described as follows: Commencing at a point on the South line of the North Half of the Northwest Quarter of Section 5, in Township 108 North, Range 26, where the said line intersects the westerly line of the right-of-way the Chicago and North Western Railway Company and thence following in and on the westerly line of said railway right-of-way in a southerly and westerly direction distance of 1500 feet; thence in a straight line northerly and to a point on the south line of the North Half of the Northwest Quarter of Section 5, in Township 108 North of Range 26 West, 220 feet West from the point of commencement; thence east along said last mentioned line a distance of 220 feet to the point of commencement. Said area lying northerly right of way line of new U.S. Trunk Highway No. 14.

Has caused the same to be surveyed and platted as CENTERPOINT ENERGY MANKATO FIRST ADDITION and do hereby dedicate to the public for public use the public ways and the easements for drainage and utility purposes as created by this plat.

In witness whereof said CenterPoint Energy Resources Corp d/b/a CenterPoint Energy Minnesota Gas, has caused these presents to be signed by its proper officer this _____ day of _____, 20_____.

Signed: CenterPoint Energy Resources Corp d/b/a CenterPoint Energy Minnesota Gas

By: _____
_____ as _____

STATE OF _____
COUNTY OF _____

This instrument was acknowledged before me on this _____ day of _____, 20_____ by _____ as _____, of CenterPoint Energy Resources Corp d/b/a CenterPoint Energy Minnesota Gas.

_____(Notary Signature)

_____(Notary Printed Name)

Notary Public, _____County, State of _____

My Commission Expires _____

SURVEYOR'S CERTIFICATE

I, Daniel J. Roeber, do hereby certify that this plat was prepared by me or under my direct supervision; that I am a duly Licensed Land Surveyor in the State of Minnesota; that this plat is a correct representation of the boundary survey; that all mathematical data and labels are correctly designated on this plat; that all monuments depicted on this plat have been, or will be correctly set within one year; that all water boundaries and wet lands, as defined in Minnesota Statutes, Section 505.01, Subd. 3, as of the date of this certificate are shown and labeled on this plat; and all public ways are shown and labeled on this plat.

Dated this _____ day of _____, 20_____ .

_____

Daniel J. Roeber, Licensed Land Surveyor
Minnesota License Number 43133

STATE OF MINNESOTA
COUNTY OF _____

This instrument was acknowledged before me on this _____ day of _____, 20_____, by Daniel J. Roeber, a Licensed Land Surveyor.

_____(Notary Signature)

_____(Notary Printed Name)

Notary Public, _____ County, State of Minnesota

My Commission Expires _____

APPROVALS

PLANNING COMMISSION

Be it known that on this _____ day of _____, 20_____, the Planning Commission of the City of Mankato did duly review this plat of CENTERPOINT ENERGY MANKATO FIRST ADDITION.

By _____ Chairperson By _____ Secretary:

CITY COUNCIL OF CITY OF MANKATO, MINNESOTA

Be it known that on this _____ day of _____, 20_____, the City Council of the City of Mankato did duly approve this plat of CENTERPOINT ENERGY MANKATO FIRST ADDITION, and that, as per Minnesota Statutes, Section 505.03, Subd. 2, this plat has been submitted to and written comments and recommendations have been received from the Blue Earth Highway Engineer and the Commissioner of Transportation.

By _____ Mayor: By _____ Secretary:

TITLE OPINION

I, _____, Licensed Attorney, State of Minnesota, do hereby certify that the owner as indicated hereon represents all ownership interest in the land encompassed by this plat.

By _____ , Licensed Attorney By _____
(signature) (printed name)

BLUE EARTH COUNTY PROPERTY AND ENVIRONMENTAL RESOURCES

I hereby certify that there are no delinquent taxes and/or delinquent special assessments, that the current taxes have been paid and that the transfer has been entered on the land described herein on the _____ day of _____, 20_____.

_____
Blue Earth County Property and Environmental Resources Director

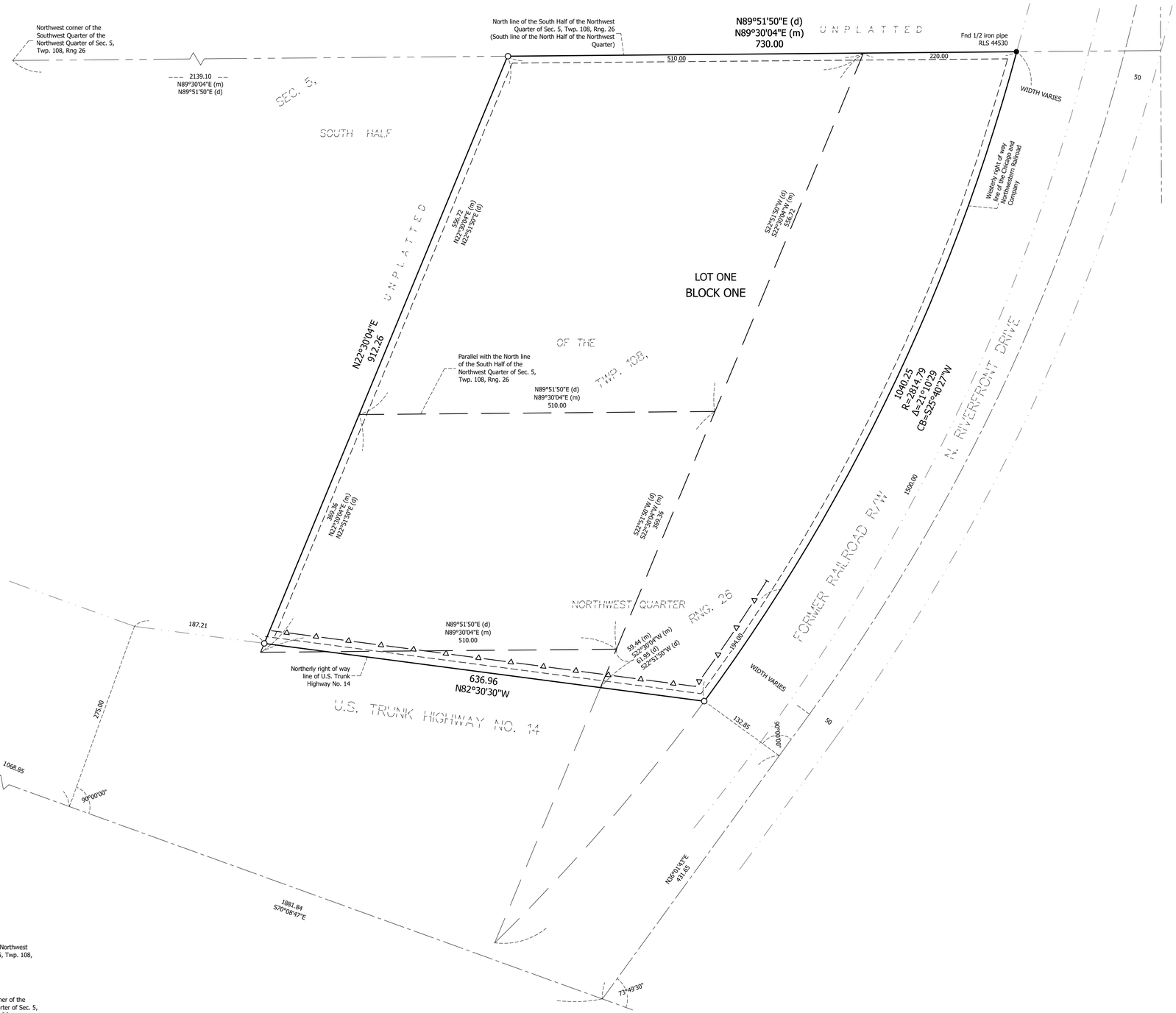
COUNTY RECORDER

I hereby certify that this instrument was filed in my office for record on this, the _____ day of _____, 20_____, at _____o'clock ___M., and that was duly recorded on _____ Plats, Number _____.

_____
Blue Earth County Recorder

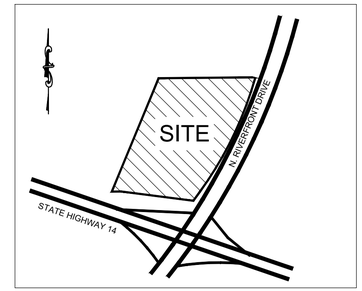
Stantec

CENTERPOINT ENERGY MANKATO FIRST ADDITION



LOCATION MAP

NOT TO SCALE



0 80 160

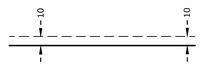
GRAPHIC SCALE IN FEET
1 inch = 80 feet

BEARING ORIENTATION

BASED ON THE NORTH LINE OF THE SOUTH HALF OF THE NORTHWEST QUARTER OF SEC. 5, TWP. 108, RNG. 26, WHICH HAS AN ASSUMED BEARING OF SOUTH 89 DEGREES 51 MINUTES 50 SECONDS EAST.

DRAINAGE & UTILITY EASEMENTS SHOWN THUS:

(NOT TO SCALE)



BEING 10 FEET IN WIDTH AND ADJOINING LOT LINES AND RIGHT OF WAY LINES AS SHOWN ON THIS PLAT, UNLESS OTHERWISE DIMENSIONED.

LEGEND

●	DENOTES IRON MONUMENT FOUND
○	DENOTES 1/2 INCH BY 14 INCH IRON PIPE MONUMENT SET WITH PLASTIC PLUG INSCRIBED WITH "STANTEC 43133", IN ACCORDANCE WITH MN STATE STATUTE 505.021, SUBD. 10.
-△——△-	DENOTES RESTRICTED RIGHT OF WAY ACCESS
(m)	DENOTES MEASURED DISTANCE
(d)	DENOTES DEED DISTANCE

Stantec



SITE PLAN LEGEND

- PROPERTY BOUNDARY LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING TREE
- EXISTING GAS LINE
- EXISTING FIBER OPTIC CABLE
- EXISTING SEWER LINE
- EXISTING MANHOLE
- EXISTING CULVERT
- EXISTING CONTOURS
- EXISTING UTILITY POLE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING GRAVEL
- EXISTING PAVEMENT
- EXISTING CONCRETE
- PROPOSED ACCESS ROAD
- PROPOSED FENCE
- PROPOSED SOLAR PANEL ARRAYS
- PHASE 1 CONSTRUCTION AREA
- PHASE 2 CONSTRUCTION AREA
- IMPERVIOUS AREA SETBACK
- BUILDING SETBACK

NOTES:

1. THE PROPERTY DESCRIBED AND EASEMENTS SHOWN HEREON IS THE SAME AS THE PROPERTY DESCRIBED IN THE TITLE COMMITMENT, PREPARED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY, (ISSUING AGENT, THE TITLE TEAM), COMMITMENT NO. MA 250043, WITH A COMMITMENT DATE OF NOVEMBER 7, 2025 AT 7:00 AM.
2. THE SUBJECT PROPERTY CONTAINS ±14.83 ACRES (±646,030 SQUARE FEET).
3. WETLANDS SHOWN PER WETLAND DELINEATION REPORT PREPARED BY ERM DATED OCTOBER 9, 2025.
4. CURRENT ZONING PER CITY OF MANKATO (BLUE EARTH COUNTY) GIS MAP = M-2 HEAVY INDUSTRIAL.
5. TOPOGRAPHIC SURVEY COMPLETED BY IMEG ON OCTOBER 21, 2025.
6. SOLAR LAYOUT PROVIDED BY VERSIRIS ENERGY DATED DECEMBER 29, 2025.
7. BUILDING LAYOUT PROVIDED BY STANDBY SYSTEMS DATED APRIL 30, 2026.
8. TREES ALONG EDGE OF GRAVEL AND ADJACENT TO EXISTING BUILDING ARE SCHEDULED FOR REMOVAL PRIOR TO PROJECT CONSTRUCTION
9. APPROXIMATE HYDRANT AND TIE-IN LOCATION BASED ON CITY UTILITY MAP AND PREVIOUS AS-BUILT SURVEY.

EXISTING ZONING	M-2 HEAVY INDUSTRIAL DISTRICT	
	REQUIRED	PROVIDED
MINIMUM LOT WIDTH	100 FT	1034 FT
FRONT YARD SETBACK (IMPERVIOUS)	15 FT	306 FT
FRONT YARD SETBACK (BUILDING)	30 FT	110 FT
SIDE YARD SETBACK (IMPERVIOUS)	6 FT	329 FT
SIDE YARD SETBACK (BUILDING)	15 FT	51 FT
REAR YARD SETBACK	NONE	NONE
BUILDING HEIGHT	NONE	NONE

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

ERM

OVERALL SITE PLAN

DRAWING NO. C4

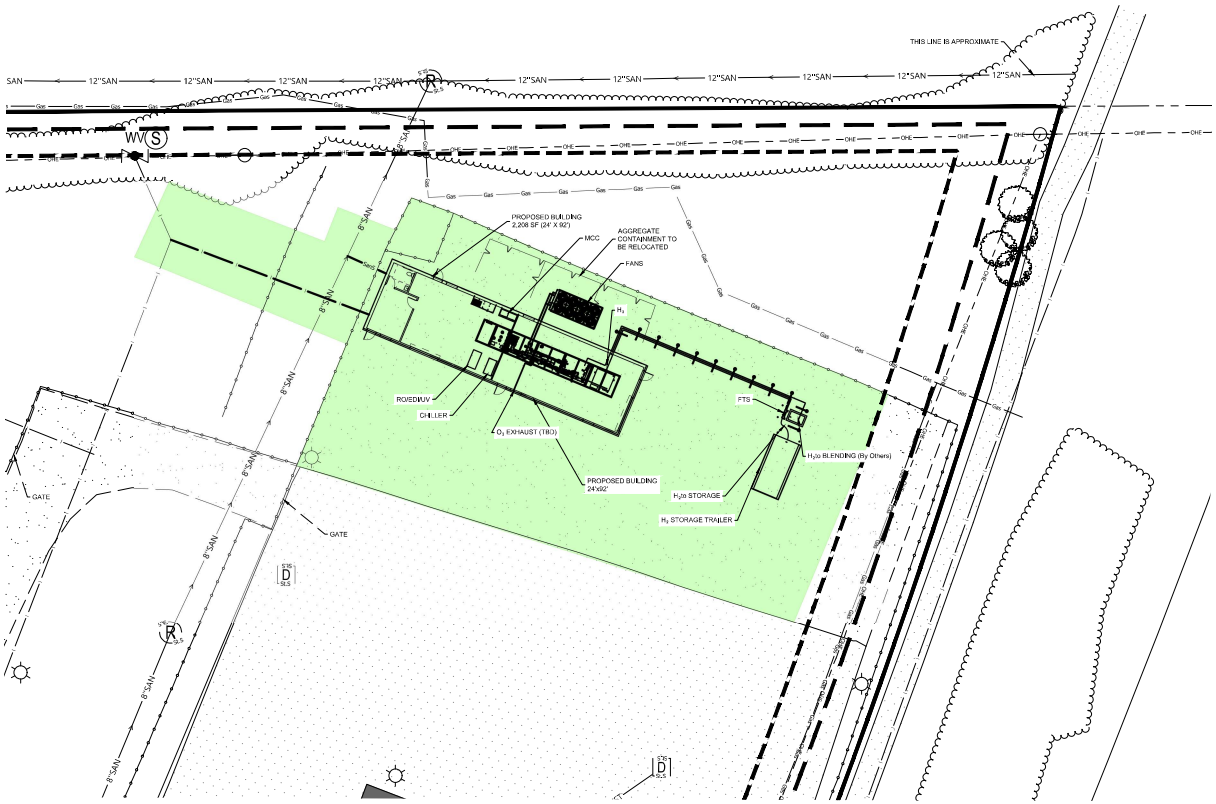
MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV. 0

SCALE	DESIGNED BY	PROJECT NUMBER	SHEET NO.
1" = 60'	WS	0764026	C4.01
DATE DRAWN: 05/26/2026	DRAWN BY: JB		

Environmental Resources Management, Inc.

FILE PATH: C:\Users\jessica.bell\OneDrive - ERM\04 Mankato Hydrogen Plant_CAD\CUP\PhaseC_Site Plan.dwg DWG By: Jessica Bell



SITE PLAN LEGEND

- PROPERTY BOUNDARY LINE
- OHE — EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING TREE
- Gas — EXISTING GAS LINE
- UFO — EXISTING FIBER OPTIC CABLE
- STM — EXISTING SEWER LINE
- EXISTING MANHOLE
- EXISTING CULVERT
- EXISTING CONTOURS
- EXISTING UTILITY POLE
- UE — EXISTING UNDERGROUND ELECTRIC
- EXISTING GRAVEL
- EXISTING PAVEMENT
- EXISTING CONCRETE
- PROPOSED ACCESS ROAD
- PROPOSED FENCE
- PROPOSED SOLAR PANEL ARRAYS
- PHASE 1 CONSTRUCTION AREA
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- IMPERVIOUS AREA SETBACK
- BUILDING SETBACK

NOTES:

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ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

SITE PLAN - INSET

DESCRIPTIVE NO.: C4

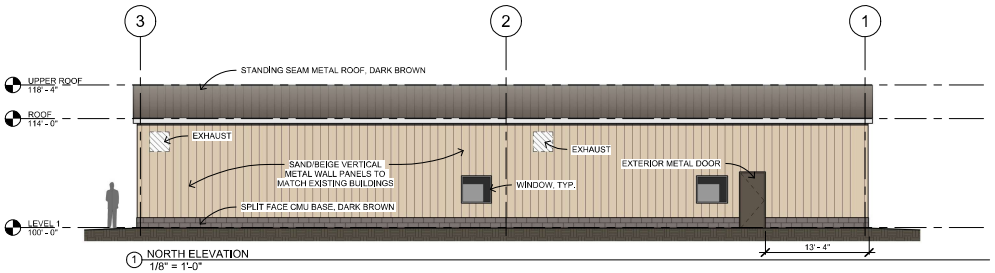
MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV.: 0

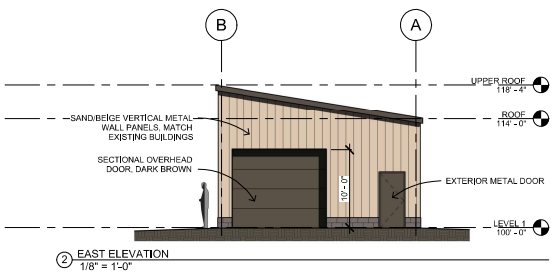
SCALE	DESIGNED BY	PROJECT NUMBER	SHEET NO.
1" = 20'	WS	0764026	C4.02
DATE DRAWN: 05/26/2026	DRAWN BY: JB		

Environmental Resources Management, Inc.

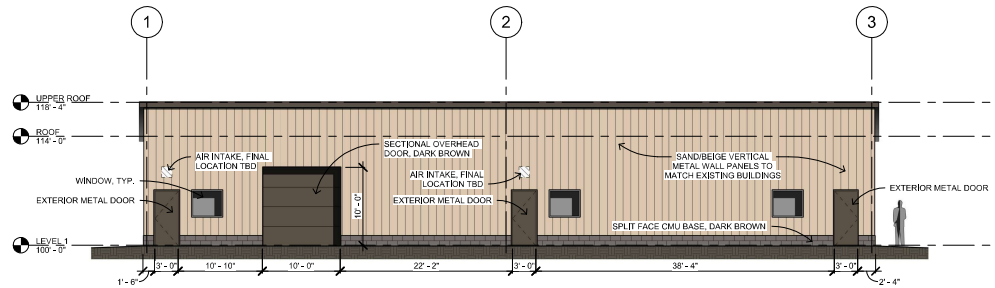
FILE PATH: C:\Users\jessica.jbell\OneDrive - ERM\2026\0764026 CenterPoint Energy Environmental Support (Gen) - Mankato Hydrogen Plant_CAD\CUP\00-CUP_Site Plan.dwg SITE PLAN INSET PRINTED ON 4/14/2026 BY Jessica Bell



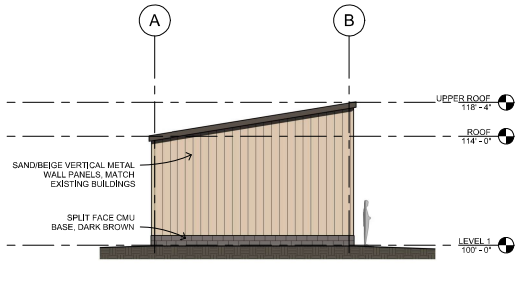
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1/8" = 1'-0"



2 EAST ELEVATION
1/8" = 1'-0"



3 SOUTH ELEVATION
1/8" = 1'-0"



4 WEST ELEVATION
1/8" = 1'-0"

BLOOM HAY DOBBS

MIDTOWN COMMONS

2324 UNIVERSITY AVE W, SUITE 200, ST. PAUL, MN 55114

PH. 612.338.4590

CENTERPOINT ENERGY - MANKATO
2400 N RIVERFRONT DR, MANKATO, MN 56001
CONTACT: DENNIS DAAS
PHONE: (651) 270-0050

CONSULTANT

PROJECT NAME: CENTERPOINT ENERGY - MANKATO GREEN HYDROGEN
PROJECT NUMBER: 18009.008
DATE: 03/27/2026

REVISIONS

NUMBER	DESCRIPTION	DATE

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 ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME

SIGNATURE

LICENSE NO.

03/27/2026
DATE

DRAFT
FOR DISCUSSION ONLY

Not For Construction

SHEET TITLE:

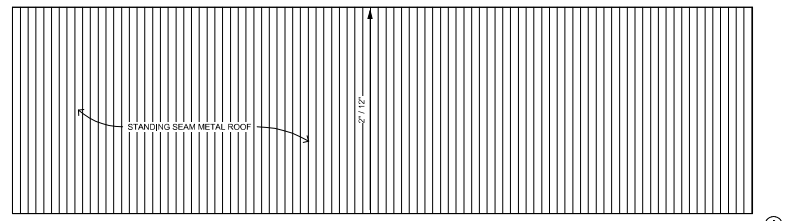
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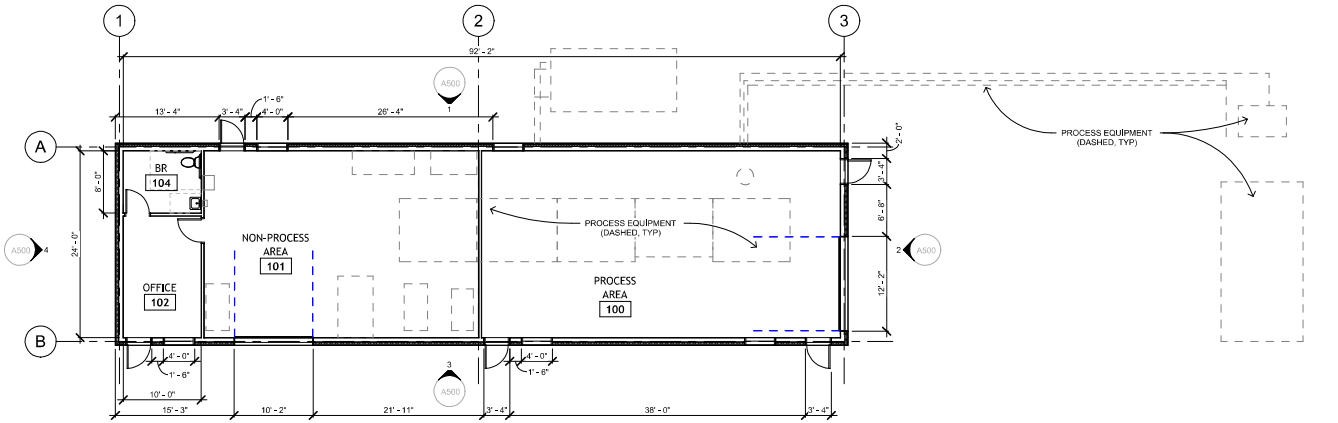
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2 ROOF PLAN
1/8" = 1'-0"



1 LEVEL 1 FLOOR PLAN
1/8" = 1'-0"

BLOOM HAY DOBBS

MIDTOWN COMMONS

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PRINT NAME

SIGNATURE

LICENSE NO.

03/27/2026
DATE

DRAFT
FOR DISCUSSION ONLY

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SHEET TITLE:

FLOOR PLAN AND ROOF PLAN

SHEET NUMBER:

A210

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CenterPoint Energy

Mankato Hydrogen Energy Plant Project

CUP / Final Plat Application – May 2026

Visual Rendering
Overhead

Looking North



ERM

CenterPoint Energy

Mankato Hydrogen Energy Plant Project

CUP / Final Plat Application – May 2026

Visual Rendering
Overhead

Looking East



ERM

CenterPoint Energy

Mankato Hydrogen Energy Plant Project

CUP / Final Plat Application – May 2026

Visual Rendering
Overhead

Looking South



ERM

CenterPoint Energy

Mankato Hydrogen Energy Plant Project

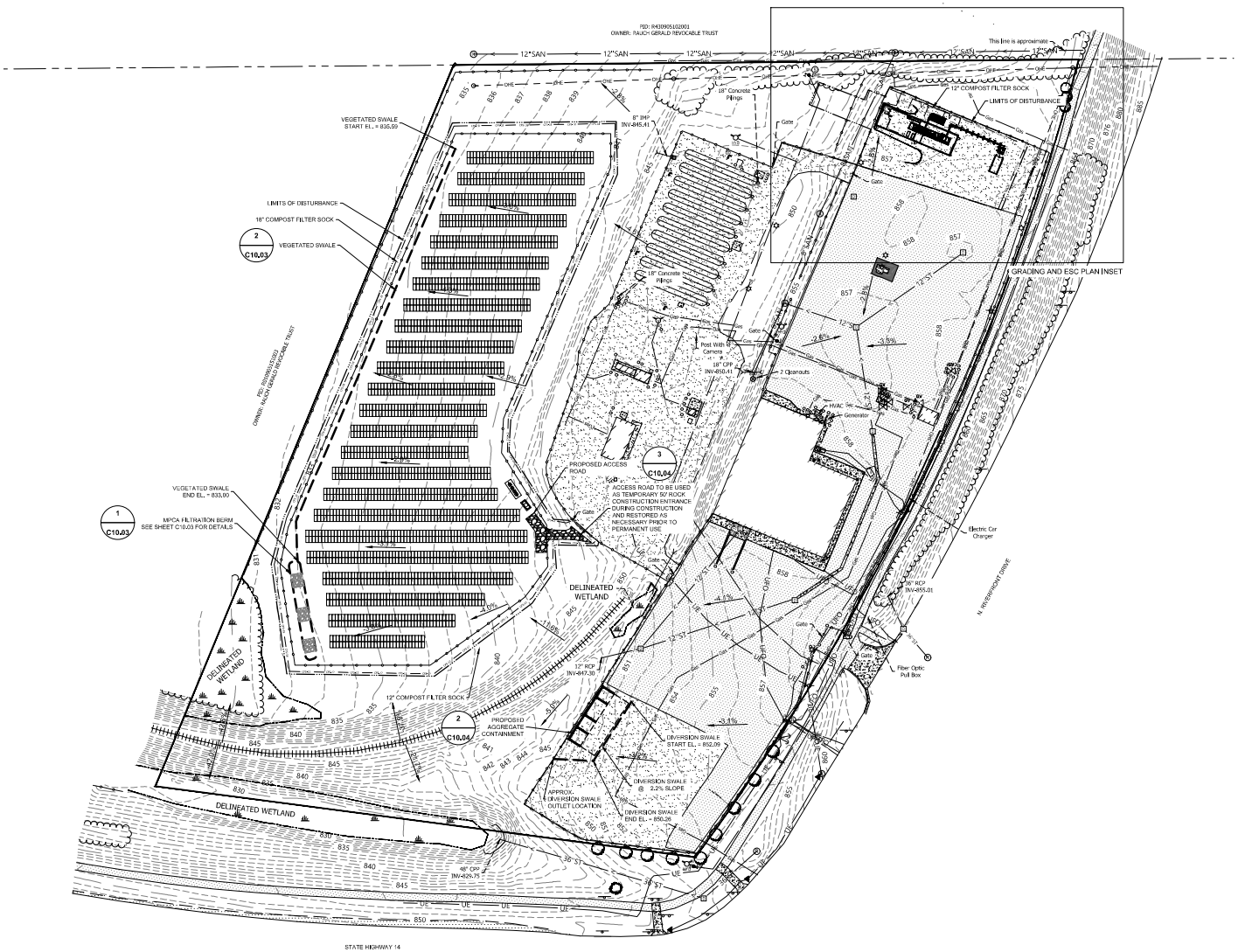
CUP / Final Plat Application – May 2026

Visual Rendering
Overhead

Looking West



ERM



N

SCALE 1" = 60'

0 60 120 180 FEET

GRADING AND ESC PLAN LEGEND

- PROPERTY BOUNDARY LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING TREE
- EXISTING GAS LINE
- EXISTING FIBER OPTIC CABLE
- EXISTING SEWER LINE
- EXISTING MANHOLE
- EXISTING CULVERT
- EXISTING CONTOURS
- EXISTING UTILITY POLE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING GRAVEL
- EXISTING PAVEMENT
- EXISTING CONCRETE
- PROPOSED ACCESS ROAD
- PROPOSED FENCE
- PROPOSED SOLAR PANEL ARRAYS
- PROPOSED COMPOST FILTER SOCK (CFS)
- PROPOSED STORMWATER FEATURE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED ROCK CONSTRUCTION ENTRANCE

NOTES:

1. ESTIMATED TOTAL AREA OF DISTURBANCE: 4.04 ACRES

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

OVERALL GRADING & ESC PLAN

DESCRIPTION NO.: C8

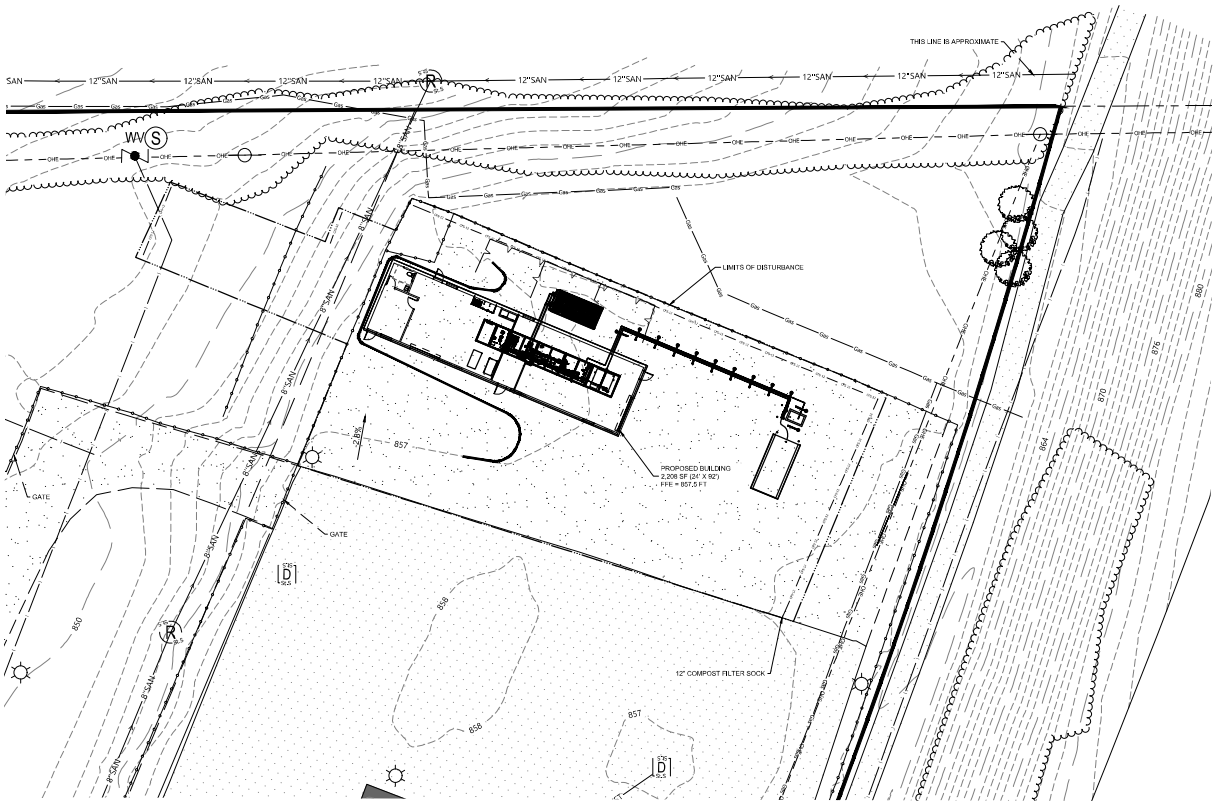
MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV.: 0

SCALE	1" = 60'	DESIGNED BY	WS	PROJECT NUMBER	0764026	SHEET NO.	C8.01
DATE DRAWN	05/26/2026	DRAWN BY	JB				

Environmental Resources Management, Inc.

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N

SCALE 1" = 20'

0 20 40 60 FEET

GRADING AND ESC PLAN LEGEND

- PROPERTY BOUNDARY LINE
- OHE — EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING TREE
- Gas — EXISTING GAS LINE
- UFO — EXISTING FIBER OPTIC CABLE
- 12"S — EXISTING SEWER LINE
- EXISTING MANHOLE
- EXISTING CULVERT
- EXISTING CONTOURS
- EXISTING UTILITY POLE
- UE — EXISTING UNDERGROUND ELECTRIC
- EXISTING GRAVEL
- EXISTING PAVEMENT
- EXISTING CONCRETE
- PROPOSED ACCESS ROAD
- PROPOSED FENCE
- PROPOSED SOLAR PANEL ARRAYS
- PROPOSED COMPOST FILTER SOCK (CFS)
- PROPOSED STORMWATER FEATURE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED CONTOUR

NOTES:

1. ESTIMATED TOTAL AREA OF DISTURBANCE: 4.04 ACRES

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

ERM

GRADING & ESC PLAN - INSET

DESCRIPTION NO.: C8

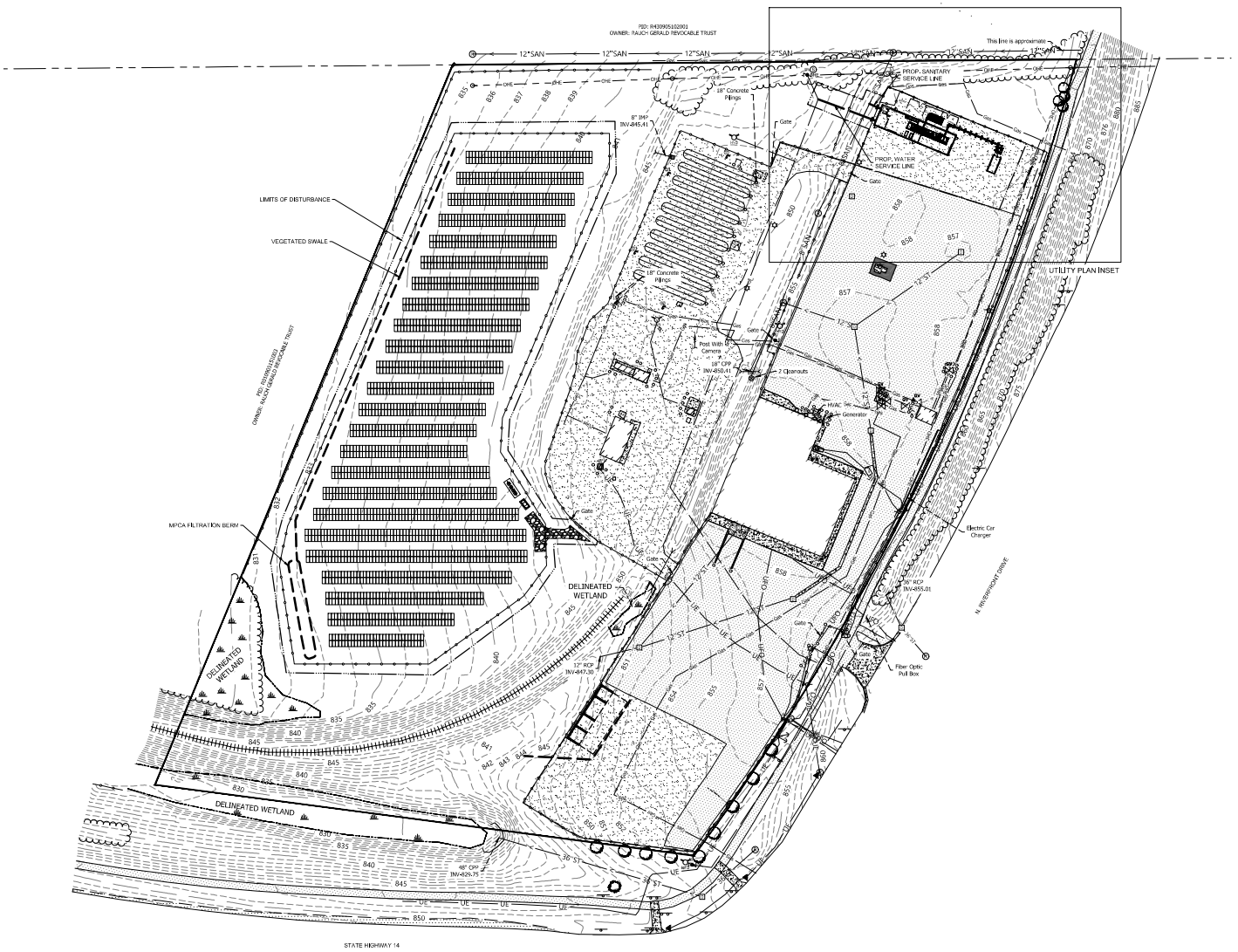
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CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV.: 0

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DATE DRAWN	05/26/2026	DRAWN BY	JB				

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N

SCALE 1" = 60'

0 60 120 180 FEET

UTILITY PLAN LEGEND

- PROPERTY BOUNDARY LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING TREE
- EXISTING GAS LINE
- EXISTING FIBER OPTIC CABLE
- EXISTING SEWER LINE
- EXISTING MANHOLE
- EXISTING CULVERT
- EXISTING CONTOURS
- EXISTING UTILITY POLE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING GRAVEL
- EXISTING PAVEMENT
- EXISTING CONCRETE
- PROPOSED ACCESS ROAD
- PROPOSED FENCE
- PROPOSED STORMWATER FEATURE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED WATER SERVICE LINE
- PROPOSED SANITARY SERVICE LINE

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

OVERALL UTILITY PLAN

DESCRIPTION C9

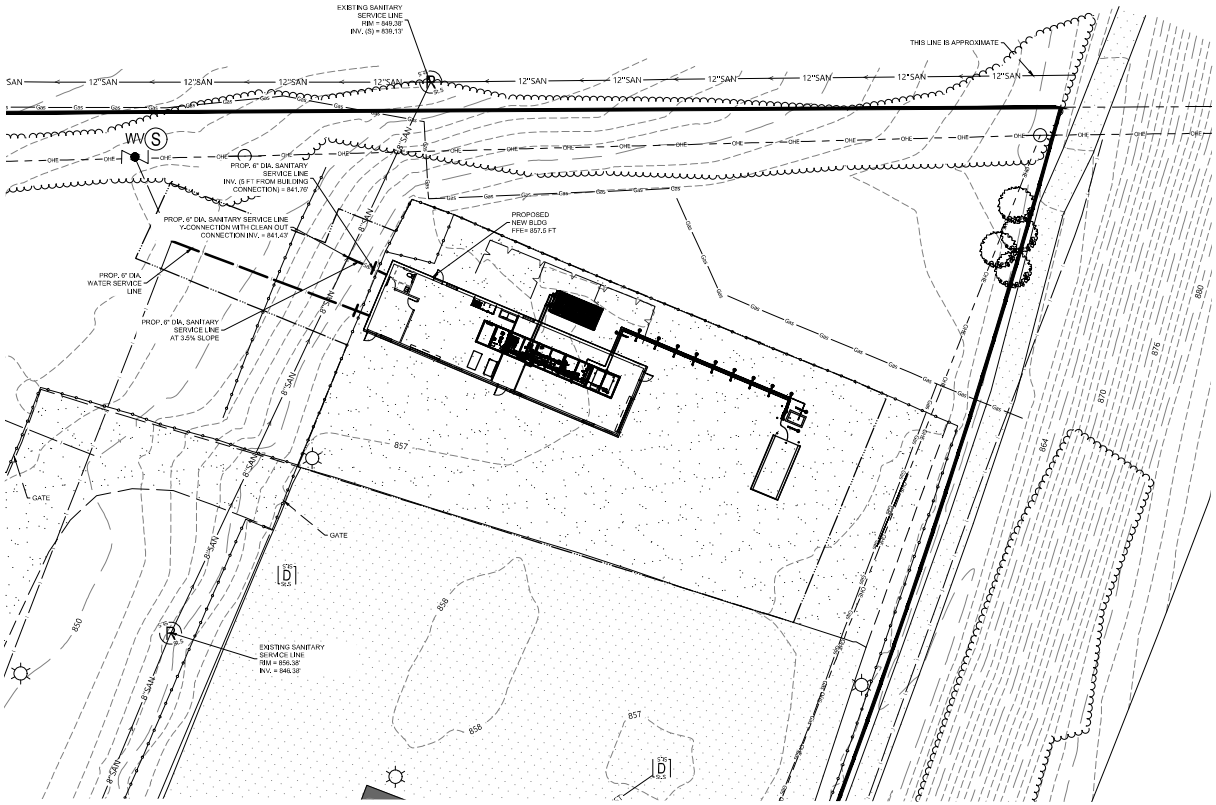
MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV. 0

SCALE	1" = 60'	DESIGNED BY	WS	PROJECT NUMBER	0764026	SHEET NO.	C9.01
DATE DRAWN	05/26/2026	DRAWN BY	JB				

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SCALE 1" = 20'

0 20 40 60 FEET

UTILITY PLAN LEGEND

- PROPERTY BOUNDARY LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING TREE
- EXISTING GAS LINE
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- EXISTING CONTOURS
- EXISTING UTILITY POLE
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- EXISTING GRAVEL
- EXISTING PAVEMENT
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- PROPOSED ACCESS ROAD
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- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED WATER SERVICE LINE
- PROPOSED SANITARY SERVICE LINE

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

UTILITY PLAN - INSET

DESCRIPTION NO.: C9

MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV.: 0

SCALE	1" = 20'	DESIGNED BY	WS	PROJECT NUMBER	0764026	SHEET NO.	C9.02
DATE DRAWN	05/26/2026	DRAWN BY	JB				

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Mankato Hydrogen Energy Plant

Conditional Use Permit – City of Mankato

2400 North Riverfront Drive

Mankato, Minnesota 56001

PREPARED BY

ERM

May 26, 2026

CONTENTS

1.	OVERVIEW	3
1.1	PROJECT DESCRIPTION	3
1.2	PROPOSED USE AND JUSTIFICATION	3
1.3	PROJECT PHASING AND CONSTRUCTION SCHEDULE	4
1.4	VARIANCE – NOT REQUIRED	4
2.	PRELIMINARY AND FINAL PLATS	4
3.	TITLE WORK AND LEGAL DISCRIPTION	4
4.	CIVIL PLAN SET	4
4.1	DEVELOPMENT CONCEPT PLAN	5
4.2	DRAINAGE REPORT	5
4.3	EASEMENTS	5
5.	ACCESS AND TRAFFIC ROUTES	5
5.1	SITE ACCESS	5
5.2	PARKING AND LOADING PLAN	5
5.3	TRAFFIC CIRCULATION PATTERNS	5
5.4	EMERGENCY VEHICLE ACCESS AND FIRE HYDRANT LOCATION PLAN	5
6.	BUILDING PLAN	6
6.1	BUILDING MATERIALS	6
6.2	FLOOR AND ELEVATION PLANS	6
7.	FENCING	6
8.	GLINT AND GLARE STUDY	6
9.	GRADING, EROSION, AND SEDIMENT CONTROL PLAN	6
10.	HISTORICAL RESOURCE REVIEW	7
11.	LIGHTING (PHOTOMETRIC) PLAN	7
12.	LANDSCAPING AND SCREENING PLAN	7
13.	NOISE ASSESSMENT	7
14.	OPERATIONS, MAINTENANCE, AND SAFETY PLAN	8
14.1	EMERGENCY RESPONSE	8
14.2	HYDROGEN FACILITY	9
14.3	SOLAR PANEL ARRAY	10
14.4	COMMITMENT TO COMPLIANCE AND COMMUNICATION	10

15.	SITE RESTORATION AND DECOMMISSIONING	10
16.	TREES	11
17.	UTILITY SERVICES PLAN	11
18.	WETLAND DELINEATION	12
19.	ZONING	12

APPENDIX CONTENTS LIST – UNDER SEPARATE COVER

APPENDIX A	PRELIMINARY AND FINAL PLATS
APPENDIX B	TITLE WORK AND LEGAL DISCRIPTION
APPENDIX C	CIVIL PLAN SET
APPENDIX D	DRAINAGE REPORT
APPENDIX E	FLOOR AND ELEVATION PLANS
APPENDIX F	GLINT AND GLARE STUDY
APPENDIX G	HISTORICAL RESOURCE REVIEW
APPENDIX H	NOISE ASSESSMENT
APPENDIX I	DECOMMISSIONING COSTS - SOLAR ARRAY
APPENDIX J	WETLAND CONSERVATION ACT – NOTICE OF DECISION
FIGURES	VISUAL RENDERINGS, BUILDING DESIGN, FLOOR PLAN, BUILDING ELEVATIONS, PHOTOMETRICS PLAN, AGGREGATE CONTAINMENT

1. OVERVIEW

1.1 PROJECT DESCRIPTION

CenterPoint Energy Minnesota Gas (CenterPoint) is submitting this application to the City of Mankato for a Final Plat and Conditional Use Permit (CUP) to install a green hydrogen production and storage facility at their existing site located at 2400 North Riverfront Drive in Mankato, Minnesota 56001. The proposed facility is referred to as the Mankato Hydrogen Energy Plant Project (Project) and is located in an M-2 Industrial District.

The proposed Project will include a hydrogen facility that uses renewable energy from a 1 megawatt (MW) on-site solar panel array to split water into hydrogen and oxygen. The hydrogen will either be blended at low concentrations into the existing natural gas distribution system or stored on-site in a mobile hydrogen storage unit. The solar panel array will consist of approximately 2,120 590W panels on roughly 3.2 acres of land within a restored prairie located west of the current facility. The hydrogen production and storage facility will be installed within an existing gravel area located east of the existing on-site propane tanks.

The on-site solar panel array is expected to operate on the property for the interim for 25 years. CenterPoint is coordinating with Xcel Energy, the site's electric utility, regarding how solar array will interact with the local grid when production exceeds demand from the hydrogen facility.

The on-site solar panel consists of steel driven posts embedded into the ground, with modules attached to the top of the posts via fixed steel racking. The panels are planned to sit approximately 8 feet off the ground at the highest point with a 20-degree tilt. The Project utilizes silicon based solar panels which have an anti-reflective coating. The solar panel array will be accessible through a locked gate near the southwest corner of the property. The cover plantings inside the solar array footprint will be a combination of low growth native crops and a seed mix that promotes pollinator friendly habitats.

1.2 PROPOSED USE AND JUSTIFICATION

In July 2024, CenterPoint received approval from the Minnesota Public Utilities Commission to implement a diverse set of innovative pilot projects that aim to reduce greenhouse gas emissions and advance decarbonization efforts for our Minnesota customers. The projects are part of a five-year innovation plan submitted under a landmark state energy law: the Natural Gas Innovation Act (NGIA). Passed with bipartisan support, NGIA created a new regulatory framework for natural gas utilities to invest in renewable energy resources and innovative technologies.

As part of this NGIA strategy, CenterPoint is exploring the potential of green hydrogen to reduce carbon emissions across their natural gas distribution system. This Project is one of the pilot projects CenterPoint is using to explore green hydrogen's potential. More information about CenterPoint's green hydrogen programs can be found at the following link: https://www.centerpointenergy.com/en-us/residential/services/cleaner-energy-and-innovation/green-hydrogen?sa=mn https://www.centerpointenergy.com/en-us/residential/services/cleaner-energy-and-innovation/green-hydrogen?sa=mn

1.3 PROJECT PHASING AND CONSTRUCTION SCHEDULE

Construction will occur in two phases to minimize environmental impacts and maintain compliance with applicable regulations. Phase 1, scheduled to commence in the 3rd quarter of 2026, will include site preparation, installation of erosion and sediment controls, initial grading, and installation of the Solar Array. Phase 2, anticipated to commence in the 4th quarter of 2026, will include hydrogen production and storage facility construction, final grading, and site stabilization. Best Management Practices (BMPs) will be implemented throughout all phases to prevent sediment discharge and protect water quality. The schedule is subject to change pending weather conditions, permitting timelines, and equipment delivery lead times, and all work will be coordinated with local agencies to ensure compliance.

1.4 VARIANCE – NOT REQUIRED

A variance will not be required in connection with the proposed conditional use, as the Project has been designed to comply with all applicable City of Mankato zoning, setback, access, and site development standards. The facility will be located within an existing industrial area, utilize established access routes, and will not introduce impacts that would necessitate deviations from City Code requirements. As such, no conditions have been identified that would warrant a variance request.

Additionally, the site is currently zoned M-2 Heavy Industrial and will remain under this designation following the installation of the Project.

2. PRELIMINARY AND FINAL PLATS

The Preliminary and Final Plats for the Project are included as an attachment to the ePortal online CUP application (Appendix A).

3. TITLE WORK AND LEGAL DISCRIPTION

The CenterPoint Energy Mankato Facility is legally described as part of the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West; AND, part of the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West; AND, a tract of land located in the South Half of the Northwest Quarter of Section 5, Township 108 North, Range 26 West; AND, part of a parcel lying within the Southeast Quarter of the Northwest Quarter, Section 5, Township 108 North, Range 26 West, all located in the City of Mankato, Blue Earth County (2400 N. Riverfront Drive / BEC PID's R010905176004, R010905176003, R010905176002, R010905176001).

A Microsoft Word (docx) standard format with the subject property legal description was included as an attachment to the ePortal online CUP application (Appendix B).

4. CIVIL PLAN SET

A Civil Plan Set consisting of the following information was included as an attachment to the ePortal online CUP application (Appendix C).

4.1 DEVELOPMENT CONCEPT PLAN

Plans included in the ePortal online CUP application include a Site Plan, Emergency Access Plan, Grading Drainage and Erosion Control Plan, Landscape and Screening Plan, Photometric Plan Utility Plan, and Phasing Plan.

4.2 DRAINAGE REPORT

A Drainage Report was included in the application in Appendix D.

4.3 EASEMENTS

The Preliminary Plat identifies all private easements. The proposed Project disturbance limits described in this application will not impact the private easements. CenterPoint is coordinating with the owner of the private easements to ensure continued access is provided between North Riverfront Drive and the property immediately west of CenterPoint's property.

A 10-foot drainage and utility easement is proposed around the parcel boundary, as shown in the Preliminary Plat.

5. ACCESS AND TRAFFIC ROUTES

5.1 SITE ACCESS

The hydrogen facility will be accessible through the existing main facility entrance and paved access routes, while the solar panel array will be accessible through a locked gate at the southeast edge of the array. No new access points from public roadways or turning lanes on public rights-of-way will be required.

5.2 PARKING AND LOADING PLAN

No off-street parking or loading facilities will be required.

5.3 TRAFFIC CIRCULATION PATTERNS

The project will use the existing site access routes and will have minimal impact on existing traffic circulation patterns. This is an unmanned facility, requiring monthly, quarterly, and annual routine maintenance by one to three trained personnel; therefore, no long-term changes to roadway configuration or traffic flow are anticipated. Any construction-related disruptions will be minor and temporary, with normal traffic circulation maintained throughout the construction period.

5.4 EMERGENCY VEHICLE ACCESS AND FIRE HYDRANT LOCATION PLAN

An Emergency Vehicle Access and Fire Hydrant Location Plan is included as an attachment to the ePortal online CUP application in the Civil Plan Set – Sheet 5.01 (Appendix C). The plan was prepared in accordance with the City of Mankato Fire Department Access Guidelines and depicts emergency vehicle circulation and turning radius, site access routes, and fire hydrant locations. Emergency and fire vehicle access to the facility is currently provided via strobe access and will continue as such.

The facility currently has three fire hydrants in proximity to the hydrogen facility. Access to the existing fire hydrants is not restricted and remains readily available to emergency personnel. Therefore, no additional fire hydrants are necessary or proposed as part of the Project.

6. BUILDING PLAN

6.1 BUILDING MATERIALS

The proposed Building Design will be consistent with the existing building materials found on site. A photo of a similar building is included in the attached figures.

6.2 FLOOR AND ELEVATION PLANS

The floor and elevation plans of the proposed hydrogen facility building are part of the Archtectural Plan set that was included as an attachment to the ePortal online CUP application (Appendix E).

7. FENCING

A 7-foot-tall perimeter fence is proposed around the solar panel installation to restrict access to the system from unqualified personnel. Fence design will be in accordance with City of Mankato screening requirements. Refer to the Civil Plan Set – Sheet 10.04 that was included as an attachment to the ePortal online CUP application (Appendix C).

8. GLINT AND GLARE STUDY

A Glint and Glare Study of the solar array identified nine potential receptor locations; however, no “yellow flare” (potential to cause after-image) was present on the results for each ‘receptor’ location.

The analysis conservatively ignores any screening provided by new trees, as described in the Civil Plan, and the 10-ft high earthen berm separating the roadway from the solar array. CenterPoint will ensure screening on site is sufficient to protect drivers from hazardous glare. Additionally, Federal Aviation Administration (FAA) pre-screening of the solar panel glare analysis determined that the Project is not required to file a Notice with the FAA.

A copy of the Glint and Glare Study and FAA Pre-screening Results were included as attachments to the ePortal online CUP application (Appendix F).

9. GRADING, EROSION, AND SEDIMENT CONTROL PLAN

The Project is located on privately owned land held by CenterPoint, encompassing approximately 14.83-acres across four parcels. Of this area, approximately 4.0 acres will be disturbed during construction. BMPs will be implemented to prevent sediment release from the construction site. Refer to the attached Civil Plans – Sheets 8.01, 8.02, 10.01, 10.02, and 10.03 for the planned BMP locations. Where necessary, final grading will restore the site to pre-construction contours.

Pursuant to the requirements outlined by the City of Mankato Ordinance, Chapter 8 – Erosion and Sediment Control, CenterPoint will apply for a land-disturbing activity permit. In addition, CenterPoint will apply to the Minnesota Pollution Control Agency for coverage under the National

Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Program – Construction Stormwater General Permit (MNR100001).

10. HISTORICAL RESOURCE REVIEW

A review of the National Park Service's National Register of Historic Places database confirmed that no historic structures, cultural resources, or design features are present within the proposed project. The closest listed historic property (Stewart, William E., House) is situated approximately 1.65 miles southwest of the proposed project. As a result, no impacts are anticipated by the Project on any historic properties. Refer to the attached National Historic Place review memo (Appendix G).

11. LIGHTING (PHOTOMETRIC) PLAN

A Photometric Plan and details are included as an attachment to the ePortal online CUP application in the Civil Plan Set – Sheet 7.01 (Appendix C). As indicated in this plan, adequate safety and security lighting is proposed for the hydrogen facility building.

12. LANDSCAPING AND SCREENING PLAN

A Landscaping and Screening Plan has been developed in coordination with the City standards. Refer to the Civil Plan Set – Sheet 6.01 that was included as an attachment to the ePortal online CUP application (Appendix C).

13. NOISE ASSESSMENT

A pre-construction noise assessment has been completed for the Project. The assessment included detailed noise calculations of the major facility noise generating equipment operating under full-load conditions and a comparison to the noise regulations within the State of Minnesota Administrative Rules.

The operational noise assessment revealed that Project-generated noise levels are expected to be in compliance with the applicable noise regulations. Operational Project noise levels were shown to be less than 50 dBA at the nearest residential and recreational property lines for both daytime and nighttime hours. The noise calculations did not include factors such as the barrier effect of existing buildings and equipment, the screening effect of vegetation, or changes in topography, resulting in a conservative assessment. A copy of the report was included as an attachment to the ePortal online CUP application (Appendix H).

Additionally, the proposed construction of the Project will be within working hours, between the hours of 7am and 7pm, Monday through Friday. Weekend work may take place if there are significant project construction delays due to weather. These hours are flexible and are intended to work with the community to control noise and disturbance.

14. OPERATIONS, MAINTENANCE, AND SAFETY PLAN

CenterPoint Energy has significant experience in hydrogen production and has safely operated a similar hydrogen blending facility in Minneapolis, Minnesota since 2022. Lessons learned from that facility continue to inform system design, safety protocols, and operational practices for this Project.

The Project will be designed, constructed, and operated in accordance with applicable federal, state, and local regulations and permit conditions. Required permits and approvals will be obtained, as applicable, prior to corresponding construction and operational activities. A comprehensive Operations and Maintenance (O&M) Manual will be developed and implemented to ensure safe, reliable operation and long-term system performance while protecting human health, the environment, and the surrounding community. The manual will include procedures for emergency response, routine inspections, preventive maintenance, and system testing, and will incorporate industry best practices and site-specific conditions. The final manual can be available to the City for review upon request following construction.

Hazards associated with the Project, including hydrogen, oxygen, electricity, natural gas, and personnel and vehicle traffic, have been evaluated through a safety risk assessment conducted during design. Mitigation measures have been incorporated into system design and will guide ongoing operations. Environmental protection measures will include stormwater and erosion controls, spill prevention and response procedures, and proper waste management practices to minimize the potential for impacts to surrounding resources.

To further reduce environmental risk, the facility will implement spill prevention and response measures, including maintaining appropriately sized and strategically located spill response kits, secondary containment where applicable (e.g., for fuels, oils, or chemicals), and training personnel in proper spill response procedures. Any releases will be promptly contained, cleaned up, documented, and reported in accordance with regulatory requirements. The site will also maintain clearly posted emergency contact information consistent with CenterPoint Energy's emergency communication protocols to ensure rapid response coordination.

CenterPoint Energy will prioritize community safety through controlled site access, perimeter fencing, clear signage, and coordination with local emergency responders. The facility will be designed and operated to minimize noise, traffic, and visual impacts.

14.1 EMERGENCY RESPONSE

A site-specific Emergency Response Plan will be developed and maintained for the facility. This plan will include emergency contacts, notification procedures, coordination with emergency services, description of site-specific hazards, description of on-site emergency equipment and controls, detailed response procedures for emergency scenarios, and other information necessary to prepare for and react to emergencies. The Emergency Response Plan will be periodically reviewed and updated based on operational experience and evolving best practices.

Prior to start of Operation, CenterPoint will coordinate with First Responders including local fire, police, EMS, and emergency management officials to provide training related to site-specific

hazards. Training may include classroom briefings, tabletop exercises, or site walk-throughs, as appropriate. Updated site maps, emergency contact information, and safety documentation will be provided to responding agencies.

14.2 HYDROGEN FACILITY

The hydrogen facility will consist of the electrolyzer, balance of plant, water treatment system, blending infrastructure, and compression and storage systems. All equipment will meet applicable industry standards and hazard classifications. The hydrogen facility is an unmanned facility that will operate continuously, except during occasional periods of scheduled maintenance. The facility requires routine monthly, quarterly, and annual maintenance and is designed to be started and stopped locally.

Key safety system features include hazardous detection, notification, and response systems that collectively monitor for hazardous accumulation of hydrogen and oxygen, notify site operators of any hazards, and shut down the system in a safe manner if hazards are detected. Other key safety features include, but are not limited to, manual emergency shutdown buttons, relief stacks, and oxygen venting systems. The facility will be monitored remotely 24/7 by trained staff at CenterPoint Energy's Gas Control Center in Minneapolis.

Major components of the hydrogen facility include:

- RODI skid
- Water and oxygen separation skid
- Electrolyzer stack
- Power supply and rectifier skid
- Cooling systems
- Hydrogen handling and compression equipment
- PLC control system
- Power distribution equipment
- Backup generator
- Hydrogen gas compressor
- Mobile hydrogen storage

The mobile hydrogen storage unit will have a maximum storage capacity of 146 kg of hydrogen at 6500 psi. The unit is designed to be towed by commercial transport. The unit will be managed in accordance with applicable storage, handling, and transportation safety requirements, including regular inspection and secure containment to prevent accidental releases.

The proposed building for the hydrogen facility will require both water and sanitary municipal services, also discussed in Section 17 – Utility Services Plan. Water service will connect through a planned 6-inch lateral to the existing 8-inch watermain, and sewer service will connect through a planned 6-inch lateral to the existing 8-inch sanitary line. During normal continuous operation, the hydrogen facility is expected to consume approximately 2 gallons of water per minute. The water treatment skid will discharge approximately 1 gallon of wastewater per minute, while the remaining gallon is consumed in the production of hydrogen.

14.3 SOLAR PANEL ARRAY

Design and installation of all components of the solar array will be in accordance with applicable electrical and fire safety codes. All equipment will be appropriate for the range of electrical demand it will be exposed to, with appropriate disconnects, circuit breakers, and labeling as necessary. The array will also be monitored remotely 24/7 by trained staff at CenterPoint Energy's Gas Control Center in Minneapolis.

The solar array will be surrounded by a new chain-link fence to restrict access for unauthorized personnel. The site will be accessible via a locked gate at the southeast edge of the array. Signage will be installed to deter trespassing and provide safety information.

Major components of the solar array include:

- Approximately 2,120 590W panels (~8 feet high, 20-degree tilt)
- Fixed racking and pilings
- Inverters, switchgear, and transformer

A pollinator-friendly vegetative mix will be used for ground cover beneath the array to support local ecosystems, reduce erosion, and improve soil stability. CenterPoint Energy will work with a qualified third-party vendor to manage site vegetation, including conducting regular maintenance to ensure site meets applicable pollinator-friendly requirements and remove observed noxious weeds. Vegetation management may include mechanical methods and selective herbicide application, as needed, in accordance with applicable regulations and label requirements to prevent impacts to non-target species, surface water, and groundwater.

Stormwater management practices will be implemented to minimize runoff, control erosion, and prevent sediment transport from the site. Routine inspections will ensure that drainage features and ground cover remain effective.

14.4 COMMITMENT TO COMPLIANCE AND COMMUNICATION

CenterPoint Energy will maintain compliance with applicable requirements throughout the life of the facility and will promptly address any health, safety, or environmental concerns. The company is committed to transparent communication with City staff, regulatory agencies, and the community, and will provide safety information and respond to inquiries as requested.

15. SITE RESTORATION AND DECOMMISSIONING

CenterPoint will be responsible for costs associated with decommissioning the system and restoring the site at the end of its service life or if the system is permanently taken out of use.

The solar panel array will be decommissioned and the site restored to a condition comparable to its pre-conditional condition once the equipment reaches the end of its useful service life, unless a plan is submitted to the City of Mankato to repower the facility or repurpose the site and equipment for another approved use. All applicable equipment will be removed and either recycled or disposed of in accordance with applicable regulations within a reasonable timeline after being determined to

have reached the end of its useful service life. A financial surety will be provided to the City of Mankato to ensure decommissioning of the equipment. CenterPoint Energy proposes a surety of $70,000 to cover decommissioning costs, as quoted in Appendix I.

The hydrogen facility can operate independently from the solar panel array and is not expected to be decommissioned alongside the solar array. The facility is located within an existing industrial area and is designed for long-term operation. Components will be repaired or replaced as needed to maintain safe and reliable performance. In the event the hydrogen facility is permanently taken out of service, CenterPoint Energy will implement a formal decommissioning process.

16. TREES

No tree removal will be required within City rights-of-way as part of the Project.

17. UTILITY SERVICES PLAN

The proposed building for the hydrogen facility will require both water and sanitary municipal services. Water service will connect through a planned 6-inch lateral to the existing 8-inch watermain, and sewer service will connect through a planned 6-inch lateral to the existing 8-inch sanitary line. Refer to the Civil Plan Set – Sheets 9.01 and 9.02 that was included as an attachment to the ePortal online CUP application (Appendix C).

During normal continuous operation, the hydrogen facility is expected to consume approximately 2 gallons of water per minute. The water treatment skid will discharge approximately 1 gallon of wastewater per minute, while the remaining gallon is consumed in the production of hydrogen. Based on these rates:

- Estimated Daily Water Use:
- 2 gallons/min × 60 minutes/hour × 24 hours/day = 2,880 gallons/day

- Estimated Daily Wastewater Discharge:
- 1 gallon/min × 60 minutes/hour × 24 hours/day = 1,440 gallons/day

- Estimated Monthly (30-day) Water Use:
- 2,880 gallons/day × 30 days = 86,400 gallons/month

- Estimated Monthly (30-day) Wastewater Discharge:
- 1,440 gallons/day × 30 days = 43,200 gallons/month

These estimates reflect continuous operation and will be used for utility planning, service sizing, and evaluating billing impacts. If operational schedules change or if the City requires a different calculation basis (e.g., maximum day or average month), updated estimates can be provided.

18. WETLAND DELINEATION

CenterPoint completed a wetland delineation survey and received a Notice of Decision from the City of Mankato Technical Evaluation Panel (TEP) on December 10, 2025, confirming a no-loss determination under Minnesota Rule 8420.0415, Subpart A (“an activity that will not impact a wetland”). A copy of the issued Notice of Decision was included as an attachment to the ePortal online CUP application (Appendix J).

19. ZONING

No zoning changes are required. The site is currently zoned M-2 Heavy Industrial and will remain under this designation following the installation of the Project

CenterPoint Energy

Mankato Hydrogen Energy Plant Project

CUP / Final Plat Application – May 2026

Proposed Building

- The proposed building to be constructed at Mankato Facility site will be similar in appearance to the example photo to the right.
- Exterior metal siding and roof
- Standing seam metal roof
- 24-foot x 92-foot (2,208-square foot) area
- 18-foot side wall height



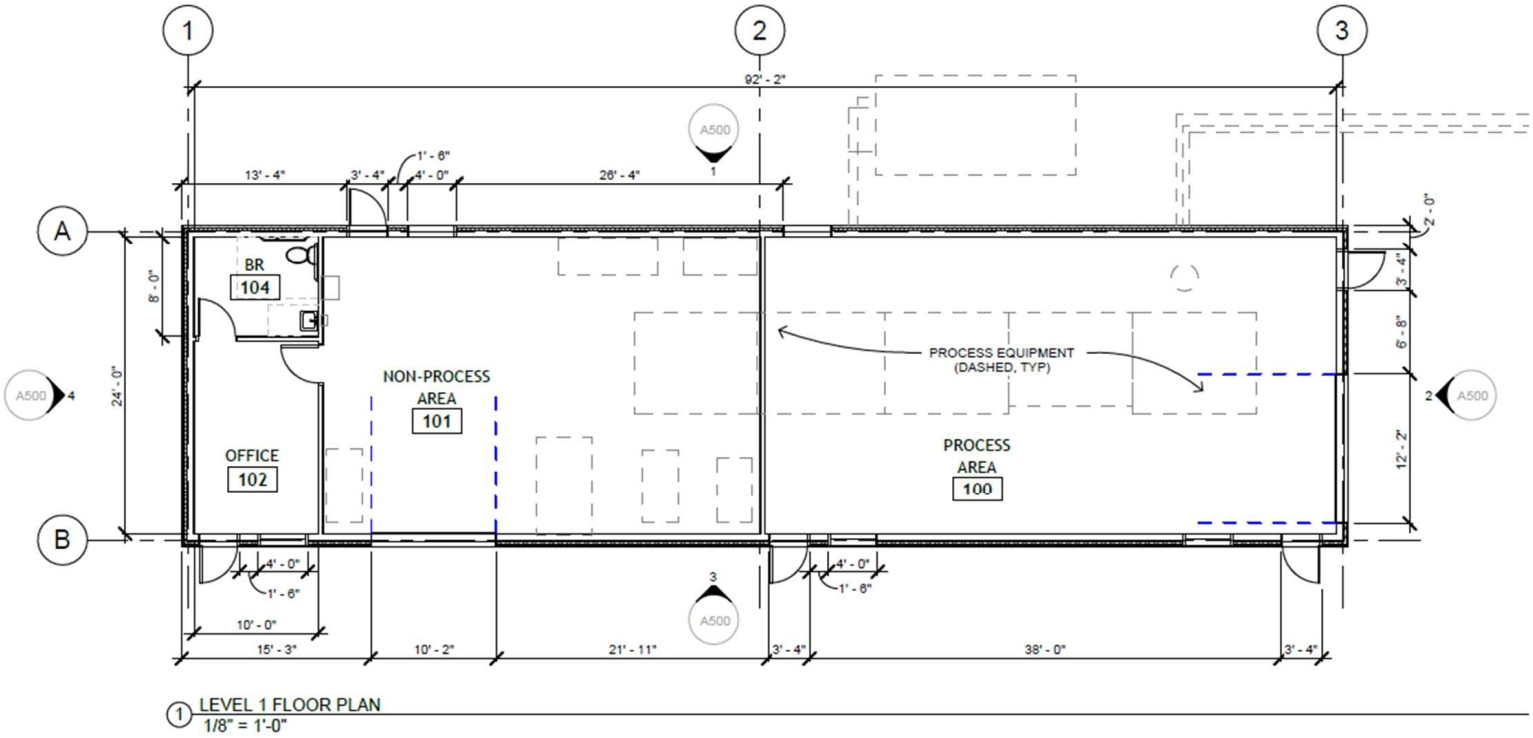
ERM

CenterPoint Energy

Mankato Hydrogen Energy Plant Project``

CUP / Final Plat Application – May 2026

Proposed Building Floor Plan



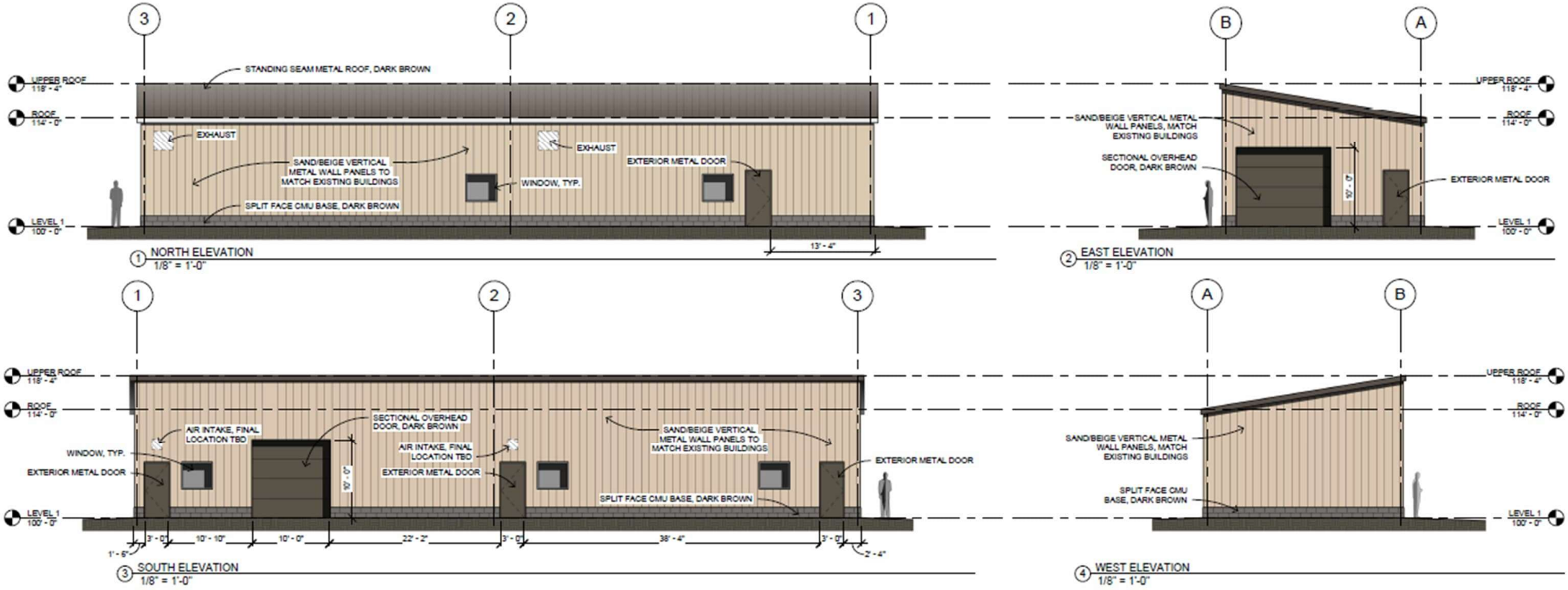
1 LEVEL 1 FLOOR PLAN
1/8" = 1'-0"

CenterPoint Energy

Mankato Hydrogen Energy Plant Project

CUP / Final Plat Application – May 2026

Proposed Building Elevations



ERM

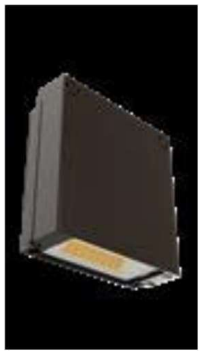
CenterPoint Energy

Mankato Hydrogen Energy Plant Project

CUP / Final Plat Application – May 2026

Photometrics Plan

- Proposed - 5 box lights on building
- WPX0 LED, 1650 Lumen setting, 4000K Setting, 120-277V
- Lumens per Lamp = 1645





Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Site	+	0.5 fc	5.7 fc	0.0 fc	N/A	N/A

ERM

CenterPoint Energy

Mankato Hydrogen Energy Plant Project

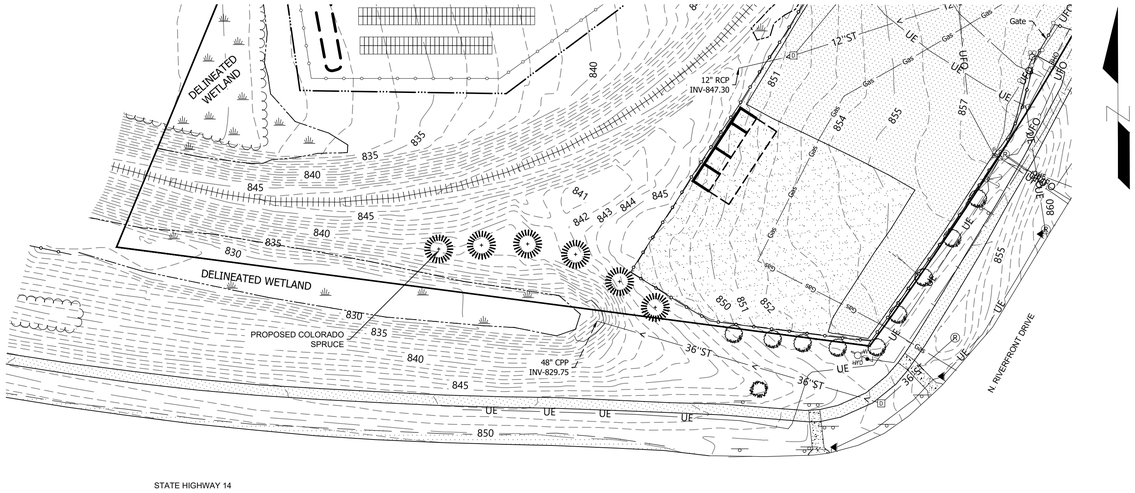
CUP / Final Plat Application – May 2026

Aggregate Containment

- The containment structure will house aggregate currently stored elsewhere on site.
- The proposed concrete aggregate containment will be similar in appearance to the example photo to the right.
- 36-foot x 75-foot area
- 4-foot side wall height
- 6-foot back wall height
- 8-inch thick concrete pad
- 8-inch concrete walls



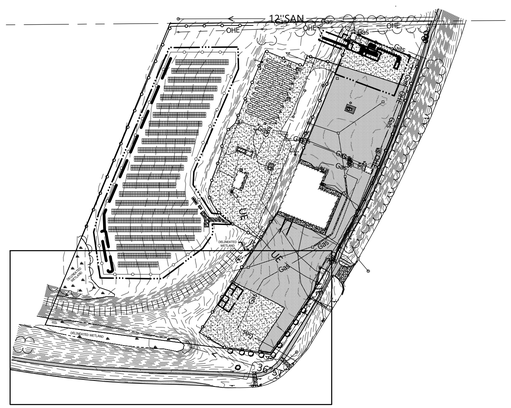
ERM



SCREENING PLAN INSET

SCALE 1" = 60'

0 60 120 180 FEET



SCREENING PLAN INSET

GENERAL SITE LAYOUT

SCALE 1" = 200'

0 200 400 600 FEET



PRECONDITION SCREENING 3D RENDERING



POSTCONDITION SCREENING 3D RENDERING

PLANT SCHEDULE

CODE	QTY	COMMON NAME/LATIN NAME	SIZE	ROOT	REMARKS
	6	COLORADO SPRUCE	6'	B&B	FULL FORM TO GRADE
		Picea pungens			SPACE EVENLY

SCREENING & PLANTING NOTES

GENERAL PLANTING NOTES, IRRIGATION NOTES, AND PLANTING DETAILS TO BE SUBMITTED WITH FINAL DESIGN.

REFER TO GRADING PLAN FOR GRADES AND EROSION CONTROL.

REMOVE WIRING, TWINE OR ROPES AND BURLAP FROM THE TOP AND SIDES OF THE ROOT BALL FOR BALLED AND BURLAPPED PLANTS.

REMOVE CONTAINERS AND CUT CIRCLING ROOTS IF PLANTS ARE CONTAINER GROWN.

MULCH DEPTH SHALL BE A MAXIMUM OF FOUR INCHES, AND SHALL BE KEPT AT LEAST TWO INCHES AWAY FROM THE STEM OF THE TREES.

THE LANDSCAPE CONTRACTOR SHALL REPAIR ALL DAMAGE TO THE SITE CAUSED BY THE PLANTING OPERATION AT NO COST TO THE OWNER.

ALL PLANTINGS SHALL RECEIVE FERTILIZER AS FOLLOWS: (NO PHOSPHORUS) *10-0-20 GRANULAR FERTILIZER APPLIED AT THE TIME OF PLANTING AT A RATE OF 12 OZ PER 2.5 CALIPER INCHES OF TREE AND 6 OZ PER SHRUB. *10-0-10 FERTILIZER APPLIED THE FOLLOWING SPRING AT SAME RATE.

ALL DISTRUBED AREAS SHALL BE SEEDED WITH A PRAIRIE SEED MIX OR APPROVED ALTERNATIVE.

SCREENING PLAN LEGEND

- PROPERTY BOUNDARY LINE
- OHE — EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING TREE
- Gas — EXISTING GAS LINE
- UFO — EXISTING FIBER OPTIC CABLE
- 12"ST — EXISTING SEWER LINE
- EXISTING MANHOLE
- EXISTING CULVERT
- EXISTING CONTOURS
- EXISTING UTILITY POLE
- UE — EXISTING UNDERGROUND ELECTRIC
- EXISTING GRAVEL
- EXISTING PAVEMENT
- EXISTING CONCRETE

TREE/ARBORVITAE

NOTES:

TREE TO HAVE SHREDDED HARDWOOD MULCH UNLESS NOTED OTHERWISE. NO MULCH TO BE IN CONTACT WITH TRUNK.

SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.

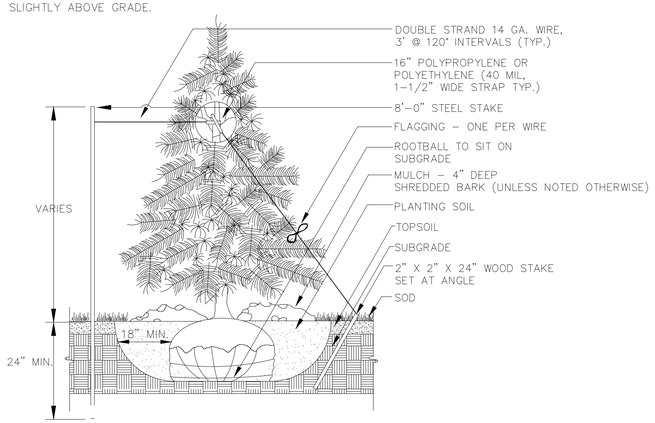
TWO ALTERNATE METHODS OF TREE STAKING ARE ILLUSTRATED.

IT IS THE CONTRACTOR'S OPTION TO STAKE TREES; HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE GUARANTEE PERIOD.

PLACE ROOT COLLAR AT OR JUST ABOVE FINISHED GRADE.

THE HOLE FOR PLANTING MUST BE AT LEAST TWICE THE WIDTH OF THE ROOT BALL

ALL TREES TO BE PLANTED WITH THE ROOT COLLAR LEVEL OR SLIGHTLY ABOVE GRADE.



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NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

ERM

SCREENING PLAN

DISCIPLINE NO. C6

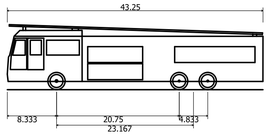
MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV. 0

SCALE	DESIGNED BY	PROJECT NUMBER	SHEET NO.
1" = 60'	WS	0764026	C6.01
DATE DRAWN 05/26/2026	DRAWN BY JB		

Environmental Resources Management, Inc.

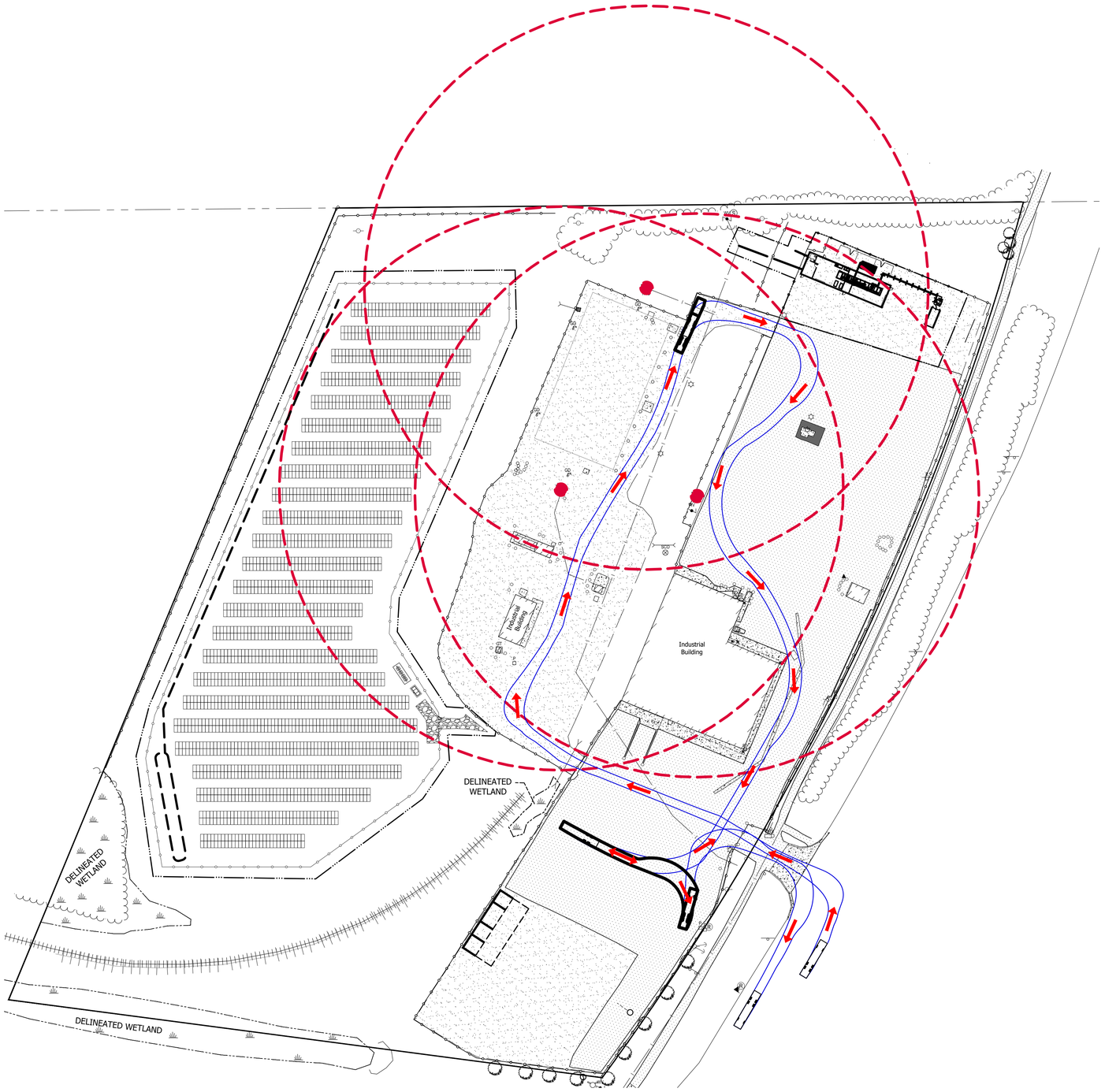
FILE PATH: C:\Users\jessica.blat\OneDrive - ERM\064419 CenterPoint Energy Environmental Support (Client) - Mankato Hydrogen Plant_CAD\CUP\05_Screening Plan.dwg SCREENING PLAN, PRINTED ON 5/18/2026 BY: Jessica Blat



E-ONE Heavy Walk-In Rescue	
Overall Length	43.250ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

NOTES:

1. DESIGN VEHICLE USED IS E-ONE HEAVY WALK-IN RESCUE.
2. THE DESIGN VEHICLE DIMENSIONS EXCEED THE CITY'S "TURNING RADIUS REQUIREMENT A" VEHICLE.



N

SCALE 1" = 60'

0 60 120 180 FEET

EMERGENCY ACCESS PLAN LEGEND

- PROPERTY BOUNDARY LINE
- ZONING SETBACKS
- OHE — EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING TREE
- Gas — EXISTING GAS LINE
- UFO — EXISTING FIBER OPTIC CABLE
- 12"ST — EXISTING SEWER LINE
- EXISTING MANHOLE
- EXISTING CULVERT
- EXISTING CONTOURS
- EXISTING UTILITY POLE
- OHW — EXISTING TRANSMISSION LINE
- UE — EXISTING UNDERGROUND ELECTRIC
- PROPOSED ACCESS ROAD
- PROPOSED FENCE
- PROPOSED SOLAR PANEL ARRAYS
- EDGE OF VEHICLE TRACKING PATH
- VEHICLE PATH DIRECTION
- FIRE HYDRANT LOCATION
- FIRE HYDRANT 300' RADIUS

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ERM

EMERGENCY ACCESS PLAN

DISCIPLINE NO. C5

MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV. 0

SCALE	DESIGNED BY	PROJECT NUMBER	SHEET NO.
1"=60'	WS	0764026	C5.01
DATE DRAWN 05/26/2026	DRAWN BY JB		

Environmental Resources Management, Inc.

FILE PATH: C:\Users\jessica.blatt\OneDrive - ERM\0064159 CenterPoint Energy Environmental Support (Client) - Mankato Hydrogen Plant_CAD\CUP\07_Emergency Access Exhibit.dwg EMERGENCY ACCESS EXHIBIT, PRINTED ON 4/16/2026 BY Jessica Blatt



N

SCALE 1" = 60'

0 60 120 180 FEET

EXISTING CONDITIONS LEGEND

- PROPERTY BOUNDARY LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING TREE
- EXISTING GAS LINE
- EXISTING FIBER OPTIC CABLE
- EXISTING SEWER LINE
- EXISTING MANHOLE
- EXISTING CULVERT
- EXISTING CONTOURS
- EXISTING UTILITY POLE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING GRAVEL
- EXISTING PAVEMENT
- EXISTING CONCRETE

NOTES:

1. THE PROPERTY DESCRIBED AND EASEMENTS SHOWN HEREON IS THE SAME AS THE PROPERTY DESCRIBED IN THE TITLE COMMITMENT, PREPARED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY, (ISSUING AGENT, THE TITLE TEAM), COMMITMENT NO, MA 250043, WITH A COMMITMENT DATE OF NOVEMBER 7, 2025 AT 7:00 AM.
2. THE SUBJECT PROPERTY CONTAINS ±14.83 ACRES (±646,030 SQUARE FEET).
3. WETLANDS SHOWN PER WETLAND DELINEATION REPORT PREPARED BY ERM DATED OCTOBER 9, 2025.
4. CURRENT ZONING PER CITY OF MANKATO (BLUE EARTH COUNTY) GIS MAP = M-2 HEAVY INDUSTRIAL.
5. TOPOGRAPHIC SURVEY COMPLETED BY IMEG ON OCTOBER 21, 2025.
6. APPROXIMATE HYDRANT AND TIE-IN LOCATION BASED ON CITY UTILITY MAP AND PREVIOUS AS-BUILT SURVEY.

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

ERM

OVERALL EXISTING CONDITIONS

DESCRIPTION NO.: C3

MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV.: 0

SCALE	1" = 60'	DESIGNED BY	WS	PROJECT NUMBER	0764026	SHEET NO.	C3.01
DATE DRAWN	05/26/2026	DRAWN BY	JB				

Environmental Resources Management, Inc.

FILE PATH: C:\Users\jwebb2\ERM\Denver - SDM\0064169 CenterPoint Energy Environmental Support (Dan) - Mankato Hydrogen Plant_CAD\CUP\03-04_Existing Conditions.dwg DWGNAME: EXISTING CONDITIONS PLOTTED ON: 4/14/2026 BY: Jessica Webb

SITE DESCRIPTION

PROJECT NAME AND LOCATION:
MANKATO HYDROGEN ENERGY PLANT
2400 N RIVERFRONT DR
MANKATO, MN 56001
COORDINATES: 44.190286, -93.981120

OWNER NAME, ADDRESS, AND EMAIL:
CENTERPOINT ENERGY
PO BOX 59038
MINNEAPOLIS MN 55459
ANDREW.ROCKWELL@CENTERPOINTENERGY.COM

DESCRIPTION:
A 1-MEGAWATT (MW) HYDROGEN PLANT AND A 1 MW ON-SITE SOLAR PANEL ARRAY IN THE CITY OF MANKATO, BLUE EARTH COUNTY, MINNESOTA.

SOIL DISTURBING ACTIVITIES WILL INCLUDE: CLEARING AND GRUBBING; PERIMETER, AND OTHER EROSION AND SEDIMENT CONTROLS; GRADING; GRAVEL PLACEMENT AND FINAL PLANTING AND SEEDING.

CURVE NUMBERS: PRE-DEVELOPMENT CURVE NUMBER - 80
POST-DEVELOPMENT CURVE NUMBER - 80

SITE AREA: THE SITE'S APPROXIMATE ACREAGE IS 14.83 ACRES. 4.04 ACRES WILL BE DISTURBED BY CONSTRUCTION ACTIVITIES.

SOIL TYPES:

18 35
85 94B
1039

SEQUENCE OF MAJOR ACTIVITIES:
THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:
1. PHASE 1 CONSTRUCTION
   - 1.1. INSTALL PERIMETER CONTROLS
   - 1.2. INSTALL ROCK CONSTRUCTION ENTRANCE
   - 1.3. CLEAR AND GRUB
   - 1.4. FULL SITE GRADING
   - 1.5. PILE TOPSOIL WITHIN PERIMETER EROSION AND SEDIMENT CONTROLS
   - 1.6. STABILIZE DENUDED AREAS AND STOCKPILES WITHIN 14 DAYS OF LAST CONSTRUCTION ACTIVITY IN THAT AREA
   - 1.7. CONSTRUCTION OF ACCESS ROAD
   - 1.8. INSTALLATION OF SOLAR ARRAY EQUIPMENT AND FACILITIES
   - 1.9. FINAL GRADING, REMOVE TEMPORARY LAYDOWN AREA, AND INSTALL PERMANENT SEEDING
   - 1.10. INSTALL FILTRATION BERM AND ASSOCIATED OUTLET STRUCTURES
   - 1.11. RESEED ANY DISTURBED AREAS AND LANDSCAPE SITE
   - 1.12. REMOVAL OF TEMPORARY CONTROLS UPON SITE STABILIZATION
2. PHASE 2 CONSTRUCTION
   - 2.1. INSTALL PERIMETER CONTROLS
   - 2.2. INSTALLATION AND CONSTRUCTION OF HYDROGEN PLANT FACILITIES
   - 2.3. RESTORATION ANY DISTURBED AREAS
   - 2.4. REMOVAL OF TEMPORARY CONTROLS UPON SITE STABILIZATION

NAME OF RECEIVING WATERS: THE ENTIRE SITE ULTIMATELY DRAINS TO THE MINNESOTA RIVER.

GENERAL NOTES

ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH ALL LOCAL EROSION/SEDIMENT CONTROL, WASTE DISPOSAL, SANITARY AND HEALTH REGULATIONS.

ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST MEET THE STANDARDS AND SPECIFICATIONS OF THE MPCA STORMWATER MANUAL.

OTHER EROSION CONTROL ITEMS MAY BE NECESSARY DUE TO ENVIRONMENTAL CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND IMPLEMENTATION OF ADDITIONAL EROSION CONTROL ITEMS, AT THE ENGINEER'S DISCRETION.

REGULAR INSPECTION AND MAINTENANCE WILL BE PROVIDED FOR ALL EROSION AND SEDIMENT CONTROL PRACTICES.

THE CONTRACTOR SHALL USE EROSION CONTROL MEASURES AS NECESSARY TO PREVENT SEDIMENT MOVEMENT INTO AREAS DESIGNATED AS WETLANDS.

NO SOLID OR LIQUID WASTE SHALL BE DISCHARGED INTO STORM WATER RUNOFF.
ADDITIONAL EROSION AND SEDIMENT CONTROL BMP'S MAY BE REQUIRED AS IDENTIFIED BY THE DESC INSPECTOR.

CONTROLS

EROSION AND SEDIMENT CONTROLS: COMPOST FILTER SOCK AND ROCK CONSTRUCTION ENTRANCE

STABILIZATION PRACTICES

TEMPORARY STABILIZATION - TOPSOIL STOCKPILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES WILL BE STABILIZED WITH TEMPORARY SEED AND MULCH NO LATER THAN 14 DAYS FROM THE LAST CONSTRUCTION ACTIVITY IN THAT AREA. THE TEMPORARY SEED SHALL BE APPLIED AS PER THE TEMPORARY SEEDING SPECIFICATIONS.

PERMANENT STABILIZATION - DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 14 DAYS OR WITHIN 7 DAYS FOR AREAS THAT DRAIN TO SPECIAL OR IMPAIRED WATERS AFTER THE LAST CONSTRUCTION ACTIVITY.

STORMWATER MANAGEMENT
STORMWATER DRAINAGE WILL BE PROVIDED VIA DIVERSION SWALE AND A FILTRATION BERM.

OTHER CONTROLS

WASTE DISPOSAL:
ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER RENTED FROM A LICENSED SOLID WASTE MANAGEMENT COMPANY. THE DUMPSTER WILL MEET ALL LOCAL, CITY AND STATE SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF TWICE PER WEEK OR MORE OFTEN IF NECESSARY, AND THE TRASH WILL BE HAULED OFF-SITE. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ONSITE. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES WILL BE POSTED IN THE OFFICE TRAILER. THE INDIVIDUAL WHO MANAGES THE DAY-TO-DAY SITE OPERATIONS WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED. ALL CONSTRUCTION AND DEMOLITION DEBRIS (C&D) WASTE WILL BE DISPOSED OF IN A MINNESOTA POLLUTION CONTROL AGENCY APPROVED C&D LANDFILL.

HAZARDOUS WASTE:
ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES. THE INDIVIDUAL WHO MANAGES DAY-TO-DAY SITE OPERATIONS WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

SANITARY WASTE:
ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF THREE TIMES PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR, AS REQUIRED BY LOCAL REGULATION.

OFF-SITE VEHICLE TRACKING:
OFF-SITE TRACKING OF SEDIMENTS SHALL BE MINIMIZED. A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. ALL PAVED STREETS ADJACENT TO THE SITE WILL BE SWEPT DAILY TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARPAULIN.

DEWATERING ACTIVITIES:
THERE SHALL BE NO TURBID DISCHARGES TO SURFACE WATERS, RESULTING FROM DEWATERING ACTIVITIES. SEDIMENT-LADEN WATER MUST PASS THROUGH A SETTLING POND, FILTER BAG, OR OTHER COMPARABLE PRACTICE, PRIOR TO DISCHARGE.

PROCESS WASTEWATER:
ALL PROCESS WASTEWATER (EQUIPMENT WASHING, LEACHATE FROM ON-SITE WASTE DISPOSAL, ETC.) SHALL BE COLLECTED AND DISPOSED OF AT A PUBLICLY OWNED TREATMENT WORKS.

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, CONSTRUCTION ENTRANCE(S) AND COMPOST FILTER SOCK WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. SEDIMENT CONTROL DEVICES SHALL BE IMPLEMENTED FOR ALL AREAS REMAINING DISTURBED LONGER THAN 14 DAYS AND/OR WITHIN 7 DAYS OF ANY GRUBBING ACTIVITIES. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN 14 DAYS WILL BE STABILIZED WITH A TEMPORARY SEED. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, THAT AREA WILL BE STABILIZED WITH PERMANENT SEED AND MULCH.

INVENTORY FOR POLLUTION PREVENTION PLAN

- COMPOST FILTER SOCK
- ROCK CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT

SPILL PREVENTION

MATERIAL MANAGEMENT PRACTICES:
THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORMWATER RUNOFF.

GOOD HOUSEKEEPING: THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.

1. AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.
2. ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
3. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
4. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
5. WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
6. MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
7. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO VERIFY PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS: THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.

1. PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
2. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION.
3. IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURERS' OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES

THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ONSITE:

PETROLEUM PRODUCTS - ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FUEL STORAGE TANKS SHALL BE LOCATED AWAY FROM SURFACE WATERS AND STORM SEWER SYSTEM INLETS. FUEL TANKS SHALL BE STORED IN A DIKED AREA CAPABLE OF HOLDING 150% OF THE TANK CAPACITY.

FERTILIZERS - FERTILIZERS USED WILL NOT BE APPLIED.

SOIL STERILENT/PRE-EMERGENT - CONTRACTOR SHALL PLACE ON THE PROPOSED SUBGRADE AND ON THE FINISHED GRADE WITHIN THE LIMITS OF DISTURBANCE AS DIRECTED BY THE OWNER.

PAINTS - ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS - CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

1. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY. MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
2. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
3. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
4. SPILLS WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
5. SOILS CONTAMINATED BY PETROLEUM OR OTHER CHEMICAL SPILLS MUST BE TREATED/DISPOSED AT AN MPCA APPROVED SOLID WASTE MANAGEMENT FACILITY OR HAZARDOUS WASTE TREATMENT, STORAGE OR DISPOSAL FACILITY (TSDF).
6. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
7. THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THEY WILL DESIGNATE SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

ERM

NOTES AND DETAILS

DESCRIPTION NO.: C10

MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV.: 0

SCALE	DESIGNED BY	PROJECT NUMBER	SHEET NO.
N.T.S.	WS	0764026	C10.01
DATE DRAWN	DRAWN BY		
05/26/2026	JB		

Environmental Resources Management, Inc.

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DUST CONTROL

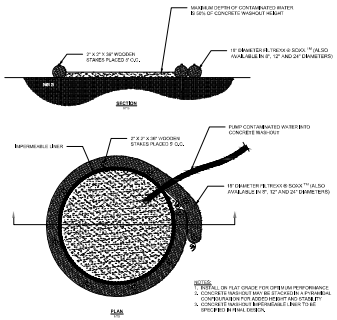
DUST CONTROL INVOLVES PREVENTING OR REDUCING DUST FROM EXPOSED SOILS OR OTHER SOURCES DURING LAND DISTURBING, DEMOLITION AND CONSTRUCTION ACTIVITIES TO REDUCE THE PRESENCE OF AIRBORNE SUBSTANCES WHICH MAY PRESENT HEALTH HAZARDS, TRAFFIC SAFETY PROBLEMS OR HARM ANIMAL OR PLANT LIFE.

THE FOLLOWING SPECIFICATIONS FOR DUST CONTROL SHALL BE FOLLOWED ONSITE:

1. VEGETATIVE COVER AND/MULCH - APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE FOR OVER 14 DAYS, SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING; PERMANENT SEEDING; MULCHING PRACTICES; AND TREE AND NATURAL AREA PROTECTION PRACTICES.
2. WATERING - SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEEDED. ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES. WATERING SHALL BE DONE AT A RATE THAT PREVENTS DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURERS INSTRUCTIONS.
3. STONE - GRADED ROADWAYS AND OTHER SUITABLE AREAS WILL BE STABILIZED USING CRUSHED STONE OR COARSE GRAVEL AS SOON AS PRACTICABLE AFTER REACHING AN INTERIM OR FINAL GRADE. CRUSHED STONE OR COARSE GRAVEL CAN BE USED AS A PERMANENT COVER TO PROVIDE CONTROL OF SOIL EMISSIONS.
4. BARRIERS - EXISTING WINDBREAK VEGETATION SHALL BE MARKED AND PRESERVED. SNOW FENCING OR OTHER SUITABLE BARRIER MAY BE PLACED PERPENDICULAR TO PREVAILING AIR CURRENTS AT INTERVALS OF ABOUT 15 TIMES THE BARRIER HEIGHT TO CONTROL AIR CURRENTS AND BLOWING SOIL.
5. OPERATION AND MAINTENANCE - WHEN TEMPORARY DUST CONTROL MEASURES ARE USED; REPETITIVE TREATMENT SHOULD BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.
6. STREET CLEANING - PAVED AREAS THAT HAVE ACCUMULATED SEDIMENT FROM CONSTRUCTION SHOULD BE CLEANED DAILY, OR AS NEEDED, UTILIZING A STREET SWEEPER OR BUCKET - TYPE ENDLOADER OR SCRAPER.

CONCRETE WASHOUT

SPECIFICATIONS FOR CONCRETE WASHOUT



1. THE RESIDUE OR CONTENTS OF ALL CONCRETE MIXERS, DUMP TRUCKS, OTHER CONVEYANCE EQUIPMENT AND FINISHING TOOLS SHALL BE WASHED INTO CONCRETE CLEAN-OUT STRUCTURES CONSISTING OF A STRAW BALE BARRIER WITH GRAVEL BACKFILL. THE LENGTH AND WIDTH OF THESE STRUCTURES SHALL BE AS DETERMINED BY THE CONTRACTOR TO FACILITATE THE PARTICULAR EQUIPMENT USED. THESE STRUCTURES SHALL BE CONSTRUCTED ON LEVEL GROUND AT LEAST 100' FROM THE NEAREST WATERCOURSE, DRAINAGE SWALE OR INLET, AT NO TIME SHALL THE STRUCTURE BE ALLOWED TO BE MORE THAN 50% FULL. THE CONTRACTOR SHALL MAINTAIN THESE PONDS UNTIL ALL CONCRETE PLACEMENT IS COMPLETE FOR THE PROJECT.

2. THE INTENT OF THESE STRUCTURES IS TO COLLECT ALL CONCRETE WASH OUT WATER AND ALLOW IT TO DRY TO A SOLID MATERIAL. AFTER DRYING, THE SOLID MATERIAL CAN BE REMOVED WITH A LOADER OR EXCAVATOR FOR PROPER DISPOSAL. WASH OUT WILL NOT BE PERMITTED IN ANY OTHER AREAS.

3. USE THE MINIMUM AMOUNT OF WATER TO WASH THE VEHICLES AND EQUIPMENT. NEVER DISPOSE OF WASH OUT INTO THE STREET, STORM INLET, DRAINAGE SWALE OR WATERCOURSE. DISPOSE OF SMALL AMOUNTS OF EXCESS DRY CONCRETE, GROUT AND MORTAR IN THE TRASH. ANY SOAPS THAT ARE UTILIZED SHALL BE PHOSPHATE-FREE AND BIODEGRADABLE.

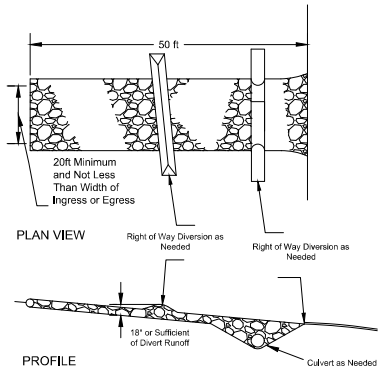
4. ADDITIONAL CONCRETE CLEAN-OUT STRUCTURES SHALL BE CONSTRUCTED WITHIN THE SPECIFIED AREA AS NEEDED BASED UPON THE VOLUME OF WASH OUT GENERATED DAILY.

ROCK CONSTRUCTION ENTRANCE

DESCRIPTION

A CONSTRUCTION ENTRANCE IS A STABILIZED PAD OF STONE UNDERLAIN WITH GEOTEXTILE AND IS USED TO REDUCE THE AMOUNT OF MUD TRACKED OFF-SITE WITH CONSTRUCTION TRAFFIC. LOCATED AT POINTS OF INGRESS/EGRESS, THE PRACTICE IS USED TO REDUCE THE AMOUNT OF MUD TRACKED OFF-SITE WITH CONSTRUCTION TRAFFIC.

SPECIFICATIONS FOR CONSTRUCTION ENTRANCE



1. STONE SIZE - THE ROCK SHALL BE 3" COARSE AGGREGATE, OR EQUIVALENT, SPREAD EVENLY 6" THICK.
2. LENGTH - THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 50 FT.
3. THICKNESS - THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK.
4. WIDTH - THE ENTRANCE SHALL BE AT LEAST 20 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE - A NONWOVEN GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA, PRIOR TO PLACING STONE.
6. TIMING - THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
7. CULVERT - A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
8. WATER BAR - A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
9. MAINTENANCE - TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
10. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
11. REMOVAL - THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

COMPOST FILTER SOCK

1. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN COMPOST FILTER SOCK THROUGHOUT THE CONSTRUCTION PERIOD.
2. MATERIALS - COMPOST USED FOR FILTER SOCKS SHALL BE WEED, PATHOGEN AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH. THEY SHALL BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF A PARTICLES RANGING FROM 3/8" TO 2".
3. FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.

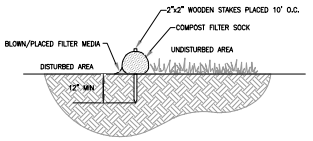
INSTALLATION:

1. FILTER SOCKS WILL BE PLACED ON A LEVEL LINE ACROSS SLOPES, GENERALLY PARALLEL TO THE BASE OF THE SLOPE OR OTHER AFFECTED AREA. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND AS NEEDED MID-SLOPE.
2. FILTER SOCKS INTENDED TO BE LEFT AS A PERMANENT FILTER OR PART OF THE NATURAL LANDSCAPE, SHALL BE SEEDED AT THE TIME OF INSTALLATION FOR ESTABLISHMENT OF PERMANENT VEGETATION.
3. FILTER SOCKS ARE NOT TO BE USED IN CONCENTRATED FLOW SITUATIONS OR IN RUNOFF CHANNELS.

MAINTENANCE:

4. ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
5. REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE PRACTICE.
6. WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.
7. REMOVAL - FILTER SOCKS WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED IN SUCH AS WAY AS TO FACILITATE AND NOT OBSTRUCT SEEDINGS.

SPECIFICATIONS FOR COMPOST FILTER SOCK



ELEVATION VIEW

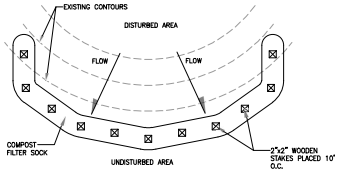


TABLE 4.1
Compost Sock Fabric Minimum Specifications

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degracable	Photo-degradable	Photo-degradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years
Two-ply systems					
Inner Containment Netting	HDPE biaxial net Continuously wound Fusion-welded junctures 3/4" X 3/4" Max. aperture size				
Outer Filtration Mesh	Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch) 3/16" Max. aperture size				
Sock fabrics composed of burlap may be used on projects lasting 6 months or less.					
Filtrexx & JMD					

COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS
N.T.S.

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Rev.	Date	Description	By	Chk

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NOTES AND DETAILS

DESCRIPTION NO. C10

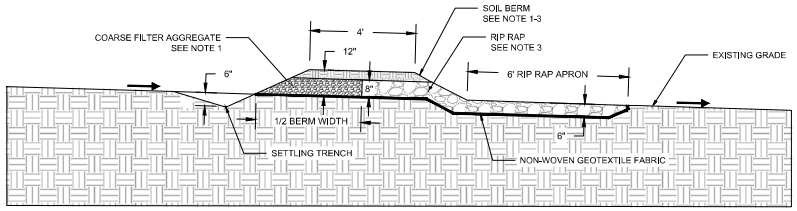
MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV. 0

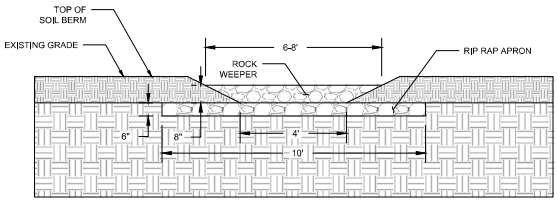
SCALE	N.T.S.	DESIGNED BY	WS	PROJECT NUMBER	0764026	SHEET NO.	C10.02
DATE DRAWN	05/26/2026	DRAWN BY	JB				

Environmental Resources Management, Inc.

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FILTRATION BERM - FRONT VIEW



FILTRATION BERM - SIDE VIEW

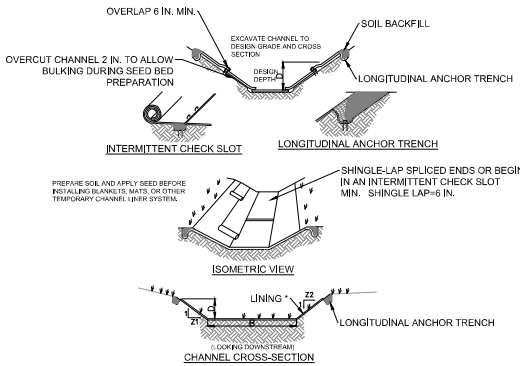
NOTES:

1. FILTRATION BERM SHALL HAVE A CONSISTENT SHAPE THROUGHOUT.
2. COARSE FILTER AGGREGATE SHALL BE 1" ROCK CONSISTING OF NATURALLY OCCURRING UNIFORMLY BLENDED MINERAL MATERIALS WITH NO MORE THAN 20% PASSING THE NO. 200 SEIVE AND CONTAINING NO TOPSOIL, ORGANICS, OR SEVERELY WEATHERED ROCK.
3. RIP RAP SHALL HAVE A D50 = 6" AND SHALL BE FREE OF SOIL AND OTHER DEBRIS AND CONSIST OF STONED WITH AT LEAST ONE FRACTURED FACE WHOSE WIDTHS ARE NOT LESS THAN 30% OF THE LENGTH OF EACH STONE.

MAINTENANCE:

4. ROUTINELY INSPECT FILTRATION BERM AFTER EACH SIGNIFICANT RAIN.
5. REPAIR DAMAGED AREAS WITHIN 24 HOURS. IF PORTIONS OF THE BERM OUTSIDE OF THE ROCK FILTERS ARE BREACHED, THE BERM SHALL BE EXPANDED OR ENLARGED UNTIL BREACHING IS PREVENTED.

1 / C10.03 — FILTRATION BERM
N.T.S.



* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION.
**AMENDED SOILS SPECIFICATIONS TO BE DETERMINED IN THE FINAL PLANS.

NOTES

ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.

SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

CONSTRUCTION SEQUENCE

1. BEGIN VEGETATED SWALE CONSTRUCTION ONLY WHEN THE UPGRADIENT TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE. VEGETATED SWALES SHOULD BE CONSTRUCTED AND STABILIZED EARLY IN THE CONSTRUCTION SCHEDULE, PREFERABLY BEFORE MASS EARTHWORK AND PAVING INCREASE THE RATE AND VOLUME OF RUNOFF.
2. ROUGH GRADE THE VEGETATED SWALE. EQUIPMENT SHALL AVOID EXCESSIVE COMPACTION AND/OR LAND DISTURBANCE. EXCAVATING EQUIPMENT SHOULD OPERATE FROM THE SIDE OF THE SWALE AND NEVER ON THE BOTTOM. IF EXCAVATION LEADS TO SUBSTANTIAL COMPACTION OF THE SUBGRADE (WHERE AN INFILTRATION TRENCH IS NOT PROPOSED), 18 INCHES SHALL BE REMOVED AND REPLACED WITH A BLEND OF TOPSOIL AND SAND TO PROMOTE INFILTRATION AND BIOLOGICAL GROWTH. AT THE VERY LEAST, TOPSOIL SHALL BE THOROUGHLY DEEP PLOWED INTO THE SUBGRADE IN ORDER TO PENETRATE THE COMPACTED ZONE AND PROMOTE AERATION AND THE FORMATION OF MACROPORES. FOLLOWING THIS, THE AREA SHOULD BE DISKED PRIOR TO FINAL GRADING OF TOPSOIL.
3. CONSTRUCT CHECK DAMS, IF REQUIRED.
4. FINE GRADE THE VEGETATED SWALE. ACCURATE GRADING IS CRUCIAL FOR SWALES. EVEN THE SMALLEST NONCONFORMITIES MAY COMPROMISE FLOW CONDITIONS.
5. SEED, VEGETATE AND INSTALL PROTECTIVE LINING AS PER APPROVED PLANS AND ACCORDING TO FINAL PLANTING LIST. PLANT THE SWALE AT A TIME OF THE YEAR WHEN SUCCESSFUL ESTABLISHMENT WITHOUT IRRIGATION IS MOST LIKELY. HOWEVER, TEMPORARY IRRIGATION MAY BE NEEDED IN PERIODS OF LITTLE RAIN OR DROUGHT. VEGETATION SHOULD BE ESTABLISHED AS SOON AS POSSIBLE TO PREVENT EROSION AND SCOUR.
6. ONCE ALL TRIBUTARY AREAS ARE SUFFICIENTLY STABILIZED, REMOVE TEMPORARY EROSION AND SEDIMENT CONTROLS. IT IS VERY IMPORTANT THAT THE SWALE BE STABILIZED BEFORE RECEIVING UPLAND STORMWATER FLOW.
7. FOLLOW MAINTENANCE GUIDELINES, AS DISCUSSED BELOW.

NOTE: IF A VEGETATED SWALE IS USED FOR RUNOFF CONVEYANCE DURING CONSTRUCTION, IT SHOULD BE REGRADED AND RESEEDED IMMEDIATELY AFTER CONSTRUCTION AND STABILIZATION HAS OCCURRED. ANY DAMAGED AREAS SHOULD BE FULLY RESTORED TO PROVIDE FUTURE FUNCTIONALITY OF THE SWALE.

2 / C10.03 — VEGETATED SWALE
N.T.S.

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

ERM

NOTES AND DETAILS

DESCRIPTION NO.: C10

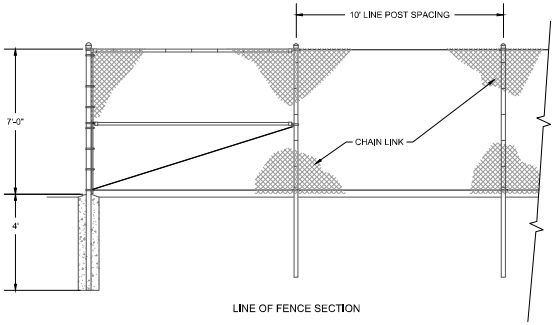
MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV.: 0

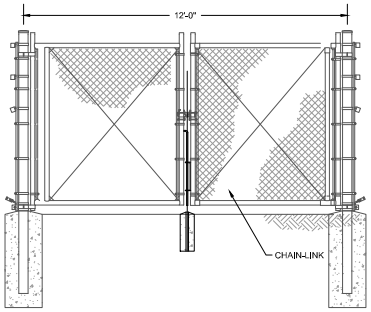
SCALE	DESIGNED BY	PROJECT NUMBER	SHEET NO.
N.T.S.	WS	0764026	C10.03
DATE DRAWN	DRAWN BY		
05/26/2026	JB		

Environmental Resources Management, Inc.

FILE PATH: C:\Users\jbeeks\ERM\DocHive - 0290\0544193\Centerpoint Energy Environmental Support (Client) - Mankato Hydrogen Plant_CAD\CUP\1-4-C_Notes and Details\Acad NCT15.5 - PRINTED On: 4/14/2026 BY: Jessica Bee



LINE OF FENCE SECTION

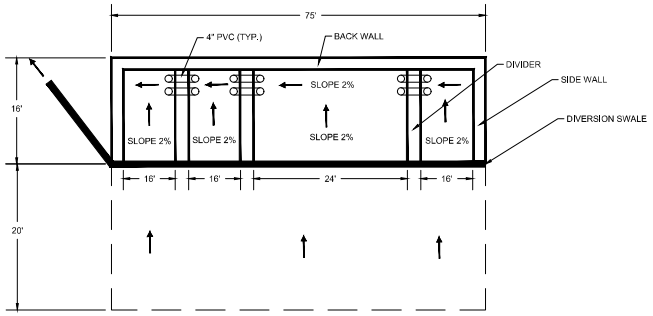


12' DOUBLE GATE SECTION

NOTES:

1. FABRIC SHALL BE 84" 9 GA. BLACK VINYL CHAIN LINK (1 ¾ KK).
2. INSTALL BRACE ASSEMBLY AS REQUIRED AT CORNER, CHANGE IN DIRECTION, OR APPROXIMATELY EVERY 1,500 LF.
3. CONCRETE POST FOOTINGS SHALL BE FOUR TIMES THE DIAMETER OF THE POST AND SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 PSI MIN.
4. INSTALL FENCING WITHIN THE LIMITS OF APPROVED CLEARING. PERFORM NO ADDITIONAL CLEARING TO ACCOMMODATE FENCE INSTALLATION.
5. FENCE POSTS TO AVOID EXISTING DRAINTILES TO THE MAXIMUM EXTENT PRACTICABLE.

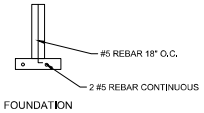
1 / C10.04 CHAIN LINK FENCE
N.T.S.



PLAN VIEW

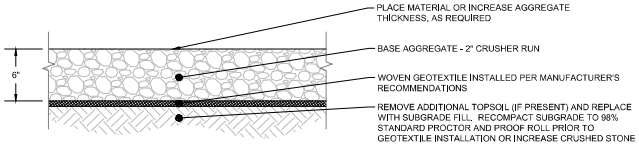
NOTES:

1. WALL DIMENSIONS SHALL BE:
   8" THICK SIDE WALLS
   10" THICK BACK WALL
   4' HIGH DIVIDERS/SIDE WALLS
   8' HIGH BACK WALL



FOUNDATION

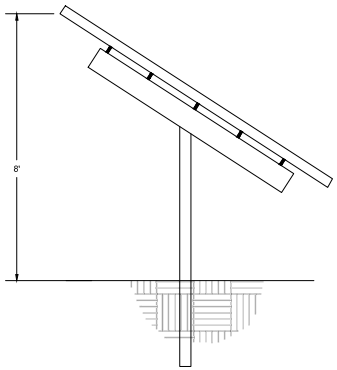
2 / C10.04 AGGREGATE CONTAINMENT
N.T.S.



NOTES:

1. FINAL GRAVEL ACCESS ROAD DESIGN TO BE APPROVED BY GEOTECHNICAL ENGINEER.

3 / C10.04 GRAVEL ACCESS ROAD
N.T.S.



NOTES:

1. SOLAR PANELS TO BE INSTALLED PER THE MANUFACTURER SPECIFICATIONS.
2. SOLAR PANELS TO HAVE A MAXIMUM HEIGHT OF 8 FT.

4 / C10.04 SOLAR PANEL
N.T.S.

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

ERM

NOTES AND DETAILS

MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

SCALE	N.T.S.	DESIGNED BY	WS	PROJECT NUMBER	0764026
DATE DRAWN	05/26/2026	DRAWN BY	JB		

DESCRIPTION NO.: C10
REV.: 0
SHEET NO.: C10.04

Environmental Resources Management, Inc.

FILE PATH: C:\Users\jbeeks2\ERM\DocHive - 0276620041\03-CenterPoint Energy Environmental Support (Client) - Mankato Hydrogen Plant_CAD\CUP1-04-C_Notes and Details.dwg ACTIES-1, PRINTED ON 4/14/2026 BY Jessica Bee



Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Site	+	0.5 fc	5.7 fc	0.0 fc	N/A	N/A

Schedule

Symbol	Label	Image	QTY	Catalog Number	Description	Lamp	Number Lamps	Lumens per Lamp	LLF	Wattage	Polar Plot
	A		5	WPX0 LED ALO 1650LM SWW2 4000K MVOLT	WPX0 LED, 1650 Lumen setting, 4000K Setting, 120-277V		1	1645	0.93	12.4511	Max: 752cd

PHOTOMETRICS PLAN LEGEND

- Gas — EXISTING GAS LINE
- UFO — EXISTING FIBER OPTIC CABLE
- 12"ST — EXISTING SEWER LINE
- EXISTING MANHOLE
- EXISTING CULVERT
- EXISTING CONTOURS
- EXISTING UTILITY POLE
- UE — EXISTING UNDERGROUND ELECTRIC

NOTES:

1. PHOTOMETRICS PLAN SHOWN IS FROM MUSKA COMPANIES DATED JANUARY 13, 2026.

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

ERM

PHOTOMETRICS PLAN

DISCIPLINE NO. C7

MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV. 0

SCALE	DESIGNED BY	PROJECT NUMBER	SHEET NO.
1" = 60'	WS	0764026	C7.01
DATE DRAWN: 05/26/2026	DRAWN BY: JB		

Environmental Resources Management, Inc.

FILE PATH: C:\Users\jessica.bat\OneDrive - ERM\0764159 CenterPoint Energy Environmental Support (Client) - Mankato Hydrogen Plant_CAD\CUP\09_Photometrics Plan.dwg PHOTOMETRICS PLAN, PRINTED ON 5/18/2026 BY: Jessica Bat

CENTERPOINT ENERGY - MANKATO GREEN HYDROGEN

MANKATO, MN

SITE MAP



CONTACTS

OWNER:

CENTERPOINT ENERGY - MANKATO
2400 N RIVERFRONT DR, MANKATO, MN 56001
Contact: DENNIS DAAS
Phone: (651) 270-0050

ARCHITECT:

BLOOM HAY DOBBS
ADDRESS: 2324 UNIVERSITY AVE W. SUITE 200
ST. PAUL, MN 55114
PH: (612)338 - 4590

GENERAL CONTRACTOR

LARSON BUILDING INC.
(763) 634-5600
CONTACT:IAN ALVIANI

DRAWING INDEX

GENERAL INFORMATION

G000 TITLE SHEET - GENERAL INFORMATION

ARCHITECTURAL

A210 FLOOR PLAN AND ROOF PLAN
A500 BUILDING ELEVATIONS

ARCHITECTURAL ABBREVIATIONS

ABV	ABOVE	E	EAST	LAV	LAVATORY	RO(H)	ROUGH OPENING
ACP	ACOUSTICAL PANEL	EA	EACH	LT	LIGHT		HEIGHT
ACT	ACOUSTICAL CEILING TILE	ELEC	ELECTRIC(AL)	LWC	LIGHT WEIGHT CONCRETE	RO(W)	ROUGH OPENING
ADJ	ADJUSTABLE	ELEV	ELEVATION	LVT	LUXURAL VINYL TILE		WIDTH
ADJ	ADJACENT	EMER	EMERGENCY			RWL	RAIN WATER LEADER
AFF	ABOVE FINISH FLOOR	ENC	ENCLOSE(URE)	MAS	MASONRY		
AHJ	AUTHORITIES HAVING JURISDICTION	EQ	EQUAL	MATL	MATERIAL	S	SOUTH
		EQUIP	EQUIPMENT	MAX	MAXIMUM	SCHED	SCHEDULE
ALT	ALTERNATIVE	EST	ESTIMATED	MC	METAL CHANNEL	SF	SQUARE FOOT
ALUM	ALUMINUM	ETC	ETCETERA	MDF	MEDIUM DENSITY FIBERBOARD	SHT	SHEET
ANOD	ANODIZED	EWC	ELEC WATER COOLER			SIM	SIMILAR
AP	ACCESS PANEL	EXH	EXHAUST	MECH	MECHANICAL	SIM REV	SIMILAR REVERSED
APPROX	APPROXIMATE(LY)	EXIST	EXISTING	MED	MEDIUM	SLNT	SEALANT
ARCH	ARCHITECT(URAL)	EXPN JT	EXPANSION JOINT	MFR	MANUFACTURER	SPEC	SPECIFICATION(S)
AUTO	AUTOMATIC	EXP	EXPANSION	MIC	MICROWAVE	SQ	SQUARE
		EXT	EXTERIOR	MIN	MINIMUM	SS	STAINLESS STEEL
BD	BOARD			MIR	MIRROR	STD	STANDARD
BIT	BITUMINOUS	FAF	FLUID APPLIED FLOOR	MISC	MISCELLANEOUS	STL	STL
BLDG	BUILDING	FB	FACE BRICK	MO	MASONRY OPENING	STOR	STORAGE
BLK	BLOCK	FD	FLOOR DRAIN			SUSP	SUSPENDED
BLKG	BLOCKING	FE	FIRE EXTINGUISHER	MP	METAL PANEL	SYST	SYSTEM
B.O.	BOTTOM OF	FFE	FINISHED FLOOR ELEVATION	MR	MOISTURE RESISTENT		
BRG	BEARING			MTD	MOUNTED	TBD	TO BE DETERMINED
BSMT	BASEMENT	FIN	FINISH(ED)	MTL	METAL	T.O.	TOP OF
BTM	BOTTOM	FLR	FLOOR(ING)	MULL	MULLION	TPD	TOILET PAPER DISPENSER
BTWN	BETWEEN	FND	FOUNDATION			TPTN	TOILET PARTITION
		FOS	FACE OF STEEL	N	NORTH	TRTD	TREATED
CABT	CABINET	FR	FRAME	NIC	NOT IN CONTRACT	TYP	TYPICAL
CEM	CEMENT(ITOUS)	FTG	FOOTING	NOM	NOMINAL		
CER	CERAMIC	FV	FIELD VERIFY	NRC	NOISE REDUCTION COEFFICIENT	UNO	UNLESS NOTED OTHERWISE
CG	CORNER GUARD			NTS	NOT TO SCALE		
CJ	CONTROL JOINT	GA	GAUGE			VB	VINYL BASE
CL	CENTER LINE	GALV	GALVANIZED	OA	OVERALL	VCT	VINYL COMPOSITION
CLG	CEILING	GB	GRAB BAR	OC	ON CENTER	TILE	
CPT	CARPET	GC	GENERAL CONTRACTOR	OD	OUTSIDE DIAMETER	VER	VERIFY
CMU	CONCRETE MASONRY UNIT	GL	GLASS	OPG	OPENING	VERT	VERTICAL
COL	COLUMN	GYP	GYPSUM	OVHD	OVERHEAD	VEST	VESTIBULE
CONC	CONCRETE	GYP BD	GYPSUM BOARD			VR	VAPOR RETARDER
CONF	CONFERENCE	HD	HEAD	PLAM	PLASTIC LAMINATE		
CONST	CONSTRUCTION	HDR	HEADER	PLYWD	PLYWOOD	W	WEST
CONT	CONTINUOUS	HM	HOLLOW METAL	PNL	PANEL	W/	WITH
CONTR	CONTRACTOR	HOR	HORIZONTAL	PR	PAIR	W/O	WITHOUT
CORR	CORRIDOR	HSS	HOLLOW STEEL SECTION	PRTN	PARTITION	WC	WATER CLOSET
		HT	HEIGHT	PT	PAINT	WD	WOOD
DETL	DETAIL	HTG	HEATING			WDW	WINDOW
DF	DRINKING FOUNTAIN	HVAC	HEATING/AIR CONDITIONING	RAD	RADIUS	WF	WIDE FLANGE
DIA	DIAMETER			RD	ROOF DRAIN	WP	WORK POINT
DIAG	DIAGONAL			REF	REFERENCE	WWF	WELDED WIRE FABRIC
DIM	DIMENSION	ID	INSIDE DIAMETER	REINF	REINFORCE(D)		
DISP	DISPENSER	INT	INTERIOR	REQD	REQUIRED		
DS	DOWNSPOUT	INSUL	INSULATE(ION)	RES	RESISTIVE		
DT	DRAIN TILE			REV	REVERSE		
DW	DISHWASHER	JC	JANITOR'S CLOSET	RF	ROOF		
DWG	DRAWING	JT	JOINT	RM	ROOM		
DWR	DRAWER			RO	ROUGH OPENING		

MATERIALS

- BATT INSULATION
- BRICK
- CAST STONE
- CONCRETE
- CONCRETE MASONRY UNIT
- EARTH
- EXISTING MATERIAL
- GRAVEL BED
- PLASTER
- RIGID INSULATION
- STEEL
- STONE
- WOOD

GENERAL SYMBOLS

DRAWING SHEET NUMBERS

DISCIPLINE — DRAWING SERIES
A101
DRAWING NUMBER

COLUMN GRID LINES

REFERENCE TO DETAIL

DETAIL — DETAIL / DRAWING NUMBER — ELEVATION
SHEET NO.

ROOM IDENTIFICATION

ROOM NAME — ROOM NAME
100 — ROOM NUMBER

DOOR IDENTIFICATION

EXISTING — NEW

LINE TYPES

1' - 3 1/2" — DIMENSION LINE
NOTE LEADER
MATCH LINE
CENTER LINE OR FINISH FLOOR LINE
BROKEN LINE, LINE ABOVE OR BELOW SOFFITS, N.I.C. ITEMS
REVISION: CLOUD AROUND MOST RECENT REVISION MADE

PARTITION SYMBOLS

PARTITION TYPE
NEW PARTITION
EXISTING WALL TO REMAIN
EXISTING WALL TO BE DEMOLISHED

NOTATION SYMBOLS

KEYNOTE TAG
EGRESS OCCUPANT LOAD

BLOOM HAY DOBBS

MIDTOWN COMMONS
2324 UNIVERSITY AVE W, SUITE 200, ST. PAUL, MN 55114
PH. 612.338.4590

CENTERPOINT ENERGY - MANKATO
2400 N RIVERFRONT DR, MANKATO, MN 56001
CONTACT: DENNIS DAAS
PHONE: (651) 270-0050

CONSULTANT

PROJECT NAME: CENTERPOINT ENERGY - MANKATO GREEN HYDROGEN
PROJECT NUMBER: 18009.008
DATE: 03/27/2026

REVISIONS

NUMBER	DESCRIPTION	DATE

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 ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME

SIGNATURE

LICENSE NO.

03/27/2026
DATE

DRAFT
FOR DISCUSSION ONLY

Not For Construction

SHEET TITLE:

TITLE SHEET - GENERAL INFORMATION

SHEET NUMBER:

G000

3/27/2026 3:27:26 PM © 2026 BLOOM HAY DOBBS. CONFIDENTIAL.

H:_18000.000 - 2018\18009.008 - CTRP - Mankato\Drawings and Graphics\REVIT\CenterPoint Mankato.rvt

BOARD OF WATER AND SOIL RESOURCES

Minnesota Wetland Conservation Act
Notice of Decision

Local Government Unit: City of Mankato	**County:** Blue Earth
Applicant Name: CenterPoint Energy Natural Gas Operations	**Applicant Representative:** Nicole Johnson, ERM
Project Name: Mankato Hydrogen Energy Plant Project	**LGU Project No. (if any):** WTLD-0010-25
Date Complete Application Received by LGU: October 22, 2025	
Date of LGU Decision: December 10, 2025	
Date this Notice was sent: December 10, 2025	

WCA Decision Type - check all that apply

☒ Wetland Boundary/Type ☐ Sequencing ☐ Replacement Plan ☐ Bank Plan (not credit purchase)
☐ Exemption ☒ No-Loss (8420.0415)
MN Rules 8420.0420 Part: ☒ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H
Subpart: ☐ 4 ☐ 5 ☐ 7 ☐ 9
MN Statutes 103G.2241
Subdivision: : ☐ 1 ☐ 2 ☐ 6 ☐ 9

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Wetland Impact Area:
Wetland Replacement Type: ☐ Project Specific Credits - Number of Credits: ☐ Bank Credits – Number of Credits:
Bank Account Number(s):

Technical Evaluation Panel Findings and Recommendations (attach if any)

☒ Approve ☐ Approve w/Conditions ☐ Deny ☐ No TEP Recommendation

LGU Decision

☐ Approved with Conditions (specify below)[1] ☒ Approved[1] ☐ Denied
List Conditions:

Decision-Maker for this Application: ☐ Staff ☐ Governing Board/Council ☒ Other: Staff in consultation with the TEP

Decision is valid for: ☒ 5 years (default) ☐ Other (specify):

[1] *Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.*

LGU Findings – Attach document(s) and/or insert narrative providing the basis for the LGU decision[1].

☐ Attachment(s) (specify):
☒ Summary: The City of Mankato TEP reviewed the request for delineation concurrence and a no-loss at their meeting on November 19, 2025, when a site visit was conducted. The initial delineation report contained only 2 wetlands, however during the site visit it was determined that there was an additional wetland located in the southwest corner of the subject site. On December 5, 2025 updated delineation information depicting the additional wetland was submitted. Based on this revised submission, the City of Mankato, in conjunction with the TEP, find concurrence that there are three wetlands on the subject site. Wetland wbea001e, a Type 3 wetland is .37 acres and is located adjacent to the southern boundary of the property. Wetland wbea002e, a Type 3 wetland, is .02 acres and is located centrally on the site adjacent to an existing parking lot. Wetland wbea003s, the wetland added based on the TEP inspection, is a Type 6 wetland consisting of .35 acres. The applicant has also requested a no-loss under Minnesota Rule 8420.0415 Subpart a, "an activity that will not impact a wetland." The applicant's submission information demonstrates a "Solar array" location that is outside of any of the three wetland areas, and the narrative provided indicates that there will be no activity in the wetland areas. Therefore, the LGU finds that the no-loss request achieves the applicable criteria.

[1] *Findings must consider any TEP recommendations.*

Attached Project Documents

☒ Site Location Map ☐ Project Plan(s)/Descriptions/Reports (specify):

Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for $500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator
Minnesota Board of Water & Soils Resources
520 Lafayette Road North
St. Paul, MN 55155
travis.germundson@state.mn.us

Does the LGU have a local appeal process applicable to this decision?

☒ Yes[1] ☐ No

[1] *If yes, all appeals must first be considered via the local appeals process.*

Local Appeals Submittal Requirements (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

Within 45 days of the decision an application for appeal must be filed with the Board of Adjustments and Appeals, address as follows: Board of Adjustments and Appeals, attention: Zoning Administrator, 10 Civic Center Plaza, PO Box 3368, Mankato, MN 56002-3368.

Notice Distribution (include name)

Required on all notices:

☒ SWCD TEP Member: Jake Fritz, via email jake.fritz@blueearthswcd.org	☒ BWSR TEP Member: Alyssa Core, Alyssa.core@state.mn.us
☒ LGU TEP Member (if different than LGU contact):	Cory Bienfang, cbienfang@mankatomn.gov
☒ DNR Representative:	Erynn Jenzen via email erynn.jenzen@state.mn.us
☐ Watershed District or Watershed Mgmt. Org.:	

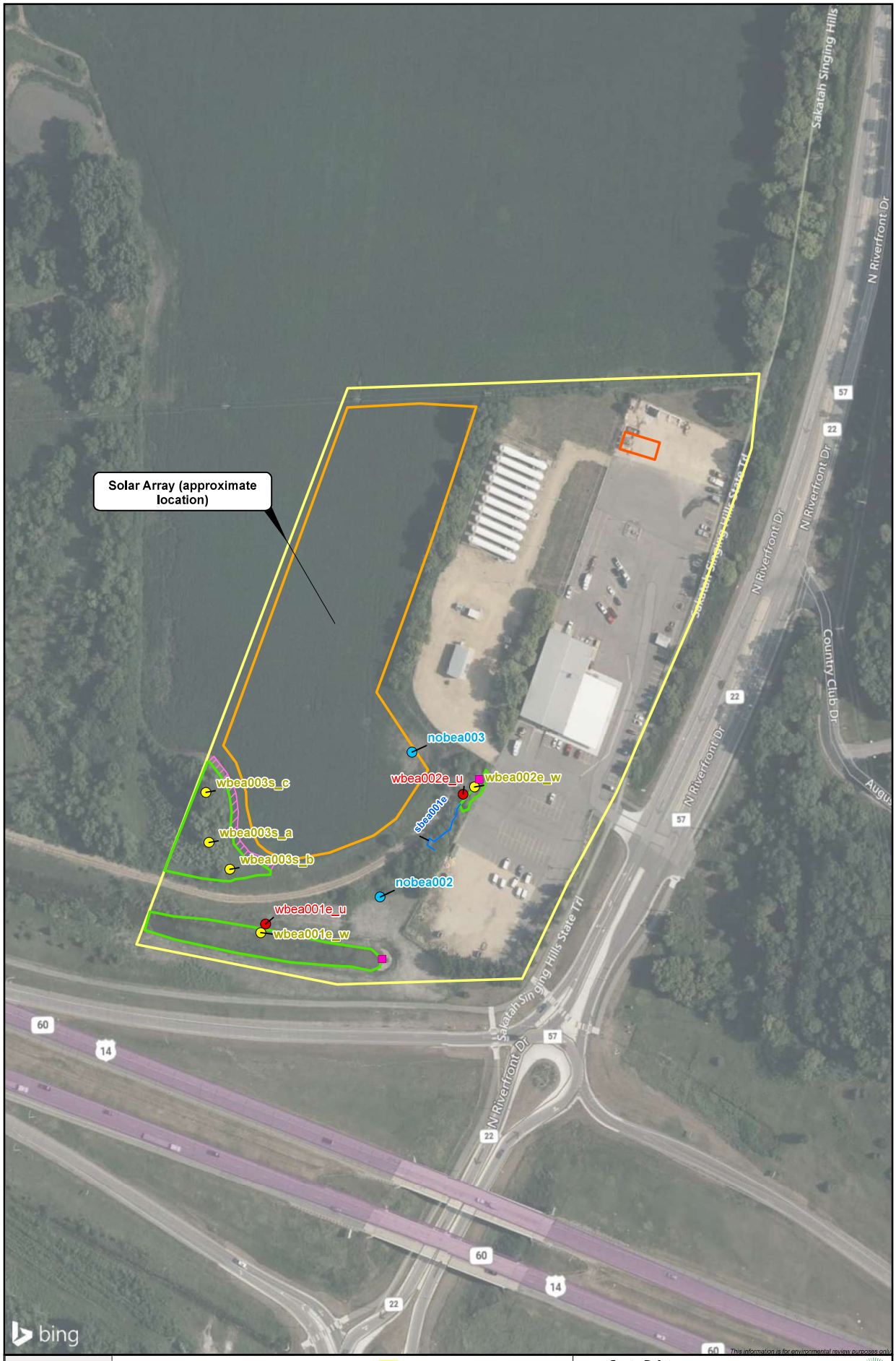
☐ Applicant:	☒ Agent/Consultant: Nicole Johnson, ERM

Optional or As Applicable:

☒ Corps of Engineers: David Studenski via email: david.a.studenski@usace.army.mil
☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):
☐ Members of the Public (notice only): ☐ Other:

Signature: *Mark Konz via electronic signature* *By Molly Westman*	**Date:** December 10, 2025

This notice and accompanying application materials may be sent electronically or by mail. The LGU may opt to send a summary of the application to members of the public upon request per 8420.0255, Subp. 3.



CenterPoint Energy

Figure 6
Field Survey Data Map
Mankato Hydrogen Energy Plant Project
Mankato, Blue Earth County, Minnesota

ERM

FILE: M:\US\Projects\A-C\CenterPoint\Minnesota\2025\09\Special_CPE_Mankato_Hydrogen_Energy_Plant_SWPPP_CPE_Mankato_Hydrogen_Energy_Plant_SWPPP.aprx | REVISED: 12/04/2025 | SCALE: 1:1,800 when printed at 11x17 | DRAWN BY: DK

Muska Electric Solar Decommissioning Estimate

Site Address: 2400 N Riverfront Drive Mankato, MN 56001

Array Infrastructure	**Labor Costs**	**Fees**
Modules (2,102)	$20,000.00	
Cable Support System (600ft)	$6,000.00	
Racking Supports (24 rows)	$19,500	
Vertical Pilings (337)	$10,000	
Electrical Equipment		
Inverters (8)	$1,500	$500
Feeder Conductors	$5,000	
Switchgear	$2,500	
Recycling/ Disposal		
Modules (2,102)		$5,000
DC Wire		*No Charge*
AC Feeder Conductors		*No Charge*
Gear		*No Charge*
Total Costs	$70,000.00	

Sincerely,

Muska Electric Company

Michael Ahmann

Michael Ahmann
{Project Manager, Estimator}

MEMO

TO	File
COMPANY	Centerpoint Energy Minnesota Gas
FROM	Macy Hanson
DATE	January 7, 2026
SUBJECT	National Register of Historic Places Review Mankato Hydrogen Energy Plant Project Mankato, Blue Earth County, Minnesota

CenterPoint Energy Minnesota Gas (CenterPoint) is proposing a project within Mankato, Blue Earth County, Minnesota, referred to as the Mankato Hydrogen Energy Plant Project (Project). The Project is anticipated to disturb approximately 3.2 acres of land.

The proposed Project is entirely located within previously disturbed areas. No new access roads will be constructed as part of the Project.

Environmental Resources Management (ERM), on behalf of CenterPoint, reviewed the National Park Service's (NPS') National Register of Historic Places (NRHP) to identify any significant cultural resources that may be listed on the NRHP within the project area. There are no NRHP-listed properties within the proposed project area. The closest NRHP-listed property (Stewart, William E., House) is situated approximately 1.65 miles Southwest of the proposed project area. As a result, CenterPoint's proposed Project will not have any direct effect on this historic property. Additionally, the Project will have no effects on any historic properties, as it is located within a previously disturbed area, approximately 1.65 miles Northeast of, and without any direct line of sight to the nearest historic property.

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Centerpoint Solar Glare Study Summary:

Component Data (pages#3-32): Input data for the array and nearby 'receptors' that have been identified (coordinates & elevations). Output data of glare projections for each receptor location.

Assumptions (pg 53): Defining 'glare' types, and methods used to perform the study.

Statement of Results: The study of the solar array to be installed highlighted (9) potential locations for potential glare (see page 1 & 2). These locations are defined as 'receptors' and named (*Eastbound Hwy, Northbound Exit Ramp, Westbound Exit Ramp, Westbound Highway, FP 1, FP 2, OP 1, OP 2, OP*). 'Yellow Glare' As defined on page (53) is of higher concern, but was not present on the results for each 'receptor location'

Sincerely,
Muska Electric Company
Michael Ahmann
Project Manager & Estimator

FORGESOLAR GLARE ANALYSIS

Project: **Centerpoint (Muska)**
Site configuration: **Centerpoint Ground Mount-temp-1**
Calculated via ForgeSolar Radiometric Physics Engine v3.1.2

Client: Muska Electric

Created 10 Apr, 2026
Updated 10 Apr, 2026
Time-step 1 minute
Timezone offset UTC-6
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 1 MW to 5 MW
Site ID 175642.28976

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad



Summary of Results

Glare with potential for temporary after-image predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	20.0	180.0	7,253	120.9	7,932	132.2	-

Vertical Surface	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Building	46,138	769.0	0	0.0
Tanks	18,316	305.3	0	0.0

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	4,215	70.2	1,232	20.5
Northbound Exit Ramp	19,889	331.5	0	0.0
West Bound Entrance Ramp	20,644	344.1	1,370	22.8
Westbound Hwy	4,376	72.9	1,725	28.8
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 1	1,164	19.4	2,208	36.8
OP 2	16,638	277.3	563	9.4

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 3	4,781	79.7	834	13.9

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 20.0°
Orientation: 180.0°
Rated power: -
Panel material: Smooth glass with AR coating



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.190575	-93.983609	836.70	2.00	838.70
2	44.192036	-93.982746	842.45	2.00	844.45
3	44.192025	-93.982129	844.98	2.00	846.98
4	44.190875	-93.982740	843.07	2.00	845.07
5	44.190590	-93.982386	842.83	2.00	844.83
6	44.190328	-93.982842	837.15	2.00	839.15
7	44.190355	-93.983577	835.78	2.00	837.78

Vertical Surfaces

Name: Building
Material profile: >
Lower edge height: 0 ft
Upper edge height: 30 ft
Surface glare contribution: evaluate single side

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.190721	-93.981673	851.12
2	44.190563	-93.981160	854.59
3	44.190830	-93.981010	856.53
4	44.190900	-93.981227	854.70
5	44.191017	-93.981163	855.48
6	44.191107	-93.981455	852.15
7	44.190721	-93.981673	851.12

Name: Tanks
Material profile: >
Lower edge height: 15 ft
Upper edge height: 32 ft
Surface glare contribution: evaluate single side

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.191482	-93.982015	849.56
2	44.191385	-93.981706	850.73
3	44.191797	-93.981460	849.87
4	44.191889	-93.981773	848.12
5	44.191482	-93.982015	849.56

Route Receptors

Name: Eastbound Hwy
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 90.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.189684	-93.986985	832.63	5.00	837.63
2	44.187323	-93.978069	907.92	5.00	912.92

Name: Northbound Exit Ramp
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 90.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.188000	-93.978649	892.90	5.00	897.90
2	44.188727	-93.980306	863.84	5.00	868.84
3	44.188992	-93.981218	846.25	5.00	851.25
4	44.189304	-93.981336	849.11	5.00	854.11
5	44.189761	-93.981068	849.06	5.00	854.06
6	44.190188	-93.980607	858.91	5.00	863.91
7	44.191323	-93.979791	879.92	5.00	884.92
8	44.191985	-93.979523	885.30	5.00	890.30

Name: West Bound Entrance Ramp
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 90.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.192531	-93.979453	887.85	5.00	892.85
2	44.191569	-93.979877	880.35	5.00	885.35
3	44.190627	-93.980505	861.17	5.00	866.17
4	44.189657	-93.981288	848.42	5.00	853.42
5	44.189373	-93.981760	848.14	5.00	853.14
6	44.189342	-93.982608	848.54	5.00	853.54
7	44.189381	-93.983536	840.13	5.00	845.13
8	44.189573	-93.985193	835.55	5.00	840.55
9	44.189846	-93.986320	834.47	5.00	839.47

Name: Westbound Hwy
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 90.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.187592	-93.978091	906.92	5.00	911.92
2	44.189900	-93.986867	832.08	5.00	837.08

Flight Path Receptors

Name: FP 1
Description:
Threshold height: 50 ft
Direction: 46.9°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	44.222743	-93.913877	1018.25	50.00	1068.25
Two-mile	44.202991	-93.943375	993.58	628.09	1621.68

Name: FP 2
Description:
Threshold height: 50 ft
Direction: 154.7°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	44.216884	-93.913877	1015.33	50.00	1065.33
Two-mile	44.243023	-93.931137	993.14	625.62	1618.76

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	44.190225	-93.981860	851.74	6.00
OP 2	2	44.190594	-93.981396	853.71	6.00
OP 3	3	44.191725	-93.980908	856.24	6.00

Obstruction Components

Name: Blvd Trees 1
Top height: 35.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.191791	-93.979974	876.56
2	44.191674	-93.980051	874.56

Name: Blvd Trees 2
Top height: 35.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.191362	-93.980242	868.97
2	44.191243	-93.980338	864.61

Name: Blvd Trees 3
Top height: 35.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.190960	-93.980515	863.98
2	44.190576	-93.980843	855.82

Name: Field Trees SW
Top height: 45.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.190504	-93.983841	834.68
2	44.190209	-93.983766	833.68

Name: Field Trees W
Top height: 32.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.191915	-93.984399	831.90
2	44.190681	-93.984410	833.86

Name: Lot Trees
Top height: 35.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.191217	-93.981486	851.62
2	44.190656	-93.981806	850.48

Name: Lot Trees SE
Top height: 30.0 ft



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.189679	-93.982219	848.15
2	44.189634	-93.981777	852.54
3	44.189978	-93.981393	854.64

Glare Analysis Results

Summary of Results

Glare with potential for temporary after-image predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	20.0	180.0	7,253	120.9	7,932	132.2	-

Vertical Surface	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Building	46,138	769.0	0	0.0
Tanks	18,316	305.3	0	0.0

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	4,215	70.2	1,232	20.5
Northbound Exit Ramp	19,889	331.5	0	0.0
West Bound Entrance Ramp	20,644	344.1	1,370	22.8
Westbound Hwy	4,376	72.9	1,725	28.8
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 1	1,164	19.4	2,208	36.8
OP 2	16,638	277.3	563	9.4
OP 3	4,781	79.7	834	13.9

PV: PV array 1 potential temporary after-image

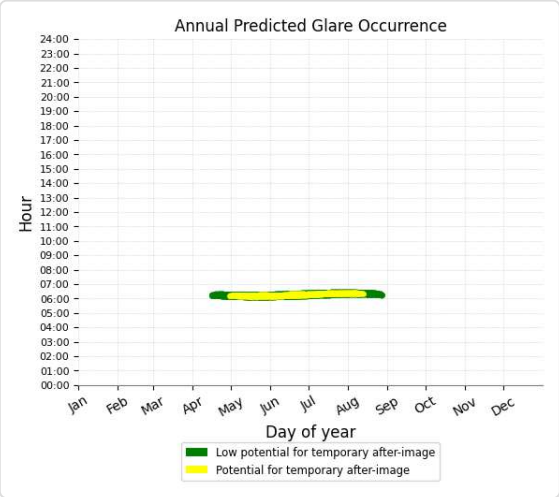
Receptor results ordered by category of glare

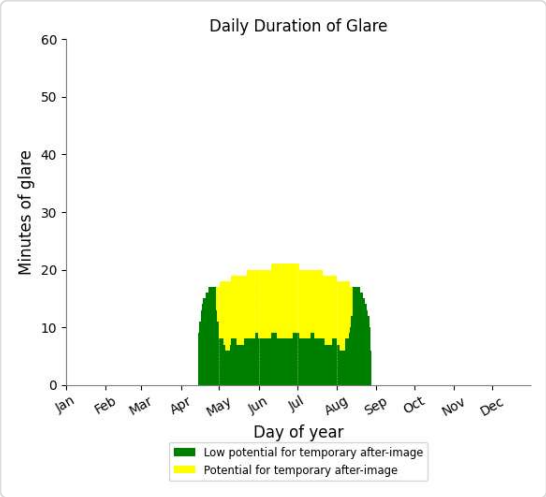
Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	1,284	21.4	1,232	20.5
West Bound Entrance Ramp	1,132	18.9	1,370	22.8
Westbound Hwy	1,242	20.7	1,725	28.8
Northbound Exit Ramp	0	0.0	0	0.0
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 1	1,164	19.4	2,208	36.8
OP 2	1,111	18.5	563	9.4
OP 3	1,320	22.0	834	13.9

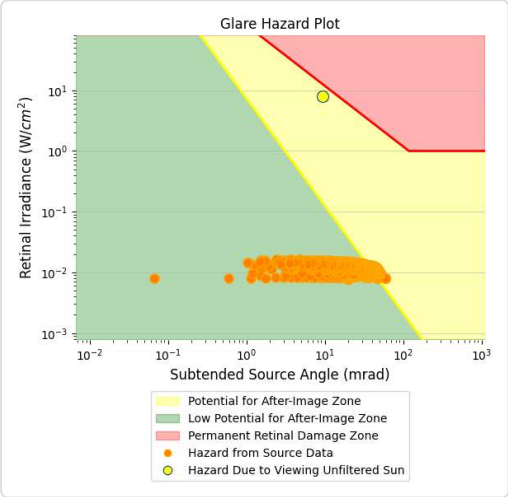
PV array 1 and Route: Eastbound Hwy

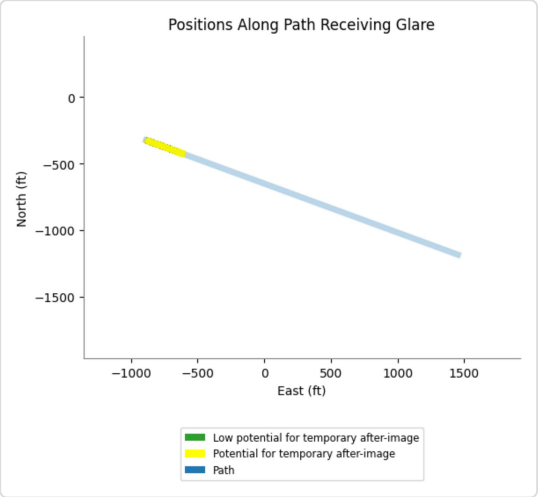
Yellow glare: 1,232 min.

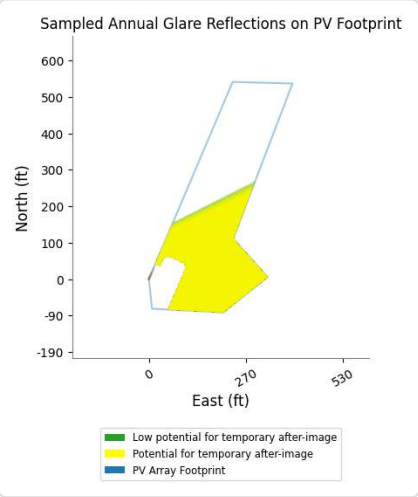
Green glare: 1,284 min.







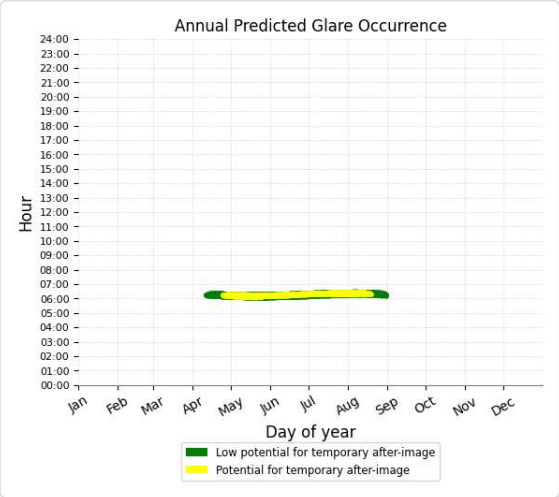


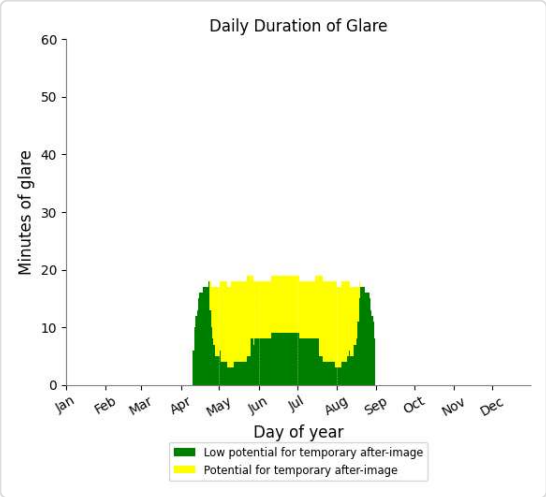


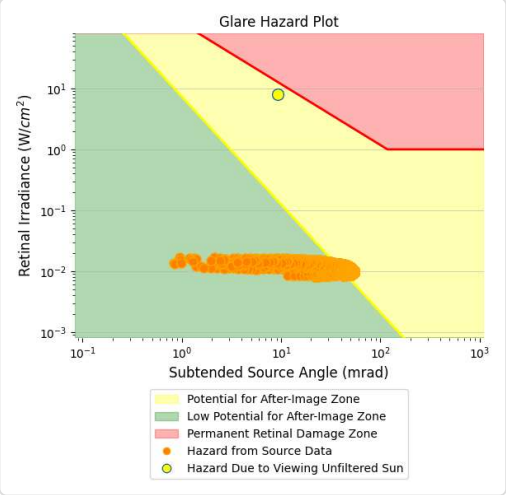
PV array 1 and Route: West Bound Entrance Ramp

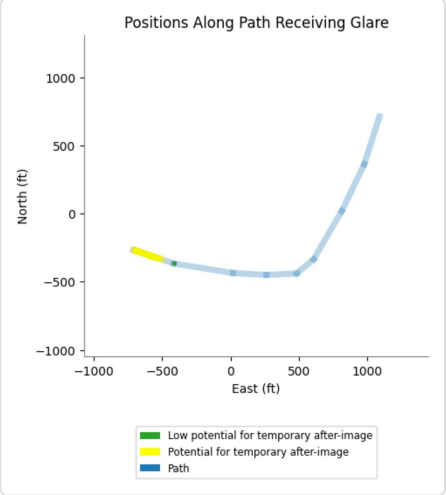
Yellow glare: 1,370 min.

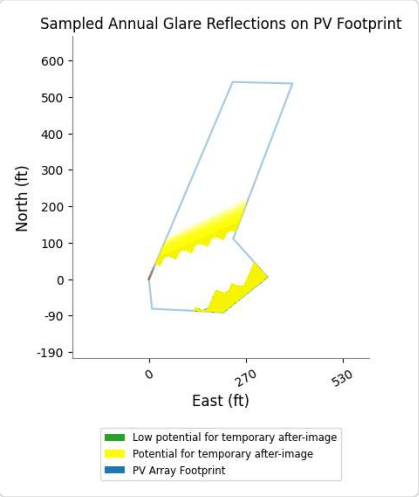
Green glare: 1,132 min.







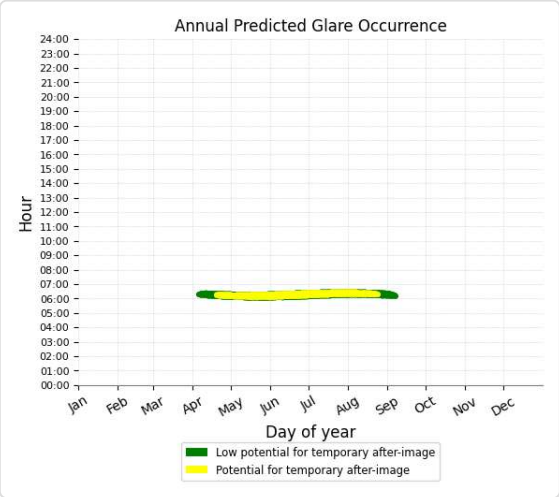


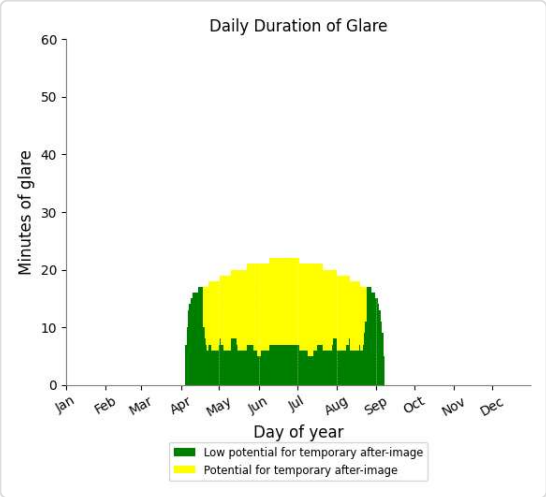


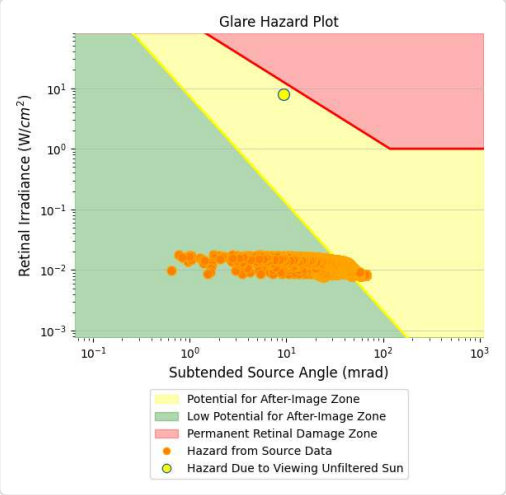
PV array 1 and Route: Westbound Hwy

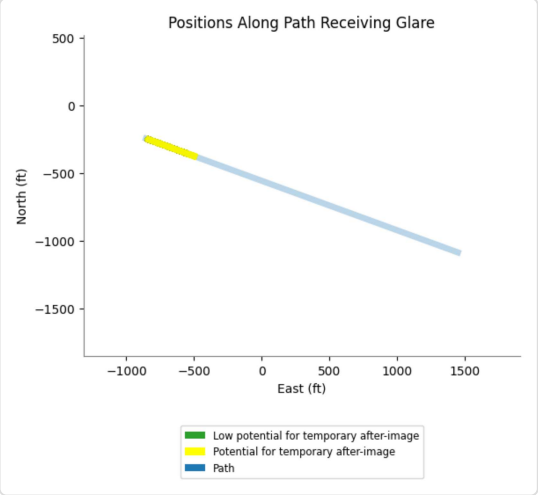
Yellow glare: 1,725 min.

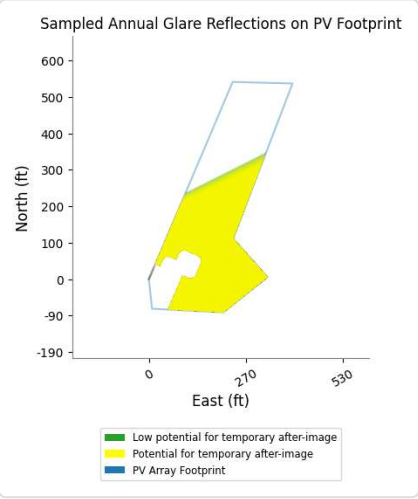
Green glare: 1,242 min.











PV array 1 and Route: Northbound Exit Ramp

No glare found

PV array 1 and FP: FP 1

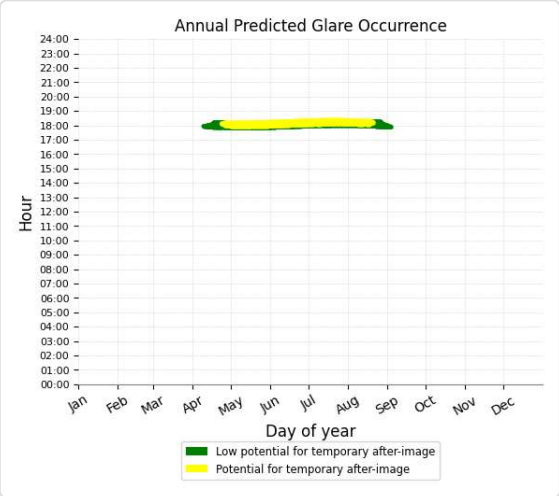
No glare found

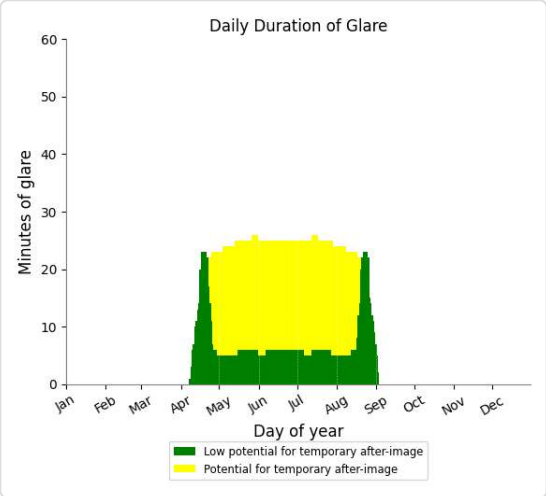
PV array 1 and FP: FP 2

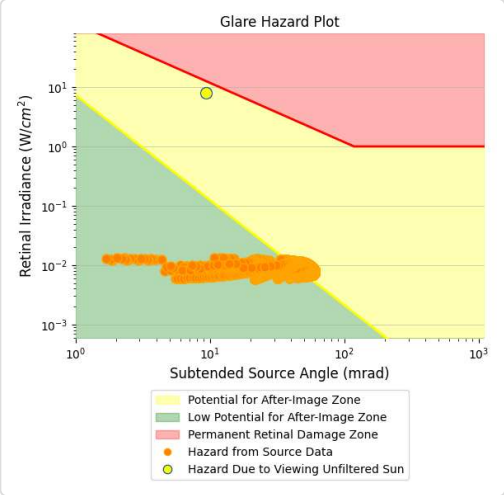
No glare found

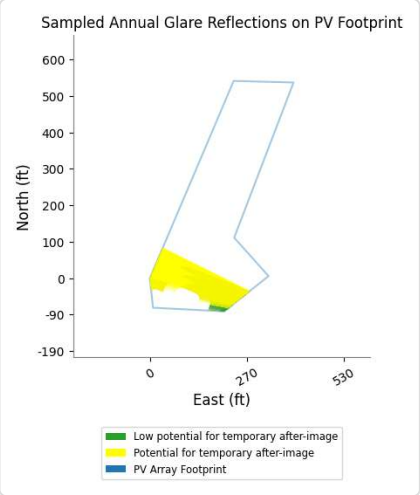
PV array 1 and OP 1

Yellow glare: 2,208 min.
Green glare: 1,164 min.





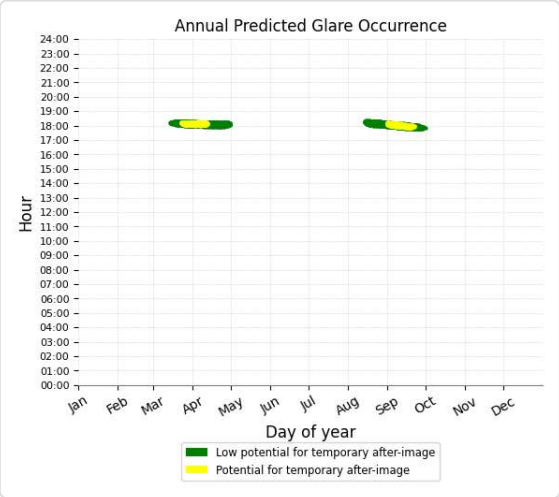


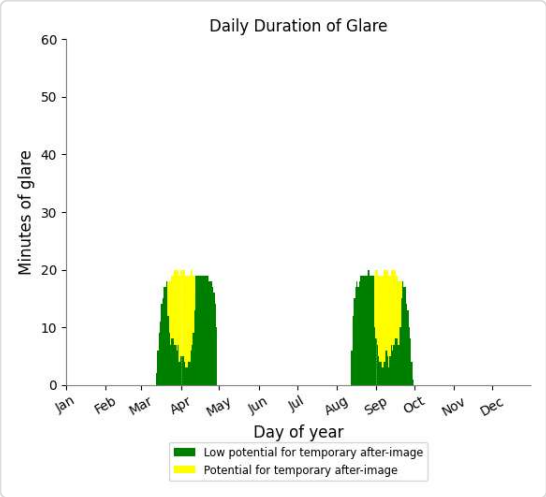


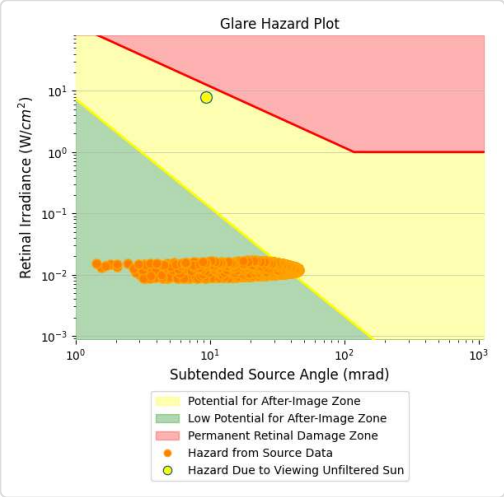
PV array 1 and OP 2

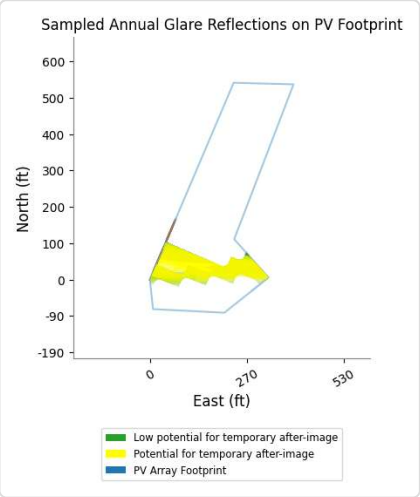
Yellow glare: 563 min.

Green glare: 1,111 min.





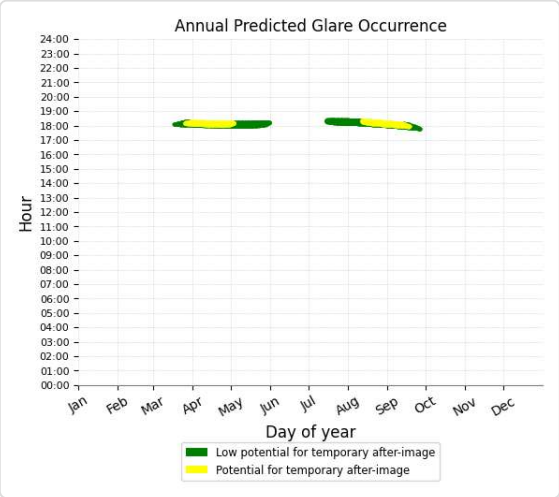


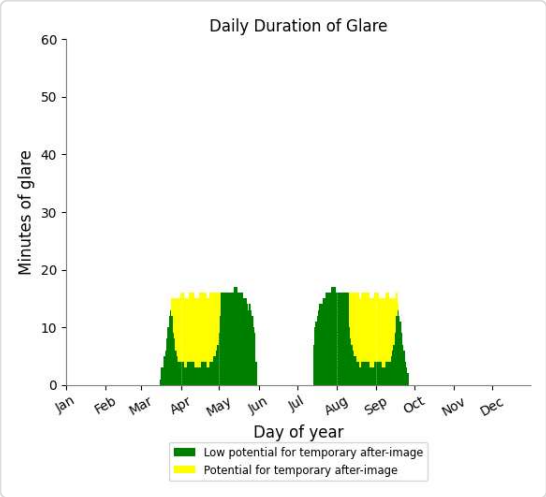


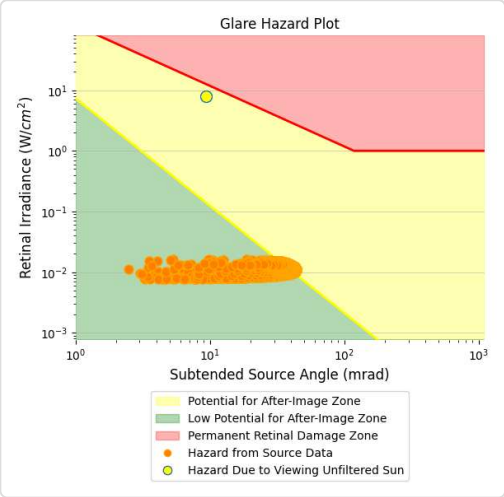
PV array 1 and OP 3

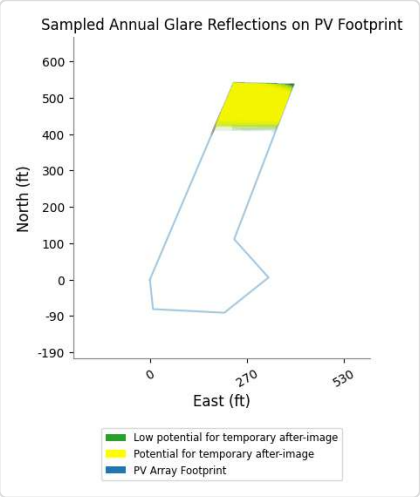
Yellow glare: 834 min.

Green glare: 1,320 min.









VS: Building

VS Face: 1-2 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	0	0.0	0	0.0
Northbound Exit Ramp	0	0.0	0	0.0
West Bound Entrance Ramp	0	0.0	0	0.0
Westbound Hwy	0	0.0	0	0.0
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0

Eastbound Hwy

Receptor type: Route
No glare found

Northbound Exit Ramp

Receptor type: Route
No glare found

West Bound Entrance Ramp

Receptor type: Route
No glare found

Westbound Hwy

Receptor type: Route
No glare found

FP 1

Receptor type: 2-mile Flight Path
No glare found

FP 2

Receptor type: 2-mile Flight Path
No glare found

OP 1

Receptor type: Observation Point
No glare found

OP 2

Receptor type: Observation Point
No glare found

OP 3

Receptor type: Observation Point
No glare found

VS Face: 2-3 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	0	0.0	0	0.0
Northbound Exit Ramp	0	0.0	0	0.0
West Bound Entrance Ramp	0	0.0	0	0.0
Westbound Hwy	0	0.0	0	0.0
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0

Eastbound Hwy

Receptor type: Route

No glare found

Northbound Exit Ramp

Receptor type: Route

No glare found

West Bound Entrance Ramp

Receptor type: Route

No glare found

Westbound Hwy

Receptor type: Route

No glare found

FP 1

Receptor type: 2-mile Flight Path

No glare found

FP 2

Receptor type: 2-mile Flight Path

No glare found

OP 1

Receptor type: Observation Point

No glare found

OP 2

Receptor type: Observation Point

No glare found

OP 3

Receptor type: Observation Point

No glare found

VS Face: 3-4 low potential for temporary after-image

Receptor results ordered by category of glare

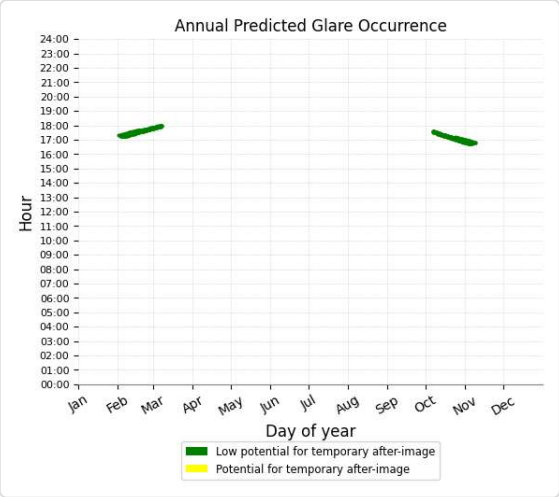
Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	507	8.4	0	0.0
Northbound Exit Ramp	5,934	98.9	0	0.0
West Bound Entrance Ramp	6,819	113.7	0	0.0
Westbound Hwy	540	9.0	0	0.0
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0

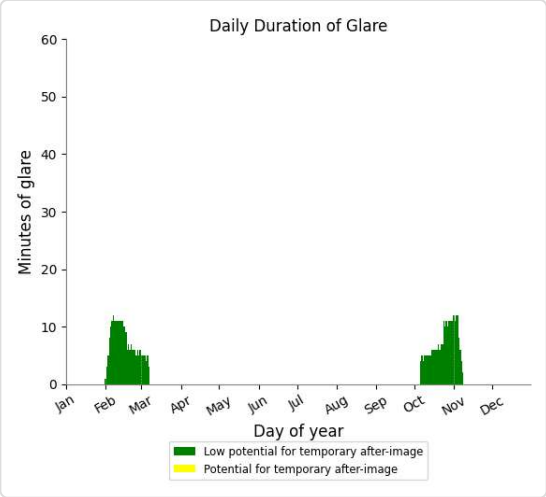
Eastbound Hwy

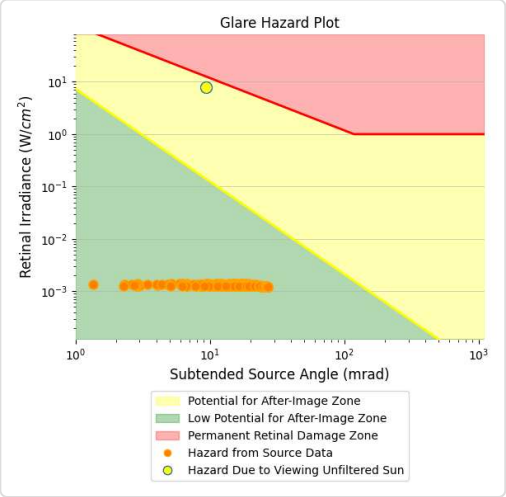
Receptor type: Route

0 minutes of yellow glare

507 minutes of green glare





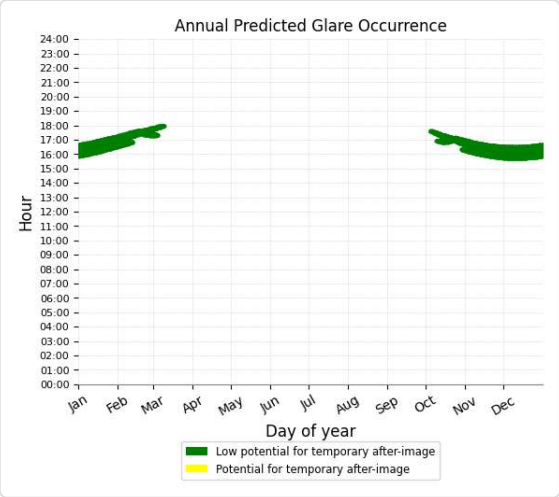


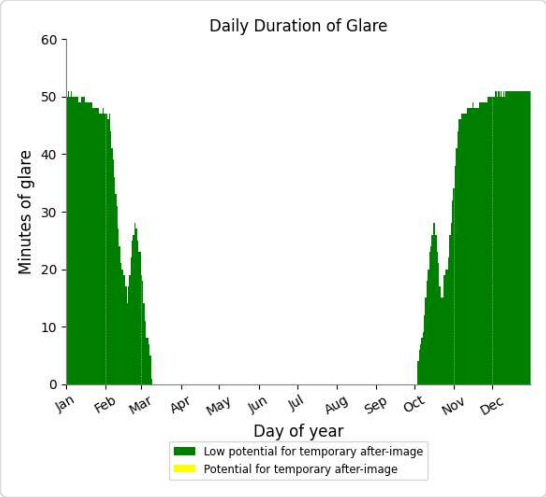
Northbound Exit Ramp

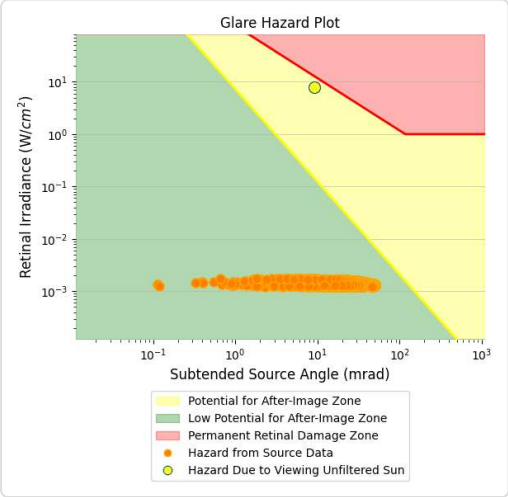
Receptor type: Route

0 minutes of yellow glare

5,934 minutes of green glare





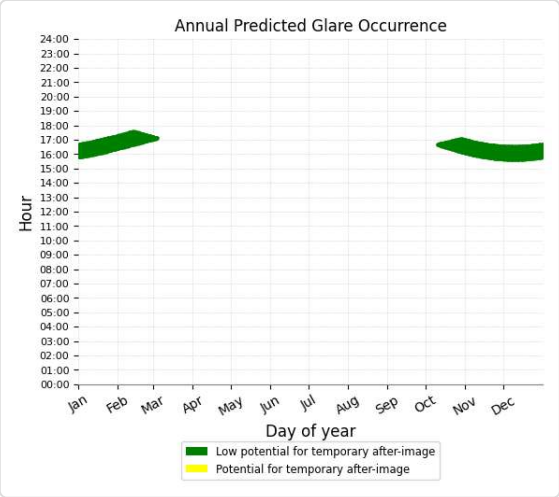


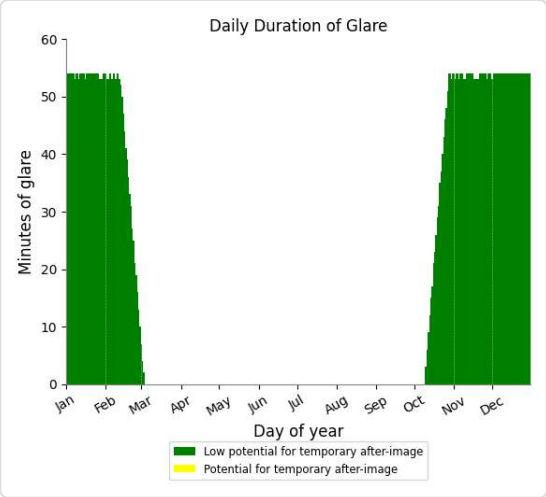
West Bound Entrance Ramp

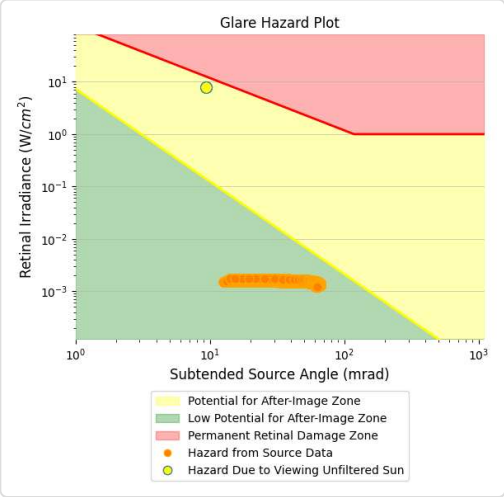
Receptor type: Route

0 minutes of yellow glare

6,819 minutes of green glare





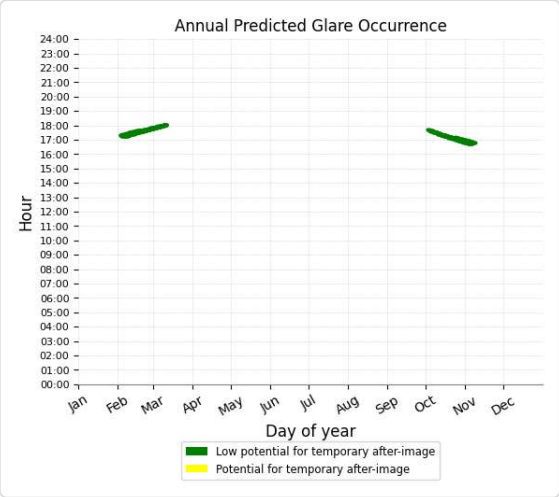


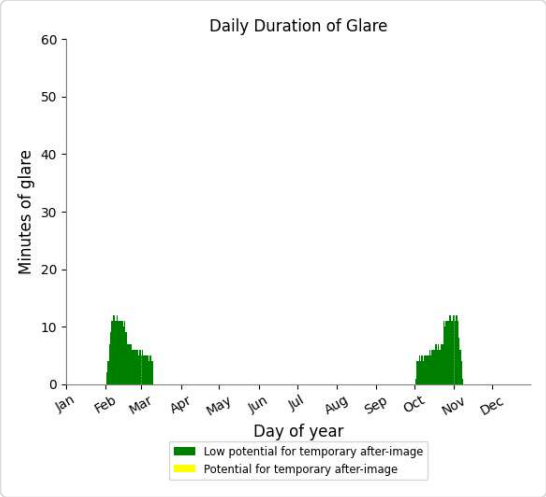
Westbound Hwy

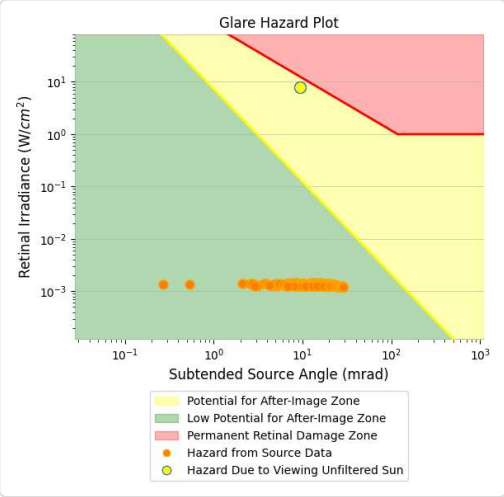
Receptor type: Route

0 minutes of yellow glare

540 minutes of green glare







FP 1

Receptor type: 2-mile Flight Path

No glare found

FP 2

Receptor type: 2-mile Flight Path

No glare found

OP 1

Receptor type: Observation Point

No glare found

OP 2

Receptor type: Observation Point

No glare found

OP 3

Receptor type: Observation Point

No glare found

VS Face: 4-5 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	0	0.0	0	0.0
Northbound Exit Ramp	0	0.0	0	0.0
West Bound Entrance Ramp	0	0.0	0	0.0
Westbound Hwy	0	0.0	0	0.0
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0

Eastbound Hwy

Receptor type: Route

No glare found

Northbound Exit Ramp

Receptor type: Route

No glare found

West Bound Entrance Ramp

Receptor type: Route

No glare found

Westbound Hwy

Receptor type: Route

No glare found

FP 1

Receptor type: 2-mile Flight Path

No glare found

FP 2

Receptor type: 2-mile Flight Path

No glare found

OP 1

Receptor type: Observation Point

No glare found

OP 2

Receptor type: Observation Point

No glare found

OP 3

Receptor type: Observation Point

No glare found

VS Face: 5-6 low potential for temporary after-image

Receptor results ordered by category of glare

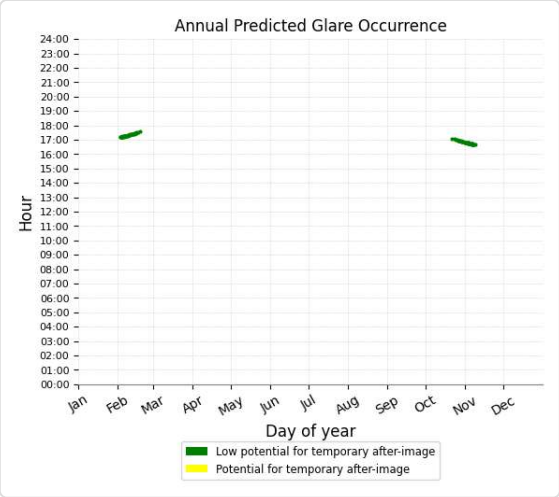
Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	74	1.2	0	0.0
Northbound Exit Ramp	3,655	60.9	0	0.0
West Bound Entrance Ramp	4,141	69.0	0	0.0
Westbound Hwy	80	1.3	0	0.0
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 2	1,640	27.3	0	0.0
OP 1	0	0.0	0	0.0
OP 3	0	0.0	0	0.0

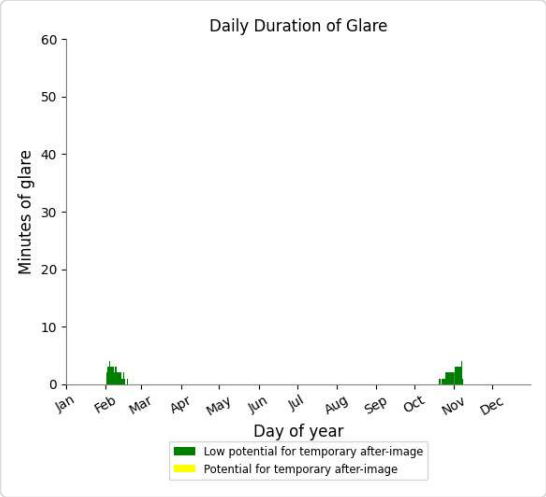
Eastbound Hwy

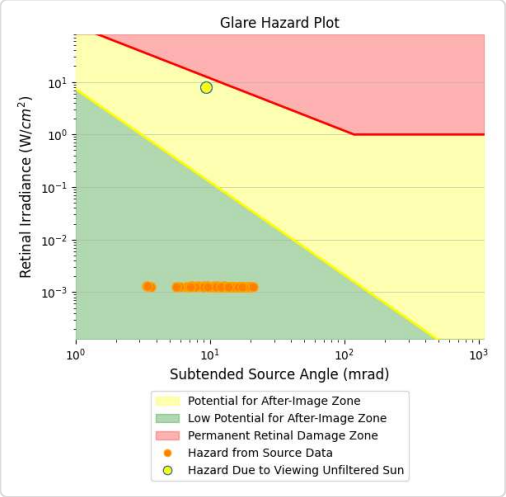
Receptor type: Route

0 minutes of yellow glare

74 minutes of green glare





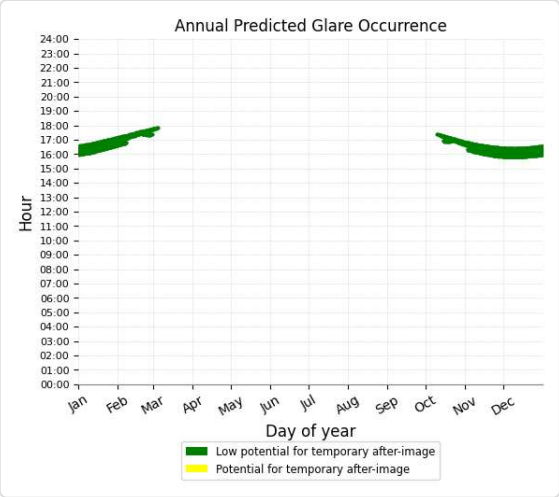


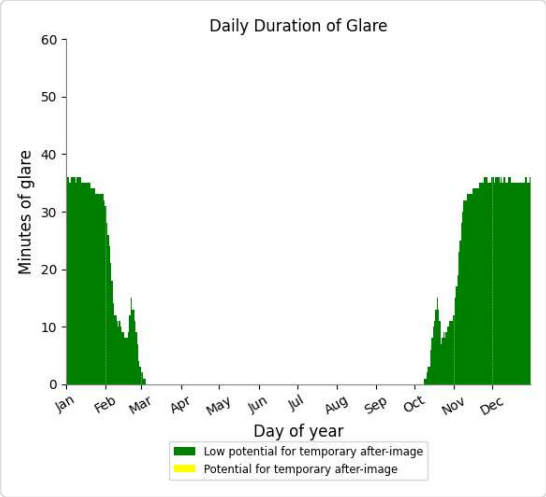
Northbound Exit Ramp

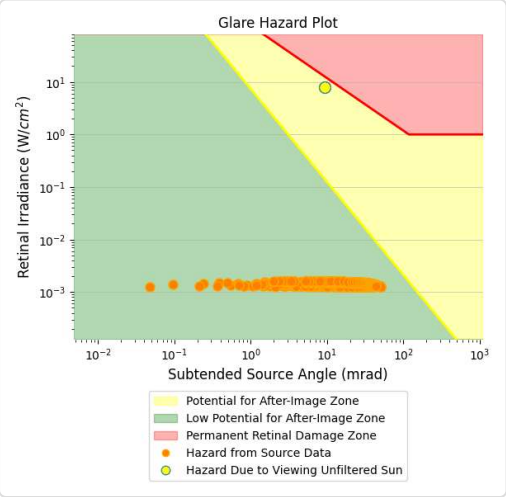
Receptor type: Route

0 minutes of yellow glare

3,655 minutes of green glare





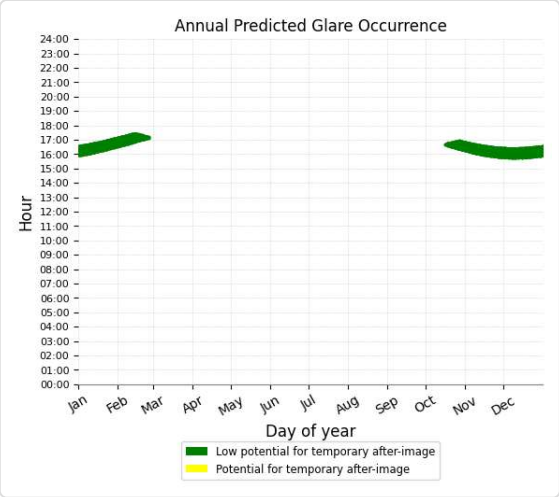


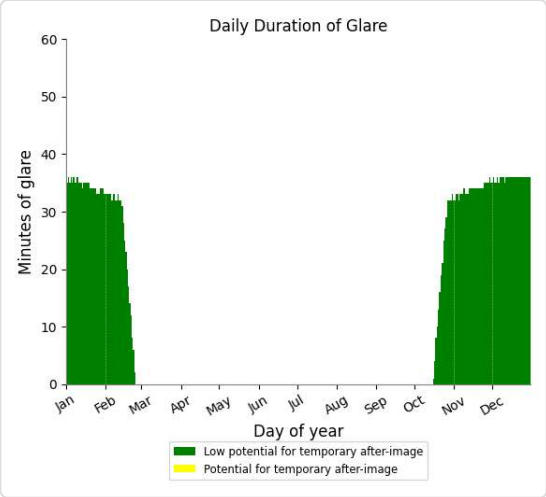
West Bound Entrance Ramp

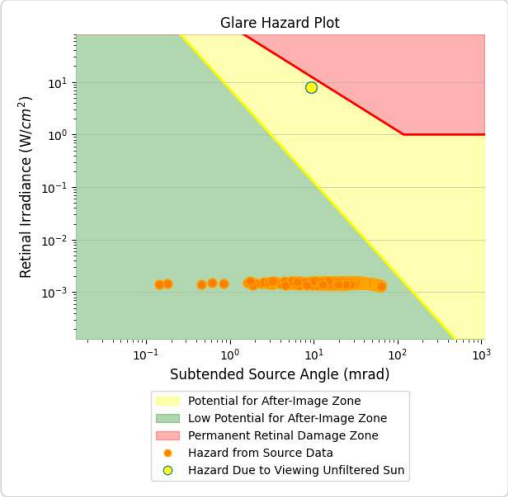
Receptor type: Route

0 minutes of yellow glare

4,141 minutes of green glare





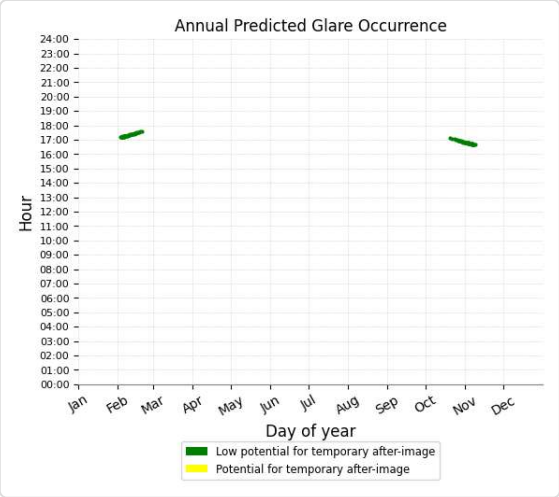


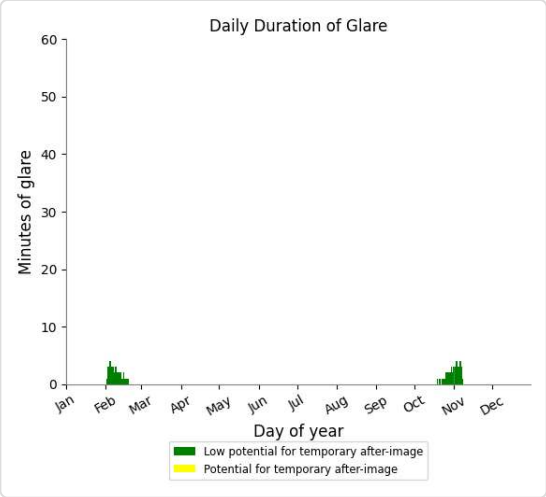
Westbound Hwy

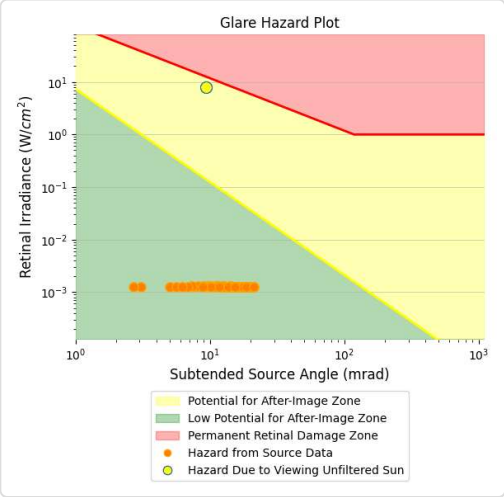
Receptor type: Route

0 minutes of yellow glare

80 minutes of green glare







FP 1

Receptor type: 2-mile Flight Path

No glare found

FP 2

Receptor type: 2-mile Flight Path

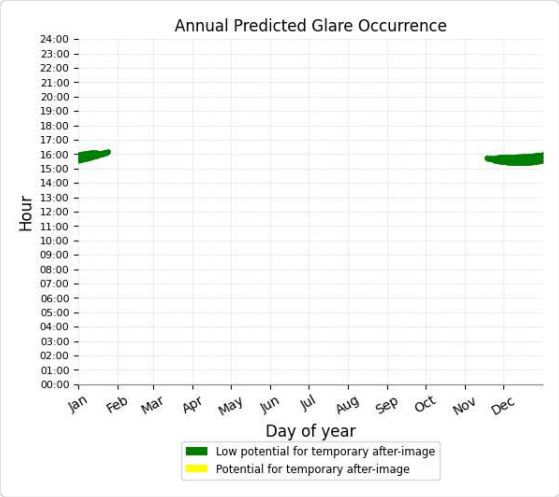
No glare found

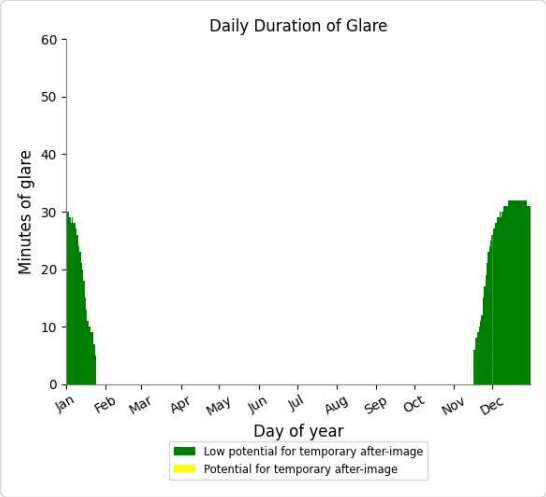
OP 2

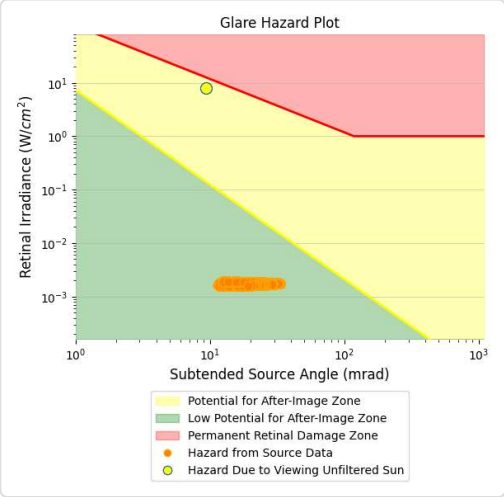
Receptor type: Observation Point

0 minutes of yellow glare

1,640 minutes of green glare







OP 1

Receptor type: Observation Point

No glare found

OP 3

Receptor type: Observation Point

No glare found

VS Face: 6-7 low potential for temporary after-image

Receptor results ordered by category of glare

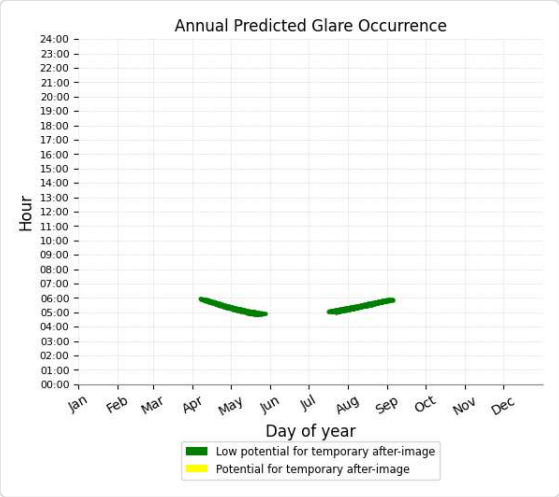
Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	895	14.9	0	0.0
Northbound Exit Ramp	4,371	72.8	0	0.0
West Bound Entrance Ramp	2,951	49.2	0	0.0
Westbound Hwy	954	15.9	0	0.0
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 2	13,577	226.3	0	0.0
OP 1	0	0.0	0	0.0
OP 3	0	0.0	0	0.0

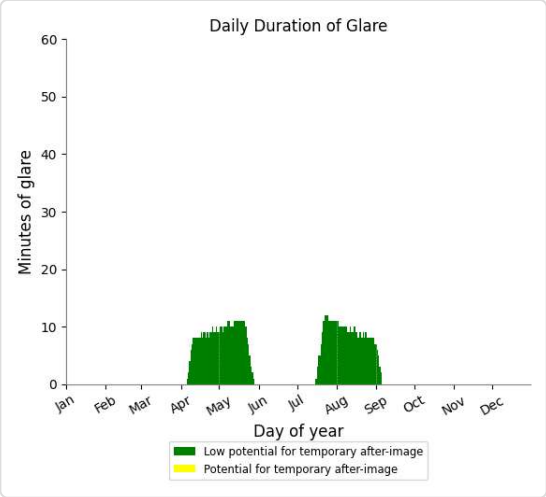
Eastbound Hwy

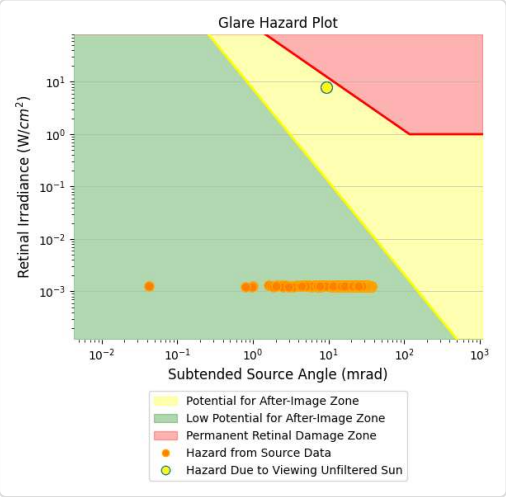
Receptor type: Route

0 minutes of yellow glare

895 minutes of green glare





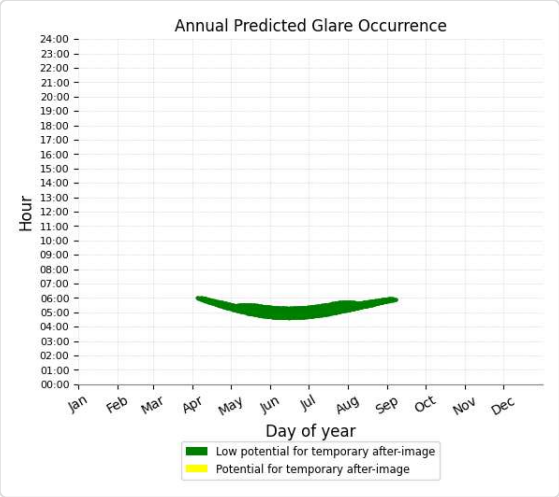


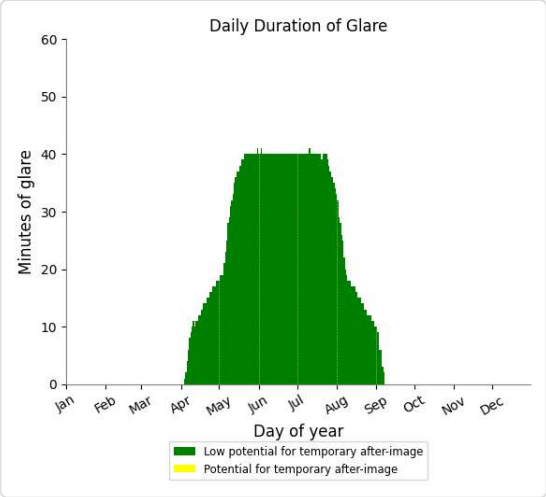
Northbound Exit Ramp

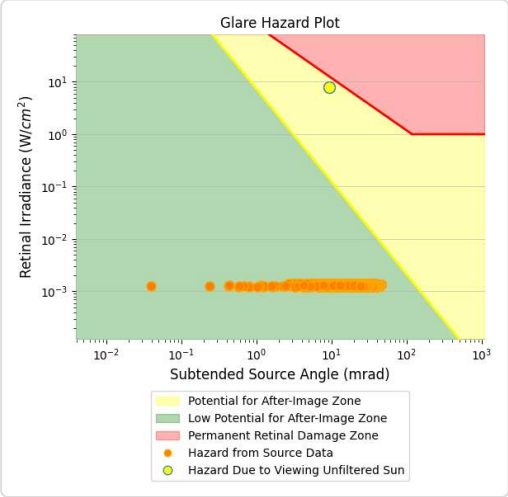
Receptor type: Route

0 minutes of yellow glare

4,371 minutes of green glare





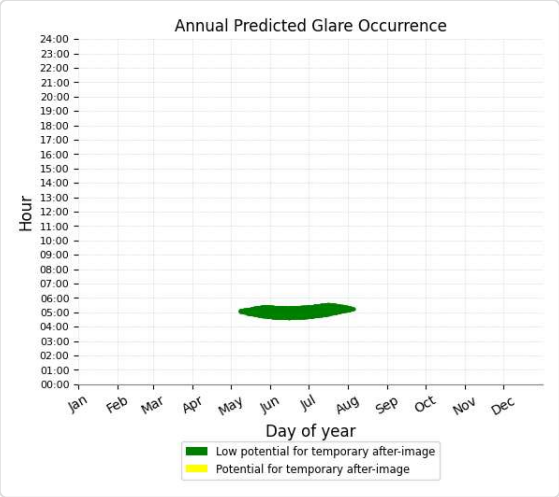


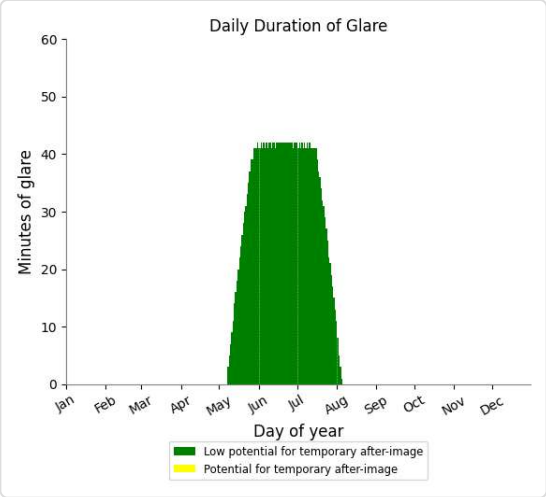
West Bound Entrance Ramp

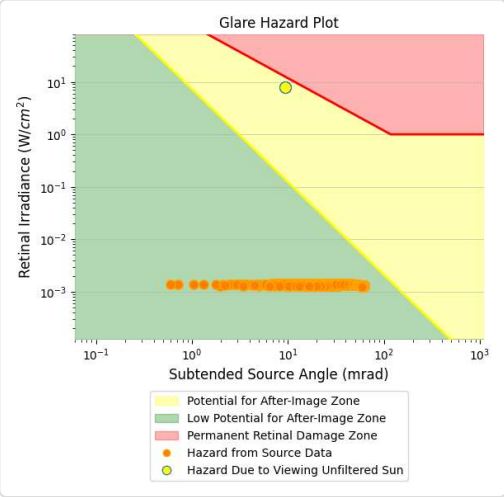
Receptor type: Route

0 minutes of yellow glare

2,951 minutes of green glare





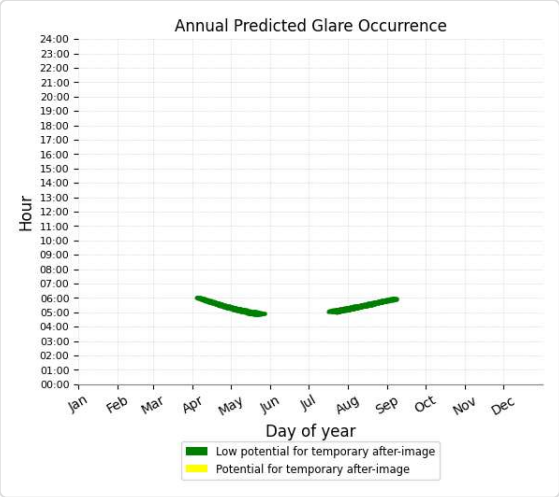


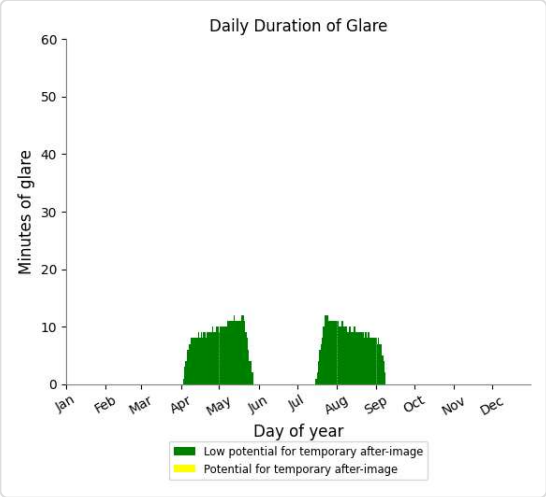
Westbound Hwy

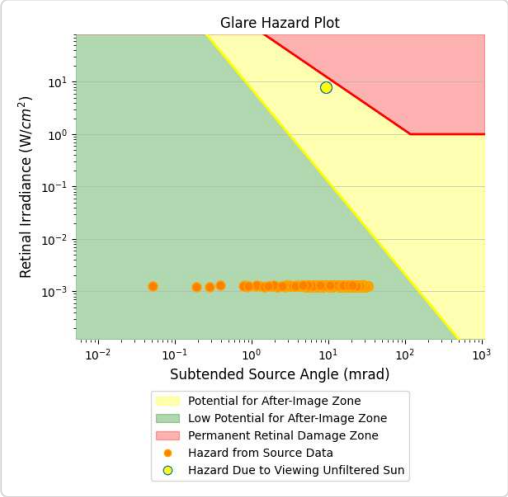
Receptor type: Route

0 minutes of yellow glare

954 minutes of green glare







FP 1

Receptor type: 2-mile Flight Path

No glare found

FP 2

Receptor type: 2-mile Flight Path

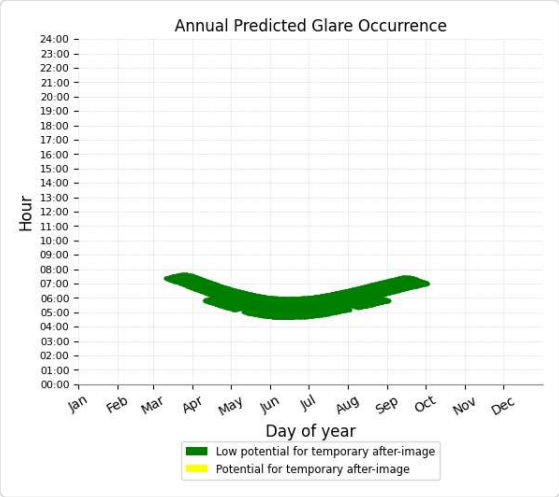
No glare found

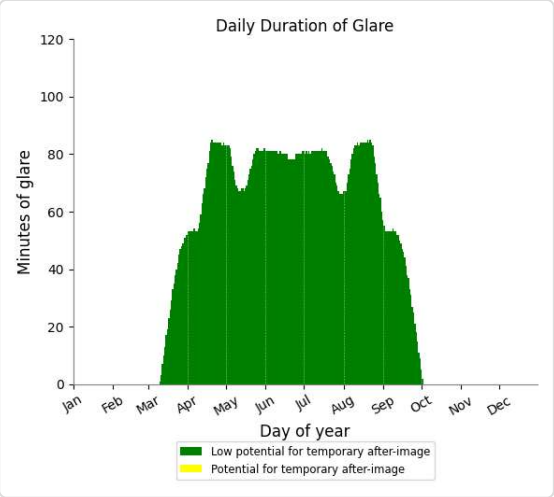
OP 2

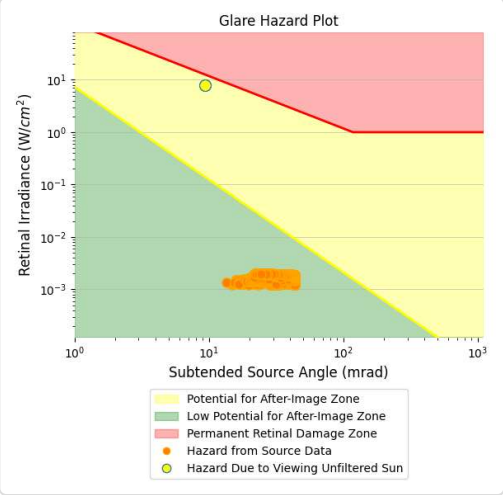
Receptor type: Observation Point

0 minutes of yellow glare

13,577 minutes of green glare







OP 1

Receptor type: Observation Point

No glare found

OP 3

Receptor type: Observation Point

No glare found

VS: Tanks

VS Face: 1-2 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	0	0.0	0	0.0
Northbound Exit Ramp	0	0.0	0	0.0
West Bound Entrance Ramp	0	0.0	0	0.0
Westbound Hwy	0	0.0	0	0.0
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0

Eastbound Hwy

Receptor type: Route

No glare found

Northbound Exit Ramp

Receptor type: Route

No glare found

West Bound Entrance Ramp

Receptor type: Route

No glare found

Westbound Hwy

Receptor type: Route

No glare found

FP 1

Receptor type: 2-mile Flight Path

No glare found

FP 2

Receptor type: 2-mile Flight Path

No glare found

OP 1

Receptor type: Observation Point

No glare found

OP 2

Receptor type: Observation Point

No glare found

OP 3

Receptor type: Observation Point

No glare found

VS Face: 2-3 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	0	0.0	0	0.0
Northbound Exit Ramp	0	0.0	0	0.0
West Bound Entrance Ramp	0	0.0	0	0.0
Westbound Hwy	0	0.0	0	0.0
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0

Eastbound Hwy

Receptor type: Route

No glare found

Northbound Exit Ramp

Receptor type: Route

No glare found

West Bound Entrance Ramp

Receptor type: Route

No glare found

Westbound Hwy

Receptor type: Route

No glare found

FP 1

Receptor type: 2-mile Flight Path

No glare found

FP 2

Receptor type: 2-mile Flight Path

No glare found

OP 1

Receptor type: Observation Point

No glare found

OP 2

Receptor type: Observation Point

No glare found

OP 3

Receptor type: Observation Point

No glare found

VS Face: 3-4 low potential for temporary after-image

Receptor results ordered by category of glare

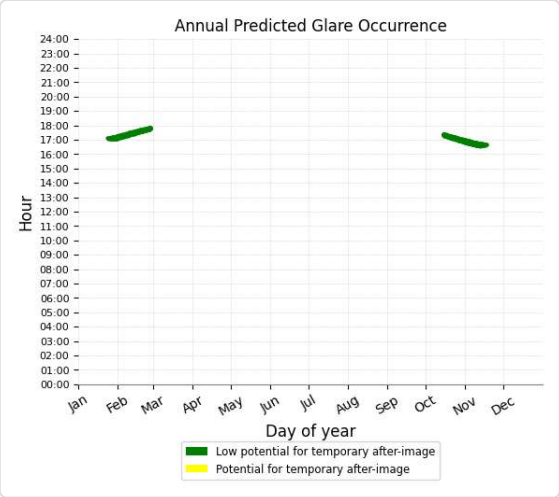
Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	680	11.3	0	0.0
Northbound Exit Ramp	3,501	58.4	0	0.0
West Bound Entrance Ramp	3,129	52.1	0	0.0
Westbound Hwy	727	12.1	0	0.0
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 2	310	5.2	0	0.0
OP 1	0	0.0	0	0.0
OP 3	0	0.0	0	0.0

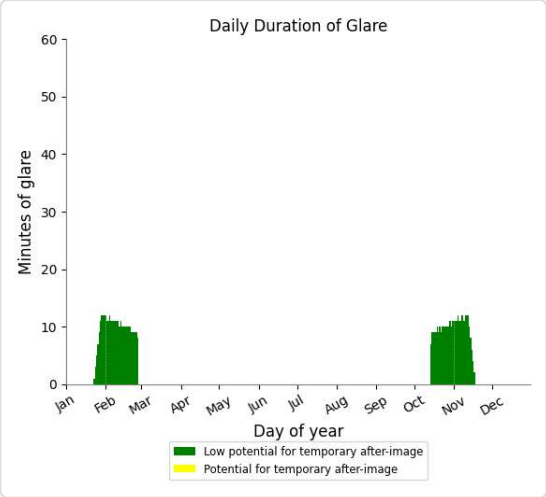
Eastbound Hwy

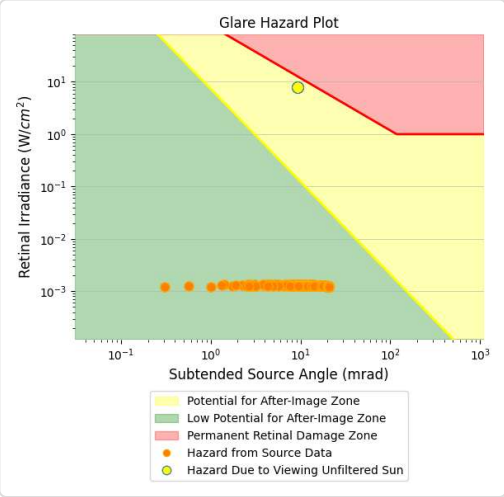
Receptor type: Route

0 minutes of yellow glare

680 minutes of green glare





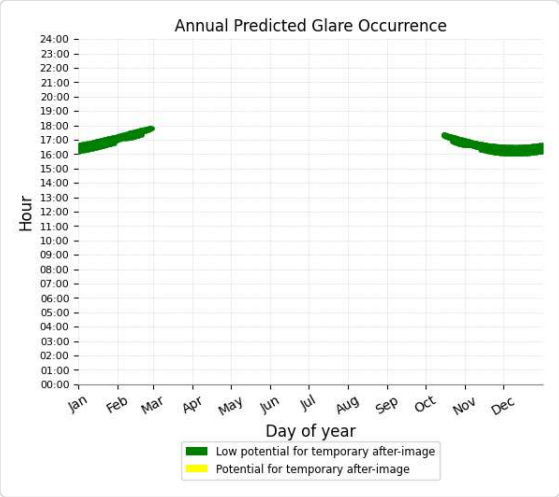


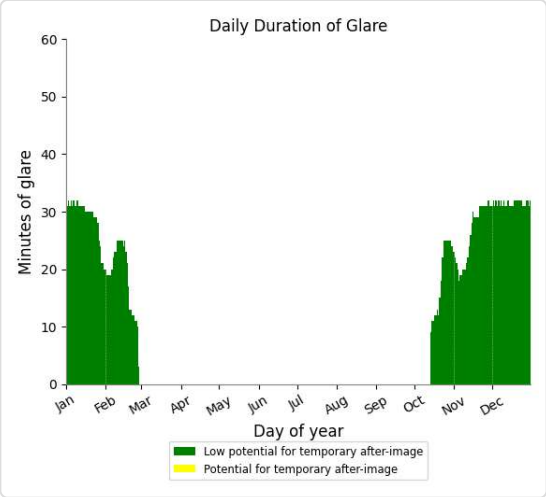
Northbound Exit Ramp

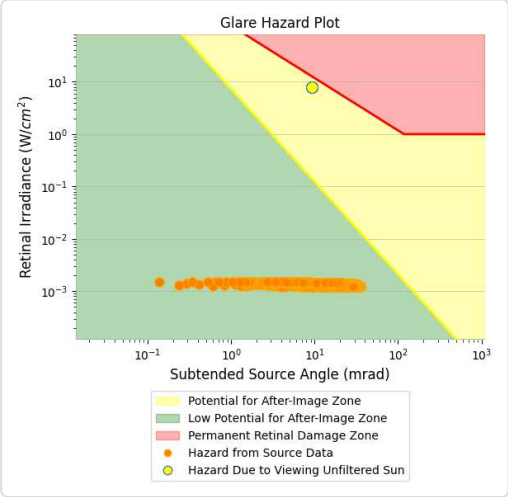
Receptor type: Route

0 minutes of yellow glare

3,501 minutes of green glare





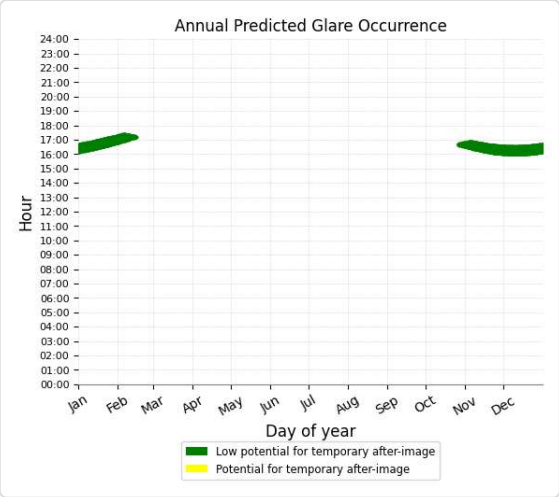


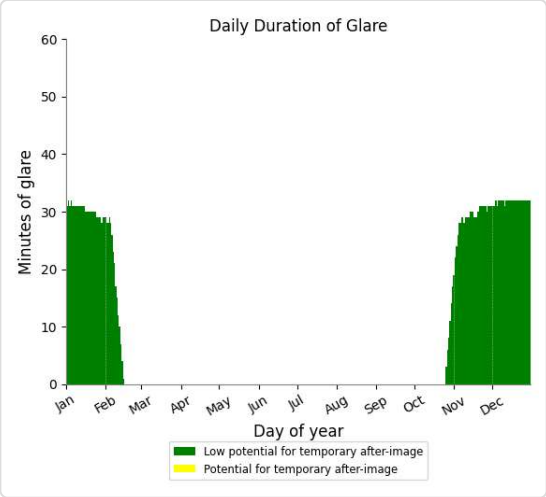
West Bound Entrance Ramp

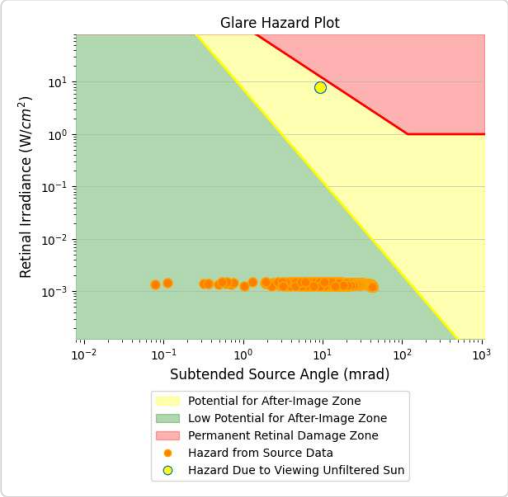
Receptor type: Route

0 minutes of yellow glare

3,129 minutes of green glare





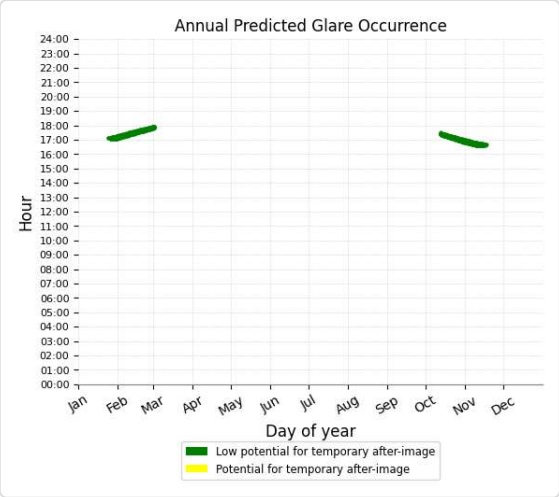


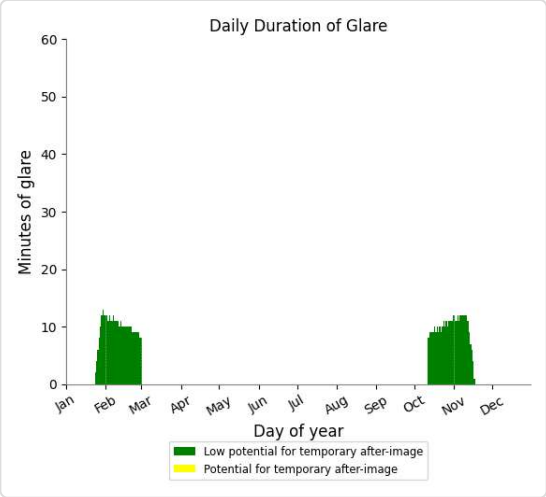
Westbound Hwy

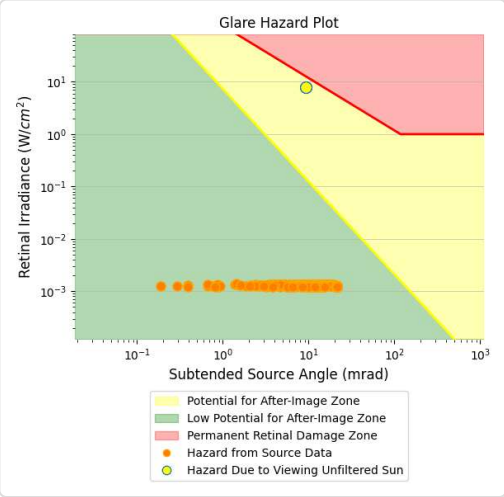
Receptor type: Route

0 minutes of yellow glare

727 minutes of green glare







FP 1

Receptor type: 2-mile Flight Path

No glare found

FP 2

Receptor type: 2-mile Flight Path

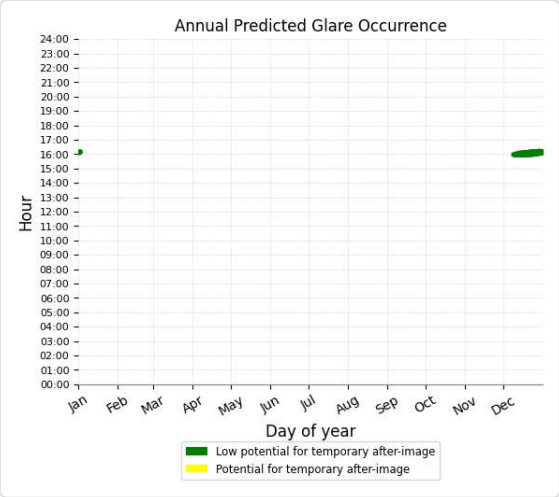
No glare found

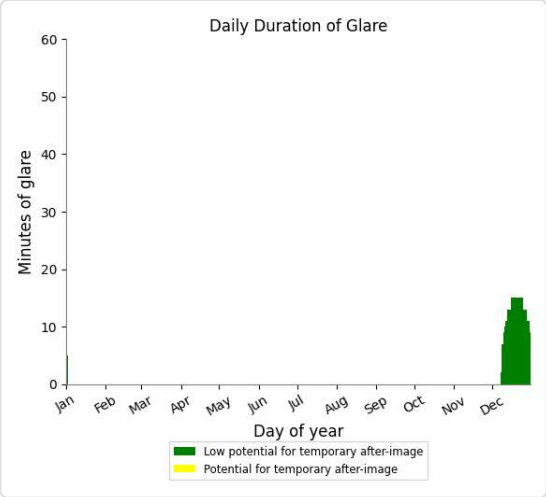
OP 2

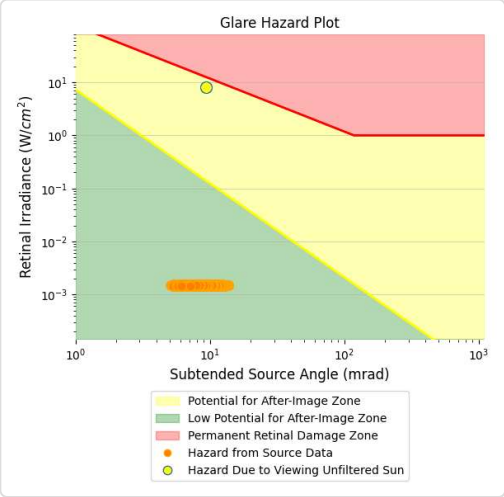
Receptor type: Observation Point

0 minutes of yellow glare

310 minutes of green glare







OP 1

Receptor type: Observation Point

No glare found

OP 3

Receptor type: Observation Point

No glare found

VS Face: 4-5 low potential for temporary after-image

Receptor results ordered by category of glare

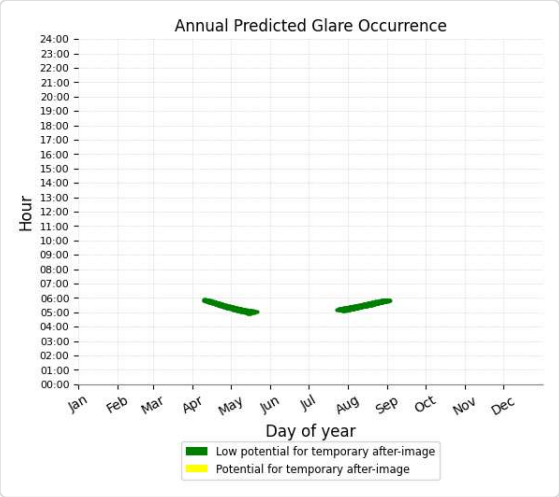
Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Eastbound Hwy	775	12.9	0	0.0
Northbound Exit Ramp	2,428	40.5	0	0.0
West Bound Entrance Ramp	2,472	41.2	0	0.0
Westbound Hwy	833	13.9	0	0.0
FP 1	0	0.0	0	0.0
FP 2	0	0.0	0	0.0
OP 3	3,461	57.7	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0

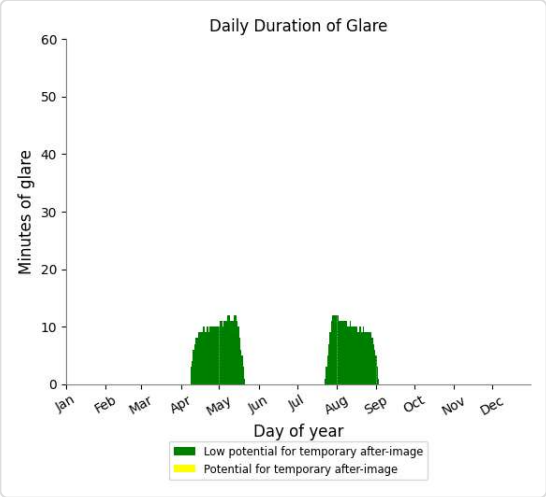
Eastbound Hwy

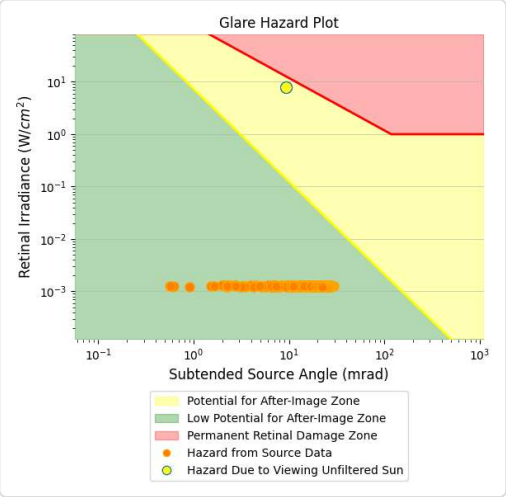
Receptor type: Route

0 minutes of yellow glare

775 minutes of green glare





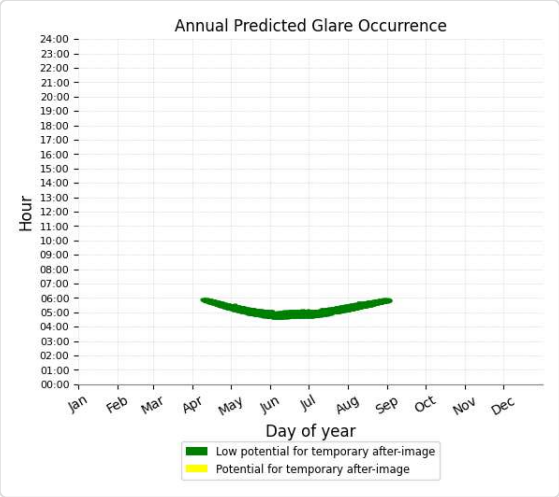


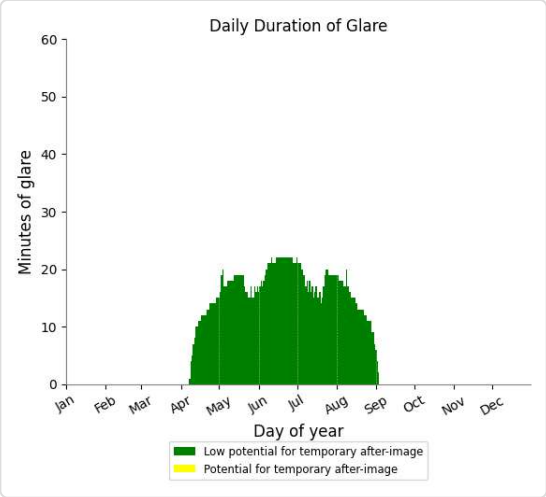
Northbound Exit Ramp

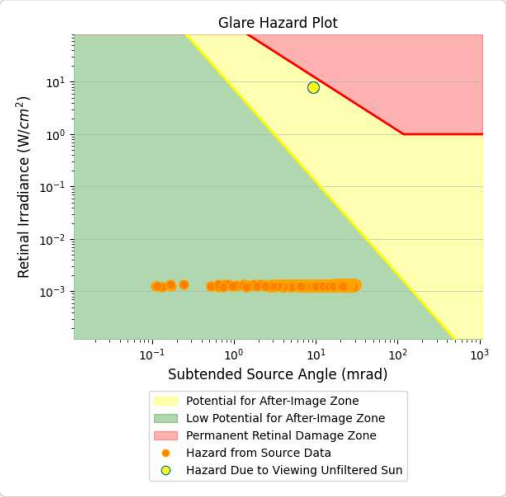
Receptor type: Route

0 minutes of yellow glare

2,428 minutes of green glare





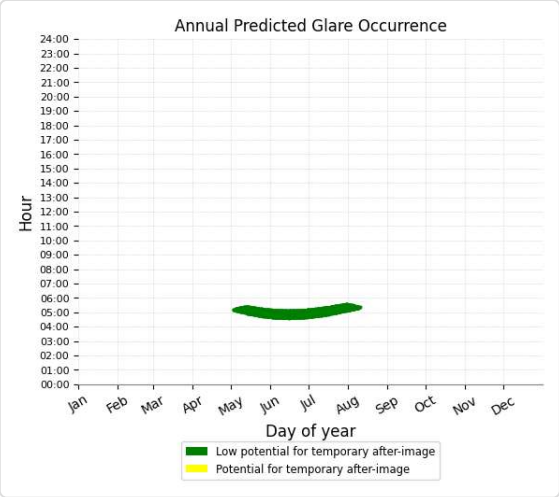


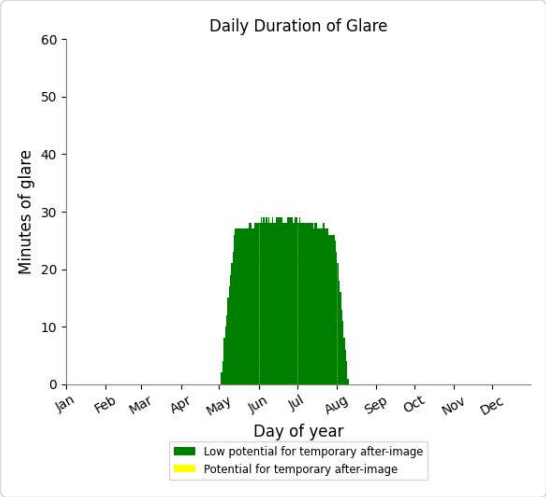
West Bound Entrance Ramp

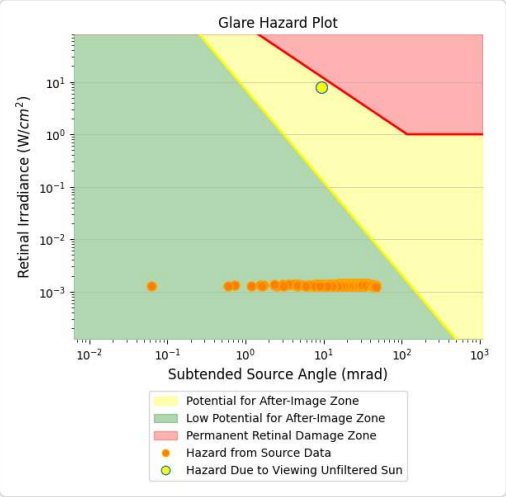
Receptor type: Route

0 minutes of yellow glare

2,472 minutes of green glare





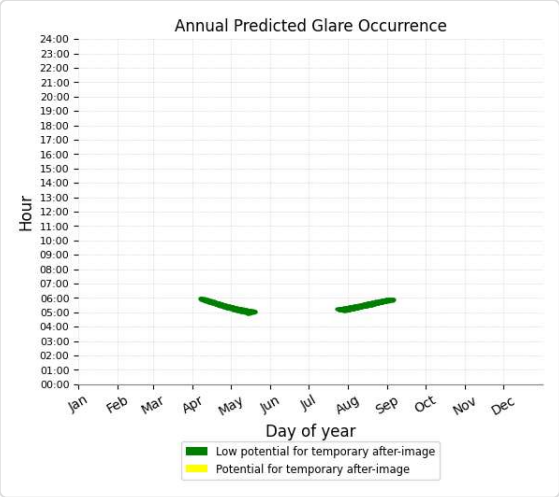


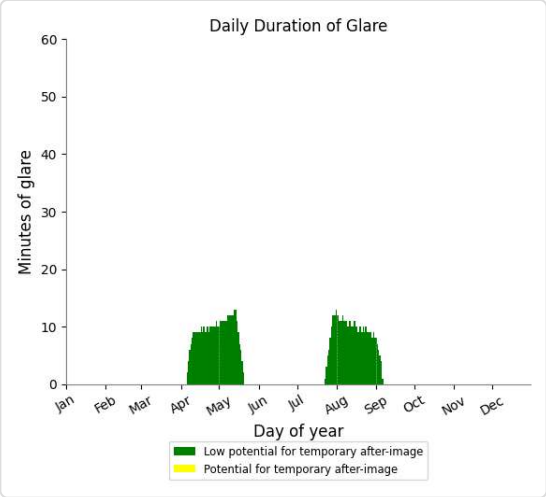
Westbound Hwy

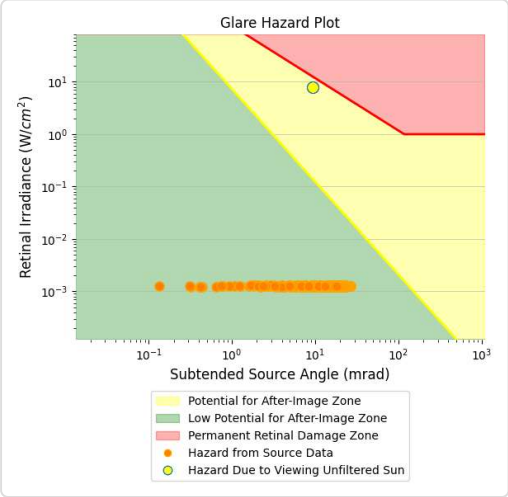
Receptor type: Route

0 minutes of yellow glare

833 minutes of green glare







FP 1

Receptor type: 2-mile Flight Path

No glare found

FP 2

Receptor type: 2-mile Flight Path

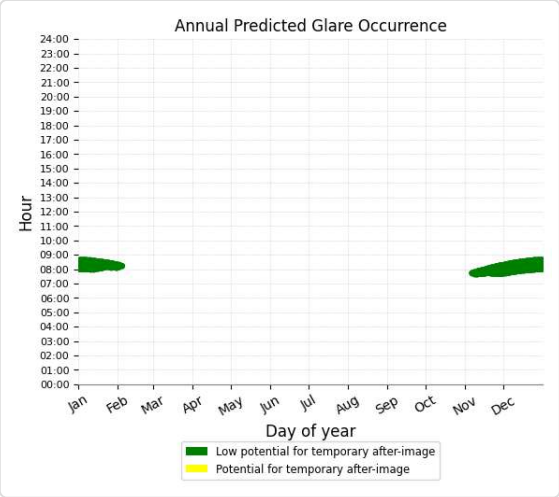
No glare found

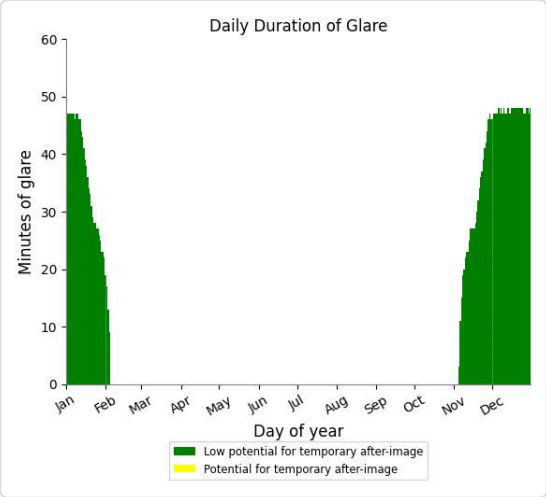
OP 3

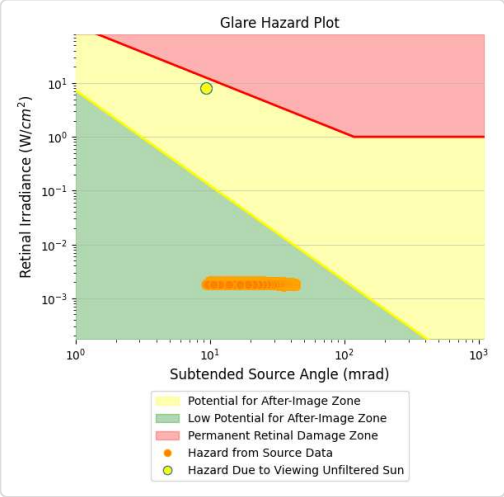
Receptor type: Observation Point

0 minutes of yellow glare

3,461 minutes of green glare







OP 1

Receptor type: Observation Point

No glare found

OP 2

Receptor type: Observation Point

No glare found

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

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This analysis was conducted using the best available radiometric modeling at the time of generation. Future updates to the modeling methodology may yield different results.


Map
Satellite
Map labels
Map terrain
Mode: Vertical Surface
Vertices: 5 (max 20)
Committed length (ft): 504
Segment length (ft): -
Total length (ft): -
PV
VS
OP
2-Mile FP
Route
OB
West Bound Entran...
PV array 1
Field Trees W
Tanks
Blvd Trees 1
Blvd Trees 2
Blvd Trees 3
Lot Trees
Building
Field Trees SW
Lot Trees SE
Google

OE/AAA Pre-screening Results

Thu Apr 16 2026 15:13:06 GMT-0500 (Central Daylight Time)

Structure: Solar Panel

Latitude	Longitude	Height	Site Elevation	AMSL
44.190328	-93.982842	10	838	848
44.19355	-93.983577	10	827	837
44.192036	-93.982746	10	835	845
44.192025	-93.982129	10	840	850

Based on the information you provided, you are not required to file notice with the FAA.



APPENDIX G HISTORICAL RESOURCE REVIEW

CenterPoint Energy Mankato Hydrogen Energy Plant

Pre-Construction Acoustical Assessment

PREPARED FOR

DATE
19 MAY 2026

REFERENCE
0812942



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The details entered below are automatically shown on the cover and the main page footer. PLEASE NOTE: This table must NOT be removed from this document.	
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DOCUMENT SUBTITLE	Pre-Construction Acoustical Assessment
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Date	May 19, 2026
Version	02
Author	Nate Born
Client name	CenterPoint Energy

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CONTENTS

1. INTRODUCTION 1
1.1 SCOPE OF REPORT 1
1.2 GENERAL INFORMATION ON NOISE 1
2. NOISE REGULATIONS 2
2.1 MINNESOTA NOISE REGULATIONS 2
2.1.1 Project-Specific Noise Area Classifications 3
2.2 CITY OF MANKATO NOISE REGULATIONS 3
3. REDUCING STATION NOISE LEVELS 4
4. ACOUSTICAL ANALYSIS 5
4.1 METHODOLOGY 5
4.2 PREDICTED NOISE LEVELS 5
5. CONCLUSION 6
6. REFERENCES 7

LIST OF TABLES

TABLE 1. SUMMARY OF NOISE RULES BASED ON NOISE AREA CLASSIFICATION 2
TABLE 2. REDUCING STATION NOISE EMISSION DATA 4
TABLE 3. EQUIPMENT SOURCE LISTING AND NOISE EMISSION DATA 5
TABLE 4. PREDICTED NOISE LEVELS AT NEAREST NAC POINTS 6

ACRONYMS AND ABBREVIATIONS

dBA	A-weighted decibels
EEI	Edison Electric Institute
ERM	Environmental Resources Management, Inc.
ISO	International Organization for Standardization
L_{10}	Noise level exceeded 10 percent of the time
L_{50}	Noise level exceeded 50 percent of the time
L_{eq}	Time-equivalent sound pressure levels (L_{eq})
MN	Minnesota
MPCA	Minnesota Pollution Control Agency
MW	Megawatts
NAC	Noise Area Classification

1. INTRODUCTION

1.1 Scope of Report

On behalf of CenterPoint Energy (Client), Environmental Resources Management, Inc. (ERM) completed a pre-construction noise assessment for the installation of a green hydrogen production and storage facility at their existing site located at 2400 North Riverfront Drive in Mankato, Minnesota 56001. The proposed facility is referred to as the Mankato Hydrogen Energy Plant Project (Project). The proposed Project will include a hydrogen plant that uses renewable energy from a 1 MW on-site solar panel array to split water into hydrogen and oxygen. The hydrogen will be blended at low concentrations into the existing natural gas distribution system. A solar panel array will consist of approximately 2,120 590W panels on roughly 3 acres of land within the restored prairie located west of the current facility. The hydrogen production and storage facility will be installed within an existing gravel area located east of the existing on-site propane tanks.

The primary noise generating sources associated with the Project are the solar inverter adjacent to the solar array, and the dry cooler, gas reducing station, and oxygen exhaust vent associated with the hydrogen plant. Figure 1 in Section 2.1 presents the location of the Project sources in relation to the surrounding properties.

ERM completed an acoustical analysis to evaluate whether the contribution of operational noise from the Project would comply with the State of Minnesota's Administrative Rule 7030 which governs allowable noise levels. This report presents the results of ERM's acoustical analysis.

1.2 General Information on Noise

Sound is a sequence of waves of pressure that propagate through compressible media such as air or water. When sound becomes excessive, annoying, or unwanted, it is often referred to as noise. The sound power level is the total acoustic power produced by a piece of equipment. Alternatively, the sound pressure level is the magnitude of the sound pressure wave produced by a noise source at a given distance.

Noise is typically measured on the A-weighted scale (dBA). The A-weighting scale has been shown to provide a good correlation with the human response to sound and is the most widely used descriptor for community noise assessments (Harris, 1991). The faintest sound that can be heard by a healthy ear is about 0 dBA, while an uncomfortably loud sound is about 120 dBA. In order to provide a frame of reference, some common sound levels are listed below.

- Pile Driver at 100 feet 90 to 100 dBA
- Chainsaw at 30 feet 90 dBA
- Truck at 100 feet 85 dBA
- Noisy Urban Environment 75 dBA

- Lawn Mower at 100 feet 65 dBA
- Average Speech 60 dBA
- Average Office 50 dBA
- Rural Residential During the Day 40 dBA
- Quiet Suburban nighttime 35 dBA
- Soft Whisper at 15 feet 30 dBA

2. NOISE REGULATIONS

2.1 Minnesota Noise Regulations

The Minnesota Pollution Control Agency (MPCA) enforces Minnesota's noise standards, which are known as MN Administrative Rule 7030. Minnesota's primary noise limits vary for different "noise area classifications" (NACs) based on the land use. The limits consider the "L_{10}" and "L_{50}", which are noise levels that are exceeded for 10 percent and 50 percent of the time in a one-hour period, respectively. In general, the L_{50} is roughly equivalent to the more commonly used L_{eq} (time equivalent sound level), which is the energy average of all the sounds that are present.

For residential locations (NAC 1), the limits are L_{10} = 65 dBA and L_{50} = 60 dBA during the daytime (7:00 a.m. – 10:00 p.m.) and L_{10} = 55 dBA and L_{50} = 50 dBA during the nighttime (10:00 p.m. – 7:00 a.m.). This means that during a one-hour period of monitoring, daytime noise levels generated by the Project cannot exceed 65 dBA for more than 10 percent of the time (six minutes) and cannot exceed 60 dBA for more than 50 percent of the time (30 minutes).

For recreational locations (NAC 2), the limits are L_{10} = 70 dBA and L_{50} = 65 dBA during both the daytime and nighttime hours. This means that during a one-hour period, Project noise levels cannot exceed 70 dBA for more than 10 percent of the time (six minutes) and cannot exceed 65 dBA for more than 50 percent of the time (30 minutes).

A summary of the noise rules based on noise area classification is shown in table 1.

Table 1. Summary of Noise Rules based on Noise Area Classification

Noise Area Classification	Daytime		Nighttime	
	L_{10}	L_{50}	L_{10}	L_{50}
1 (Residences, religious activities, camping areas, hospitals, hotels, schools)	65	60	55	50
2 (Retail, businesses, recreational activities, transit terminals)	70	65	70	65
3 (Manufacturing, fairgrounds, agriculture)	80	75	80	75

2.1.1 Project-Specific Noise Area Classifications

The Project is located within an industrial zoning district, which qualifies as NAC 3. The nearest NAC 1 boundary is a residential parcel located on the east side of North Riverfront Drive, south of Augusta Drive, denoted "RES1". The nearest recreational area NAC 2 boundary is a golf course on the east side of North Riverfront Drive, north of Augusta Drive, denoted "REC1". The locations of RES1 and REC1 and their distances to the Project noise sources are shown in Figure 1.

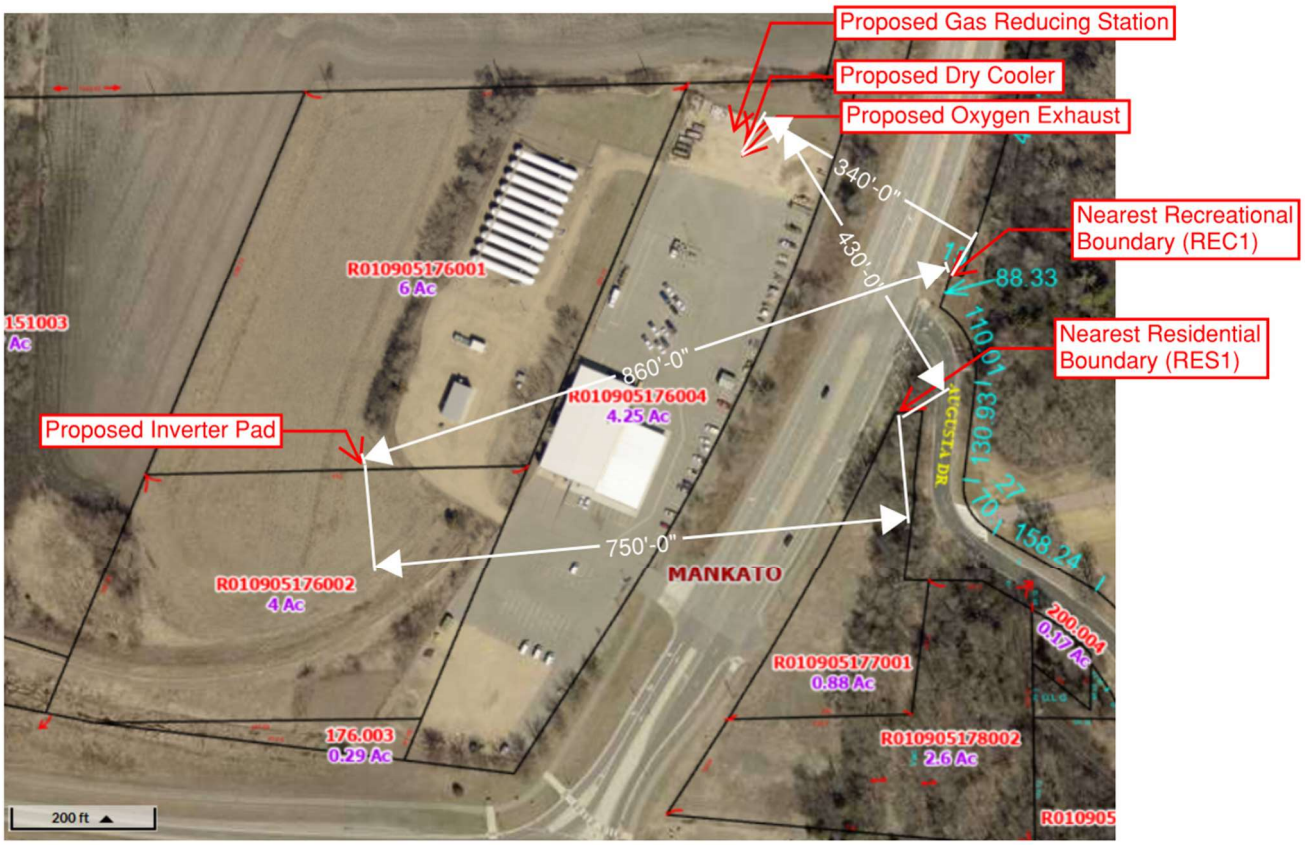


Figure 1. Nearest Noise Area Classification locations to Project Noise Sources

2.2 City of Mankato Noise Regulations

The City of Mankato's noise ordinance is within their "nuisances" section of their city ordinances. This section mainly deals with noise nuisances as they relate to motor vehicles, hobby crafts, etc. The ordinance does not contain any numerical noise limits, nor any objective criteria for what noise constitutes a "nuisance".

3. REDUCING STATION NOISE LEVELS

Manufacturer-provided noise emissions data for the reducing station were not available. ERM staff therefore mobilized to CenterPoint Energy's existing Minneapolis hydrogen plant on April 30, 2026 to measure the noise levels for that facility's existing reducing station. Sound pressure levels were measured using a Casella CEL-633 hand-held analyzer (Serial Number 2031901) equipped with a microphone windscreen. Field calibration was performed before and after monitoring using a Casella CEL Acoustics Type 1 calibrator. The sound measurement equipment included current certificates of calibration from the manufacturer. Sound measurements were recorded at 1-minute intervals at locations around the reducing station. A-weighted time-equivalent sound pressure levels (L_{eq}) were measured on slow response with the sound level meter set at a height of approximately 4 feet above ground level (the same height as the valves on the reducing station). During the measurement periods, field personnel recorded meteorological data (wind speed and direction, temperature, relative humidity, barometric pressure, and sky condition), and the predominant audible noise sources. No precipitation occurred during the measurement periods.

Eleven measurements were taken around the reducing station, at distances ranging from 4-18.5 feet. Measured sound pressure levels ranged from 69.8-85.3 dBA. The measured sound pressure levels were converted into sound power levels by considering the dimensions of the reducing station valves and the distances at which the measurements were obtained. The associated calculated sound power levels range from 90.4-98.8 dBA. A summary of the noise measurement and sound power calculation results is shown in Table 2.

Table 2. Reducing Station Noise Emission Data

Location	X distance (feet)	Y distance (feet)	Measured Sound Pressure Level[a] (dBA)	Calculated Sound Power Level[a] (dBA)
1	4	0	84.8	94.5
2	4	3.5	85.3	97.5
3	0	7.5	82.4	97.6
4	4	3.5	83.5	95.7
5	4	0	83.1	92.8
6	4	3.5	79.3	91.5
7	0	7.5	75.2	90.4
8	4	3.5	78.9	91.1
9	0	18.5	69.8	92.8
10	15	0	76.7	97.9
11	0	18.5	75.8	98.8 [b]

[a.] The sound power level is the total acoustic power produced by a piece of equipment; the sound pressure level is the magnitude of the sound pressure wave produced by a noise source at a given distance.
[b.] To be conservative, ERM attributed the highest calculated sound power level of 98.8 dBA to the reducing station.

4. ACOUSTICAL ANALYSIS

4.1 Methodology

Noise emissions data for the remaining sources were obtained from potential equipment vendors and from CenterPoint Energy. ERM completed spreadsheet calculations for each of the proposed sources to predict noise levels that will be generated during Project operation. The calculations accounted for spreading losses and atmospheric effects, but did not account for shielding from barriers or buildings, shielding from topography. No credit was taken for existing foliage or vegetation. These assumptions are conservative in nature and yield predictions that are likely higher than actual noise levels.

A summary of the equipment sources included in the noise assessment is provided in Table 3, along with the noise emissions data and the data source for each. Only continuous noise sources were considered in the calculations; intermittent noise sources, such as safety alarms, backup generators, and emergency vents are not included in the calculations.

Table 3. Equipment Source Listing and Noise Emission Data

Source	Number of Each	Noise Emissions Data		Data Source
		Sound Pressure Level [a]	Sound Power Level [a]	
Dry Cooler	1 set of 8	Rated at 64 dBA at 33 feet [b]	92.4	Kelvion [c]
Reducing Station	1	Measured at 75.8 dBA at 18.5 feet [d]	98.8	ERM
Oxygen Exhaust	1	Rated at 60 dBA at 3 feet	60.0	CenterPoint [e]
Solar Inverters	1	62.5 dBA at 33 feet	90.9	Sungrow [f]

[a.] The sound power level is the total acoustic power produced by a piece of equipment; the sound pressure level is the magnitude of the sound pressure wave produced by a noise source at a given distance.

[b.] Dry cooler emissions data for when it is operating at full load, which would only occur on very hot days.

[c.] Kelvion Model ULV-LA204K6X-091Z090 Dry Cooler Datasheet

[d.] ERM measured sound levels of the reducing station at the existing Minneapolis Hydrogen Plant, as detailed in Section 3. To be conservative, ERM attributed the highest calculated sound power level of 98.8 dBA to the Mankato reducing station.

[e.] From CenterPoint Energy, based on manufacturer's information.

[f.] Although the exact model of inverter is not known at this point, Sungrow is a typical inverter used in utility-scale solar projects. Sungrow Model SG4400UD Inverter Noise Test Report TR_20231130.

4.2 Predicted Noise Levels

The calculations allowed for the quantification of noise levels from each source, based on the sound characteristics (overall level, frequency data etc.). Individual spreadsheet calculations were

conducted for each source, and the results logarithmically added for the RES 1 and REC 1 locations to arrive at a total noise contribution from the Project at each location. The calculations were conducted for all sources operating simultaneously at or near full load conditions, and assumed 24-hour operation, with the exception of the solar inverters, which would only be operational during daytime hours.

The predicted noise contribution of each predominant noise source, the combined noise level for all sources attributed to the Project, and the associated Minnesota Standard are presented in Table 4.

Table 4. Predicted Noise Levels at nearest NAC points

Location	Time	Dry Cooler [a]	Reducing Station [b]	O2 exhaust	Inverter [c]	Sum	MPCA Standard [d]
REC1 (NAC1)	Day	40.7	46.9	8.3	32.0	47.9	65
	Night	40.7	46.9	8.3	0.0	47.8	65
RES1 (NAC2)	Day	40.5	46.7	8.1	32.2	47.8	60
	Night	40.5	46.7	8.1	0.0	47.6	50

[a.] Conservatively assumes Dry Cooler is operating at full load, which would only occur on very hot days.
[b.] ERM measured sound levels of the reducing station at the existing Minneapolis Hydrogen Plant, as detailed in Section 3. To be conservative, ERM attributed the highest sound power level of 98.8 dBA to the reducing station.
[c.] Assumes solar inverters only operate during daytime hours.
[b.] Corresponds to the L_{50} Noise Standard

As provided in Table 4, expected Project noise levels at full load conditions are shown to be in compliance with the MN noise standard for daytime and nighttime hours at both receiver locations.

5. CONCLUSION

This report presents the results of the acoustical assessment ERM conducted for the CenterPoint Mankato Hydrogen Plant Project in Mankato, Minnesota. The assessment included detailed noise calculations of the major facility noise generating equipment operating under full-load conditions and a comparison to the noise regulations within the State of Minnesota Administrative Rules.

The operational noise assessment revealed that Project-generated noise levels are expected to be in compliance with the applicable noise regulations. Operational Project noise levels were shown to be less than 50 dBA at the nearest residential and recreational property lines for both daytime and nighttime hours. The noise calculations did not include factors such as the barrier effect of existing

buildings and equipment, the screening effect of vegetation, or changes in topography, resulting in a conservative assessment.

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Sungrow Power Supply Co. Ltd. 2024. Noise Test Report TR_20231130.

CenterPoint Energy Mankato Hydrogen Energy Plant

Drainage Report

PREPARED FOR

CenterPoint Energy

DATE
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CONTENTS

1.	INTRODUCTION	1
2.	EXISTING CONDITIONS	1
3.	DESIGN BASIS AND ASSUMPTIONS	1
3.1	ORDINANCE REGULATIONS	2
3.2	SITE SOILS	2
3.3	ASSUMPTIONS	3
4.	PRE-DEVELOPED HYDROLOGY	4
5.	POST-DEVELOPMENT HYDROLOGY	4
5.1	PEAK FLOW SUMMARY	5
5.2	VOLUME SUMMARY	6
6.	POST CONSTRUCTION STORMWATER MANAGEMENT	6
6.1	PROPOSED BMP'S	6
	6.1.1 FILTRATION BERM	6
6.2	POTENTIAL THERMAL IMPACTS TO SURFACE WATERS	7
6.3	CONCLUSION	7
7.	REFERENCES	8

APPENDIX A – SOILS REPORT AND NOAA DATA

APPENDIX B – RATE REDUCTION CALCULATIONS

APPENDIX C – VOLUME CALCULATIONS

ENCLOSURE 1 – EXISTING DRAINAGE AREA MAP

ENCLOSURE 2 – PROPOSED DRAINAGE AREA MAP

LIST OF TABLES

TABLE 1	RAINFALL DATA	2
TABLE 2	SOIL CLASSIFICATION	3
TABLE 3	DA-1 PRE-DEVELOPMENT CONDITIONS	4
TABLE 4	DA-1A POST-DEVELOPMENT CONDITIONS	5
TABLE 5	DA-1B POST-DEVELOPMENT CONDITIONS	5
TABLE 6	PEAK FLOW RATES PRE- AND POST-DEVELOPMENT	5
TABLE 7	TREATMENT VOLUME REQUIREMENT	6

Acronyms and abbreviations

BMP	Best Management Practice
CAD	Computer-aided design
CF	Cubic feet
CFS	Cubic feet per second
CN	Curve number
DA	Drainage Area
EGLE	Michigan Department of Environment, Great Lakes, and Energy
FEMA	Federal Emergency Management Agency
HSG	Hydrologic soil group
LOI	Line of interest
min	minutes
MPCA	Minnesota Pollution Control Agency
MW	megawatt
NRCS	Natural Resources Conservation Service
PCSM	Post Construction Stormwater Management
SCS	Soil Conservation Service (NRCS)
TR-20	Technical Release 20
TR-55	Technical Release 55
USDA	United States Department of Agriculture
USGS	United States Geological Survey

1. INTRODUCTION

CenterPoint Energy Minnesota Gas (CenterPoint)(Applicant) is proposing to construct Mankato Hydrogen Energy Plant Project (Project), a 1-megawatt (MW) hydrogen plant and a 1 MW on-site solar panel array in the City of Mankato, Blue Earth County, Minnesota. The Project area is owned by CenterPoint and is situated on an approximately 14.83-acre parcel (Project Area) also owned by CenterPoint. Once developed, the property will be used for hydrogen energy production and storage. The disturbed acreage is approximately 4.04 acres and includes the development of a solar array farm, solar equipment areas, hydrogen plant equipment, hydrogen plant buildings, access roads, stormwater management facilities, utilities, and other site amenities.

The majority of the existing site is already developed for CenterPoint's existing facilities. The solar panel array will be installed within the restored prairie located west of the current facility, and the hydrogen production and storage facility will be installed within an existing developed gravel area located east of the existing on-site propane tanks. Access to the site is off of State Highway 14.

2. EXISTING CONDITIONS

The property is located north off of State Highway 14 approximately 0.35 miles north of the intersection with State Highway 14 and Good Counsel Drive and 0.10 miles south of the intersection with State Highway 14 and Augusta Drive. The property is located within city limits of the City of Mankato. All existing topographic information for the project area and immediate surrounding areas has been provided in the Plans Issued for Conditional Use Permitting. The existing site consists of developed area for CenterPoint's existing facilities and restored prairie area located west of the current facility. The proposed construction of the solar arrays is located on the restored prairie area and consists of one drainage area that drains to a line of interest (LOI) offsite (LOI 1), see **Enclosure 1**. The LOI ultimately drains to the Minnesota River. During construction, Erosion and Sediment (E&S) Best Management Practices (BMPs), such as compost filter socks, temporary check dams, and rock construction entrances, shall be installed in order to reduce suspended solids released from the site.

3. DESIGN BASIS AND ASSUMPTIONS

The site's drainage characteristics were modeled for existing and developed conditions in accordance with the Minnesota Stormwater Manual and Mankato Grading Manual that defines Mankato City's standards and specifications for stormwater management practices implemented during land development. The runoff analysis calculations and watershed routing calculations were performed using the SCS TR-20 method in HydroCAD 10.20-7a. This computer program requires the application of several assumptions to some of the input data. These assumptions consist of variables as applied to the pre- and post-development flow paths, soil conditions, above-site drainage areas, and ground cover conditions. This section discusses this input data, and the assumptions utilized.

3.1 ORDINANCE REGULATIONS

This Stormwater Management Plan was designed to be consistent with the Minnesota Stormwater Manual and Mankato City Grading Manual which meet permit obligations with the Minnesota Pollution Control Agency (MPCA). The Mankato City Grading Manual requirements include reducing the peak flow from pre- to post- condition for the 2-, 10-, 100- and back-to-back 10-year 24-hour storm events and treating the volume of runoff for the first 1.1 inches of runoff from all new impervious surfaces. The first 1.1 inches of runoff from impervious surfaces can be treated by routing 100 percent of the runoff volume from new impervious surfaces through a filtration practice where infiltration is not feasible. The Minnesota Stormwater Manual requirements include treating the volume of the first 1.0 inches of runoff from impervious surfaces and allows for the pervious are between solar panels to count towards that treatment. To comply with the Mankato City stormwater requirements and receive credits for the pervious area between the solar panels, a 10% increase in volume is added to the required treatment volume calculated from the solar array area utilizing the Minnesota Stormwater Manual Solar Panel Volume Calculator.

Analysis of the 2-, 10-, 100-, and back-to-back 10-year storm events are included to comply with these requirements. Rate and volume calculations are included in **Appendix B and Appendix C,** respectively.

The rainfall depths for each storm event are shown in **Table 1**. Storms follow the SCS 24-hour Type II rainfall distribution.

TABLE 1 RAINFALL DATA

Storm	P (in)
2-year	2.86
10-year	4.27
100-year	7.17

Source: NOAA Atlas 14, Volume 8, Version 2

3.2 SITE SOILS

The soils within the project area were listed as hydrologic soil group (HSG) type ‘B’, HSG type ‘C’, and HSG type ‘D’ (see description below).

Group B soils have a moderate infiltration rate when thoroughly wet. These consist chiefly of soils moderately deep to deep, well-drained soils. These soils have a moderate rate of water transmission.

Group C soils have a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D soils have a very slow infiltration rate when thoroughly wet. These consist chiefly of soils having high clay content and high runoff potential when wet. These soils have a very slow rate of water transmission.

Site soils information was taken from the United States Department of Agriculture – Natural Resources Conservation Service (USDA – NRCS) website. The soil classification and type located on the property are summarized in **Table 2**.

TABLE 2 SOIL CLASSIFICATION

Symbol	Series Name/Slope	HSG	Hydric?	Prime Farmland
18	Comfrey clay loam	B/D	Yes	Yes, if not flooded
35	Blue Earth mucky silt loam, 0 to 1 percent slopes	B/D	Yes	No
85	Calco silty clay loam, 0 to 2 percent slopes, occasionally flooded	C/D	Yes	Yes, if not flooded
94B	Terril loam, 2 to 6 percent slopes	B	No	Yes
1039	Urban land, 0 to 2 percent slopes	-	No	-

Source: USDA NRCS Custom Soil Resource Report for Blue Earth County, Minnesota

A geotechnical investigation was performed by Braun Interec Corporation dated June 9, 2015. This investigation consisted of three soil boring located on the existing gravel area on site. Existing soils below the gravel were determined to chiefly consist of sandy lean clay which typically corresponds with HSG type 'C' or type 'D' and having slow infiltration rates. Due to the existing soils on site found during the geotechnical investigation, the site has been modeled as HSG type 'D' and infiltration is not proposed.

The approximate soil boundaries are shown on the Soils Map which is provided in **Appendix A**. The contractor should analyze the soils utilized during the construction process. Caution should be exercised in areas of poor soils. A qualified geotechnical engineer should be consulted during construction when unsuitable conditions occur. The recommended foundation design based on the soil findings shall supersede the USDA soil limitations listed above. The contractor should ensure that soils are not cut steeper than the design slopes and that fills are compacted in accordance with the site geotechnical report. Immediate seeding and mulching of disturbed areas will aid in soil stabilization and reduce soil erosion once vegetation is established.

3.3 ASSUMPTIONS

To model the pre-developed and post-developed runoff characteristics, several assumptions were made as follows:

- Acreage measurements (as applied to drainage areas and areas of ground cover) were determined by computer-aided drafting (CAD) and are approximated based on the accuracy of the site mapping and the resulting interpolation of ground slopes, ground cover, and drainage patterns.

- The LOI for the pre- and post-developed drainage areas was assumed to be located at approximately the same study point.
- The varying pre-development ground cover areas for prairie, woods, and gravel land coverage were estimated from survey, aerial imagery, the United States Geological Survey (USGS) National Landcover Database, and from site observation.
- In accordance with TR-55 requirements, pre-development Curve Number (CN) values for Meadow, Woods, and gravel land cover with Type 'D' soils are 78, 77, and 98, respectively. CN values used for post-development Meadow, Woods, gravel land cover, and disconnected impervious with Type 'D' soils are 78, 77, 98, and 98, respectively.

Other assumptions used in the calculations are discussed in the applicable sections of the report.

4. PRE-DEVELOPED HYDROLOGY

The existing site contains one drainage area (DA-1) that drains to a LOI offsite (LOI 1), as shown in **Enclosure 1**. The LOI ultimately drains to the Minnesota River.

Land cover is based on information from survey, aerial imagery, the USGS National Landcover Database, and site observation. Land cover, hydrologic soil group, and curve number information for pre-development conditions within the drainage area are summarized in **Table 3**. The pre-development drainage area curve number was weighted as shown in **Appendix B**.

TABLE 3 DA-1 PRE-DEVELOPMENT CONDITIONS

Land Cover	Area (acres)	HSG	CN
Meadow	14.47	D	78
Woods (Good)	5.43	D	77
Connected Impervious	2.47	D	98
Total/Weighted CN	22.37		80

The pre-development drainage areas and time of concentration paths are shown on the enclosed Pre-Development Drainage Area Map.

5. POST-DEVELOPMENT HYDROLOGY

The proposed site contains one drainage area (DA-1) that drains to a LOI offsite (LOI 1), as shown in **Enclosure 2**. The LOI ultimately drains to the Minnesota River.

The post-development drainage area has been broken down into two sub-drainage areas, DA-1A and DA-1B. DA-1 increases in curve number from pre- to post- condition and includes a vegetated swale and filtration berm. The filtration berm has been designed to filter the volume from all new impervious areas, calculated in accordance with the Mankato Grading Manual and MPCA Solar Site Guidance. DA-1B decreases in curve number from pre- to post- conditions and contains undetained areas. DA-1 drains to a localized low area offsite. The post-development drainage

areas and time of concentration paths are shown on the enclosed Post-Development Drainage Area Map.

Land cover, hydrologic soil group, and curve number information for post-development conditions are summarized in **Tables 4-5**.

TABLE 4 DA-1A POST-DEVELOPMENT CONDITIONS

Land Cover	Area (acres)	HSG	CN
Meadow	2.43	D	78
Connected Impervious	1.60	D	98
Disconnected Impervious	1.30	D	98
Total/Weighted CN	5.33		89

TABLE 5 DA-1B POST-DEVELOPMENT CONDITIONS

Land Cover	Area (acres)	HSG	CN
Meadow	10.71	D	78
Woods (Good)	5.43	D	77
Connected Impervious	0.90	D	98
Total/Weighted CN	17.04		79

5.1 PEAK FLOW SUMMARY

The pre- and post-development runoff at the LOI were determined using the SCS TR-20 method in HydroCAD. The runoff rate for the site was reduced from pre- to post-development conditions for the 2-, 10-, 100-, and back-to-back 10-year 24-hours storm events, in accordance with the City of Mankato Grading Manual, because of the use of peak flow reduction BMPs. Peak flow reduction BMPs include a vegetated swale. A summary of the discharges is as follows and demonstrates the decrease in the overall peak flow from the existing condition to developed condition. Calculations for pre- and post-developed conditions are included in **Appendix B**.

Pre- and post-development runoff rates in cubic feet per second (cfs) for the LOI are summarized in **Table 6.**

TABLE 6 PEAK FLOW RATES PRE- AND POST-DEVELOPMENT

Storm Event	Drainage Area 1		
	Pre-Development (cfs)	Post-Development (cfs)	Net Change (cfs)
2-year, 24-hr	32.85	29.78	-3.07

10-year, 24-hr	65.73	59.89	-5.84
Back-to-back 10-year, 24-hr	94.25	85.03	-9.22
100-year, 24-hr	138.53	126.88	-11.65

5.2 VOLUME SUMMARY

According to the Mankato City Garding Manual, the required treatment volume, which can be infiltrated or filtrated, is the first 1.1-inch of runoff from all new impervious surfaces. Additionally, the MPCA Solar Stormwater Guidance is used to calculate the required treatment volume for the solar array area. The MPCA Solar Stormwater Guidance requires solar arrays to be considered new disconnected impervious and allows for volume reduction to be applied from the previous areas between solar arrays. As such, the treatment volume requirement is a combination of these two calculations. The volume treatment requirement is met through the use of a filtration berm sized to filter the required volume. Calculations for pre- and post-developed conditions are included in **Appendix B**. Treatment volumes in cubic feet (cf) for the LOI are summarized in **Table 7.**

TABLE 7 TREATMENT VOLUME REQUIREMENT

LOI	Treatment Volume Requirement (cf)	Filtration Berm Volume (cf)
LOI-1	3,324	3,324

6. POST CONSTRUCTION STORMWATER MANAGEMENT

The post construction stormwater management design and the overall site development was conceptualized to preserve the integrity of the receiving streams while maintaining and protecting the physical, biological, and chemical qualities of the receiving surface waters.

Physical properties, or rate and volume, will be managed by demonstrating a decrease in peak rate and filtering the required volume.

Biological properties, or thermal impacts are discussed in greater detail in Section 6.2.

6.1 PROPOSED BMP'S

6.1.1 FILTRATION BERM

A filtration berm with conveyance via sheet flow and vegetated swale is proposed in DA-1. The filtration berm is sized to filter the required volume, according to the Mankato City Grading Manual and the MPCA Solar Stormwater Guidance. The site had a geotechnical testing performed by Braun Interec Corporation on May 4, 2015 which showed the site consists of mostly clayey soils, and as such infiltration of the required treatment volume is not feasible. The entire required treatment volume will be filtered through a filtration berm.

Please refer to **Appendix C** for the required filtration berm volume calculations.

6.2 POTENTIAL THERMAL IMPACTS TO SURFACE WATERS

The majority of stormwater flowing across gravel surfaces will enter a vegetated swale prior to discharging to a filtration berm, which will filter the water before discharging downstream and eventually flowing to the Minnesota River.

6.3 CONCLUSION

If the plan is implemented as described, impacts to the biological, chemical, and physical properties of downstream surface waters will be mitigated.

7. REFERENCES

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APPENDIX A – SOILS REPORT AND NOAA DATA

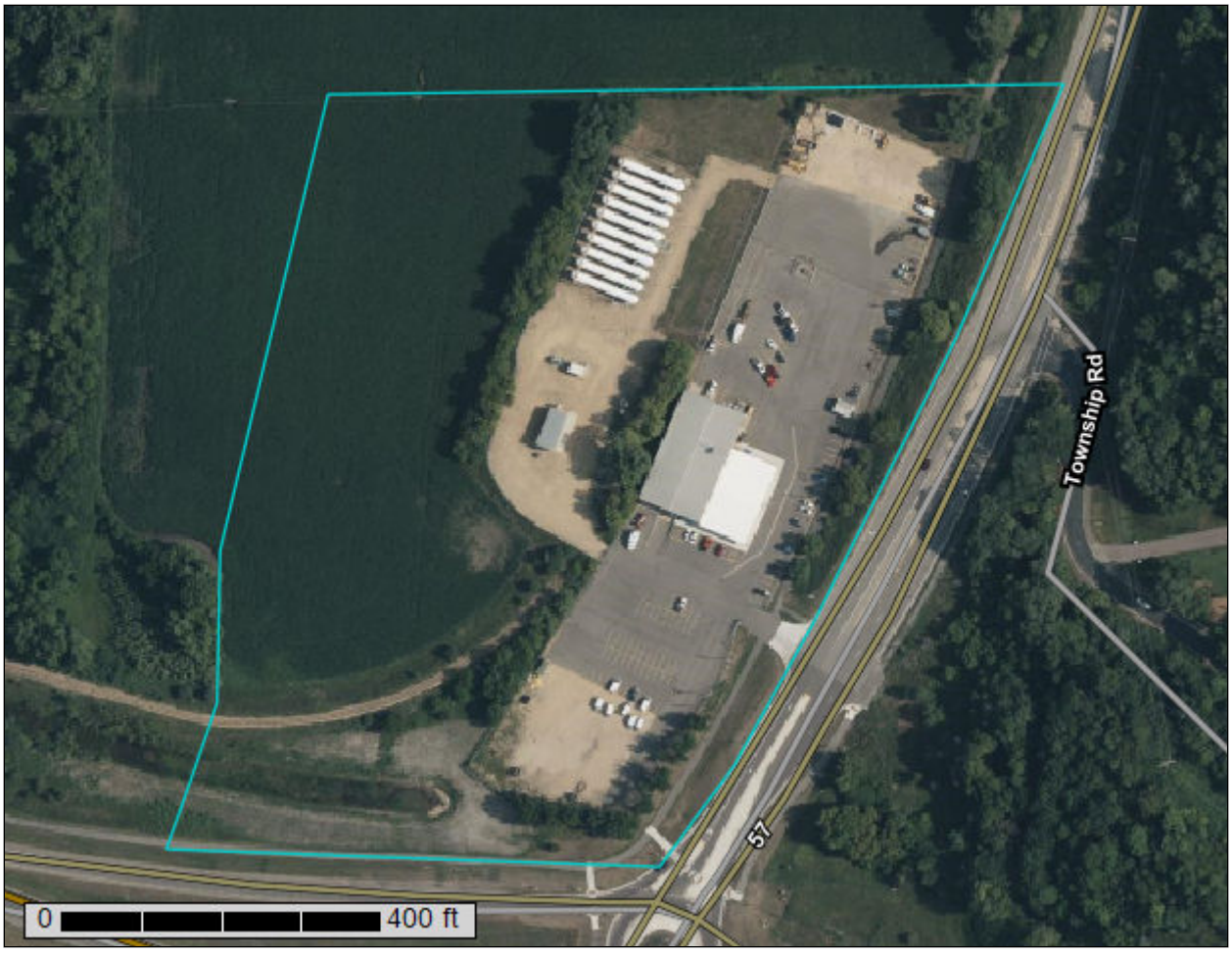
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Blue Earth County, Minnesota



April 1, 2026

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
Blue Earth County, Minnesota.....13
18—Comfrey clay loam.....13
35—Blue Earth mucky silt loam, 0 to 1 percent slopes.....14
85—Calco silty clay loam, 0 to 2 percent slopes, occasionaly flooded.....15
94B—Terril loam, 2 to 6 percent slopes.....17
94C—Terril loam, 6 to 15 percent slopes.....19
321—Tilfer silty clay loam.....20
1039—Urban land, 0 to 2 percent slopes.....21
References.....23

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

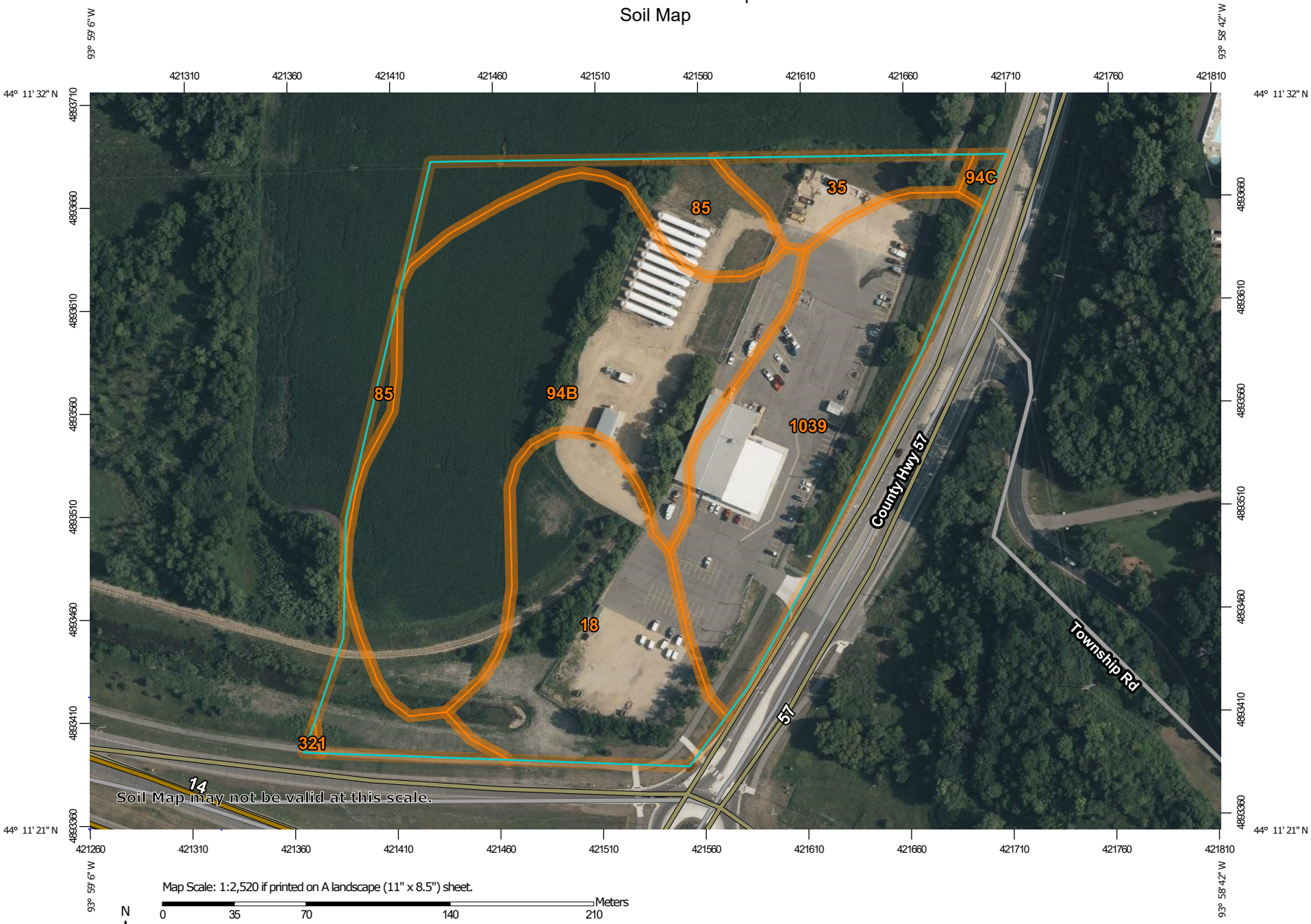
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Blue Earth County, Minnesota
Survey Area Data: Version 23, Sep 9, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 2, 2023—Aug 8, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
18	Comfrey clay loam	3.4	19.2%
35	Blue Earth mucky silt loam, 0 to 1 percent slopes	0.8	4.4%
85	Calco silty clay loam, 0 to 2 percent slopes, occasionaly flooded	2.0	11.4%
94B	Terril loam, 2 to 6 percent slopes	7.2	40.8%
94C	Terril loam, 6 to 15 percent slopes	0.1	0.5%
321	Tilfer silty clay loam	0.0	0.1%
1039	Urban land, 0 to 2 percent slopes	4.1	23.6%
Totals for Area of Interest		**17.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor

components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Blue Earth County, Minnesota

18—Comfrey clay loam

Map Unit Setting

National map unit symbol: f96x
Elevation: 700 to 1,570 feet
Mean annual precipitation: 23 to 35 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 155 to 200 days
Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Comfrey, occasionally flooded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Comfrey, Occasionally Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-loamy alluvium

Typical profile

Ap - 0 to 9 inches: clay loam
A - 9 to 34 inches: loam
C - 34 to 60 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F103XY033MN - Wet Floodplains
Forage suitability group: Level Swale, Neutral (G103XS001MN)
Other vegetative classification: Level Swale, Neutral (G103XS001MN)
Hydric soil rating: Yes

Minor Components

Calco

Percent of map unit: 5 percent

Landform: Flood plains
Hydric soil rating: Yes

Chaska

Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: Yes

35—Blue Earth mucky silt loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2vvf5
Landscape: Till plains
Elevation: 690 to 1,840 feet
Mean annual precipitation: 24 to 37 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Blue earth and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blue Earth

Setting

Landscape: Till plains
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coprogenic material over till

Typical profile

Lpco - 0 to 10 inches: mucky silt loam
Lco - 10 to 68 inches: mucky silt loam
2Cg - 68 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 13.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: R103XY018MN - Shallow Lakes
Forage suitability group: Ponded If Not Drained (G103XS013MN)
Other vegetative classification: Ponded If Not Drained (G103XS013MN)
Hydric soil rating: Yes

Minor Components

Canisteo

Percent of map unit: 10 percent
Landscape: Till plains
Landform: Ground moraines, Rims on depressions
Landform position (three-dimensional): Talf
Down-slope shape: Linear, concave
Across-slope shape: Linear
Ecological site: R103XY001MN - Loamy Wet Prairies
Other vegetative classification: Level Swale, Calcareous (G103XS009MN)
Hydric soil rating: Yes

Harps

Percent of map unit: 4 percent
Landscape: Till plains
Landform: Rims on depressions
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: R103XY009MN - Calcareous Rim Prairies
Other vegetative classification: Level Swale, Calcareous (G103XS009MN)
Hydric soil rating: Yes

Lemond

Percent of map unit: 1 percent
Landscape: Till plains
Landform: Outwash plains, Terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R103XY007MN - Sandy Wet Prairies
Other vegetative classification: Level Swale, Calcareous (G103XS009MN)
Hydric soil rating: Yes

85—Calco silty clay loam, 0 to 2 percent slopes, occasionaly flooded

Map Unit Setting

National map unit symbol: 2wd8d
Landscape: River valleys
Elevation: 690 to 1,840 feet
Mean annual precipitation: 24 to 37 inches

Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Calco, occasionally flooded, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Calco, Occasionally Flooded

Setting

Landscape: River valleys
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

Ap - 0 to 10 inches: silty clay loam
A - 10 to 45 inches: silty clay loam
Bg - 45 to 55 inches: silty clay loam
Cg - 55 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 to 8 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 12.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F103XY033MN - Wet Floodplains
Forage suitability group: Level Swale, Calcareous (G103XS009MN)
Other vegetative classification: Level Swale, Calcareous (G103XS009MN)
Hydric soil rating: Yes

Minor Components

Colo, occasionally flooded

Percent of map unit: 10 percent
Landscape: River valleys
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear

Ecological site: F103XY033MN - Wet Floodplains
Other vegetative classification: Level Swale, Neutral (G103XS001MN)
Hydric soil rating: Yes

Spillville, occasionally flooded
Percent of map unit: 5 percent
Landscape: River valleys
Landform: Flood plains
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F103XY032MN - Loamy Floodplains
Other vegetative classification: Level Swale, Neutral (G103XS001MN)
Hydric soil rating: No

94B—Terril loam, 2 to 6 percent slopes

Map Unit Setting
National map unit symbol: 2tsjq
Landscape: Till plains
Elevation: 690 to 1,840 feet
Mean annual precipitation: 24 to 37 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 140 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Terril and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Terril

Setting
Landscape: Till plains
Landform: Ground moraines
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Colluvium

Typical profile
Ap - 0 to 9 inches: loam
A - 9 to 34 inches: loam
Bw - 34 to 52 inches: loam
C - 52 to 79 inches: loam

Properties and qualities
Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches

Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 39 to 51 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: R103XY011MN - Footslope/Drainageway Prairies
Forage suitability group: Sloping Upland, Neutral (G103XS002MN)
Other vegetative classification: Sloping Upland, Neutral (G103XS002MN)
Hydric soil rating: No

Minor Components

Delft

Percent of map unit: 8 percent
Landscape: Till plains
Landform: Swales on ground moraines
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R103XY001MN - Loamy Wet Prairies
Other vegetative classification: Level Swale, Calcareous (G103XS009MN)
Hydric soil rating: Yes

Storden, moderately eroded

Percent of map unit: 7 percent
Landscape: Till plains
Landform: Ground moraines
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Ecological site: R103XY002MN - Calcareous Upland Prairies
Other vegetative classification: Sloping Upland, Calcareous (G103XS010MN)
Hydric soil rating: No

Clarion

Percent of map unit: 5 percent
Landscape: Till plains
Landform: Ground moraines
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R103XY004MN - Loamy Upland Prairies
Other vegetative classification: Sloping Upland, Neutral (G103XS002MN)
Hydric soil rating: No

94C—Terril loam, 6 to 15 percent slopes

Map Unit Setting

National map unit symbol: f99k
Elevation: 700 to 1,570 feet
Mean annual precipitation: 23 to 35 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 155 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Terril and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Terril

Setting

Landform: Hills on moraines
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium

Typical profile

Ap,A - 0 to 21 inches: loam
Bw - 21 to 49 inches: loam
C - 49 to 60 inches: loam

Properties and qualities

Slope: 6 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R103XY011MN - Footslope/Drainageway Prairies
Forage suitability group: Sloping Upland, Neutral (G103XS002MN)
Other vegetative classification: Sloping Upland, Neutral (G103XS002MN)
Hydric soil rating: No

Minor Components

Hamel
Percent of map unit: 5 percent
Landform: Drainageways
Hydric soil rating: Yes

Le sueur
Percent of map unit: 2 percent
Landform: Rises
Hydric soil rating: No

Webster
Percent of map unit: 2 percent
Landform: Drainageways
Hydric soil rating: Yes

Nicollet
Percent of map unit: 1 percent
Landform: Rises
Hydric soil rating: No

321—Tilfer silty clay loam

Map Unit Setting
National map unit symbol: f97v
Elevation: 700 to 1,570 feet
Mean annual precipitation: 23 to 35 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 155 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Tilfer and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tilfer

Setting
Landform: Flats on benches
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-silty lacustrine deposits over limestone bedrock

Typical profile
Ap,A - 0 to 22 inches: silty clay loam
Bg - 22 to 31 inches: silty clay loam
Cg - 31 to 33 inches: channers
2R - 33 to 35 inches: bedrock

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: R103XY010MN - Bedrock Controlled Wet Prairies
Forage suitability group: Ponded If Not Drained (G103XS013MN)
Other vegetative classification: Ponded If Not Drained (G103XS013MN)
Hydric soil rating: Yes

Minor Components

Joliet

Percent of map unit: 10 percent
Landform: Outwash plains
Hydric soil rating: Yes

1039—Urban land, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: f964
Elevation: 700 to 1,570 feet
Mean annual precipitation: 23 to 35 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 155 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Moraines
Down-slope shape: Linear
Across-slope shape: Linear

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NOAA Atlas 14, Volume 8, Version 2
Location name: Mankato, Minnesota, USA*
Latitude: 44.1903°, Longitude: -93.9811°
Elevation: 862 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.374** (0.296-0.486)	**0.446** (0.352-0.579)	**0.567** (0.445-0.738)	**0.671** (0.524-0.875)	**0.819** (0.618-1.10)	**0.938** (0.690-1.26)	**1.06** (0.752-1.45)	**1.19** (0.806-1.65)	**1.36** (0.887-1.93)	**1.50** (0.949-2.14)
10-min	**0.548** (0.433-0.712)	**0.653** (0.515-0.848)	**0.830** (0.652-1.08)	**0.982** (0.767-1.28)	**1.20** (0.905-1.61)	**1.37** (1.01-1.85)	**1.55** (1.10-2.12)	**1.74** (1.18-2.42)	**2.00** (1.30-2.83)	**2.20** (1.39-3.14)
15-min	**0.669** (0.528-0.868)	**0.796** (0.628-1.04)	**1.01** (0.795-1.32)	**1.20** (0.935-1.56)	**1.46** (1.10-1.96)	**1.67** (1.23-2.26)	**1.89** (1.34-2.59)	**2.12** (1.44-2.95)	**2.43** (1.58-3.45)	**2.68** (1.69-3.82)
30-min	**0.908** (0.717-1.18)	**1.08** (0.855-1.41)	**1.38** (1.09-1.80)	**1.64** (1.28-2.14)	**2.01** (1.52-2.69)	**2.30** (1.69-3.10)	**2.60** (1.85-3.57)	**2.92** (1.98-4.07)	**3.36** (2.19-4.76)	**3.70** (2.34-5.28)
60-min	**1.17** (0.927-1.52)	**1.39** (1.10-1.81)	**1.77** (1.39-2.31)	**2.11** (1.65-2.75)	**2.60** (1.98-3.51)	**3.01** (2.22-4.08)	**3.44** (2.45-4.74)	**3.90** (2.66-5.46)	**4.55** (2.97-6.46)	**5.06** (3.20-7.23)
2-hr	**1.44** (1.15-1.84)	**1.70** (1.36-2.18)	**2.16** (1.72-2.77)	**2.58** (2.04-3.31)	**3.20** (2.46-4.27)	**3.73** (2.79-4.99)	**4.28** (3.09-5.83)	**4.88** (3.37-6.76)	**5.74** (3.79-8.08)	**6.42** (4.11-9.08)
3-hr	**1.62** (1.30-2.05)	**1.90** (1.52-2.40)	**2.40** (1.93-3.06)	**2.88** (2.29-3.66)	**3.59** (2.79-4.77)	**4.20** (3.17-5.60)	**4.86** (3.54-6.58)	**5.58** (3.88-7.69)	**6.61** (4.40-9.26)	**7.44** (4.80-10.5)
6-hr	**1.90** (1.55-2.37)	**2.22** (1.81-2.78)	**2.83** (2.30-3.54)	**3.39** (2.74-4.25)	**4.26** (3.36-5.58)	**5.00** (3.82-6.58)	**5.81** (4.28-7.77)	**6.69** (4.71-9.11)	**7.96** (5.37-11.0)	**9.01** (5.87-12.5)
12-hr	**2.16** (1.79-2.66)	**2.54** (2.10-3.13)	**3.24** (2.66-3.99)	**3.88** (3.17-4.79)	**4.86** (3.88-6.27)	**5.70** (4.41-7.38)	**6.60** (4.92-8.70)	**7.58** (5.40-10.2)	**8.99** (6.13-12.3)	**10.1** (6.68-13.9)
24-hr	**2.46** (2.07-2.98)	**2.86** (2.40-3.46)	**3.59** (3.00-4.36)	**4.27** (3.54-5.20)	**5.31** (4.30-6.75)	**6.20** (4.87-7.93)	**7.17** (5.41-9.33)	**8.22** (5.92-10.9)	**9.73** (6.72-13.2)	**11.0** (7.32-14.9)
2-day	**2.86** (2.43-3.41)	**3.23** (2.74-3.84)	**3.92** (3.32-4.68)	**4.59** (3.86-5.50)	**5.64** (4.64-7.08)	**6.56** (5.23-8.28)	**7.57** (5.80-9.74)	**8.69** (6.35-11.4)	**10.3** (7.22-13.8)	**11.7** (7.87-15.7)
3-day	**3.13** (2.69-3.69)	**3.51** (3.01-4.14)	**4.22** (3.60-4.99)	**4.90** (4.16-5.82)	**5.97** (4.94-7.41)	**6.90** (5.53-8.62)	**7.92** (6.10-10.1)	**9.04** (6.65-11.8)	**10.7** (7.51-14.2)	**12.0** (8.16-16.0)
4-day	**3.35** (2.88-3.92)	**3.75** (3.23-4.39)	**4.49** (3.85-5.27)	**5.19** (4.42-6.12)	**6.28** (5.21-7.72)	**7.21** (5.81-8.94)	**8.22** (6.37-10.4)	**9.34** (6.90-12.1)	**10.9** (7.74-14.5)	**12.3** (8.37-16.3)
7-day	**3.87** (3.38-4.47)	**4.34** (3.78-5.02)	**5.17** (4.49-5.99)	**5.92** (5.10-6.89)	**7.05** (5.90-8.52)	**7.99** (6.49-9.74)	**8.99** (7.03-11.2)	**10.1** (7.51-12.8)	**11.6** (8.28-15.1)	**12.8** (8.86-16.9)
10-day	**4.38** (3.85-5.02)	**4.91** (4.30-5.62)	**5.81** (5.07-6.67)	**6.60** (5.73-7.61)	**7.76** (6.52-9.26)	**8.71** (7.12-10.5)	**9.71** (7.63-12.0)	**10.8** (8.07-13.6)	**12.2** (8.77-15.8)	**13.4** (9.31-17.5)
20-day	**6.02** (5.36-6.78)	**6.69** (5.95-7.53)	**7.79** (6.90-8.79)	**8.71** (7.67-9.87)	**9.99** (8.47-11.6)	**11.0** (9.08-13.0)	**12.0** (9.52-14.5)	**13.0** (9.86-16.1)	**14.4** (10.4-18.3)	**15.4** (10.9-20.0)
30-day	**7.44** (6.68-8.28)	**8.25** (7.40-9.20)	**9.56** (8.54-10.7)	**10.6** (9.43-11.9)	**12.1** (10.3-13.9)	**13.1** (10.9-15.3)	**14.2** (11.3-16.9)	**15.2** (11.6-18.7)	**16.6** (12.1-20.9)	**17.6** (12.4-22.6)
45-day	**9.23** (8.36-10.2)	**10.3** (9.29-11.3)	**11.9** (10.7-13.2)	**13.2** (11.8-14.6)	**14.9** (12.7-16.9)	**16.1** (13.5-18.5)	**17.2** (13.9-20.4)	**18.4** (14.1-22.3)	**19.7** (14.5-24.6)	**20.7** (14.8-26.4)
60-day	**10.8** (9.80-11.8)	**12.0** (10.9-13.1)	**13.9** (12.6-15.3)	**15.5** (13.9-17.0)	**17.4** (15.0-19.6)	**18.8** (15.8-21.4)	**20.0** (16.2-23.5)	**21.2** (16.4-25.6)	**22.7** (16.7-28.1)	**23.6** (16.9-30.0)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

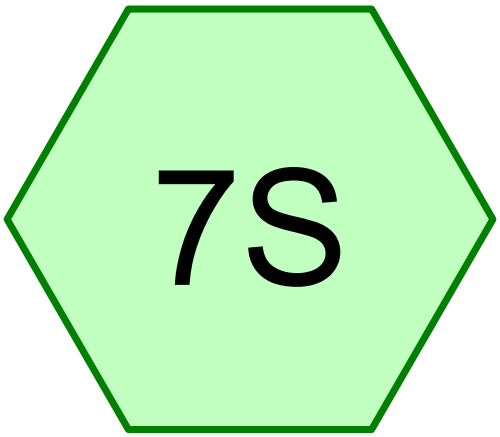
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

APPENDIX B – RATE REDUCTION CALCULATIONS



DA-1 PRE

Subcat Reach Pond Link

Routing Diagram for Pre Workup
Prepared by ERM, Printed 5/19/2026
HydroCAD® 10.20-8a s/n 02264 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	Type II 24-hr		Default	24.00	1	2.86	2
2	10-year	Type II 24-hr		Default	24.00	1	4.27	2
3	10-year back	Type II 24-hr		Default	24.00	2	4.27	2
4	100-year	Type II 24-hr		Default	24.00	1	7.17	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.470	98	Impervious (7S)
14.470	78	Meadow, non-grazed, HSG D (7S)
5.430	77	Woods, Good, HSG D (7S)
22.370	**80**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
19.900	HSG D	7S
2.470	Other	7S
22.370		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	2.470	2.470	Impervious	7S
0.000	0.000	0.000	14.470	0.000	14.470	Meadow, non-grazed	7S
0.000	0.000	0.000	5.430	0.000	5.430	Woods, Good	7S
0.000	**0.000**	**0.000**	**19.900**	**2.470**	**22.370**	**TOTAL AREA**	

Time span=0.00-74.00 hrs, dt=0.01 hrs, 7401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment7S: DA-1 PRE Runoff Area=22.370 ac 11.04% Impervious Runoff Depth=1.15"
Flow Length=1,086' Tc=15.0 min CN=80 Runoff=32.85 cfs 2.136 af

Total Runoff Area = 22.370 ac Runoff Volume = 2.136 af Average Runoff Depth = 1.15"
88.96% Pervious = 19.900 ac 11.04% Impervious = 2.470 ac

Summary for Subcatchment 7S: DA-1 PRE

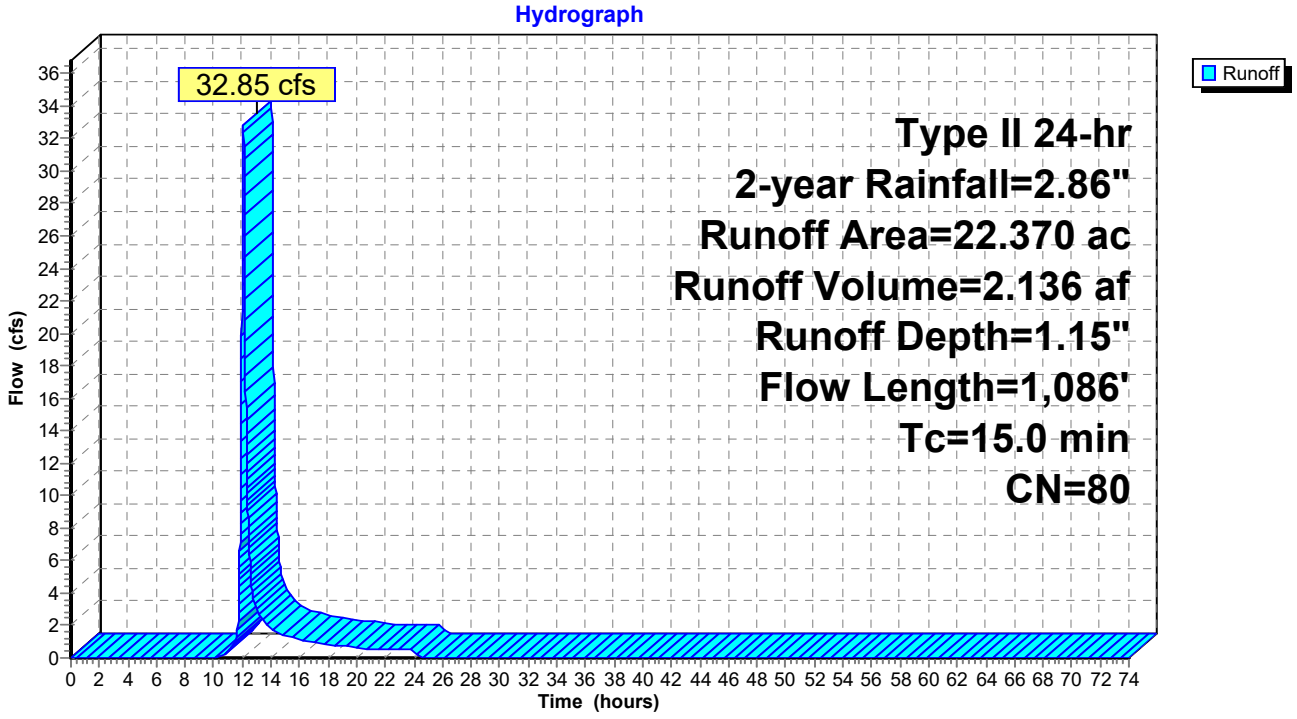
Runoff = 32.85 cfs @ 12.08 hrs, Volume= 2.136 af, Depth= 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.86"

	Area (ac)	CN	Description
	14.470	78	Meadow, non-grazed, HSG D
*	2.470	98	Impervious
	5.430	77	Woods, Good, HSG D
	22.370	80	Weighted Average
	19.900		88.96% Pervious Area
	2.470		11.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.90		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.37"
1.1	111	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
12.0	875	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	1,086	Total			

Subcatchment 7S: DA-1 PRE



Time span=0.00-74.00 hrs, dt=0.01 hrs, 7401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment7S: DA-1 PRE Runoff Area=22.370 ac 11.04% Impervious Runoff Depth=2.27"
Flow Length=1,086' Tc=15.0 min CN=80 Runoff=65.73 cfs 4.226 af

Total Runoff Area = 22.370 ac Runoff Volume = 4.226 af Average Runoff Depth = 2.27"
88.96% Pervious = 19.900 ac 11.04% Impervious = 2.470 ac

Summary for Subcatchment 7S: DA-1 PRE

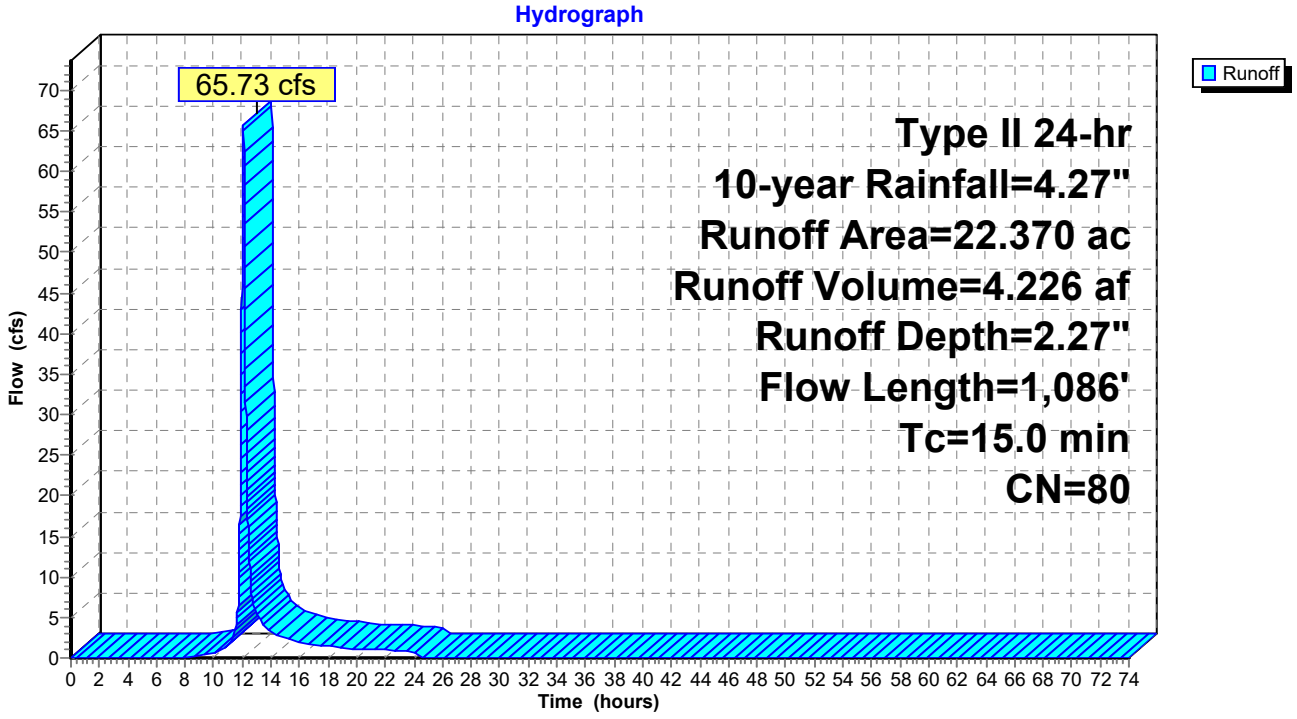
Runoff = 65.73 cfs @ 12.07 hrs, Volume= 4.226 af, Depth= 2.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=4.27"

	Area (ac)	CN	Description
	14.470	78	Meadow, non-grazed, HSG D
*	2.470	98	Impervious
	5.430	77	Woods, Good, HSG D
	22.370	80	Weighted Average
	19.900		88.96% Pervious Area
	2.470		11.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.90		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.37"
1.1	111	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
12.0	875	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	1,086	Total			

Subcatchment 7S: DA-1 PRE



Time span=0.00-74.00 hrs, dt=0.01 hrs, 7401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment7S: DA-1 PRE Runoff Area=22.370 ac 11.04% Impervious Runoff Depth=6.13"
Flow Length=1,086' Tc=15.0 min CN=80 Runoff=94.25 cfs 11.433 af

Total Runoff Area = 22.370 ac Runoff Volume = 11.433 af Average Runoff Depth = 6.13"
88.96% Pervious = 19.900 ac 11.04% Impervious = 2.470 ac

Summary for Subcatchment 7S: DA-1 PRE

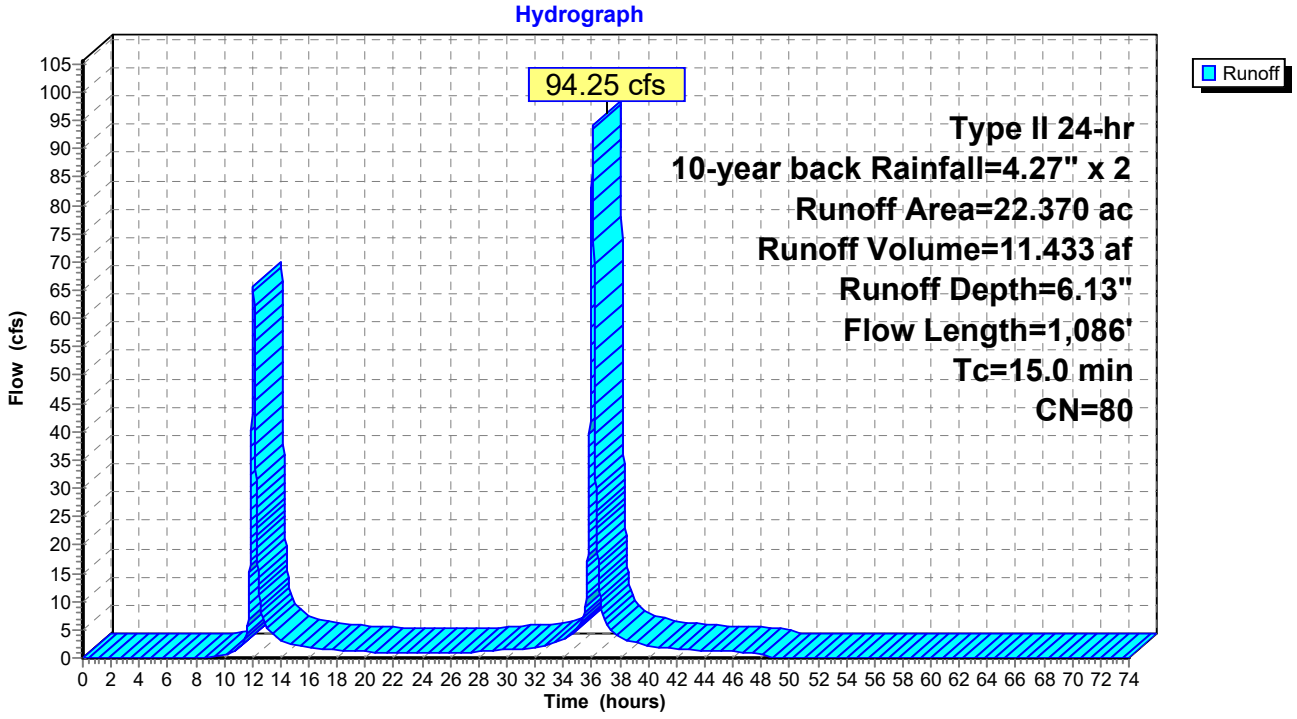
Runoff = 94.25 cfs @ 36.06 hrs, Volume= 11.433 af, Depth= 6.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year back Rainfall=4.27" x 2

	Area (ac)	CN	Description
	14.470	78	Meadow, non-grazed, HSG D
*	2.470	98	Impervious
	5.430	77	Woods, Good, HSG D
	22.370	80	Weighted Average
	19.900		88.96% Pervious Area
	2.470		11.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.90		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.37"
1.1	111	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
12.0	875	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	1,086	Total			

Subcatchment 7S: DA-1 PRE



Time span=0.00-74.00 hrs, dt=0.01 hrs, 7401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment7S: DA-1 PRE Runoff Area=22.370 ac 11.04% Impervious Runoff Depth=4.85"
Flow Length=1,086' Tc=15.0 min CN=80 Runoff=138.53 cfs 9.044 af

Total Runoff Area = 22.370 ac Runoff Volume = 9.044 af Average Runoff Depth = 4.85"
88.96% Pervious = 19.900 ac 11.04% Impervious = 2.470 ac

Summary for Subcatchment 7S: DA-1 PRE

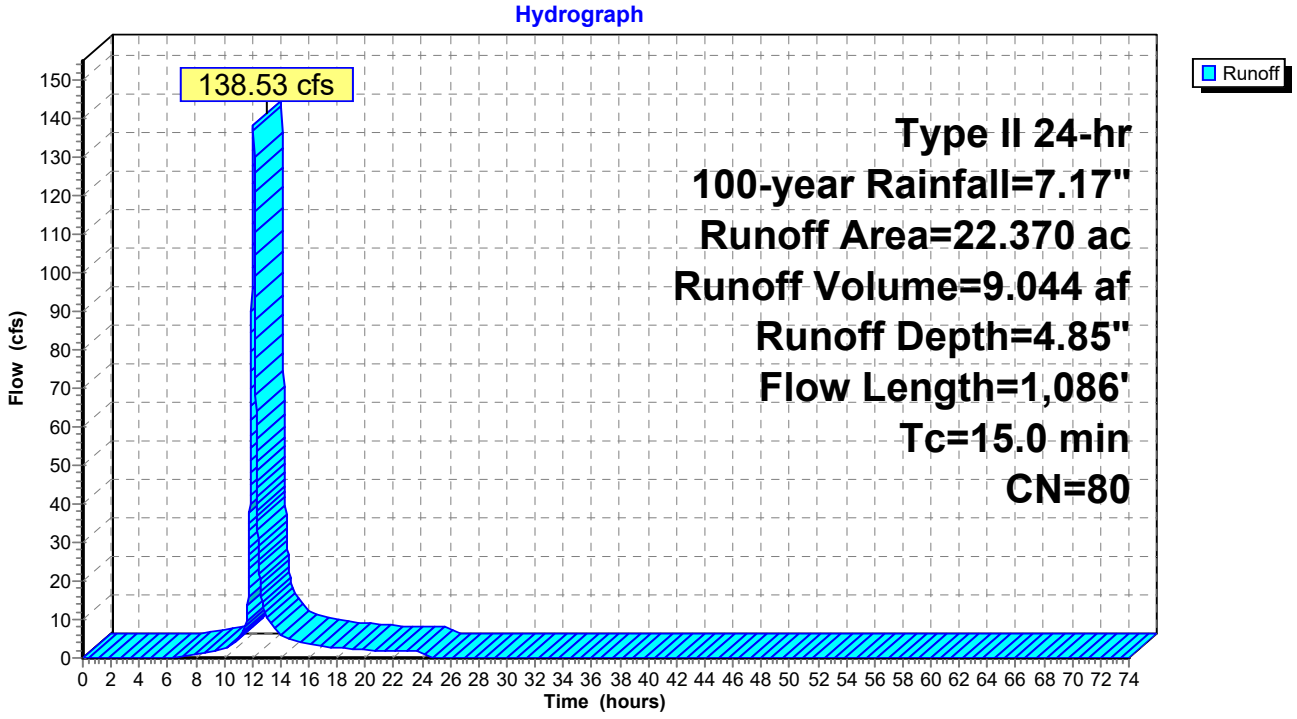
Runoff = 138.53 cfs @ 12.07 hrs, Volume= 9.044 af, Depth= 4.85"

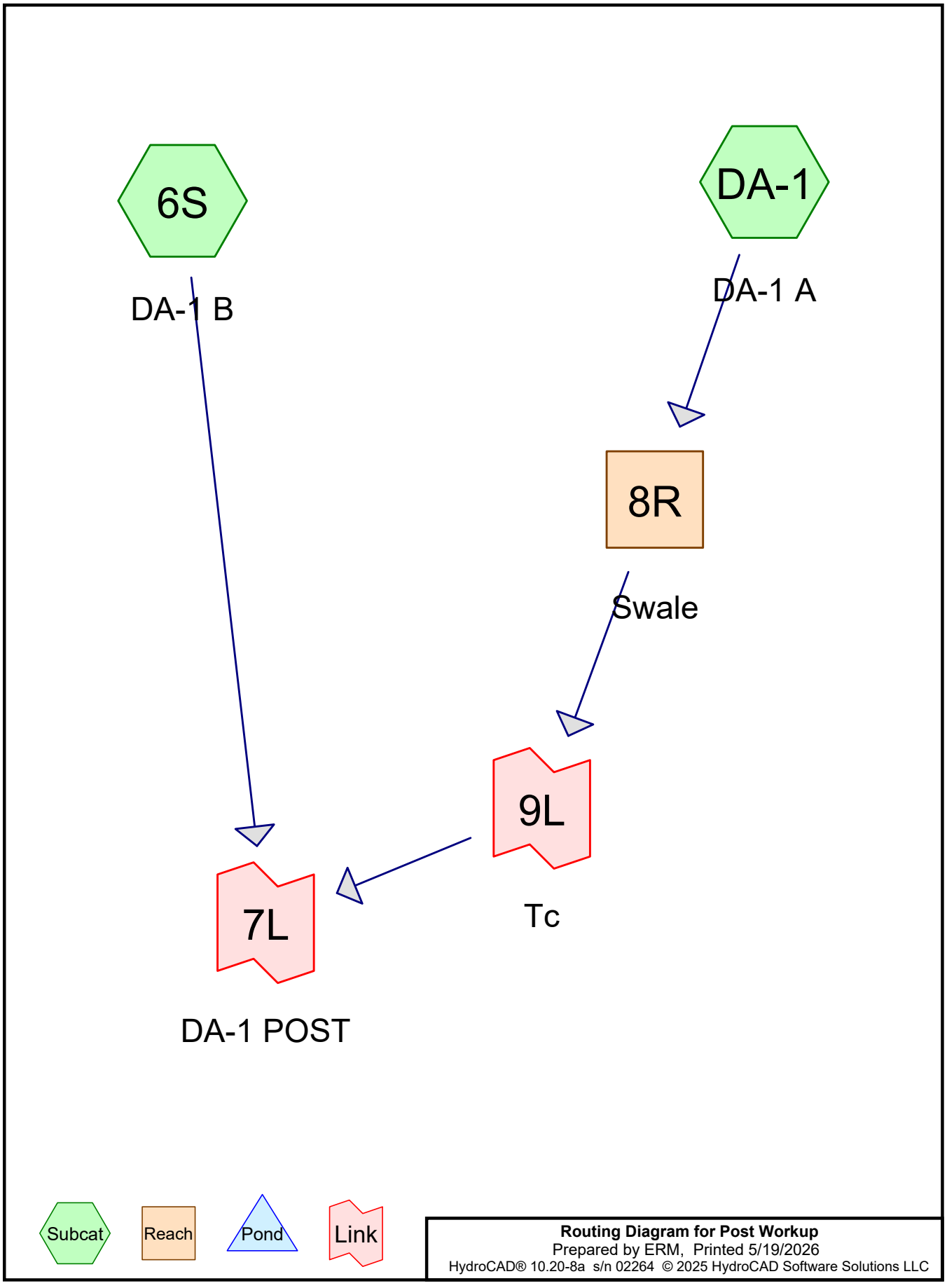
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=7.17"

	Area (ac)	CN	Description
	14.470	78	Meadow, non-grazed, HSG D
*	2.470	98	Impervious
	5.430	77	Woods, Good, HSG D
	22.370	80	Weighted Average
	19.900		88.96% Pervious Area
	2.470		11.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.90		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.37"
1.1	111	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
12.0	875	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	1,086	Total			

Subcatchment 7S: DA-1 PRE





Routing Diagram for Post Workup
Prepared by ERM, Printed 5/19/2026
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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	Type II 24-hr		Default	24.00	1	2.86	2
2	10-year	Type II 24-hr		Default	24.00	1	4.27	2
3	10-year back	Type II 24-hr		Default	24.00	2	4.27	2
4	100-year	Type II 24-hr		Default	24.00	1	7.17	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.300	98	Disconnected Impervious, HSG D (DA-1)
2.500	98	Impervious (6S, DA-1)
13.140	78	Meadow, non-grazed, HSG D (6S, DA-1)
5.430	77	Woods, Good, HSG D (6S)
22.370	**81**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
19.870	HSG D	6S, DA-1
2.500	Other	6S, DA-1
22.370		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	1.300	0.000	1.300	Disconnected Impervious	DA-1
0.000	0.000	0.000	0.000	2.500	2.500	Impervious	6S, DA-1
0.000	0.000	0.000	13.140	0.000	13.140	Meadow, non-grazed	6S, DA-1
0.000	0.000	0.000	5.430	0.000	5.430	Woods, Good	6S
0.000	**0.000**	**0.000**	**19.870**	**2.500**	**22.370**	**TOTAL AREA**	

Time span=0.00-74.00 hrs, dt=0.01 hrs, 7401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment6S: DA-1 B Runoff Area=17.040 ac 5.28% Impervious Runoff Depth=1.09"
Flow Length=1,086' Tc=15.0 min CN=79 Runoff=23.61 cfs 1.544 af

SubcatchmentDA-1: DA-1 A Runoff Area=5.330 ac 54.41% Impervious Runoff Depth=1.77"
Flow Length=433' Tc=9.1 min CN=89 Runoff=14.85 cfs 0.788 af

Reach 8R: Swale Avg. Flow Depth=0.50' Max Vel=2.94 fps Inflow=14.85 cfs 0.788 af
n=0.020 L=520.0' S=0.0048 '/' Capacity=47.71 cfs Outflow=14.08 cfs 0.788 af

Link 7L: DA-1 POST Inflow=29.78 cfs 2.332 af
Primary=29.78 cfs 2.332 af

Link 9L: Tc delayed by 9.5 min Inflow=14.08 cfs 0.788 af
Primary=14.07 cfs 0.788 af

Total Runoff Area = 22.370 ac Runoff Volume = 2.332 af Average Runoff Depth = 1.25"
83.01% Pervious = 18.570 ac 16.99% Impervious = 3.800 ac

Summary for Subcatchment 6S: DA-1 B

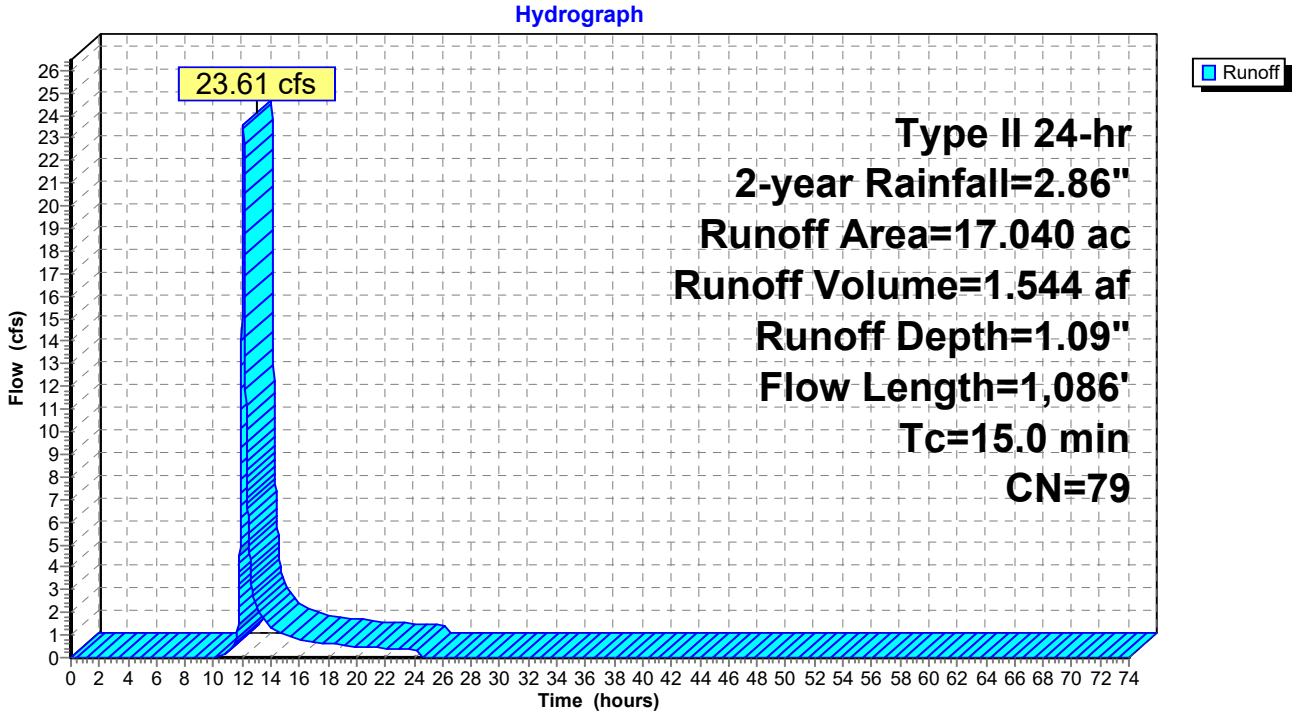
Runoff = 23.61 cfs @ 12.08 hrs, Volume= 1.544 af, Depth= 1.09"
Routed to Link 7L : DA-1 POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.86"

	Area (ac)	CN	Description
	10.710	78	Meadow, non-grazed, HSG D
*	0.900	98	Impervious
	5.430	77	Woods, Good, HSG D
	17.040	79	Weighted Average
	16.140		94.72% Pervious Area
	0.900		5.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.90		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.37"
1.1	111	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
12.0	875	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	1,086	Total			

Subcatchment 6S: DA-1 B



Summary for Subcatchment DA-1: DA-1 A

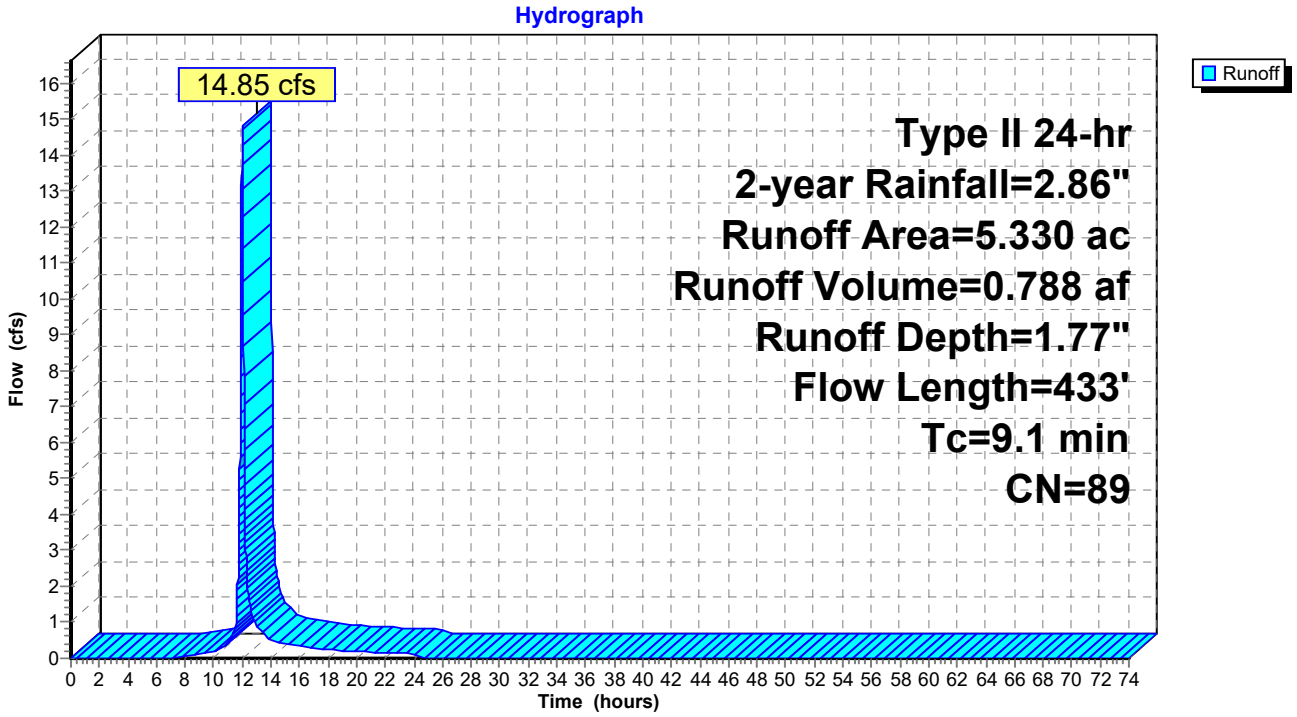
Runoff = 14.85 cfs @ 12.01 hrs, Volume= 0.788 af, Depth= 1.77"
Routed to Reach 8R : Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.86"

	Area (ac)	CN	Description
	2.430	78	Meadow, non-grazed, HSG D
*	1.600	98	Impervious
*	1.300	98	Disconnected Impervious, HSG D
	5.330	89	Weighted Average
	2.430		45.59% Pervious Area
	2.900		54.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	59	0.0500	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.37"
0.7	41	0.0200	0.99		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.37"
0.7	102	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.5	231	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.1	433	Total			

Subcatchment DA-1: DA-1 A



Summary for Reach 8R: Swale

Inflow Area = 5.330 ac, 54.41% Impervious, Inflow Depth = 1.77" for 2-year event
Inflow = 14.85 cfs @ 12.01 hrs, Volume= 0.788 af
Outflow = 14.08 cfs @ 12.08 hrs, Volume= 0.788 af, Atten= 5%, Lag= 4.7 min
Routed to Link 9L : Tc

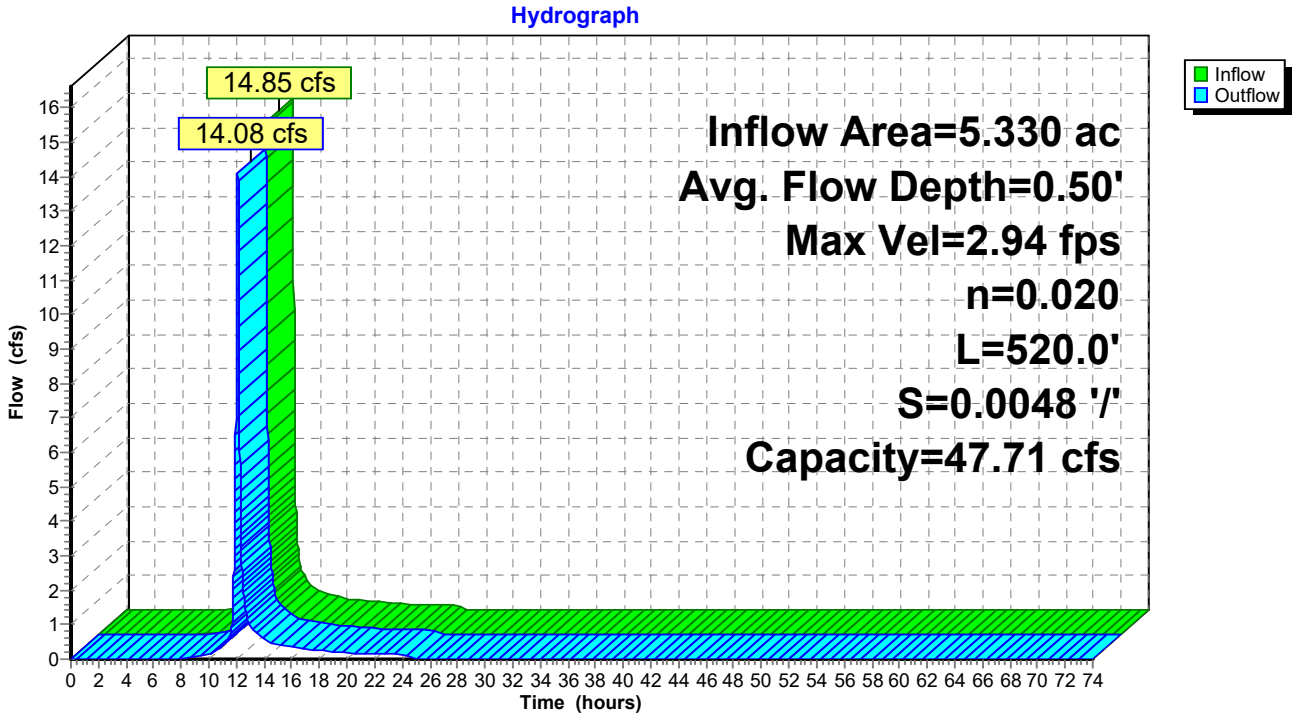
Routing by Stor-Ind+Trans method, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.94 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.61 fps, Avg. Travel Time= 14.2 min

Peak Storage= 2,491 cf @ 12.03 hrs
Average Depth at Peak Storage= 0.50' , Surface Width= 11.02'
Bank-Full Depth= 1.00' Flow Area= 11.0 sf, Capacity= 47.71 cfs

8.00' x 1.00' deep channel, n= 0.020
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 520.0' Slope= 0.0048 '/'
Inlet Invert= 835.52', Outlet Invert= 833.00'



‡

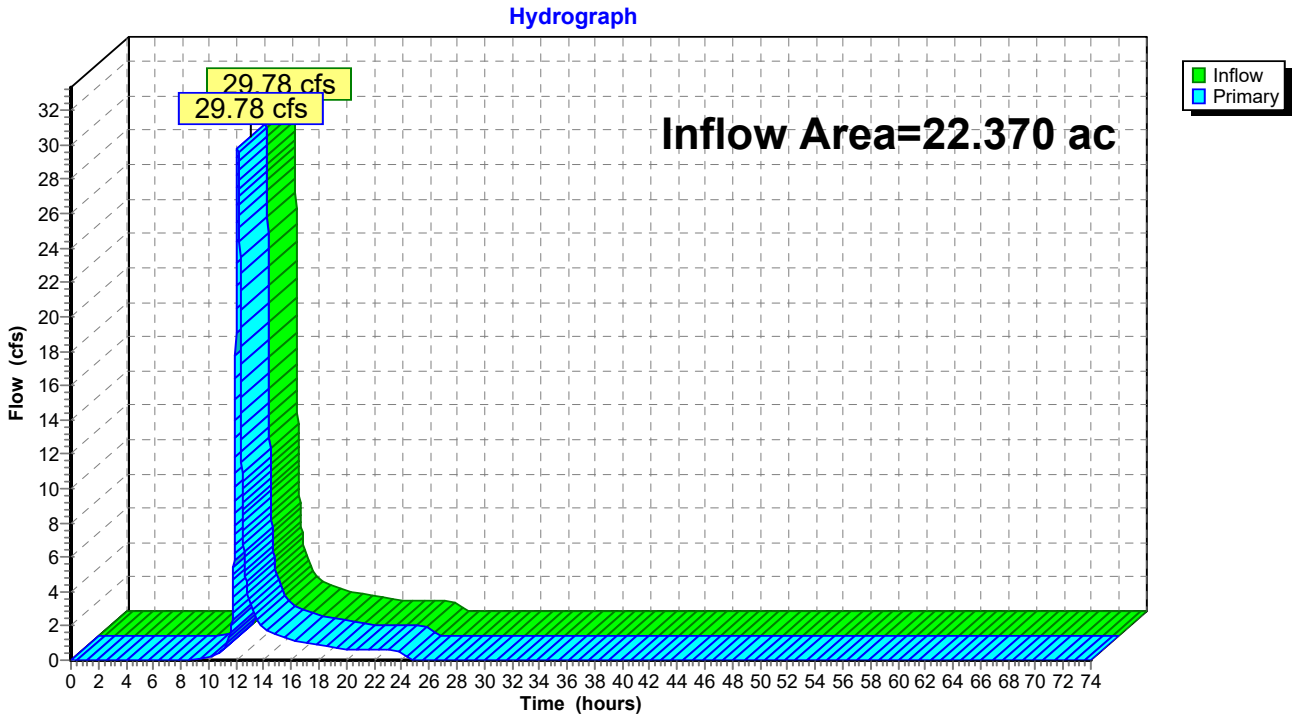


Summary for Link 7L: DA-1 POST

Inflow Area = 22.370 ac, 16.99% Impervious, Inflow Depth = 1.25" for 2-year event
Inflow = 29.78 cfs @ 12.11 hrs, Volume= 2.332 af
Primary = 29.78 cfs @ 12.11 hrs, Volume= 2.332 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs

Link 7L: DA-1 POST

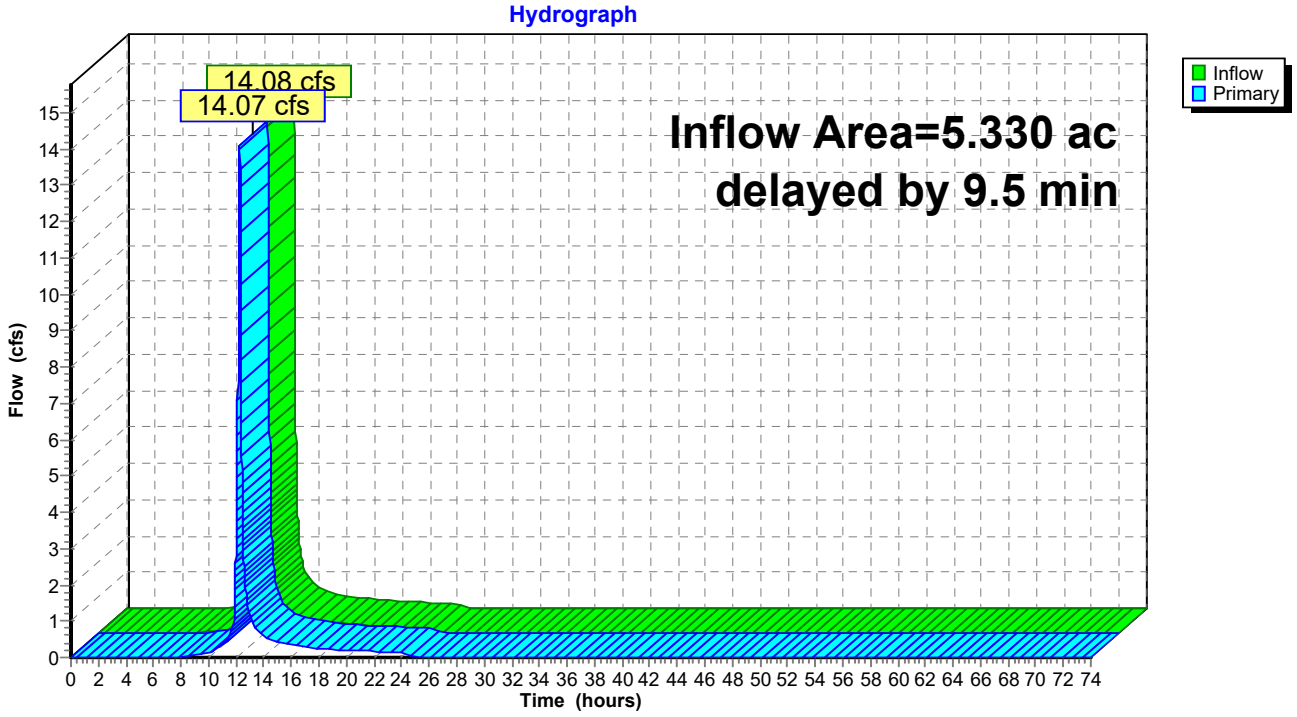


Summary for Link 9L: Tc

Inflow Area = 5.330 ac, 54.41% Impervious, Inflow Depth = 1.77" for 2-year event
Inflow = 14.08 cfs @ 12.08 hrs, Volume= 0.788 af
Primary = 14.07 cfs @ 12.24 hrs, Volume= 0.788 af, Atten= 0%, Lag= 9.5 min
Routed to Link 7L : DA-1 POST

Primary outflow = Inflow delayed by 9.5 min, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs

Link 9L: Tc



Time span=0.00-74.00 hrs, dt=0.01 hrs, 7401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment6S: DA-1 B Runoff Area=17.040 ac 5.28% Impervious Runoff Depth=2.18"
Flow Length=1,086' Tc=15.0 min CN=79 Runoff=48.26 cfs 3.102 af

SubcatchmentDA-1: DA-1 A Runoff Area=5.330 ac 54.41% Impervious Runoff Depth=3.08"
Flow Length=433' Tc=9.1 min CN=89 Runoff=25.13 cfs 1.367 af

Reach 8R: Swale Avg. Flow Depth=0.68' Max Vel=3.51 fps Inflow=25.13 cfs 1.367 af
n=0.020 L=520.0' S=0.0048 '/' Capacity=47.71 cfs Outflow=24.15 cfs 1.367 af

Link 7L: DA-1 POST Inflow=59.89 cfs 4.469 af
Primary=59.89 cfs 4.469 af

Link 9L: Tc delayed by 9.5 min Inflow=24.15 cfs 1.367 af
Primary=24.13 cfs 1.367 af

Total Runoff Area = 22.370 ac Runoff Volume = 4.469 af Average Runoff Depth = 2.40"
83.01% Pervious = 18.570 ac 16.99% Impervious = 3.800 ac

Summary for Subcatchment 6S: DA-1 B

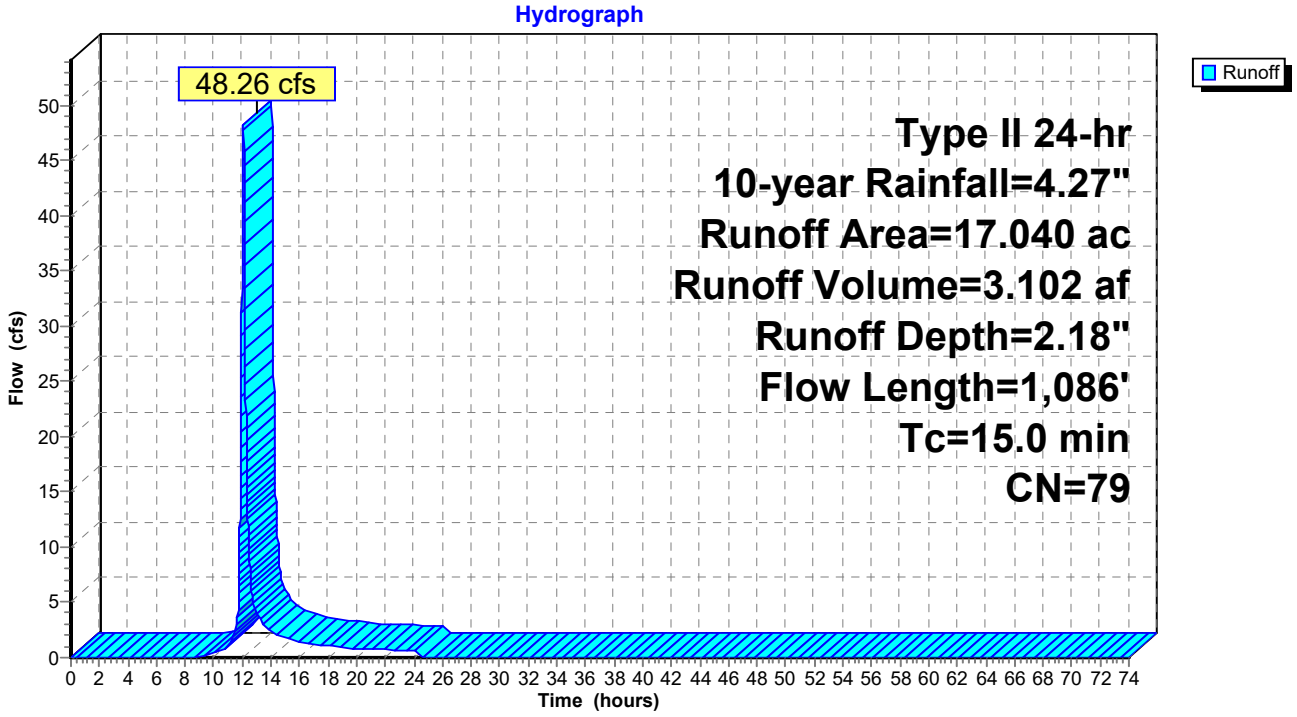
Runoff = 48.26 cfs @ 12.07 hrs, Volume= 3.102 af, Depth= 2.18"
Routed to Link 7L : DA-1 POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=4.27"

	Area (ac)	CN	Description
	10.710	78	Meadow, non-grazed, HSG D
*	0.900	98	Impervious
	5.430	77	Woods, Good, HSG D
	17.040	79	Weighted Average
	16.140		94.72% Pervious Area
	0.900		5.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.90		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.37"
1.1	111	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
12.0	875	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	1,086	Total			

Subcatchment 6S: DA-1 B



Summary for Subcatchment DA-1: DA-1 A

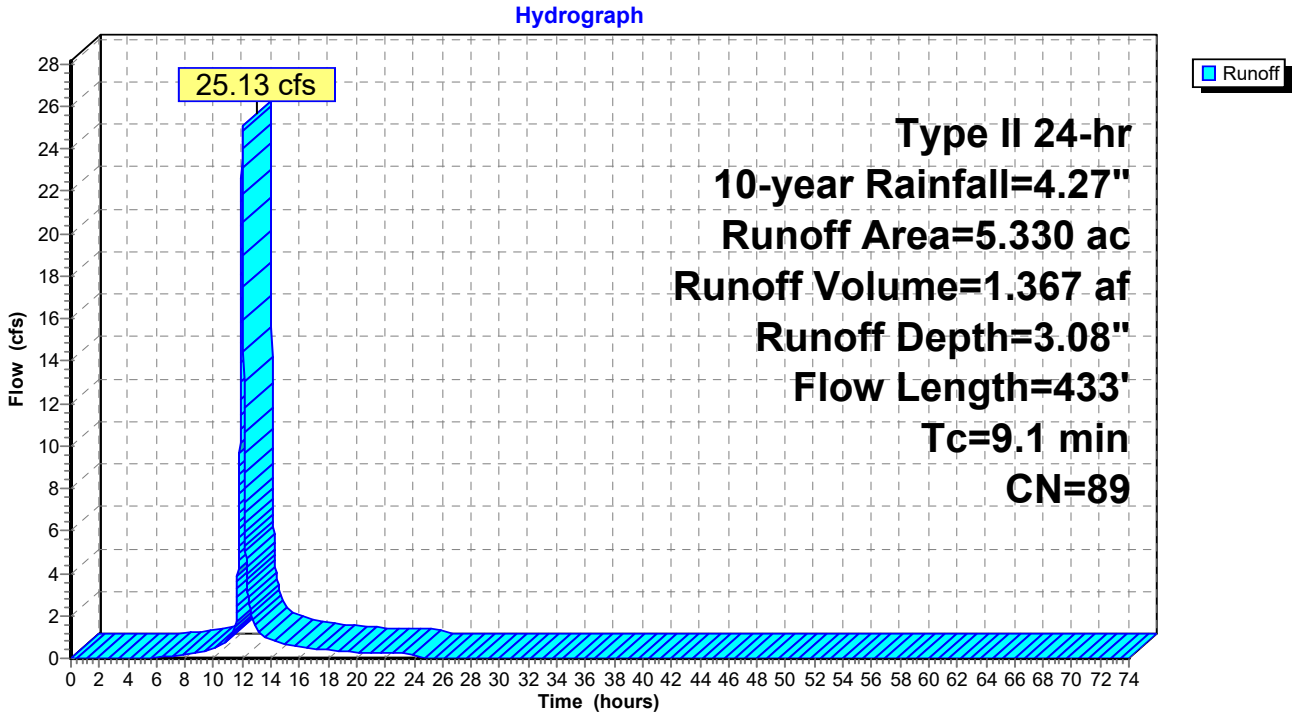
Runoff = 25.13 cfs @ 12.00 hrs, Volume= 1.367 af, Depth= 3.08"
Routed to Reach 8R : Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=4.27"

	Area (ac)	CN	Description
	2.430	78	Meadow, non-grazed, HSG D
*	1.600	98	Impervious
*	1.300	98	Disconnected Impervious, HSG D
	5.330	89	Weighted Average
	2.430		45.59% Pervious Area
	2.900		54.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	59	0.0500	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.37"
0.7	41	0.0200	0.99		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.37"
0.7	102	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.5	231	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.1	433	Total			

Subcatchment DA-1: DA-1 A



Summary for Reach 8R: Swale

Inflow Area = 5.330 ac, 54.41% Impervious, Inflow Depth = 3.08" for 10-year event
Inflow = 25.13 cfs @ 12.00 hrs, Volume= 1.367 af
Outflow = 24.15 cfs @ 12.07 hrs, Volume= 1.367 af, Atten= 4%, Lag= 4.0 min
Routed to Link 9L : Tc

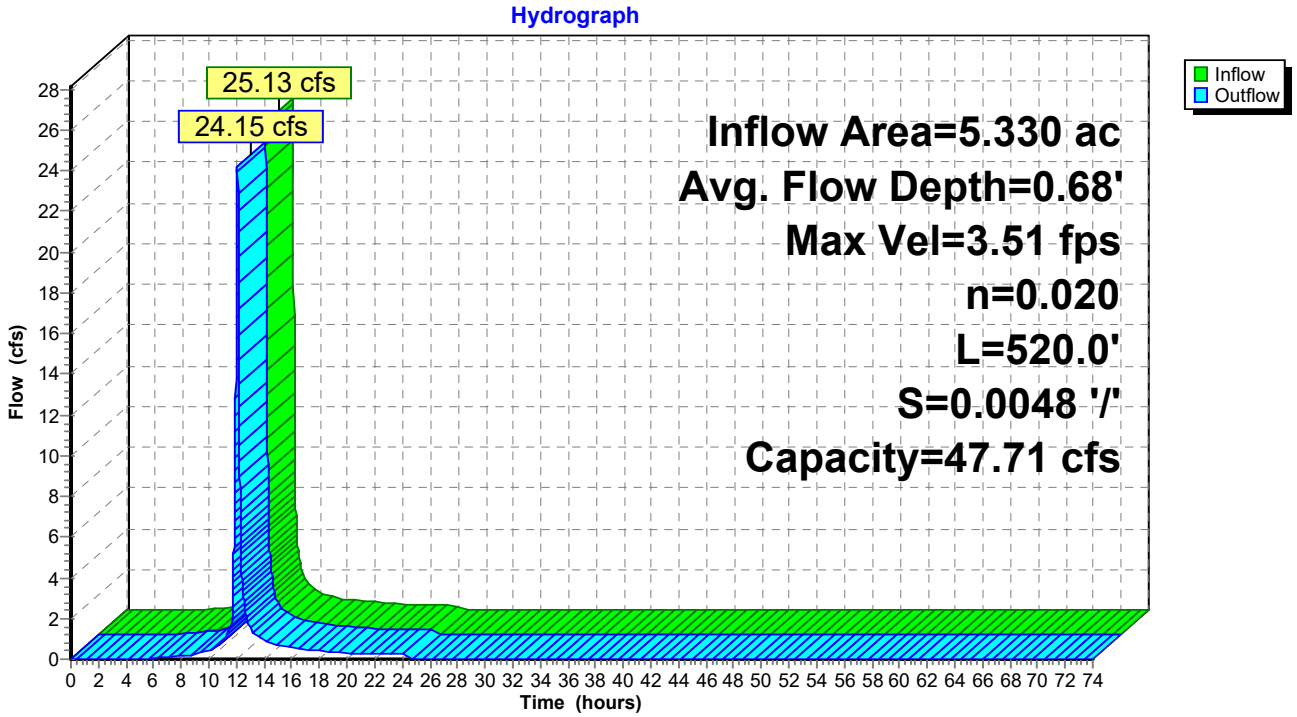
Routing by Stor-Ind+Trans method, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.51 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.72 fps, Avg. Travel Time= 12.0 min

Peak Storage= 3,581 cf @ 12.03 hrs
Average Depth at Peak Storage= 0.68' , Surface Width= 12.11'
Bank-Full Depth= 1.00' Flow Area= 11.0 sf, Capacity= 47.71 cfs

8.00' x 1.00' deep channel, n= 0.020
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 520.0' Slope= 0.0048 '/'
Inlet Invert= 835.52', Outlet Invert= 833.00'



‡

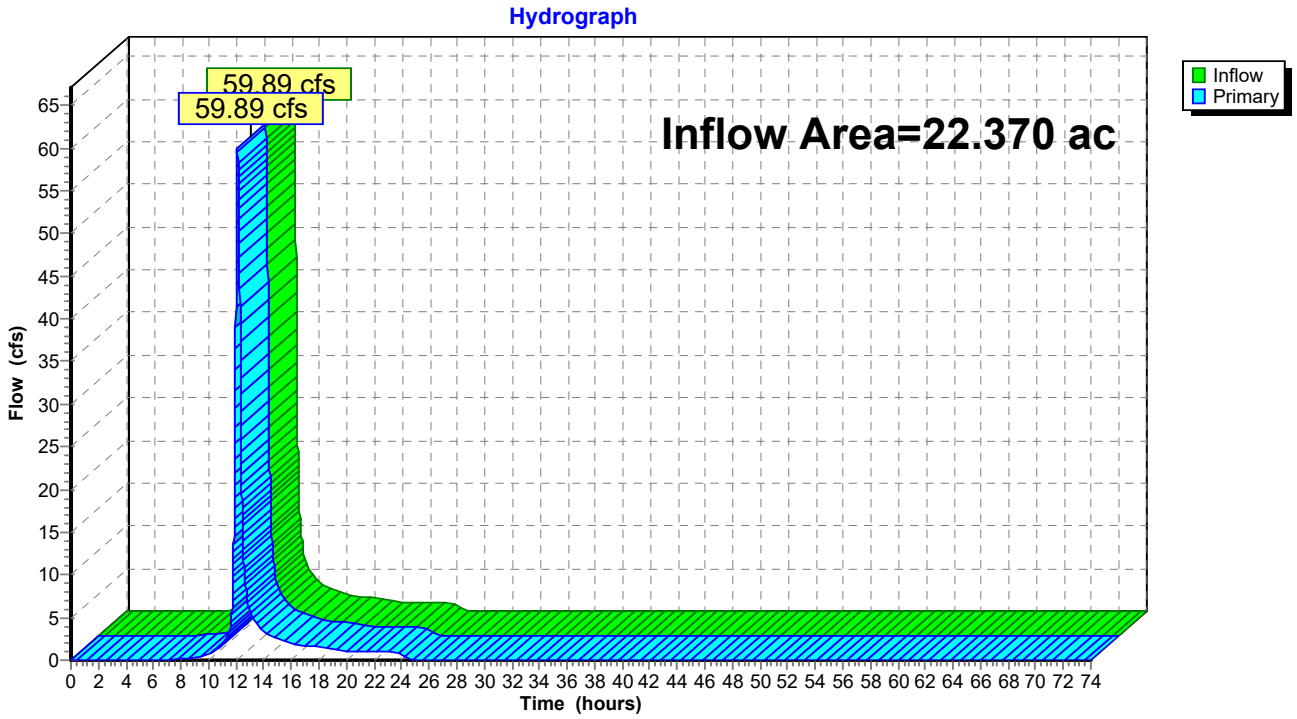


Summary for Link 7L: DA-1 POST

Inflow Area = 22.370 ac, 16.99% Impervious, Inflow Depth = 2.40" for 10-year event
Inflow = 59.89 cfs @ 12.10 hrs, Volume= 4.469 af
Primary = 59.89 cfs @ 12.10 hrs, Volume= 4.469 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs

Link 7L: DA-1 POST

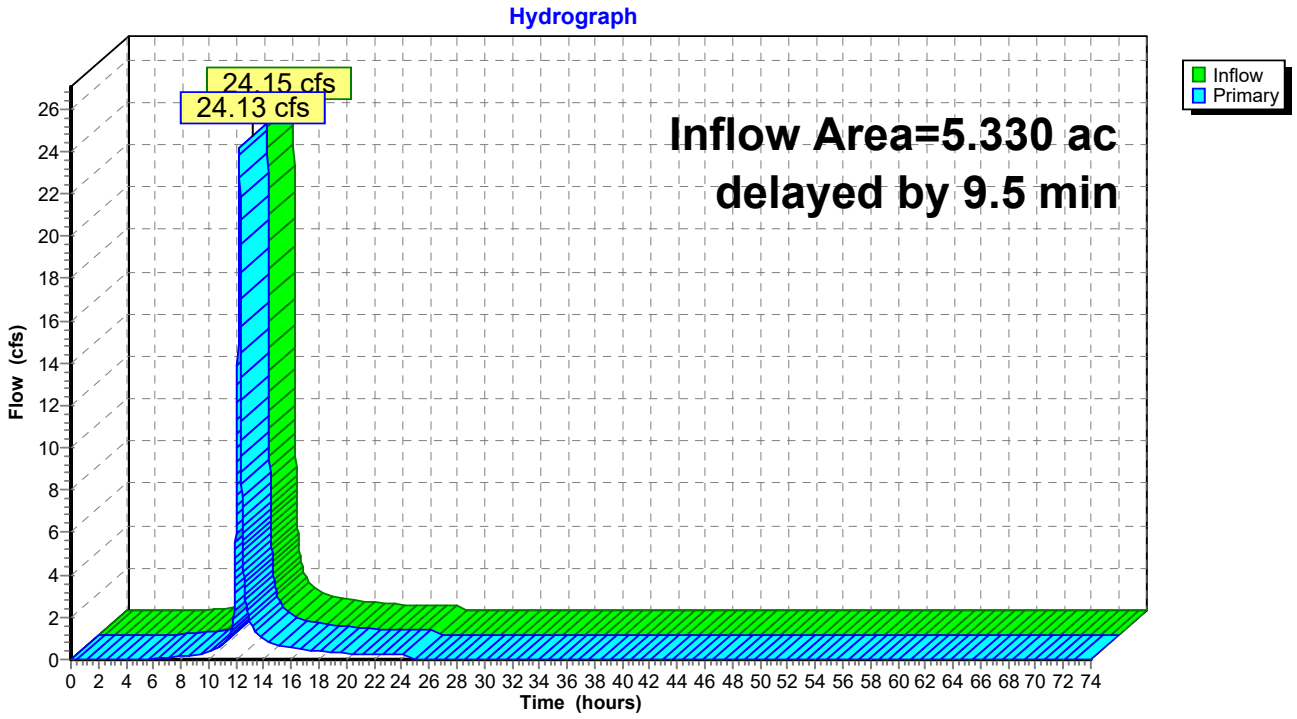


Summary for Link 9L: Tc

Inflow Area = 5.330 ac, 54.41% Impervious, Inflow Depth = 3.08" for 10-year event
Inflow = 24.15 cfs @ 12.07 hrs, Volume= 1.367 af
Primary = 24.13 cfs @ 12.23 hrs, Volume= 1.367 af, Atten= 0%, Lag= 9.5 min
Routed to Link 7L : DA-1 POST

Primary outflow = Inflow delayed by 9.5 min, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs

Link 9L: Tc



Time span=0.00-74.00 hrs, dt=0.01 hrs, 7401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment6S: DA-1 B Runoff Area=17.040 ac 5.28% Impervious Runoff Depth=6.01"
Flow Length=1,086' Tc=15.0 min CN=79 Runoff=71.12 cfs 8.538 af

SubcatchmentDA-1: DA-1 A Runoff Area=5.330 ac 54.41% Impervious Runoff Depth=7.22"
Flow Length=433' Tc=9.1 min CN=89 Runoff=28.72 cfs 3.206 af

Reach 8R: Swale Avg. Flow Depth=0.74' Max Vel=3.67 fps Inflow=28.72 cfs 3.206 af
n=0.020 L=520.0' S=0.0048 '/' Capacity=47.71 cfs Outflow=27.74 cfs 3.206 af

Link 7L: DA-1 POST Inflow=85.03 cfs 11.743 af
Primary=85.03 cfs 11.743 af

Link 9L: Tc delayed by 9.5 min Inflow=27.74 cfs 3.206 af
Primary=27.72 cfs 3.206 af

Total Runoff Area = 22.370 ac Runoff Volume = 11.743 af Average Runoff Depth = 6.30"
83.01% Pervious = 18.570 ac 16.99% Impervious = 3.800 ac

Summary for Subcatchment 6S: DA-1 B

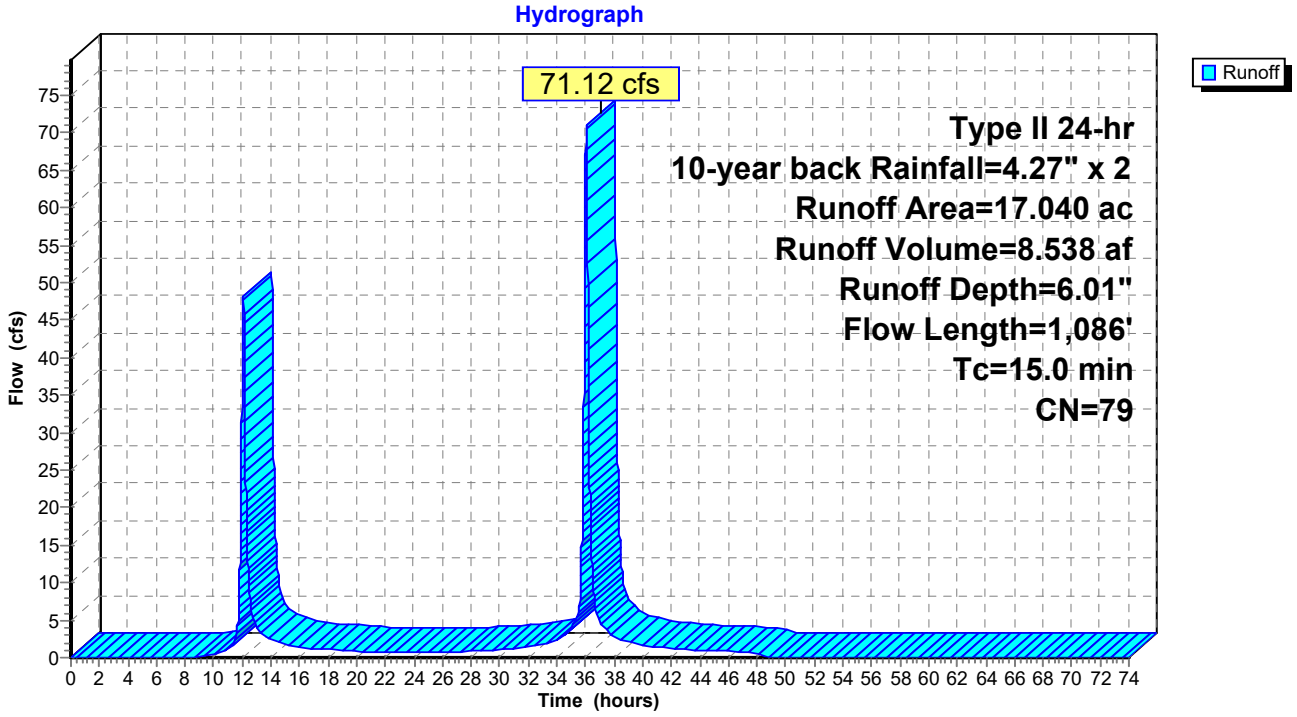
Runoff = 71.12 cfs @ 36.06 hrs, Volume= 8.538 af, Depth= 6.01"
Routed to Link 7L : DA-1 POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year back Rainfall=4.27" x 2

	Area (ac)	CN	Description
	10.710	78	Meadow, non-grazed, HSG D
*	0.900	98	Impervious
	5.430	77	Woods, Good, HSG D
	17.040	79	Weighted Average
	16.140		94.72% Pervious Area
	0.900		5.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.90		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.37"
1.1	111	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
12.0	875	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	1,086	Total			

Subcatchment 6S: DA-1 B



Summary for Subcatchment DA-1: DA-1 A

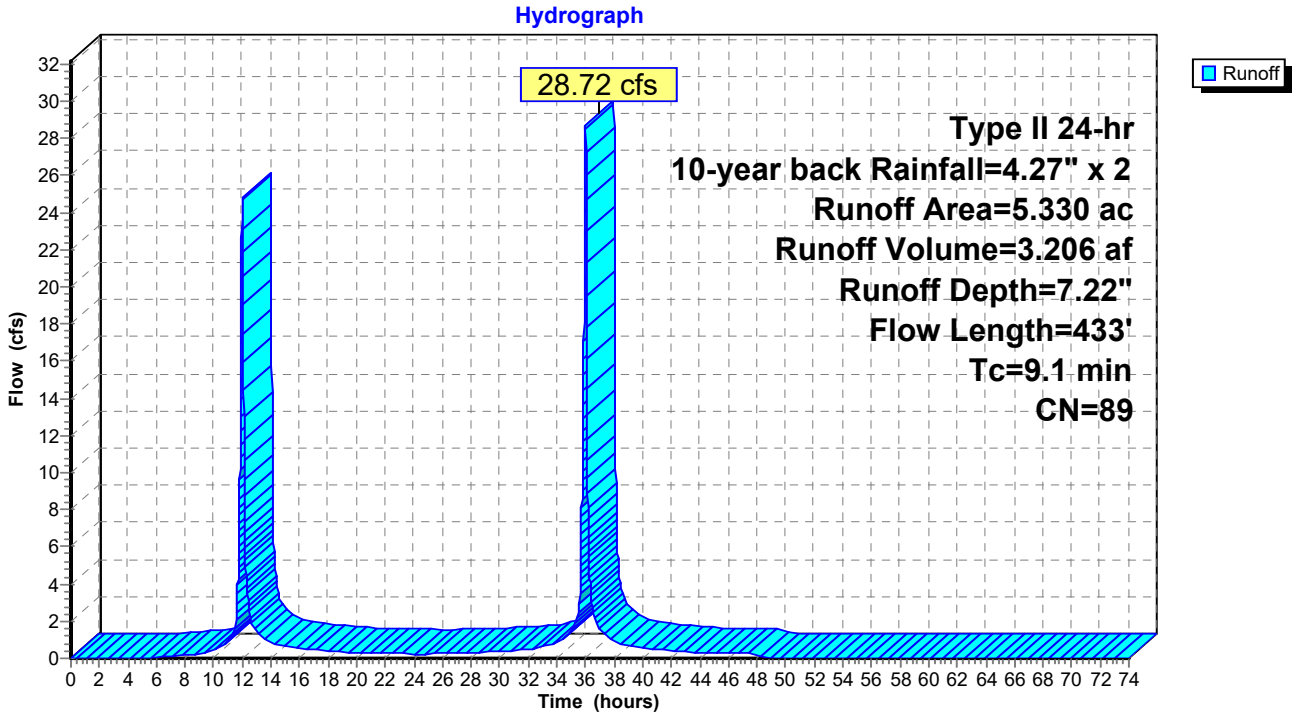
Runoff = 28.72 cfs @ 36.00 hrs, Volume= 3.206 af, Depth= 7.22"
Routed to Reach 8R : Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year back Rainfall=4.27" x 2

	Area (ac)	CN	Description
	2.430	78	Meadow, non-grazed, HSG D
*	1.600	98	Impervious
*	1.300	98	Disconnected Impervious, HSG D
	5.330	89	Weighted Average
	2.430		45.59% Pervious Area
	2.900		54.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	59	0.0500	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.37"
0.7	41	0.0200	0.99		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.37"
0.7	102	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.5	231	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.1	433	Total			

Subcatchment DA-1: DA-1 A



Summary for Reach 8R: Swale

Inflow Area = 5.330 ac, 54.41% Impervious, Inflow Depth = 7.22" for 10-year back event
Inflow = 28.72 cfs @ 36.00 hrs, Volume= 3.206 af
Outflow = 27.74 cfs @ 36.06 hrs, Volume= 3.206 af, Atten= 3%, Lag= 3.8 min
Routed to Link 9L : Tc

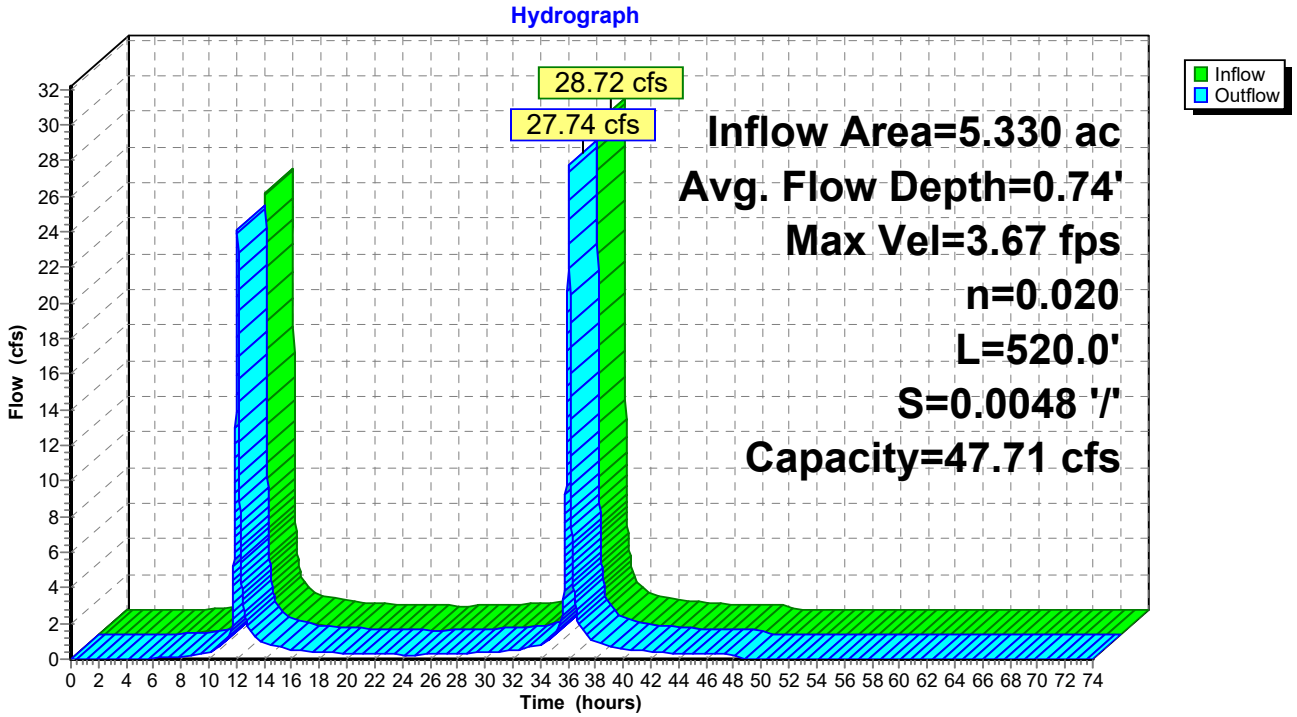
Routing by Stor-Ind+Trans method, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.67 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.82 fps, Avg. Travel Time= 10.6 min

Peak Storage= 3,936 cf @ 36.02 hrs
Average Depth at Peak Storage= 0.74' , Surface Width= 12.44'
Bank-Full Depth= 1.00' Flow Area= 11.0 sf, Capacity= 47.71 cfs

8.00' x 1.00' deep channel, n= 0.020
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 520.0' Slope= 0.0048 '/'
Inlet Invert= 835.52', Outlet Invert= 833.00'



‡

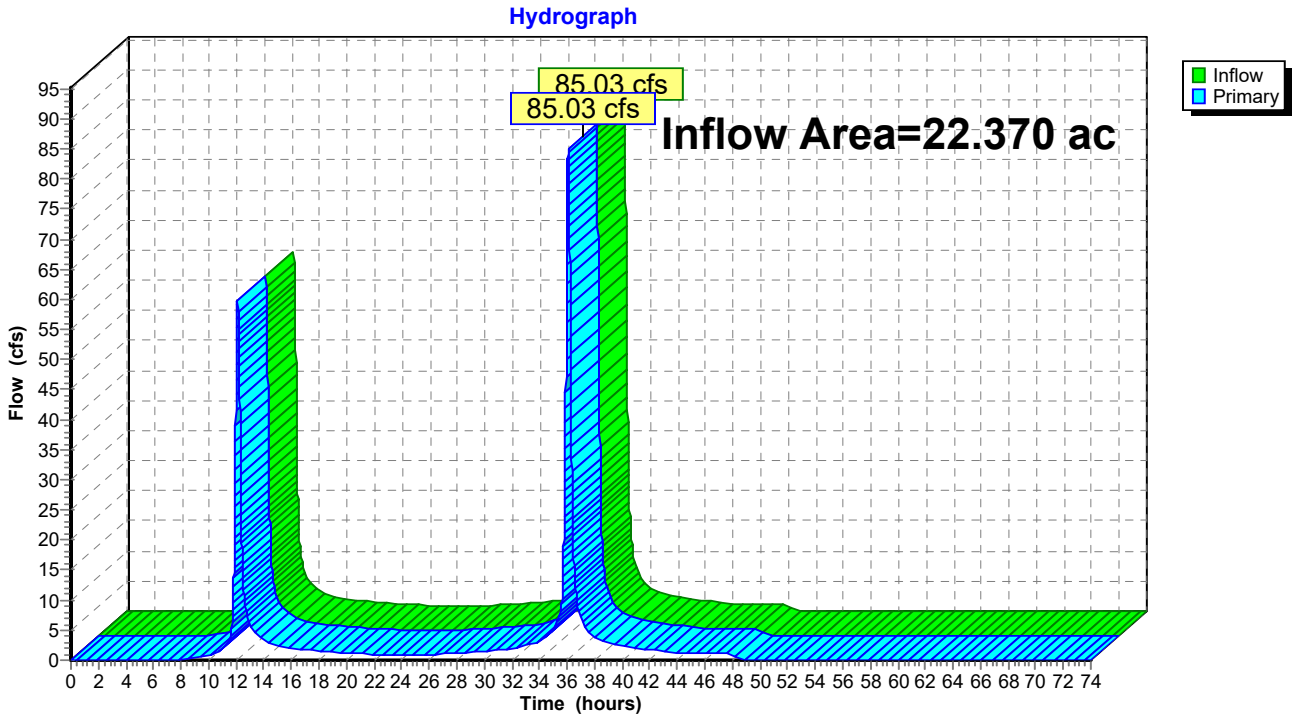


Summary for Link 7L: DA-1 POST

Inflow Area = 22.370 ac, 16.99% Impervious, Inflow Depth = 6.30" for 10-year back event
Inflow = 85.03 cfs @ 36.08 hrs, Volume= 11.743 af
Primary = 85.03 cfs @ 36.08 hrs, Volume= 11.743 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs

Link 7L: DA-1 POST

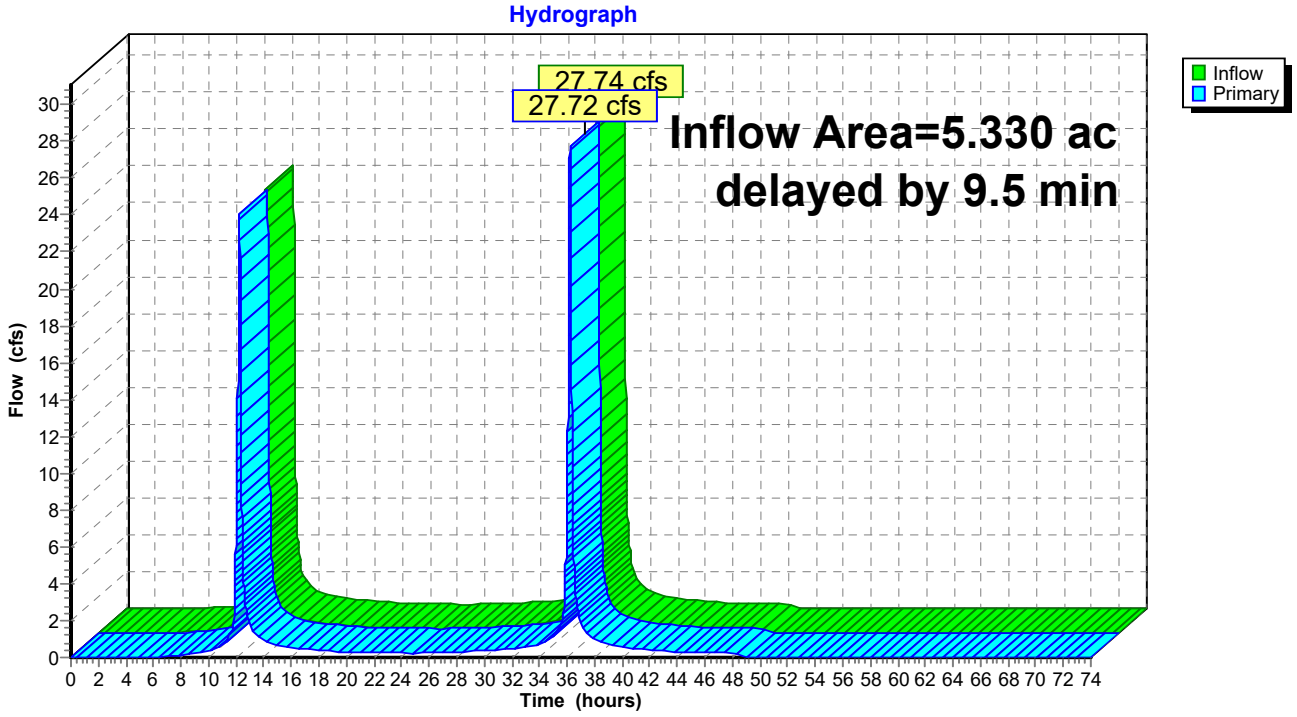


Summary for Link 9L: Tc

Inflow Area = 5.330 ac, 54.41% Impervious, Inflow Depth = 7.22" for 10-year back event
Inflow = 27.74 cfs @ 36.06 hrs, Volume= 3.206 af
Primary = 27.72 cfs @ 36.22 hrs, Volume= 3.206 af, Atten= 0%, Lag= 9.5 min
Routed to Link 7L : DA-1 POST

Primary outflow = Inflow delayed by 9.5 min, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs

Link 9L: Tc



Time span=0.00-74.00 hrs, dt=0.01 hrs, 7401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment6S: DA-1 B Runoff Area=17.040 ac 5.28% Impervious Runoff Depth=4.74"
Flow Length=1,086' Tc=15.0 min CN=79 Runoff=103.40 cfs 6.731 af

SubcatchmentDA-1: DA-1 A Runoff Area=5.330 ac 54.41% Impervious Runoff Depth=5.87"
Flow Length=433' Tc=9.1 min CN=89 Runoff=46.15 cfs 2.609 af

Reach 8R: Swale Avg. Flow Depth=0.97' Max Vel=4.26 fps Inflow=46.15 cfs 2.609 af
n=0.020 L=520.0' S=0.0048 '/' Capacity=47.71 cfs Outflow=44.79 cfs 2.609 af

Link 7L: DA-1 POST Inflow=126.88 cfs 9.340 af
Primary=126.88 cfs 9.340 af

Link 9L: Tc delayed by 9.5 min Inflow=44.79 cfs 2.609 af
Primary=44.76 cfs 2.609 af

Total Runoff Area = 22.370 ac Runoff Volume = 9.340 af Average Runoff Depth = 5.01"
83.01% Pervious = 18.570 ac 16.99% Impervious = 3.800 ac

Summary for Subcatchment 6S: DA-1 B

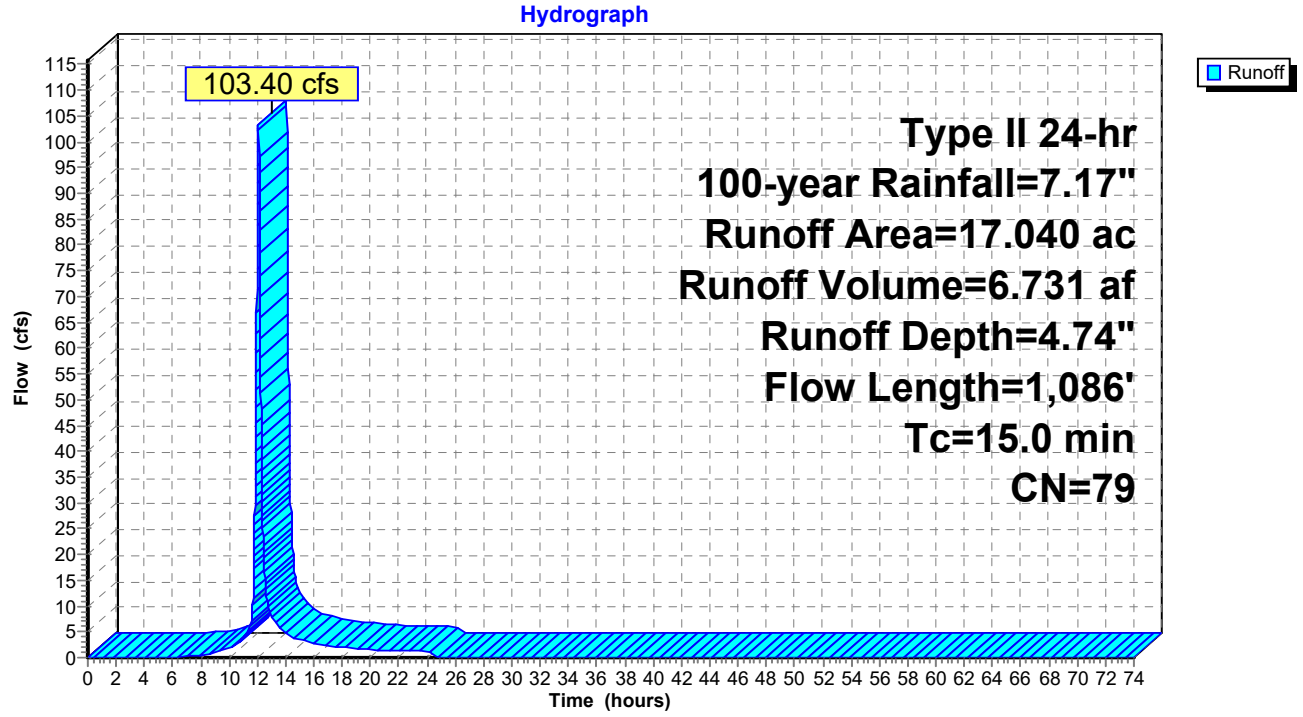
Runoff = 103.40 cfs @ 12.07 hrs, Volume= 6.731 af, Depth= 4.74"
Routed to Link 7L : DA-1 POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=7.17"

	Area (ac)	CN	Description
	10.710	78	Meadow, non-grazed, HSG D
*	0.900	98	Impervious
	5.430	77	Woods, Good, HSG D
	17.040	79	Weighted Average
	16.140		94.72% Pervious Area
	0.900		5.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	100	0.0100	0.90		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.37"
1.1	111	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
12.0	875	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	1,086	Total			

Subcatchment 6S: DA-1 B



Summary for Subcatchment DA-1: DA-1 A

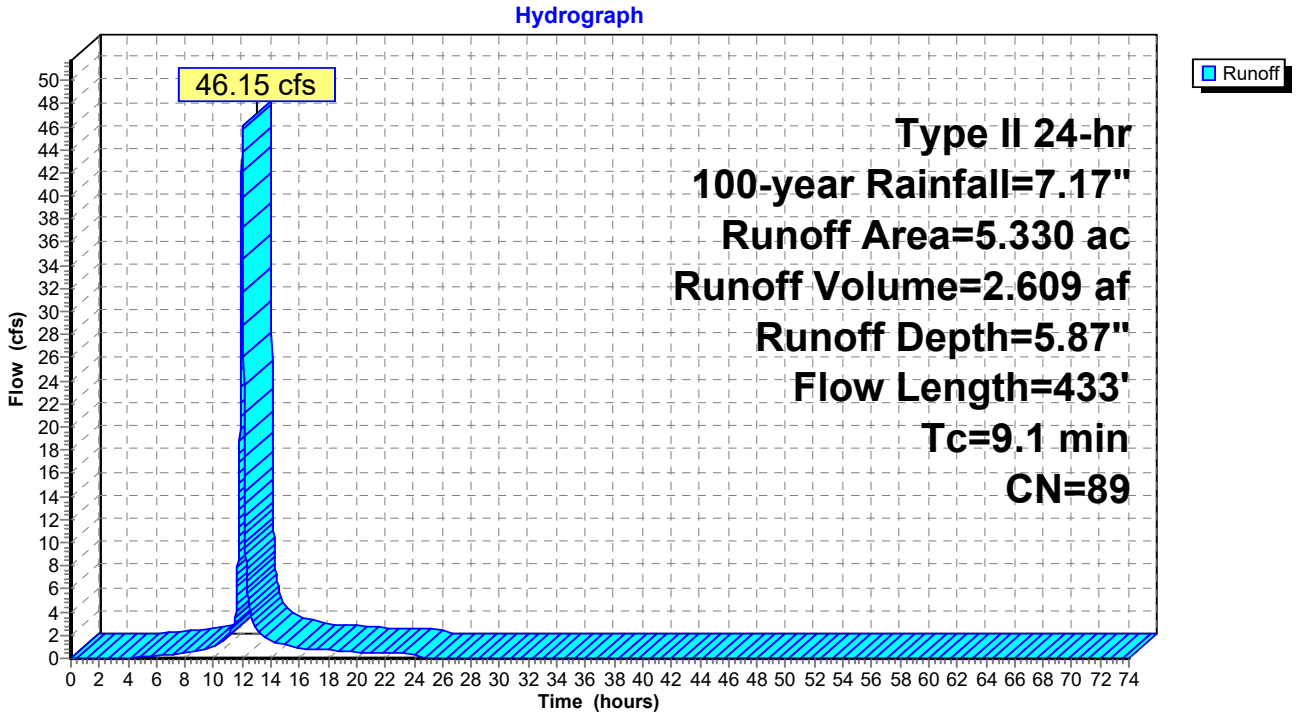
Runoff = 46.15 cfs @ 12.00 hrs, Volume= 2.609 af, Depth= 5.87"
Routed to Reach 8R : Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=7.17"

	Area (ac)	CN	Description
	2.430	78	Meadow, non-grazed, HSG D
*	1.600	98	Impervious
*	1.300	98	Disconnected Impervious, HSG D
	5.330	89	Weighted Average
	2.430		45.59% Pervious Area
	2.900		54.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	59	0.0500	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.37"
0.7	41	0.0200	0.99		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.37"
0.7	102	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.5	231	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.1	433	Total			

Subcatchment DA-1: DA-1 A



Summary for Reach 8R: Swale

Inflow Area = 5.330 ac, 54.41% Impervious, Inflow Depth = 5.87" for 100-year event
Inflow = 46.15 cfs @ 12.00 hrs, Volume= 2.609 af
Outflow = 44.79 cfs @ 12.06 hrs, Volume= 2.609 af, Atten= 3%, Lag= 3.3 min
Routed to Link 9L : Tc

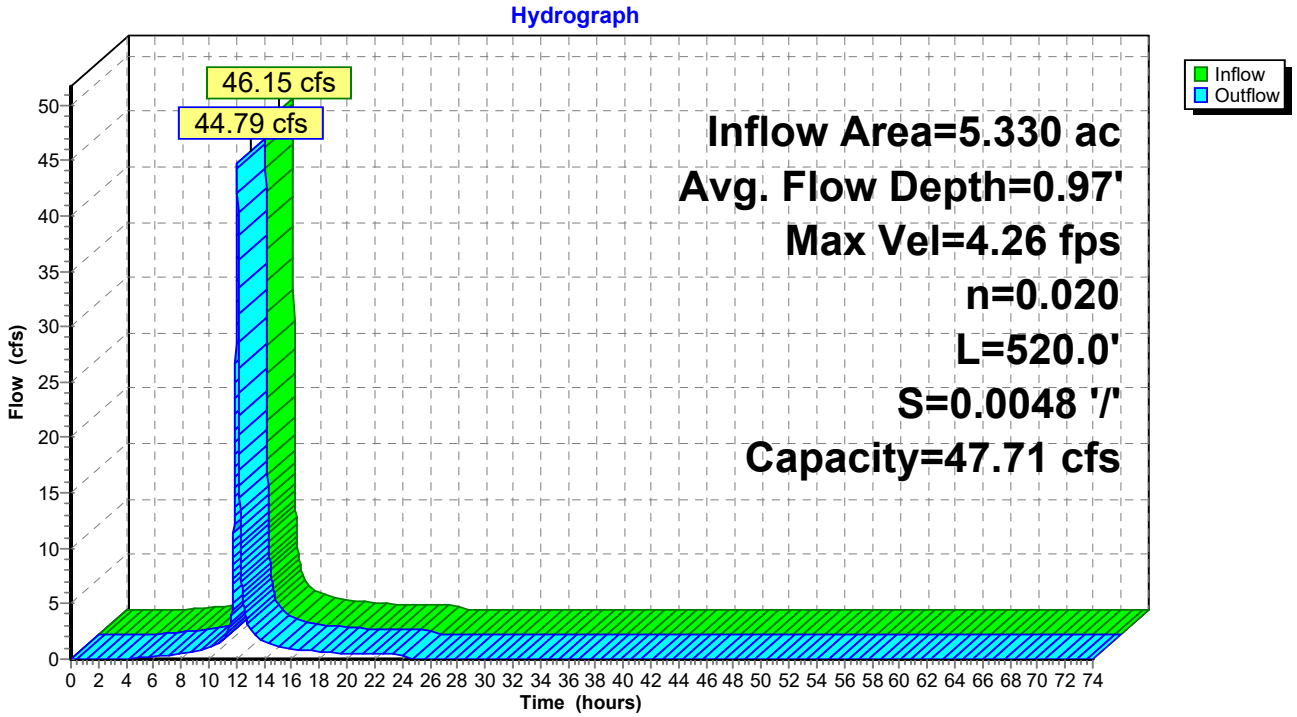
Routing by Stor-Ind+Trans method, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.26 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 0.89 fps, Avg. Travel Time= 9.7 min

Peak Storage= 5,479 cf @ 12.02 hrs
Average Depth at Peak Storage= 0.97' , Surface Width= 13.80'
Bank-Full Depth= 1.00' Flow Area= 11.0 sf, Capacity= 47.71 cfs

8.00' x 1.00' deep channel, n= 0.020
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 520.0' Slope= 0.0048 '/'
Inlet Invert= 835.52', Outlet Invert= 833.00'



‡

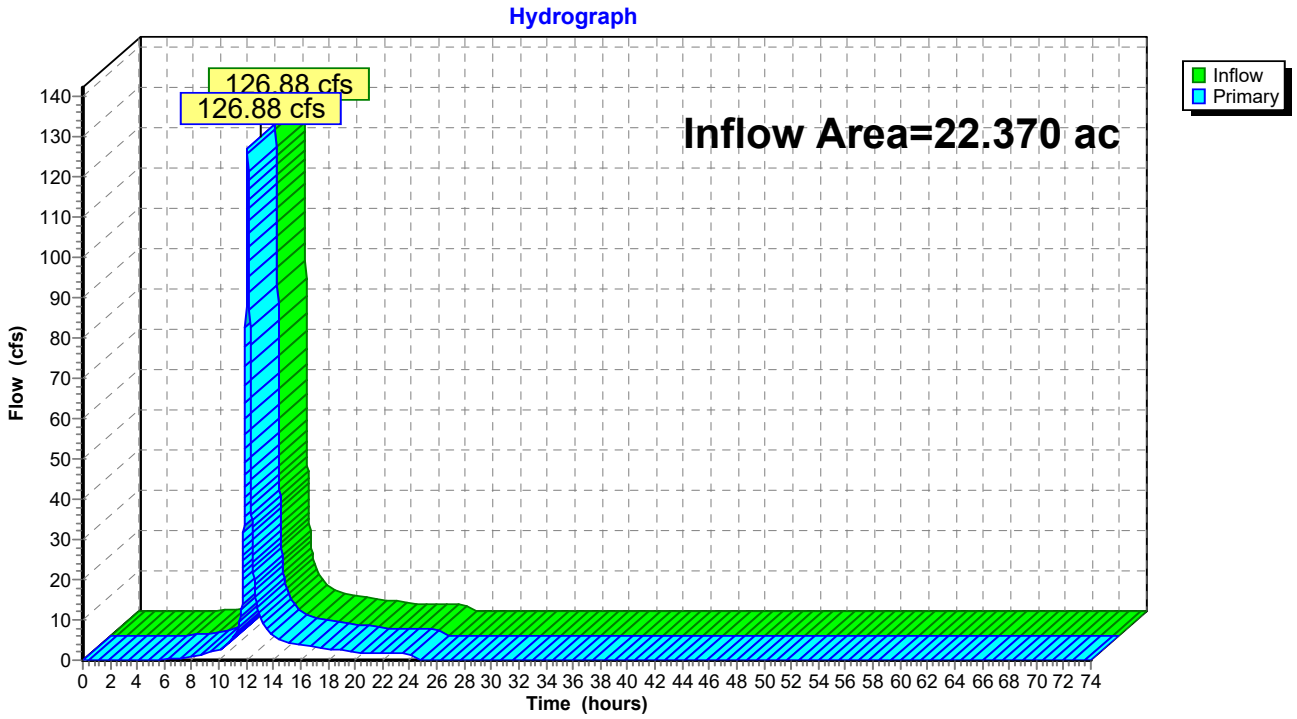


Summary for Link 7L: DA-1 POST

Inflow Area = 22.370 ac, 16.99% Impervious, Inflow Depth = 5.01" for 100-year event
Inflow = 126.88 cfs @ 12.09 hrs, Volume= 9.340 af
Primary = 126.88 cfs @ 12.09 hrs, Volume= 9.340 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs

Link 7L: DA-1 POST

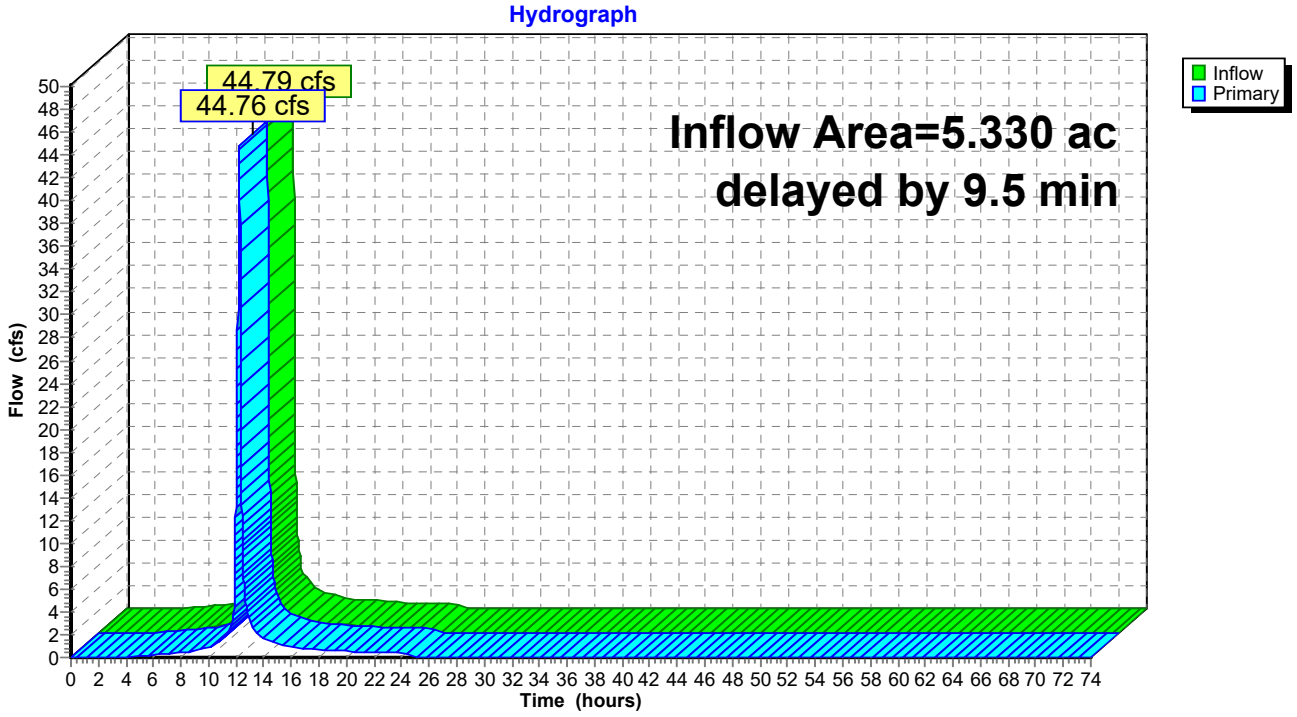


Summary for Link 9L: Tc

Inflow Area = 5.330 ac, 54.41% Impervious, Inflow Depth = 5.87" for 100-year event
Inflow = 44.79 cfs @ 12.06 hrs, Volume= 2.609 af
Primary = 44.76 cfs @ 12.22 hrs, Volume= 2.609 af, Atten= 0%, Lag= 9.5 min
Routed to Link 7L : DA-1 POST

Primary outflow = Inflow delayed by 9.5 min, Time Span= 0.00-74.00 hrs, dt= 0.01 hrs

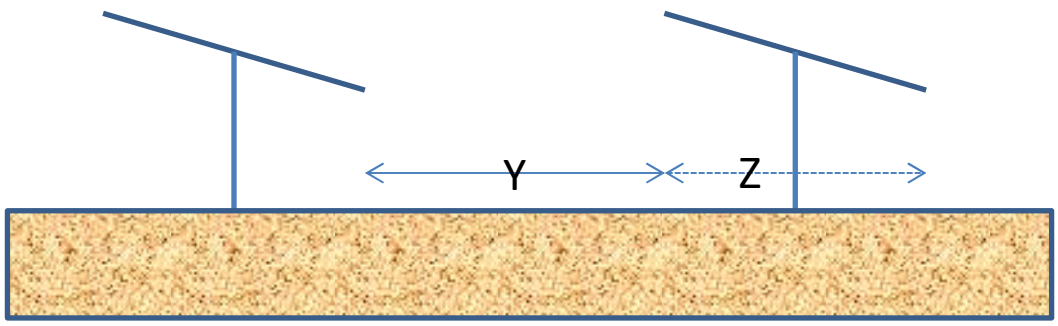
Link 9L: Tc



APPENDIX C – VOLUME CALCULATIONS

This spreadsheet makes calculations for an individual solar panel.

Enter values in blue cells		
Soil	D	
I/P ratio	1.285	
Term	**Value**	**Units**
Pervious area	43970.00	square feet
Impervious area (area of solar panel)	56511.00	square feet
Runoff depth from pervious areas	7.20	inches
Redirected runoff depth from solar panel (called average annual runoff depth)	11.00	inches
Runoff depth from solar panel	22.50	inches
Performance goal	1.00	inches
SUMMARY		
Pre-disconnection		
Runoff from impervious	105958	ft3
Runoff from pervious	26382	ft3
Total runoff	132340	ft3
Post-disconnection		
Total runoff	92108	ft3
Total runoff reduced	40233	ft3
Runoff from pervious	26382	ft3
Runoff from impervious	65726	ft3
Adjusted impervious	35053.644	square feet
Performance Goal Summary		
Performance goal	**4709.25**	ft3
BMP volume credit ($BMP_{volume\ credit}$)	**1788.11**	ft3
% of performance goal achieved	**38.0**	%
Remaining water quality volume to be treated (per panel)	**2921.14**	ft3
Pervious area = (Y + Z) * W; where W is the width of the solar panel and Z is the average horizontal distance		
Impervious area = Z * W; where W is the width of the solar panel and Z is the average horizontal distance of		



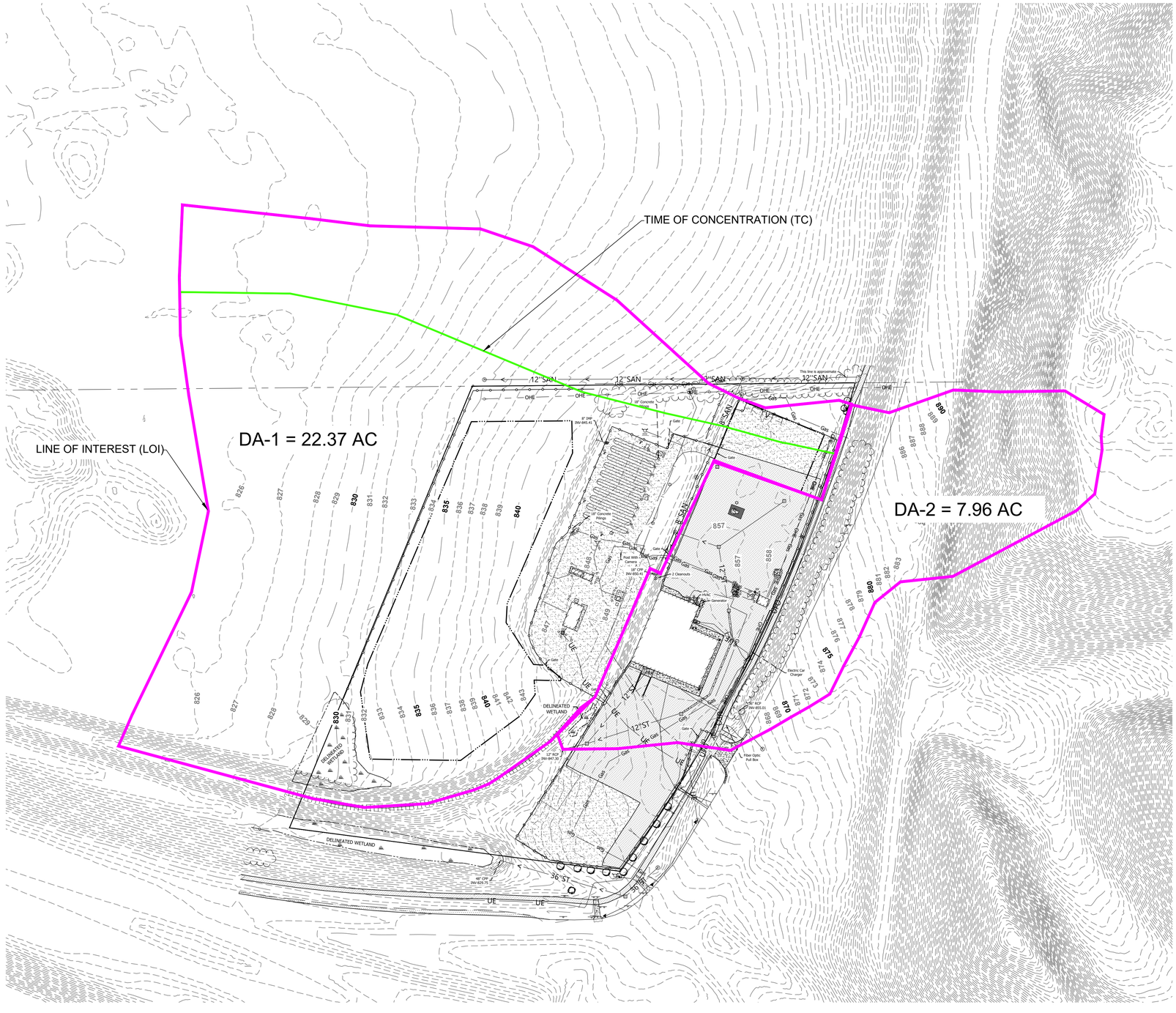
Impervious Area Calculation

Impervious Area	1093	sf
Runnoff Depth	1.1	in
Treatment Volume	100.19	cf

Total Treatment Volume Requirement

Solar Panel Treatment Volume	2921.14	cf
Other Impervious Area Treatment Volume	100.19	cf
Total	3021	cf
110% Total	**3323**	**cf**

ENCLOSURE 1 – EXISTING DRAINAGE AREA MAP



N

SCALE 1" = 100'

0 100 2 300 FEET

DRAINAGE AREA MAP LEGEND

- PROPERTY BOUNDARY LINE
- ZONING SETBACKS
- OHE — EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING TREE
- Gas — EXISTING GAS LINE
- UFO — EXISTING FIBER OPTIC CABLE
- 12"ST — EXISTING SEWER LINE
- EXISTING MANHOLE
- EXISTING CULVERT
- EXISTING CONTOURS
- EXISTING UTILITY POLE
- OHW — EXISTING TRANSMISSION LINE
- UE — EXISTING UNDERGROUND ELECTRIC
- PROPOSED ACCESS ROAD
- PROPOSED FENCE
- PROPOSED SOLAR PANEL ARRAYS
- PROPOSED FILTRATION BERM
- PROPOSED LIMIT OF DISTURBANCE
- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION

NOTES:

1. ESTIMATED TOTAL AREA OF DISTURBANCE: 4.17 ACRES
2. DA-2 DOES NOT PROPOSE A CHANGE IN LAND COVER. AS SUCH, DA-2 IS NOT INCLUDED IN THE STORMWATER CALCULATIONS. DA-2 IS SHOWN ON THE DRAINAGE AREA MAP TO REPRESENT DRAINAGE ON-SITE.

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

ERM

EXISTING CONDITIONS
DRAINAGE AREA MAP

DISCIPLINE NO.: EX.

MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

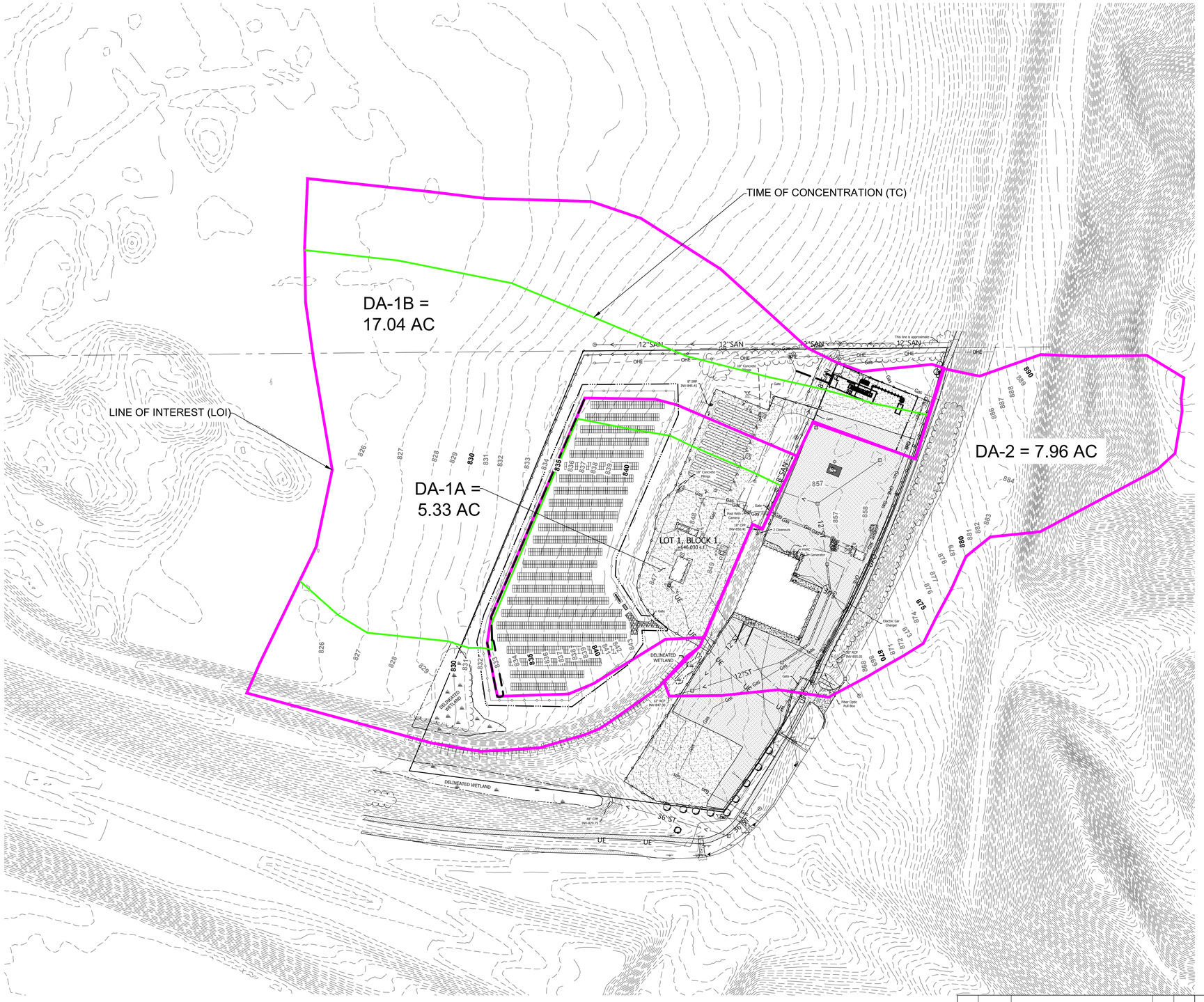
REV.: 0

SCALE	DESIGNED BY	PROJECT NUMBER	SHEET NO.
1"=100'	WS	0764026	A
DATE DRAWN: 05/26/2026	DRAWN BY: JB		

Environmental Resources Management, Inc.

FILE PATH: C:\Users\jessica.blair\OneDrive - ERM\0764159 CenterPoint Energy Environmental Support (Client) - Mankato Hydrogen Plant_CAD\CUP\Exhibits\Drainage Area Maps.dwg EXISTING CONDITIONS DA MAP. PRINTED ON 4/15/2026 BY Jessica Blair

ENCLOSURE 2 – PROPOSED DRAINAGE AREA MAP



SCALE 1" = 100'

0 100 2 300 FEET

DRAINAGE AREA MAP LEGEND

- PROPERTY BOUNDARY LINE
- ZONING SETBACKS
- OHE — EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FENCE
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING TREE
- Gas — EXISTING GAS LINE
- UFO — EXISTING FIBER OPTIC CABLE
- 12"ST — EXISTING SEWER LINE
- EXISTING MANHOLE
- EXISTING CULVERT
- EXISTING CONTOURS
- EXISTING UTILITY POLE
- OHW — EXISTING TRANSMISSION LINE
- UE — EXISTING UNDERGROUND ELECTRIC
- PROPOSED ACCESS ROAD
- PROPOSED FENCE
- PROPOSED SOLAR PANEL ARRAYS
- PROPOSED FILTRATION BERM
- PROPOSED LIMIT OF DISTURBANCE
- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION

NOTES:

1. ESTIMATED TOTAL AREA OF DISTURBANCE: 4.17 ACRES
2. DA-2 DOES NOT PROPOSE A CHANGE IN LAND COVER. AS SUCH, DA-2 IS NOT INCLUDED IN THE STORMWATER CALCULATIONS. DA-2 IS SHOWN ON THE DRAINAGE AREA MAP TO REPRESENT DRAINAGE ON-SITE.

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk

ERM

PROPOSED CONDITIONS
DRAINAGE AREA MAP

DISCIPLINE NO. EX.

MANKATO HYDROGEN ENERGY PLANT PROJECT
CENTERPOINT ENERGY
MANKATO, BLUE EARTH COUNTY, MN

REV. 0

SCALE	DESIGNED BY	PROJECT NUMBER	SHEET NO.
1"=100'	WS	0764026	B
DATE DRAWN 05/26/2026	DRAWN BY JB		

Environmental Resources Management, Inc.

FILE PATH: C:\Users\jessica.bial\OneDrive - ERM\0064199 CenterPoint Energy Environmental Support (Client) - Mankato Hydrogen Plant_CAD\CUP\Exhibits\Drainage Area Maps.dwg PROPOSED CONDITIONS DA MAP PRINTED ON 4/15/2026 BY Jessica Bial

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Site Plan and Traffic Advisory Review Committee **1. 5.**

Meeting Date: 06/09/2026

Title

CYV04-26

Request of Generation Properties, on behalf of the property owner Tony Baumann, for a variance from Chapter 10, Article II, Division 8, Sec.10-271 of the Mankato City Code to decrease the corner side yard setback from ten feet (10') to five feet, four inches (5'4") in the O-R, Office Residential, zoning district. The variance is being requested in order to allow for the construction of a new, attached deck. The property is described as the south 40' of the east 73.75 feet, Lot 6, Block 19, Map of Mankato subdivision, Blue Earth County (502 N. 2nd Street).

Applicant

The applicant is Generation Properties, on behalf of the property owner, Tony Baumann.

Request

The applicant is seeking a variance to allow a decrease in the required corner side yard setback from ten feet (10') to five feet, four inches (5'4") in the O-R, Office Residential, zoning district.

Location

The property is located at 502 N. 2nd Street and is described as the south 40 feet of the east 73.75 feet, Lot 6, Block 19, Map of Mankato Subdivision, Blue Earth County.

Existing Land Use

The property is currently a mixed use, as an auto shop with an attached residential dwelling component. The auto show is commonly known as the "Old Town Garage".

Zoning

The subject property is zoned O-R, Office-Residential District.

Environmentally Sensitive Areas

There are no known environmentally sensitive areas present on or directly adjacent to the subject property.

Public Utilities

Public utilities currently serve the subject property. No modifications to City Services are proposed with this variance request.

Review

The applicant, Generation Properties, on behalf of the property owner, Tony Baumann, is requesting a variance from Chapter 10, Article II, Division 8, Sec.10-271 of the Mankato City Code to decrease the corner side yard setback from ten feet (10') to five feet, four inches (5'4") in the O-R, Office Residential, zoning district.

The variance is being requested in order to allow for the construction of a new, attached deck (balcony). The subject property is addressed as 502 N. 2nd Street, Mankato, MN 56001.

Mankato City Code requires that structures provide setbacks from the property line, including a setback of a

balcony/deck from the property line. The required setbacks are determined based on the zoning district, and the proposed use of the property. The applicant intends to attach a second floor balcony to the existing residential portion of the structure, extending an additional 4 feet, making the balcony 5'4" inches from the property line instead of 10 feet. The balcony would be installed at 14'6" inches above grade, with the proposed support structure installed at 9'6" above grade. The deck/balcony is not proposed to extend beyond the existing side wall of the structure and therefore shall not impact the existing structural rear yard setback. The applicant states that as the balcony is proposed, it does not interfere with anything from ground level to the balcony structure. Of note, the property consists of a singular structure containing an auto shop and a primarily second-floor residential dwelling.

Site Conditions:
The primary structure on the subject property was erected in the 1930s, with site conditions predating the adoption of the current O-R, Office Residential zoning district. The subject property occupies less than 3,000 Sq. Ft. of area, which is less than 10,000 Sq. Ft. minimum lot size current standard in the zoning district.

The second-story residential component of the property appears to have been added in 2001, followed by the existing sliding glass patio door in 2018/2019.

The subject property is bound by N. 2nd Street roughly to the east and E. Spring Street roughly to the south. Due to these conditions, the property is considered a corner lot and subject to corner side yard setbacks and sight triangle limitations.

The applicant's provided site plan states that the existing corner side yard setback is 9'4", which demonstrates that an existing encroachment into the required corner side yard already exists. The site plan shows that, with a proposed 4-foot-deep balcony, the structural setback would be narrowed to 5'4".

The surrounding properties that share the 500 Block of N. Riverfront Drive / N. 2nd Street consist of a combination of mixed-use, commercial, and residential properties with varying structural setbacks.

Corner Side Yard Setback:
The subject property is considered a Corner Lot due to its location along N. 2nd Street and E. Spring Street.

Section 10-1465 of the Mankato City Code defines the setback requirements for Corner Lots. It reads: "*Every corner lot shall provide a required front yard and a corner side yard on the secondary street side of the lot. The width of the corner side yard shall not be less than one-half the distance of the required front yard depth requirement for the lot. The corner side yard shall extend from the front to the rear of the lot along the secondary side street. No building shall be allowed in the corner side yard, and the restrictions on parking in the front yard shall apply to parking in the corner side yard...*"

Because the front yard setback in the O-R Zoning District is 20 feet, the required corner side yard would then be 10 feet. The applicant is requesting to decrease the required corner side yard setback from ten feet (10') to five feet, four inches (5'4").

Narrative:
The applicant provided responses to the following Variance Request Application Questions:

1. **In your opinion, is the variance in harmony with the purposes and intent of the ordinance?** "*Being an old structure, with neighboring properties closer to the Spring Street property lines than this property. The home next door is 2 feet closer to the property line with front stoop extending 2 feet beyond this balcony.*"
2. **In your opinion, is the variance consistent with the comprehensive plan?** *"I assume the comprehensive plan would be to keep the neighborhood ascetics fairly balanced. This project has a very good Old Town feel to it and fits in nicely with neighboring properties, and in no way interfere with any other properties."*
3. I**n your opinion, does the proposal put the property to use in a reasonable manner?** *"The balcony will be attached to the residential portion of the buildings existing patio door, and the only access will be from the second floor residence. The balcony structure would be made of black iron, and protrude 4 ft. from the*

property structure and fit in the existing older properties and retain the Old Town feel and look. The entire residential portion on the property is on the second floor, and this would be the only option for a balcony."

4. **In your opinion, are there circumstances unique to the property?** *"The building has many grandfathered-in features currently. The garage and residential portion of the building at present are within the 10 foot set back at 9 ft. 4 inches from property marker. Which would have the face pf the balcony 5 ft. 4 inches from the property marker 14 ft. 6 inches in the air and will not interfere with anything below. Also is 2 feet farther inside property marker than next door neighboring houses front stoop. The side yard setback of Spring Street facing towards N. Riverfront Dr is currently 1.6 ft. from property line boarding an 8ft. stripe of driveway also owned by applicants adjoining 2nd St property , which is 3ft. from non owned neighboring structure on Spring St. Many neighboring properties on both Spring St and 2nd St have much shorter setbacks as well."*
5. **In your opinion, will the variance maintain the essential character of the locality?** *"The balcony will be a second floor structure made of black iron and should blend into the neighborhood aesthetics nicely. It will have an old look to it to compliment surrounding properties."*

Attachments

General Location Map

Aerial

Site Plan

Detail Plans

Deck Plans

Variance Questions

Beacon View

General Location Map



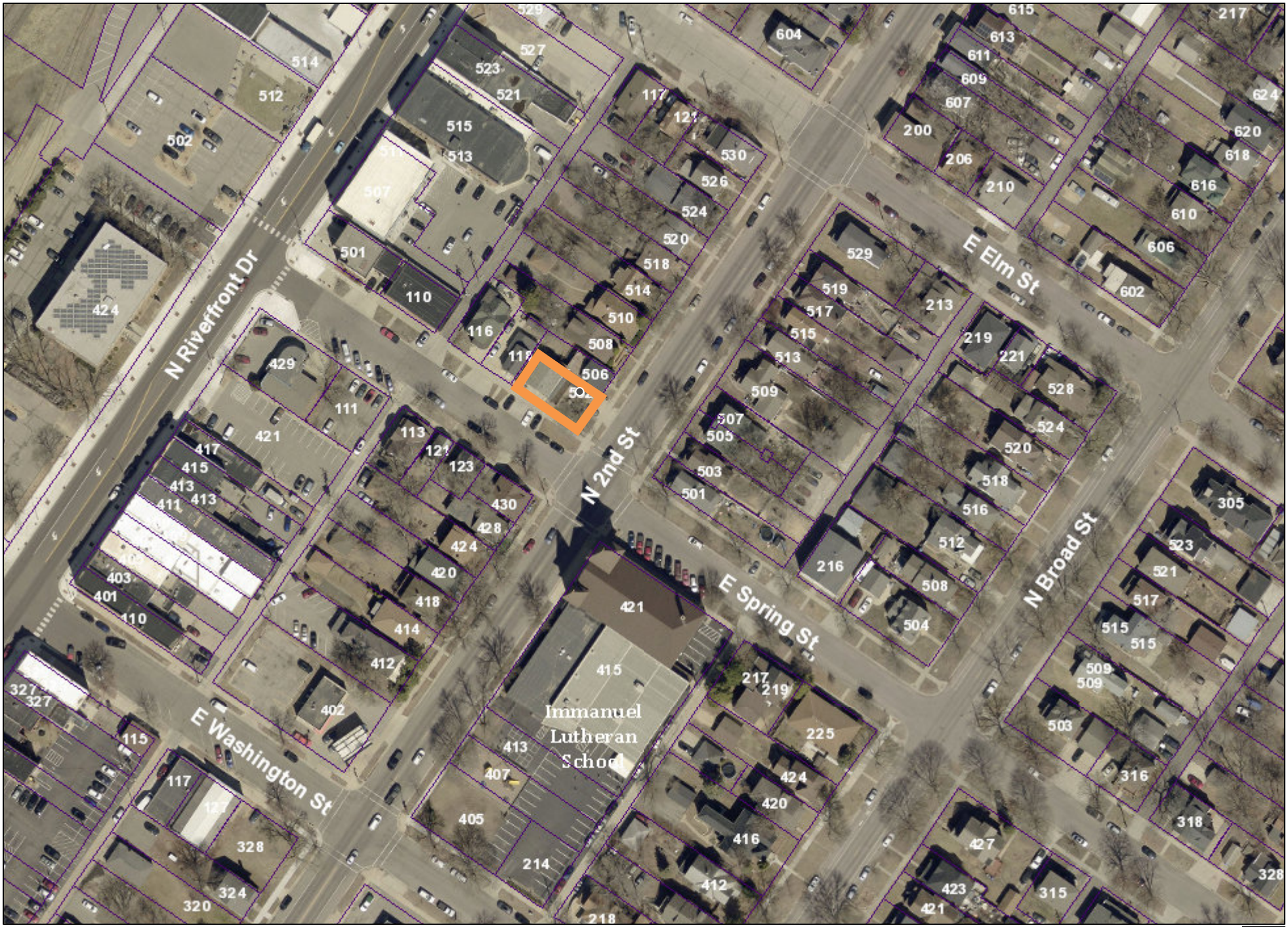
Date: June 2026

Author:

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Aerial Map



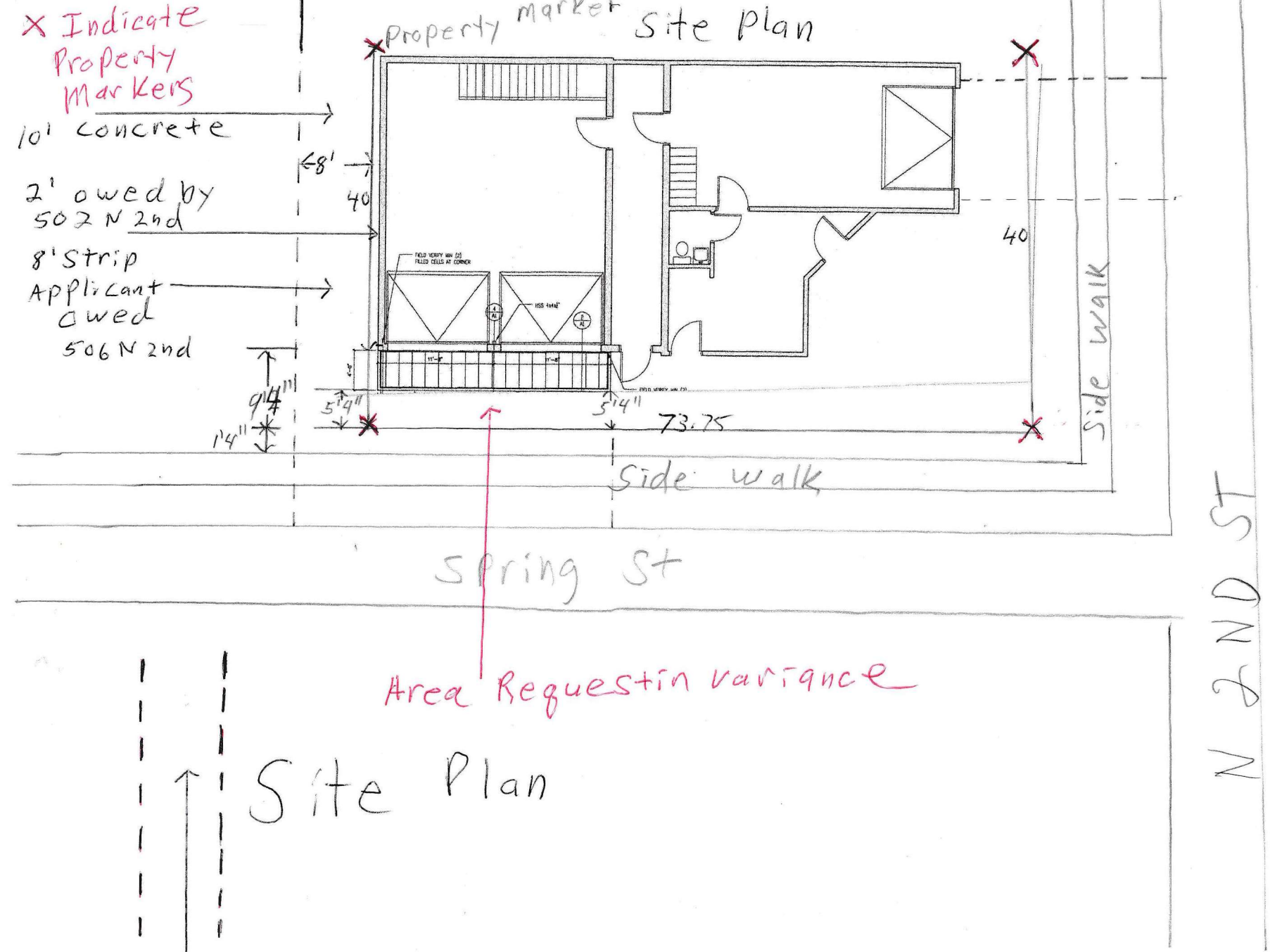
Date: June 2026

Author:

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MANKATO Leading the way...

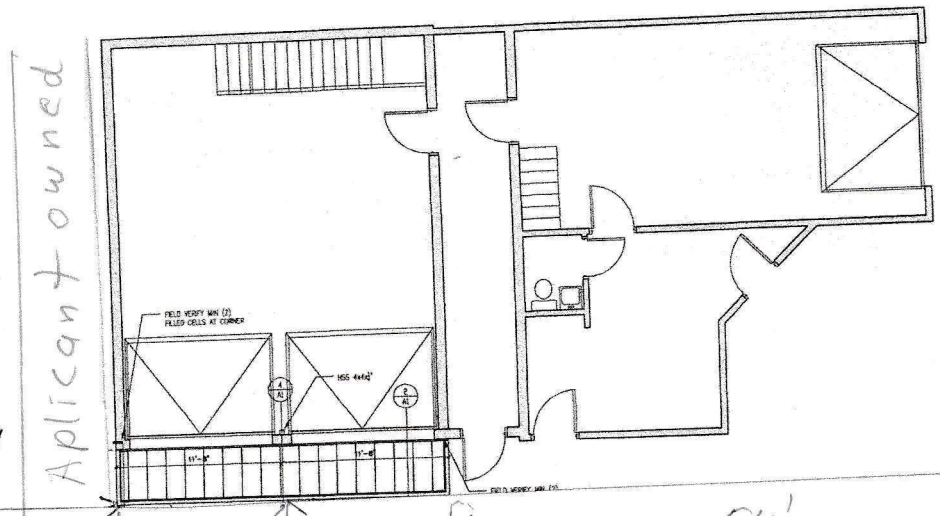
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Site Plan

Indicates concrete Driveways

102 N Second st
Balcony Site Plan



Steel
self Supporting
Balcony

Applicant owned

Side walk

N 2nd st

10'

5'

4'11"

54'

Property mkr

Side walk

Property mkr

SPring Street

Balcony Hight is 14' 6" From Ground Surface
Balcony Support Brackets 9' 6" off Surface

N 2nd St

General

a. Examine site and all drawings to determine locations and dimensions of chases, inserts, openings, sleeves and other project requirements not shown on the structural drawings.
b. Notify the Engineer about discrepancies between the field conditions and these construction documents.
c. Contractor shall provide all temporary bracing, shoring, guying or other means necessary to avoid excessive stresses and to hold structural elements in place during construction. Shoring design shall be provided by the contractor. Structural members are designed for "in place" loads.
d. The Contractor shall verify by field check, all dimensions, elevations, sizes, locations, etc. of elements of the existing structure that are necessary for the proper fitting up to new construction.
e. When discrepancies exist between the design drawings (including this sheet) and the specifications, the more stringent of the two determined by the engineer shall govern. When discrepancies exist between scaled dimensions in the design drawings and the figures written in them, the figures shall govern.

Design Codes:

a. Building Code: Minnesota State Building Code (most current edition)
b. ASCE 7-10
c. IBC 2012
d. AISC 14th Edition
e. NCMA
f. NDS (for wood construction)

Design Loads:

a. snow load
   1. ground pressure Pg = 50 psf
   2. importance factor = 1.0
   3. site exposure C
   4. roof thermal factor Ct = 1.0
   5. flat roof snow load = 35 psf
   6. roof drift load where applicable
c. live load
   1. decks and balconies 60psf

Structural Steel

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   2. AISC 303-10- "code of standard practice for steel buildings and bridges"
   3. AWS D1.1 - "Structural Welding Code"
b. Material Strengths

Structural type/shape	ASTM designation	Material strength
W-shape	A992	Fy = 50 ksi
M, S, C, MC, and L-shapes, plates and bars	A36	Fy = 36 ksi
HSS rectangular	A500 Gr. B	Fy = 46 ksi
Fasteners	A325N	Fnv = 48 ksi, Fnt = 90 ksi
	A325X	Fnv = 60 ksi, Fnt = 90 ksi
	A490N	Fnv = 60 ksi, Fnt = 113 ksi
	A490X	Fnv = 75 ksi, Fnt = 113 ksi
Connection nuts	A563	
Washers	F436	
Welds		
E70xx electrodes	A233	Fu = 70 ksi
Cold rolled E60xx electrodes	A233	Fu = 60 ksi
Expansion anchors	Hilti Kwik bolts or equivalent	

g. Welding
   1. Welding shall conform to AWS Structural Welding Code AWS D1.1
   2. All welding shall be performed by AWS certified welders.
   3. Steel to be field welded shall not be painted until welding is complete
   4. Welding of galvanized steel is not permitted.
   5. Unless specified otherwise, welds shall be a fillet weld, continuous and/or all around with minimum throat dimensions as required for material thickness per AISC or AWS.
h. Beams and columns shall be erected true and plumb within AISC tolerance. Provide temporary bracing as needed.
i. Column base and cap plates shall be welded around all sides.

Carpentry

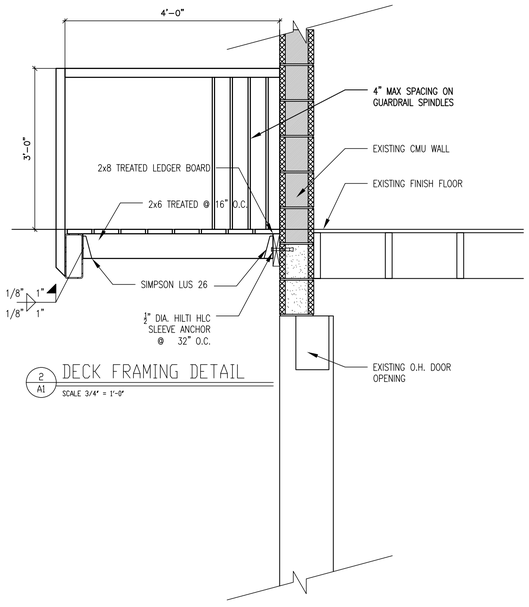
a. The IBC 2012 Chapter 23 and the National Design Specifications(NDS) for Wood Construction, 2011 edition, shall govern the design and installation of all dimension lumber.
b. All member sizes on the drawings are in nominal dimensions.
c. Laminated Veneer Lumber (LVL) LVL shall meet or exceed the following minimum allowable stresses: Fb = 2600psi Ft = 1555; Fv 285 psi; Fc perp = 750 psi; Fc = 2,510 psi; E = 1,900,000 psi

   Laminated Strand Lumber (LSL) LVL shall meet or exceed the following minimum allowable stresses: Fb = 1700psi Ft = 1,075; Fv 400 psi; Fc perp = 680 psi; Fc = 1400 psi; E = 1,300,000 psi

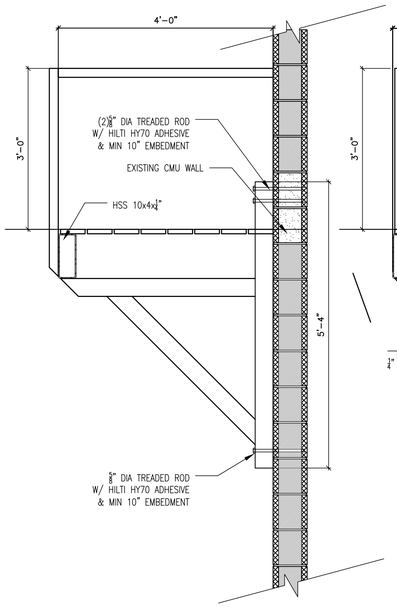
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   Header Lumber, must be either Hem-Fir No. 1 or better or Douglas Fir Larch No.1 or better with minimum allowable stresses as follows: Fb=1150 psi; Ft=750 psi; Fv=180 psi; Fc perp = 625 psi; Fc = 1800 psi; E = 1,800,000 psi

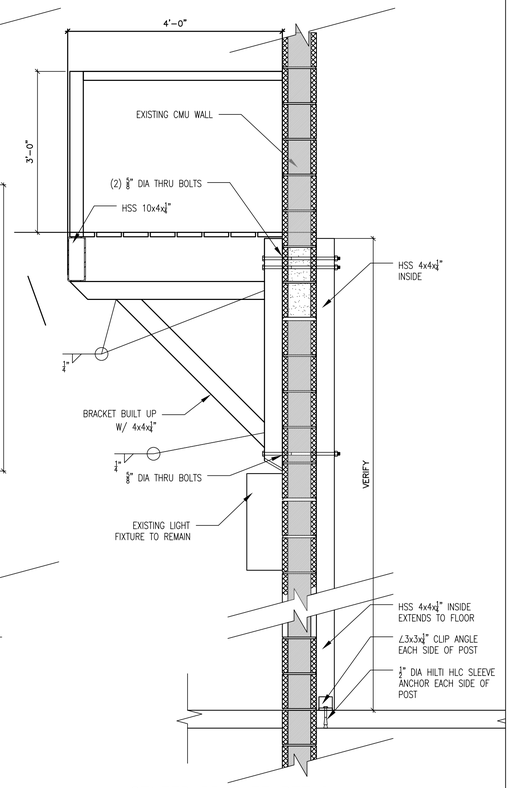
d. Plywood or OSB minimums: All plywood and OSB shall be APA rated.
   Roof: APA Rated Exposure 1, see drawings for thickness and span ratings.
   Exterior walls: APA Rated Sheathing, Exposure 1. see drawings for schedule.
   Install all plywood products according to APA recommendations.
e. Nailing" per IBC table 2304.9.1 or as required by drawings. Space Nails to avoid splitting.
f. Nailed Built-up Columns: shall be laterally supported by solid blocking except where end joists are nailed to a header, band or rim joist, or to an adjoining stud. Blocking shall be not less than 2 inches in thickness and the full depth of the joist.
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i. Use treated wood for sill plates in contact with masonry or concrete.
j. All wood connectors, joist hangers, hold downs, post caps, bases etc. shall be manufactured by Simpson Strong-Tie co. Inc., USP Kant Sag or an Engineer approved equal. Install per manufacturers instructions u.n.o.



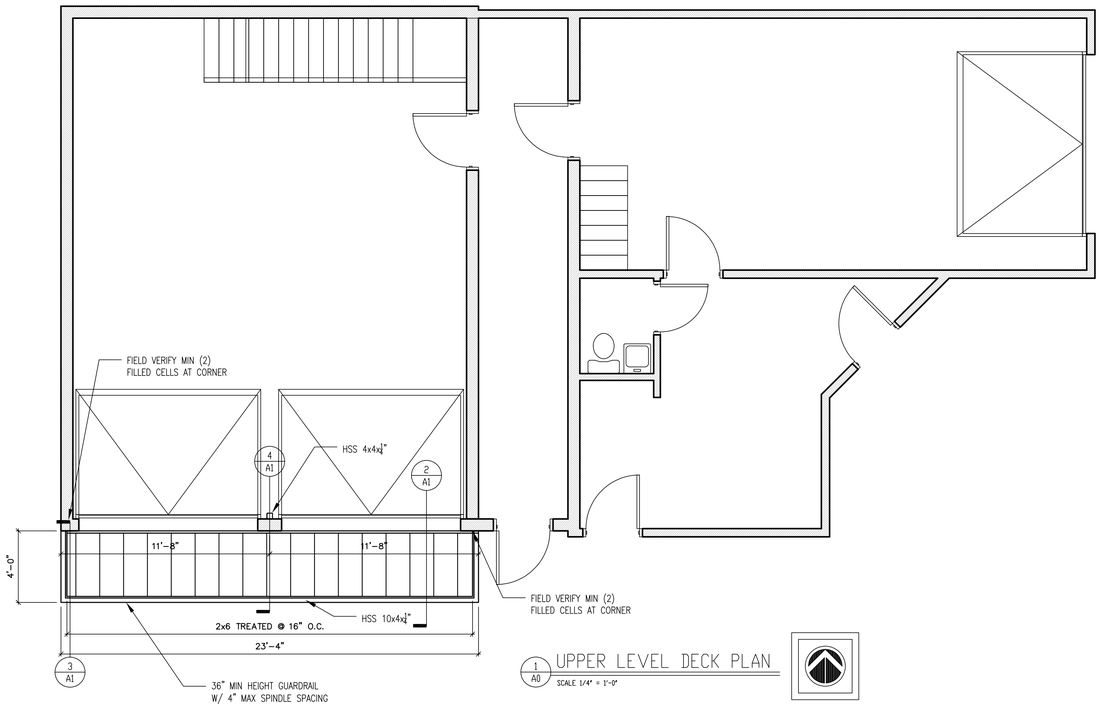
2 A1 DECK FRAMING DETAIL
SCALE 3/4" = 1'-0"



3 A1 CORNER BRACKET DETAIL
SCALE 3/4" = 1'-0"



4 A1 CENTER BRACKET DETAIL
SCALE 3/4" = 1'-0"



1 A0 UPPER LEVEL DECK PLAN
SCALE 1/4" = 1'-0"

CONSULTANTS:
ARCHITECTURAL

strangedesign
530 n riverfront dr , mankato mn 56001
phone 507.351.5340
adam@mystrangedesign.com

PROJECT TITLE:

OLD TOWN GARAGE DECK ADDITION

502 N. 2ND ST

MANKATO MINNESOTA

GP Engineering
Structural & Investigative

I HEREBY CERTIFY THAT THE PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

ENGINEER: Gregory A. Prunty
CERTIFICATION NO: 49847
SIGNATURE: DATE: 8-20-2020
GENERAL CONTRACTOR:

-

No.	SUBMISSIONS & REVISIONS	Date
1	DESIGN DOCUMENTS	08-18-2020

DISCLAIMER - Project is design build, Due to the lack of "on site" consultation & supervision, and control over the actual construction process, and because of the various local building code requirements & weather conditions, the drafter/designer/architect ASSUMES NO RESPONSIBILITY in the use of these plans for any damages. This includes structural failures due to any deficiencies, omissions, or errors in the design or blueprints. It is recommended you consult with a local building official and/or inspector prior to the start of construction. General Contractor shall verify all existing dimensions and field conditions prior to ordering or fabricating any materials. Notify designer/architect if conditions, materials, sizes or dimensions are different from what is shown on documents. Cross reference plans with all other consultant sets. All construction materials shall be installed in accordance with manufacturers current specifications and industry standards. All construction components shall meet adopted code requirements.

PLAN AND DETAILS

PROJ. NO.: C2028
DATE: 08-18-2020
DRAWN BY: AMS
CHECKED BY:

A1

General

a. Examine site and all drawings to determine locations and dimensions of chases, inserts, openings, sleeves and other project requirements not shown on the structural drawings.
b. Notify the Engineer about discrepancies between the field conditions and these construction documents.
c. Contractor shall provide all temporary bracing, shoring, guying or other means necessary to avoid excessive stresses and to hold structural elements in place during construction. Shoring design shall be provided by the contractor. Structural members are designed for "in place" loads.
d. The Contractor shall verify by field check, all dimensions, elevations, sizes, locations, etc. of elements of the existing structure that are necessary for the proper fitting up to new construction.
e. When discrepancies exist between the design drawings (including this sheet) and the specifications, the more stringent of the two determined by the engineer shall govern. When discrepancies exist between scaled dimensions in the design drawings and the figures written in them, the figures shall govern.

Design Codes:

a. Building Code: Minnesota State Building Code (most current edition)
b. ASCE 7-10
c. IBC 2012
d. AISC 14th Edition
e. NCMA
f. NDS (for wood construction)

Design Loads:

a. snow load
   1. ground pressure Pg = 50 psf
   2. importance factor = 1.0
   3. site exposure C
   4. roof thermal factor Ct = 1.0
   5. flat roof snow load = 35 psf
   6. roof drift load where applicable
c. live load
   1. decks and balconies 60psf

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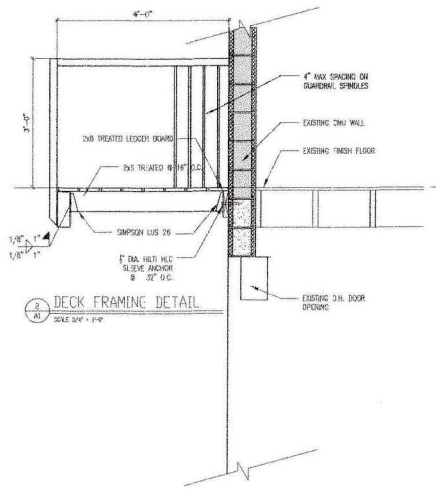
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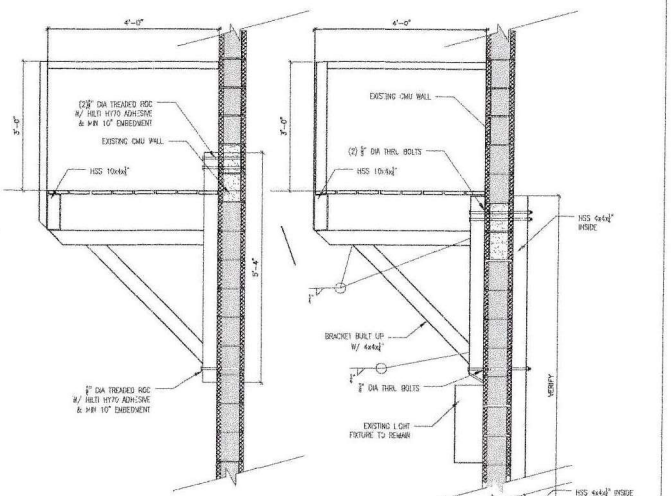
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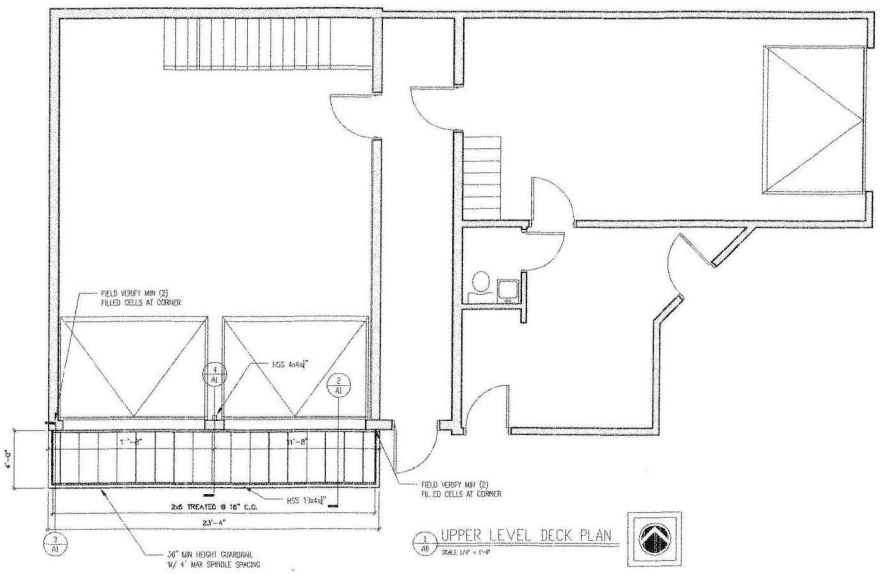


2/A1 DECK FRAMING DETAIL
SCALE 3/4" = 1'-0"



3/A1 CORNER BRACKET DETAIL
SCALE 3/4" = 1'-0"

4/A1 CENTER BRACKET DETAIL
SCALE 3/4" = 1'-0"



3/A1 1/A8 UPPER LEVEL DECK PLAN
SCALE 1/4" = 1'-0"

CONSULTANTS
ARCHITECTURAL

strangedesign
530 n riverfront dr. mankato mn 56001
phone 507.351.5340
adam@mystrangedesign.com

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CERTIFICATION No: 49847
SIGNATURE: DATE: 6-20-2020
GENERAL CONTRACTOR

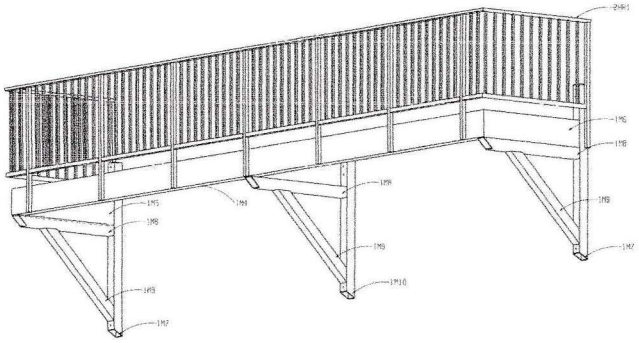
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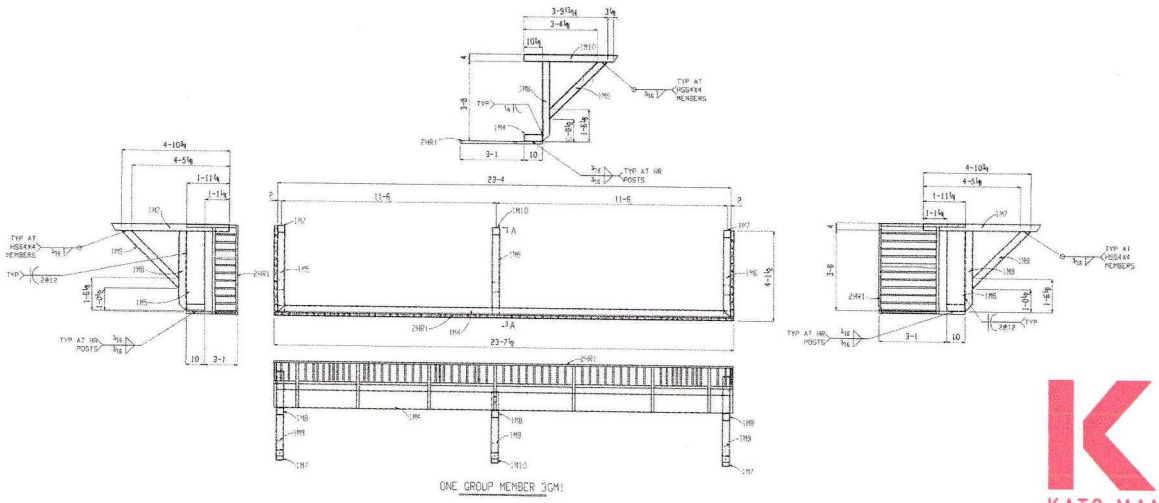
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PLAN AND DETAILS

PROJ NO.: C2020
DATE: 08-18-2020
DRAWN BY: AWS
CHECKED BY:

A1





ONE GROUP MEMBER 3GM1

BILL OF MATERIAL

QTY TOTAL	PC MARK	DESCRIPTION	LENGTH	SURFACE FINISH	GRADE	REMARKS	WEIGHT TOTAL
2EA	3GM1	GROUP MEMBER					2,173
1	1M4	MISC		PAINT C1			
2	PL6X10	MISC	6'-4"	PAINT C1	A1008		503
1	1M5	MISC		PAINT C1			
2	PL6X11	MISC	3'-1"	PAINT C1	A1008		83
1	1M6	MISC		PAINT C1			
2	PL6X12	MISC	3'-1"	PAINT C1	A1008		82
1	1M7	MISC		PAINT C1			
1	PL6X30	MISC	5'-1"	PAINT C1	A1008		191
2	PL1/2X3/4	MISC	0'-3/4"	PAINT C1	A36		7
1	1M8	MISC		PAINT C1			
2	PL6X13	MISC	3'-1"	PAINT C1	A1008		154
1	1M9	MISC		PAINT C1			
2	PL6X21	MISC	5'-8 1/2"	PAINT C1	A1008		195
1	1M10	MISC		PAINT C1			
1	PL6X14	MISC	4'-3"	PAINT C1	A1008		97
2	PL1/4X3/4	MISC	0'-3/4"	PAINT C1	A36		5
1	2HR1	HANDRAIL		PAINT C1			
2	HSS2X1X1/8		23'-7/8"		A1085		32
10	HSS4X4X1/8		3'-10"		A1085		139
2	HSS2X1/8		4'-1"		A1085		9
2	HSS2X1/8		4'-1"		A1085		9
2	HSS1X1/8		3'-11"		A1085		9
1	HSS8X4X1/4		3'-11"		A1043		8
5	HSS3X1/2		3'-10"		A1085		25
1	HSS4X1/2		2'-5"		A1085		10
1	HSS2X1/8		1'-8"		A1085		2
1	HSS1X1/8		1'-8"		A1085		2

TOTAL WEIGHT: 1,479

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF KATO MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF KATO MANUFACTURING IS PROHIBITED.

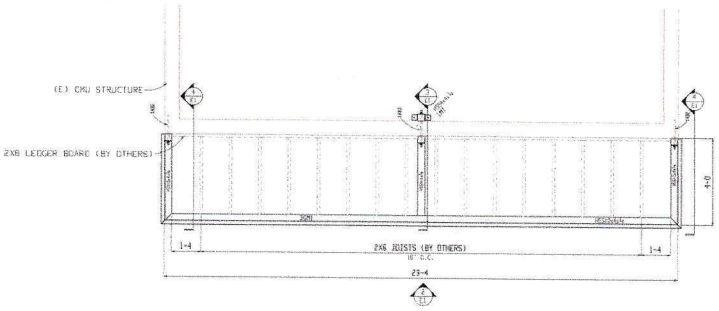
GENERAL NOTES:
1. ENG. CERTIFICATION: CONTRACTOR TO FULLY ACCEPT ALL RESPONSIBILITIES AND OBLIGATIONS.
2. SHOP DRAWINGS: ALL DETAILS AND DIMENSIONS TO BE CHECKED BY CONTRACTOR BEFORE SHOP DRAWINGS ARE SUBMITTED TO THE ENGINEER FOR REVIEW. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION IN WRITING WHEN SHOP DRAWINGS ARE SUBMITTED. NO CHANGES SHALL BE MADE FROM THE APPROVED SHOP DRAWINGS UNLESS APPROVED BY THE ENGINEER IN WRITING. ANY CHANGES MADE WITHOUT SUCH APPROVAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. ERECTION: ALL ERECTION SHALL BE PERFORMED BY QUALIFIED ERECTORS EXPERIENCED IN THIS TYPE OF WORK. ERECTORS SHALL BE RESPONSIBLE FOR THE STABILITY AND SAFETY OF THE STRUCTURE DURING ERECTION AND SHALL PROVIDE ADEQUATE TEMPORARY BRACING AND GUYS AS REQUIRED. ERECTORS SHALL BE RESPONSIBLE FOR ALIGNING AND PLUMBING THE STRUCTURE AND ALL COMPONENTS BEFORE FINAL WELDING OR BOLTING.
4. WELDING: ALL WELDING SHALL BE PERFORMED BY WELDERS QUALIFIED IN ACCORDANCE WITH AWS D1.1 STRUCTURAL WELDING CODE - STEEL. ALL WELDS SHALL BE CONTINUOUS UNLESS OTHERWISE NOTED. WELDS SHALL BE FREE FROM CRACKS, INCOMPLETE FUSION, POROSITY, AND OTHER DEFECTS. ALL WELDS SHALL BE VISUALLY INSPECTED BY A CERTIFIED WELDING INSPECTOR.
5. BOLTING: ALL BOLTED CONNECTIONS SHALL BE TIGHTENED TO THE SNUG-TIGHT CONDITION AS DEFINED BY THE RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS. BOLTS SHALL BE INSTALLED WITH HARDENED WASHERS AS REQUIRED.
6. PAINTING: ALL STEEL SURFACES SHALL BE PREPARED AND PAINTED IN ACCORDANCE WITH THE PAINTING SPECIFICATION. TOUCH-UP PAINTING SHALL BE PERFORMED ON ALL DAMAGED AREAS AFTER ERECTION.
7. ANCHOR RODS: ANCHOR RODS SHALL BE SET TO THE TOLERANCES SHOWN ON THE DRAWINGS. TEMPLATES SHALL BE USED TO ENSURE PROPER LOCATION.
8. ERECTION SEQUENCE: THE ERECTION SEQUENCE SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO BEGINNING ERECTION.
9. FIELD MEASUREMENTS: VERIFY ALL DIMENSIONS IN THE FIELD BEFORE FABRICATION.
10. DEVIATIONS: ANY DEVIATIONS FROM THE APPROVED SHOP DRAWINGS OR THESE GENERAL NOTES SHALL BE APPROVED BY THE ENGINEER IN WRITING BEFORE IMPLEMENTATION.
11. SAFETY: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND PROCEDURES DURING ERECTION.
12. CLEANUP: THE CONTRACTOR SHALL CLEAN UP ALL DEBRIS AND WASTE MATERIALS RESULTING FROM THE ERECTION WORK.

KATO MANUFACTURING

PROJECT NUMBER	2156 - Old Town Garage
DATE	2.9.26
DRAWN BY	SG
CHECKED BY	
APPROVED BY	
SCALE	

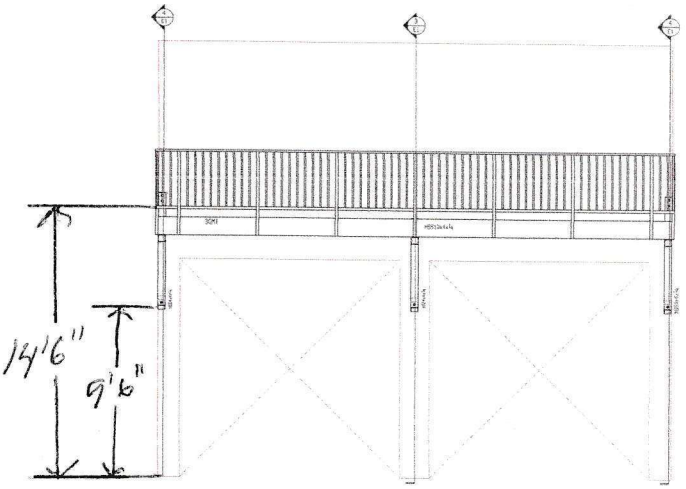
D3

REV	DATE	DESCRIPTION

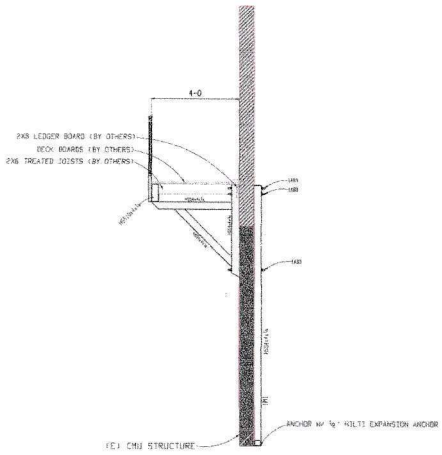


1 / E1 DETAIL TITLE

SHEET NOTES:
(1) REF: 1/A1
(2) DECK BOARDS NOT SHOWN FOR CLARITY (BY OTHERS)

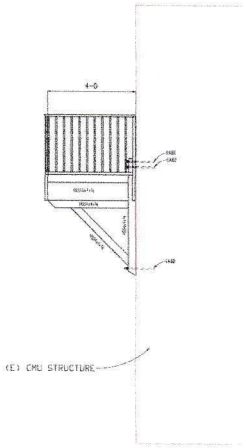


2 / E1 ELEVATION 1



3 / E1 SECTION 1

SHEET NOTES:
(1) REF: 4/A1



4 / E1 SECTION 2

SHEET NOTES:
(1) REF: 3/A1

KATO MANUFACTURING

CONTRACTOR APPROVAL				PROJECT NUMBER	2156 - Old Town Garage
Approved with Dimensions				DATE	2.9.26
Approved as Noted with Dimensions				DRAWN BY	SG
Revise & Resubmit				CHECKED BY	
	BY	DATE	DESCRIPTION	APPROVED BY	
				SCALE	E1

The applicant provided responses to the following Variance Request Application Questions:

1. **In your opinion, is the variance in harmony with the purposes and intent of the ordinance?**

   "*Being an old structure, with neighboring properties closer to the Spring Street property lines than this property. The home next door is 2 feet closer to the property line with front stoop extending 2 feet beyond this balcony.*"

2. **In your opinion, is the variance consistent with the comprehensive plan?**

   "I assume the comprehensive plan would be to keep the neighborhood ascetics fairly balanced. This project has a very good Old Town feel to it and fits in nicely with neighboring properties, and in no way interfere with any other properties."

3. **In your opinion, does the proposal put the property to use in a reasonable manner?**

   "The balcony will be attached to the residential portion of the buildings existing patio door, and the only access will be from the second floor residence. The balcony structure would be made of black iron, and protrude 4 ft. from the property structure and fit in the existing older properties and retain the Old Town feel and look. The entire residential portion on the property is on the second floor, and this would be the only option for a balcony."

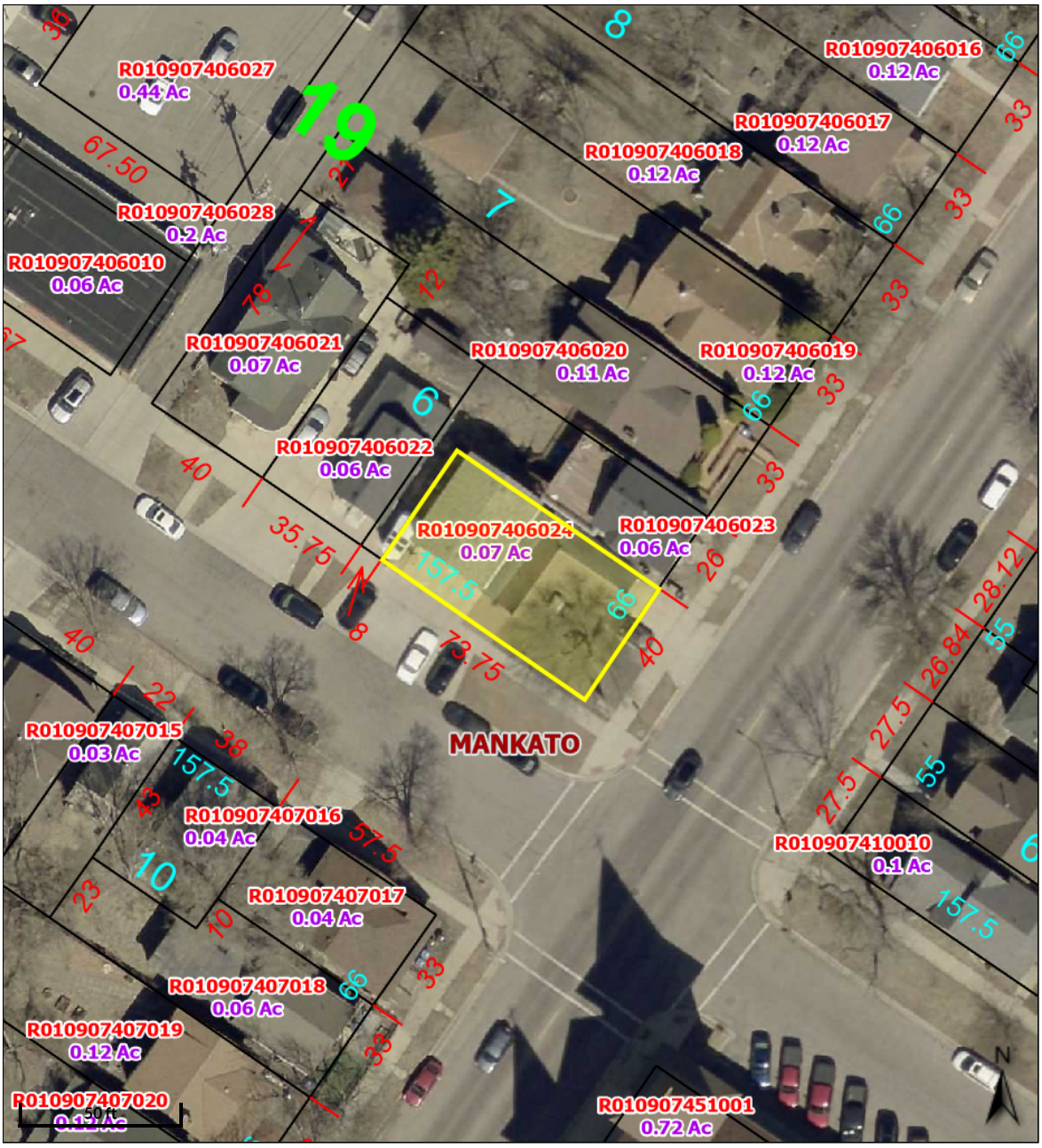
4. **In your opinion, are there circumstances unique to the property?**

   "The building has many grandfathered-in features currently. The garage and residential portion of the building at present are within the 10 foot set back at 9 ft. 4 inches from property marker. Which would have the face pf the balcony 5 ft. 4 inches from the property marker 14 ft. 6 inches in the air and will not interfere with anything below. Also is 2 feet farther inside property marker than next door neighboring houses front stoop. The side yard setback of Spring Street facing towards N. Riverfront Dr is currently 1.6 ft. from property line boarding an 8ft. stripe of driveway also owned by applicants adjoining 2nd St property , which is 3ft. from non owned neighboring structure on Spring St. Many neighboring properties on both Spring St and 2nd St have much shorter setbacks as well."

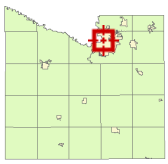
5. **In your opinion, will the variance maintain the essential character of the locality?**

   "The balcony will be a second floor structure made of black iron and should blend into the neighborhood aesthetics nicely. It will have an old look to it to compliment surrounding properties."

BLUE EARTH COUNTY



Overview



Legend

- **Parcel Points: Condo & Air Rights**

Cartography Urban

- Lot Dim Carto 100
- Lot Number Carto 100
- Parcel Acreage Carto 100
- Parcel Dim Carto 100
- Parcel Owner Hook 100
- Railroad Name Carto 100
- Road Name Carto 100
- Sub Blk Number Carto 100
- **Tax Parcels**
- **Township Names**

Date created: 5/12/2026
Last Data Uploaded: 5/12/2026 11:22:01 AM

Developed by SCHNEIDER GEOSPATIAL

Site Plan and Traffic Advisory Review Committee **1. 6.**

Meeting Date: 06/09/2026

Title

*****SITE PLAN AND TRAFFIC ADVISORY COMMITTEE REVIEW ONLY. Administrative Land Combination to allow for a new residential facility in Groh Farms.**

Applicant

The applicant is James Lozinski of James Lozinski Construction.

Request

The applicant is seeking a Site Plan and Traffic Advisory Committee review for an administrative lot combination in the Groh Farms Subdivision.

Location

The subject properties are addressed as 3201 and 3205 Basset Dr.

Existing Land Use

The properties are currently vacant and ready for development.

Zoning

The subject properties are zoned R-2, One and Two Family Dwelling District.

Review

The applicant is seeking a Site Plan and Traffic Advisory Committee review for an administrative lot combination in the Groh Farms Subdivision.

Plans provided show the proposed lot combination.

Attachments

General Location Map

Aerial Plan

Administrative Land Combination

General Location Map



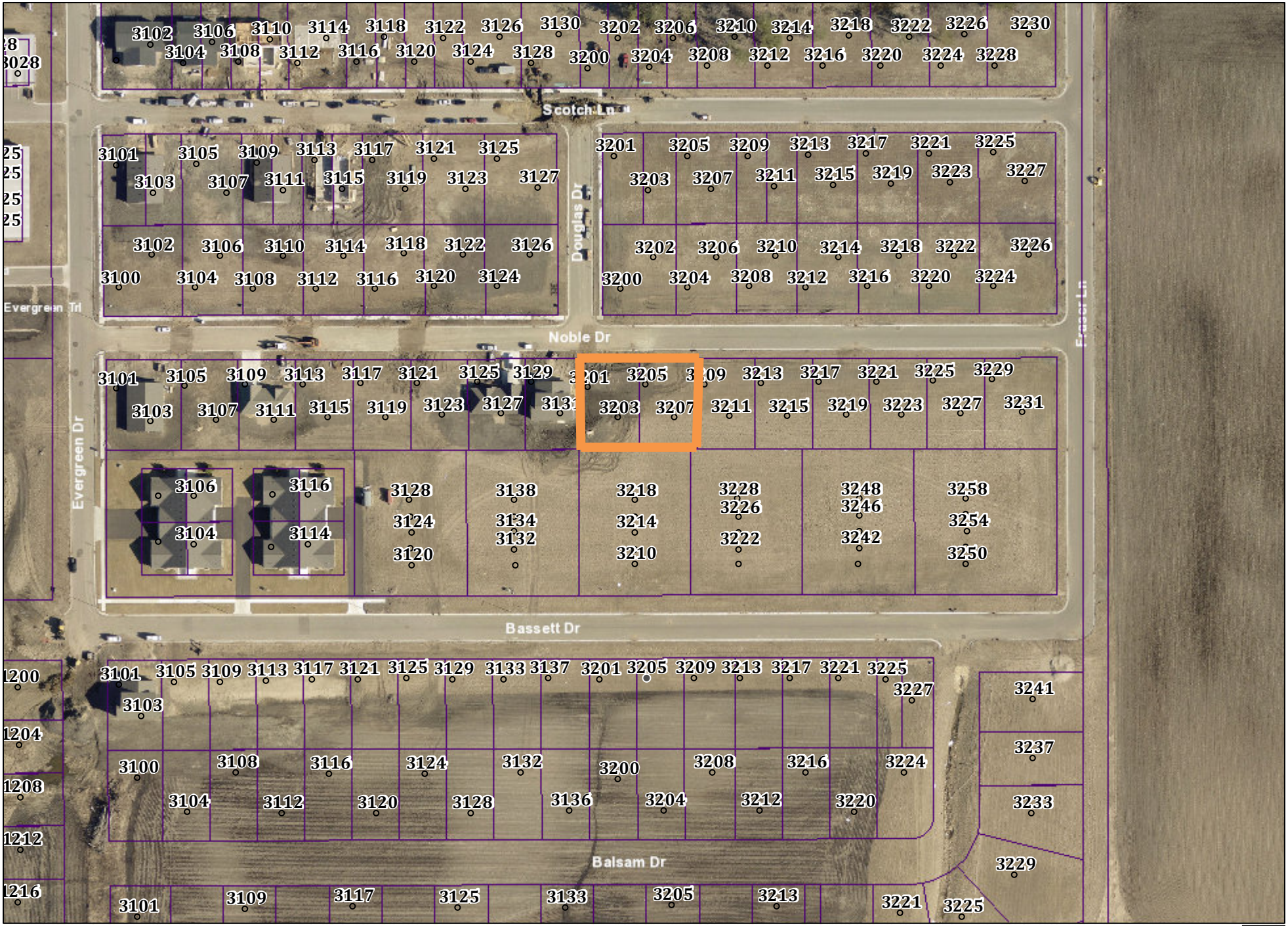
Date: June 2026

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.

N

Aerial Map



Date: June 2026

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.

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LEGAL DESCRIPTION:
Lots 11 & 12, Block 6, Groh Farm Subdivision, Blue Earth County, Minnesota.

SCOPE OF WORK & LIMITATIONS:

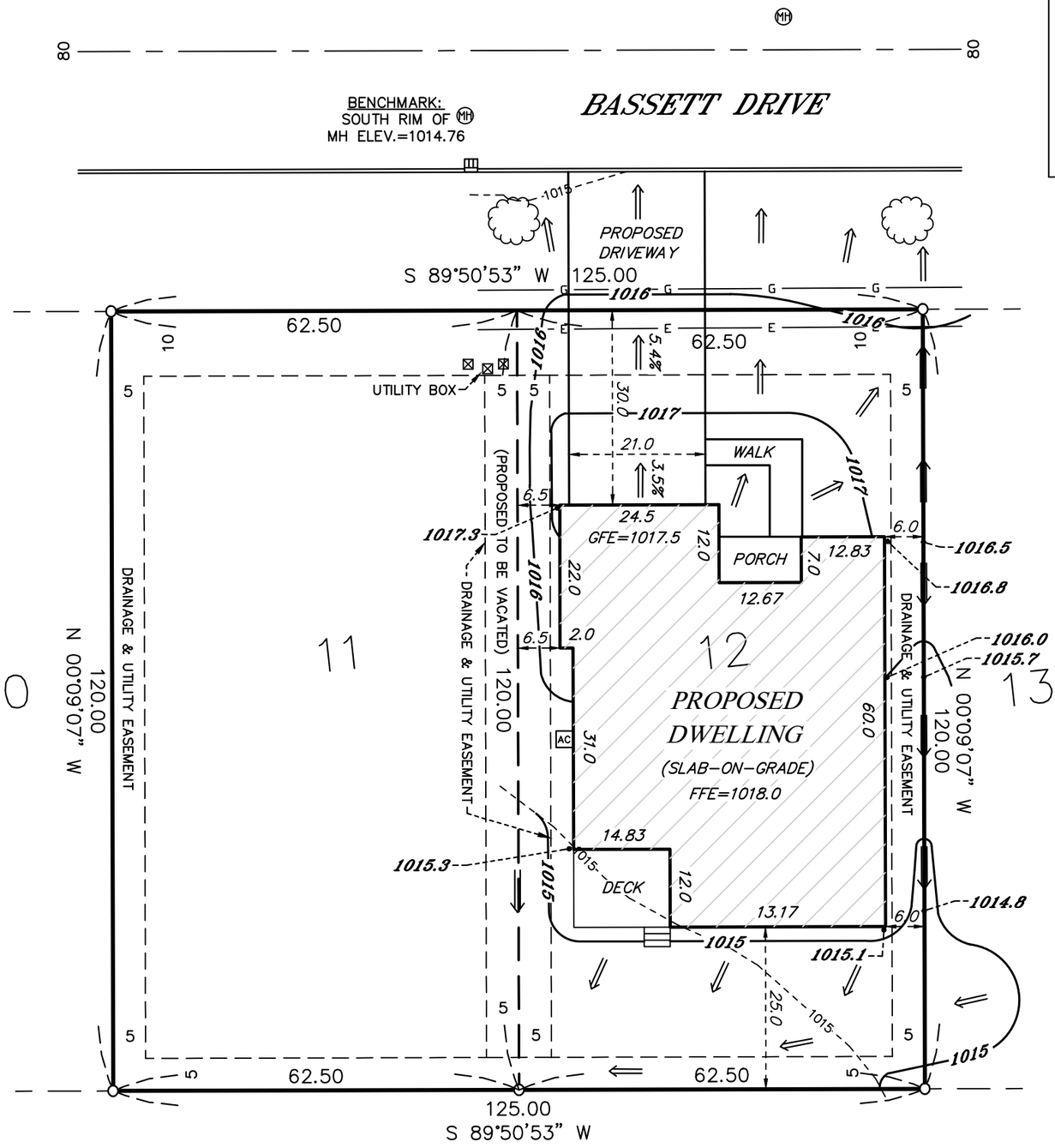
1. Showing the length and direction of boundary lines of the legal description listed above. The scope of our services does not include determining what you own, which is a legal matter. Please check the legal description with your records or consult with competent legal counsel, if necessary, to make sure that it is correct and that any matters of record, such as easements, that you wish to be included on the survey have been shown.
2. Showing the location of observed existing improvements we deem necessary for the survey.
3. Setting survey markers or verifying existing survey markers to establish the corners of the property.
4. Showing elevations on the site at selected locations to give some indication of the topography of the site. We have also provided a benchmark for your use in determining elevations for construction on this site. The elevations shown relate only to the benchmark provided on this survey. Use that benchmark and check at least one other feature shown on the survey when determining other elevations for use on this site or before beginning construction.
5. This survey has been completed without the benefit of a current title commitment. There may be existing easements or other encumbrances that would be revealed by a current title commitment. Therefore, this survey does not purport to show any easements or encumbrances other than the ones shown hereon.
6. While we show a proposed location for this home or addition, we are not as familiar with your proposed plans as you, your architect, or the builder are. Review our proposed location of the improvements and proposed yard grades carefully to verify that they match your plans before construction begins. Also, we are not as familiar with local codes and minimum requirements as the local building and zoning officials in this community are. Be sure to show this survey to said officials, or any other officials that may have jurisdiction over the proposed improvements and obtain their approvals before beginning construction or planning improvements to the property.
7. Proposed floor elevations and lot grading based on preliminary plat provided by the city.
8. Note that all building dimensions and building tie dimensions to the property lines, are taken from the siding and or stucco of the building.

STANDARD SYMBOLS & CONVENTIONS:

- ● Denotes iron survey marker, found.

DRAINAGE & UTILITY EASEMENT TO BE VACATED - LOT 11:
The East 5 feet Lot 11, Block 6, Groh Farm Subdivision, Blue Earth County, Minnesota, lying between the North 10 feet and South 5 feet of said Lot 11.

DRAINAGE & UTILITY EASEMENT TO BE VACATED - LOT 12:
The West 5 feet Lot 12, Block 6, Groh Farm Subdivision, Blue Earth County, Minnesota, lying between the North 10 feet and South 5 feet of said Lot 12.



DATE	REVISION DESCRIPTION

DRAWING ORIENTATION & SCALE
N
0 10' 20'

CLIENT/JOB ADDRESS
MICHAEL FOX
3201 & 3205 BASSETT DR.
MANKATO, MN

Advance
Surveying & Engineering Co.
18202 Minnetonka Blvd. Suite 401
Deephaven, Minnesota 55391
Phone (952) 474-7964
Web: www.advsur.com

I HEREBY CERTIFY THAT THIS PLAN, SURVEY OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.
Wayne W. Preubs
#43503 LICENSE NO.
MAY 6, 2026 DATE

DATE SURVEYED: FEBRUARY 9, 2026
DATE DRAFTED: MAY 6, 2026

SHEET TITLE: PROPOSED SURVEY
SHEET SIZE: 11 X 17
DRAWING NUMBER: 260145 JR

SHEET NO. S1
SHEET 1 OF 1

Site Plan and Traffic Advisory Review Committee **1. 7.**

Meeting Date: 06/09/2026

Title

*****SITE PLAN AND TRAFFIC ADVISORY REVIEW COMMITTEE ONLY. Administrative lot split for Miller Creek 1st Addition.**

Applicant

The applicant is Rich Wehye of R Henry Construction.

Request

The applicant is seeking a Site Plan and Traffic Advisory Committee review for an administrative lot combination.

Location

The properties are described as lots 11, 12, and 13 in the Miller Creek Subdivision.

Existing Land Use

The properties are currently vacant and ready for development.

Zoning

The subject property is zoned R-1, One Family Dwelling District.

Review

The applicant is seeking a Site Plan and Traffic Advisory Committee review for an administrative lot combination in the Miller Creek Subdivision.

Plans provided show the proposed lot combination.

Attachments

General Location Map

Aerial Plan

Administrative Land Combination

General Location Map



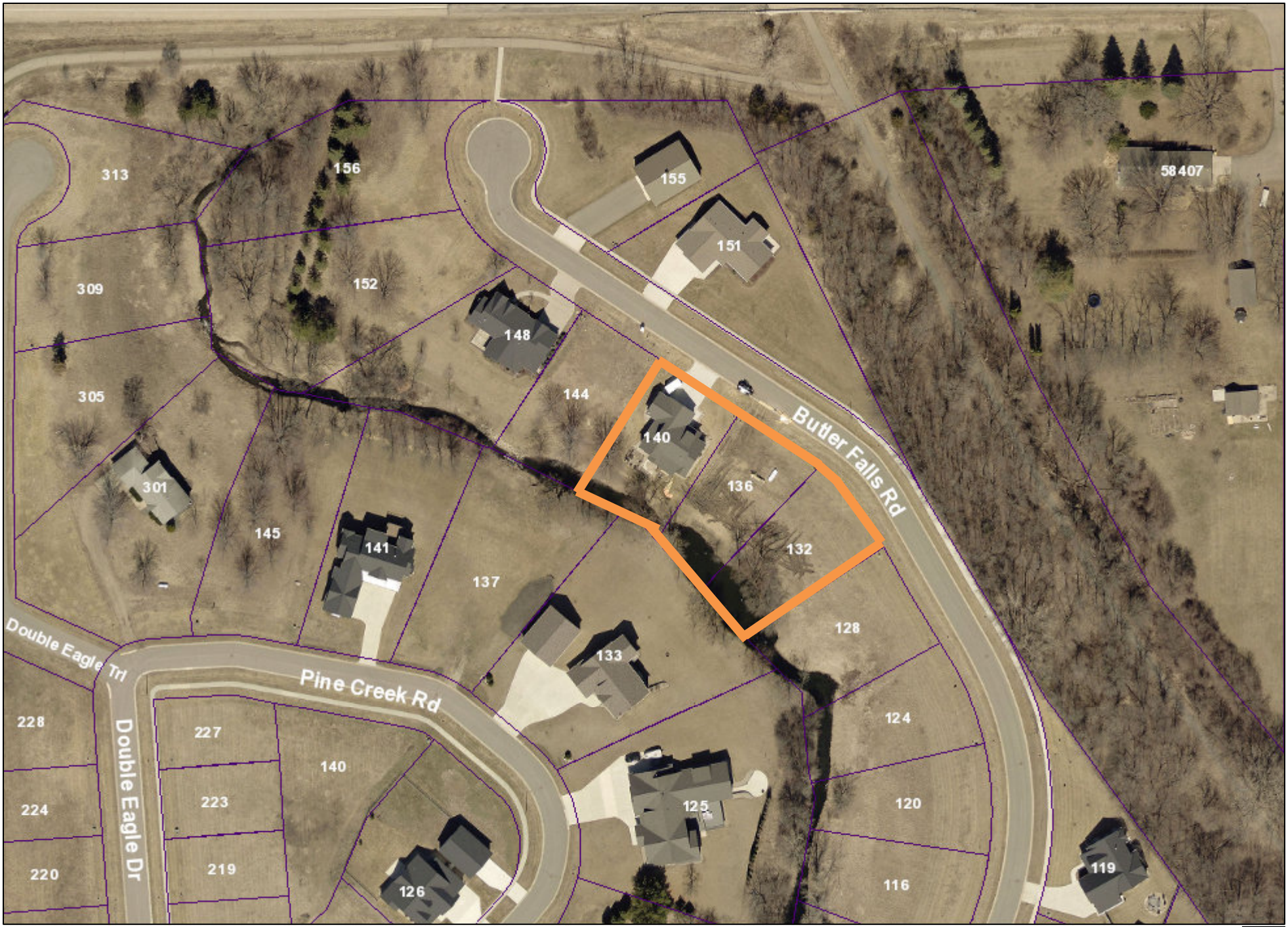
Date: June 2026

Author:

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N

Aerial Map

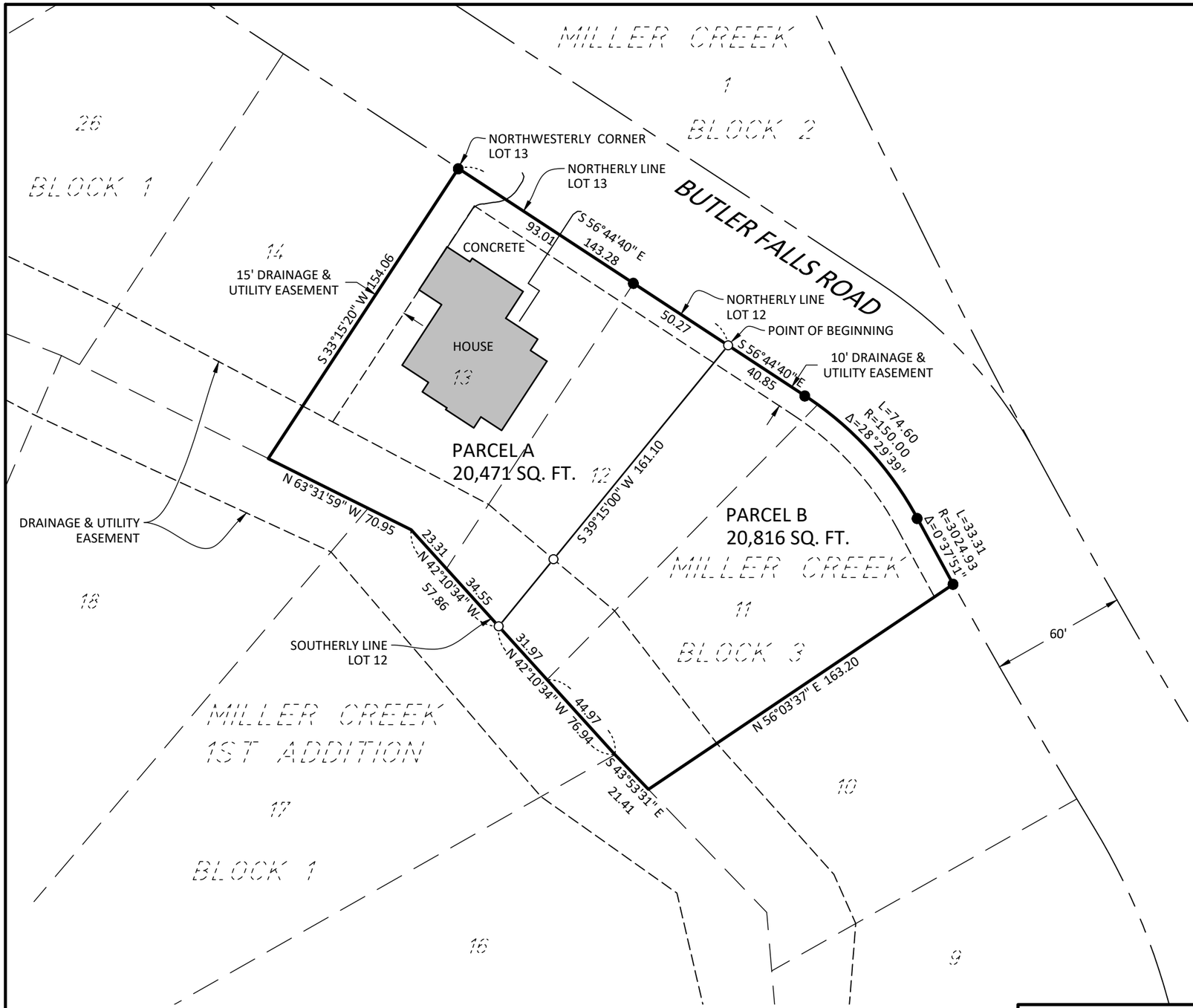


Date: June 2026

Author:

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N



LEGEND

- ○ 3/4" IRON PIPE MONUMENT SET MARKED BY LIC. NO. 46564
- ● MONUMENT FOUND

DESCRIPTION

Parcel A

Lot 13 and that part of Lot 12 which lies northwesterly of the following described line:

Commencing at the northwesterly corner of Lot 13, Block 1, Miller Creek; thence South 56 degrees 44 minutes 40 seconds East, along the northerly line of said Lot 13 and Lot 12, a distance of 143.28 feet to the point of beginning; thence South 39 degrees 15 minutes 00 seconds East, a distance of 161.10 feet to a point on the southwesterly line of Lot 12 and there terminating.

Parcel B

Lot 11 and that part of Lot 12 which lies southeasterly of the following described line:

Commencing at the northwesterly corner of Lot 13, Block 1, Miller Creek; thence South 56 degrees 44 minutes 40 seconds East, along the northerly line of said Lot 13 and Lot 12, a distance of 143.28 feet to the point of beginning; thence South 39 degrees 15 minutes 00 seconds East, a distance of 161.10 feet to a point on the southwesterly line of Lot 12 and there terminating.

CITY ACKNOWLEDGMENT

This Lot Split has been reviewed and approved pursuant to Section 11.14 of the Mankato City Code by the City Engineer and the Planning Director.

Signed this ____ day of _____ 2026.

_____
Mankato City Engineer

Signed this ____ day of _____ 2026.

_____
Mankato Planning Director

0 50
SCALE IN FEET

SURVEYOR'S CERTIFICATION

I hereby certify that this survey, plan, or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Michael M. Eichers
License Number 46564

6/2/2026
Date

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ADMINISTRATIVE LOT SPLIT
MANKATO, MINNESOTA

BOLTON & MENK
1960 Premier Drive
Mankato, MN 56001
Phone: (507) 625-4171

LOTS 11, 12 & 13, BLOCK 3, MILLER CREEK, BLUE EARTH COUNTY, MINNESOTA

FOR: RHENRY CONSTRUCTION

Meeting Date: 06/09/2026

Title

*****SITE PLAN AND TRAFFIC ADVISORY COMMITTEE REVIEW ONLY. Request of Mankato Motorsports for a review of a parking lot expansion at 140 St. Andrews Drive.**

Applicant

The applicant is Tony Steffensmeier of Mankato Motorsports.

Request

The applicant is requesting a Site Plan and Traffic Advisory and Committee Review for a parking lot expansion located at 140 St. Andrews Dr. The parking lot is approximately 46,000sf and will connect to existing infrastructure.

Location

The property is located at 140 St. Andrews Dr.

Existing Land Use

The property is currently vacant but has been utilized to store vehicle inventory.

Zoning

The property is zoned B-3, General Business District.

Public Utilities

The property owner will need to tie it into public infrastructure. Connections can not be made across property lines.

Site Plan Review Comments

Below you will find the Site Plan and Traffic Advisory Committee comments from the July 8, 2025 meeting.

Parking lot expansion located at 140 St. Andrews Dr.

a. The applicant shall provide clarity on what is intended to be included in this proposal and provide updated plans to reflect as much. If the plans include a building addition, additional review and approval will likely be required.
b. The applicant shall provide landscaping plans that meet City of Mankato code.

- Perimeter landscaping for parking lot screening in accordance with the gateway standards and perimeter landscaping standards.
    - Code reference: *Screening of parking areas. Wherever a surface parking area faces a street frontage, the parking area shall be screened from the street with a wall fence, or hedge to a minimum of four feet nor more than eight feet in height, nor be less than 80 percent opaque. This screening must be accomplished in the setback area between ten feet and 15 feet from the right-of-way line.*
    - *Every off-street parking lot containing four or more parking stalls shall be buffered and screened by perimeter landscaping consisting of an area at least three feet or greater in height as required in the*

yard and setback standards of each zoning district. The required perimeter landscaping area shall be measured from the back curb and excludes any parking space overhang area. The perimeter landscaping shall consist of a combination of ground cover, shade trees or evergreen trees, shrubs, and appropriate screening devices such as decorative walls, fences, or berms. Shade trees shall be provided at a rate of one tree for every 50 linear feet of perimeter length or fraction thereof. Evergreen trees shall be provided at a rate of one tree and shrub for every 25 linear feet of perimeter length of fraction thereof. Evergreen trees shall be maintained at a height of not less than six feet. Subject to approval by the zoning administrator, ornamental trees and shrubs may be substituted for shade trees and evergreens. Areas not planted with shrubs, trees, or other appropriate screening devices shall be maintained with living ground cover, or planting beds with bark or rock mulch.

- Interior landscaping is based on parking stall count.
  - *Code reference: Every off-street parking lot providing 50 spaces or more shall provide interior landscaping. Interior landscaping shall consist of planting islands with a minimum area of 60 square feet and a minimum width of six feet, measured from the back of curb to back of curb. The interior landscaping shall constitute at least five percent of the area of the parking lot. Area devoted to perimeter landscaping shall not be considered as any part of interior landscaping. Where more than one planting island is provided, such islands shall be appropriately spaced throughout the parking lot. As part of site plan review, pursuant to article X, division 10, of this chapter, interior landscaping may be required for off-street parking lots containing less than 50 spaces.*

c. The applicant shall provide a photometric plan and exterior light fixture cut sheets that meets Mankato City Code if new exterior lighting will be installed.
d. The applicant shall install curbing (6”) and stripping according to the Mankato City Code.
e. The applicant shall provide a snow removal/storage plan.
f. The applicant shall be advised that the stormwater usage calculation will change from 176 to 248.
g. The applicant shall be advised that the street lighting calculation will change from 144 to 317.
h. The applicant shall note that utility connections must come from the public infrastructure.
a. The applicant shall be aware that permanent stormwater management is accounted for with a regional pond, but a stormwater memo is requested for documentation of site hydrology.
j. The applicant shall be aware that any new signage will require a separate sign permit.
k. The applicant shall clarify the purpose of the area with a finished floor elevation, and plans shall be updated accordingly to reflect the intended permitting work.
ax. The proposed construction/activity occurs over the property line between the two parcels. Will the applicant be combining the two parcels to create a zoning lot?

Review

The applicant is seeking a committee review for a parking lot addition.

Plans submitted show the addition being located to the west of their current property location. The parking lot will be approximately 46,000 sf.

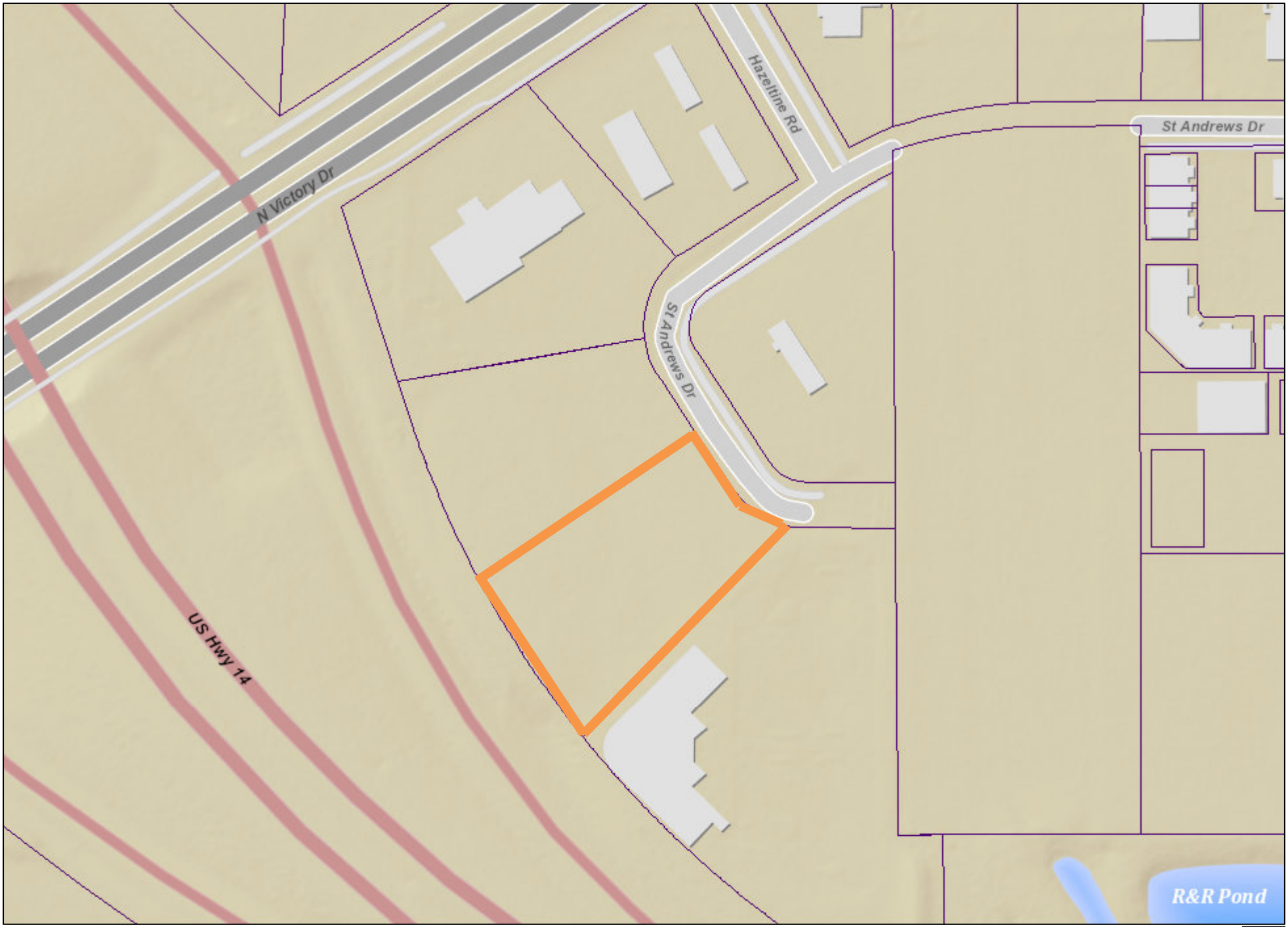
Attachments

General Location Map

Aerial Plan

Site Plan

City of Mankato



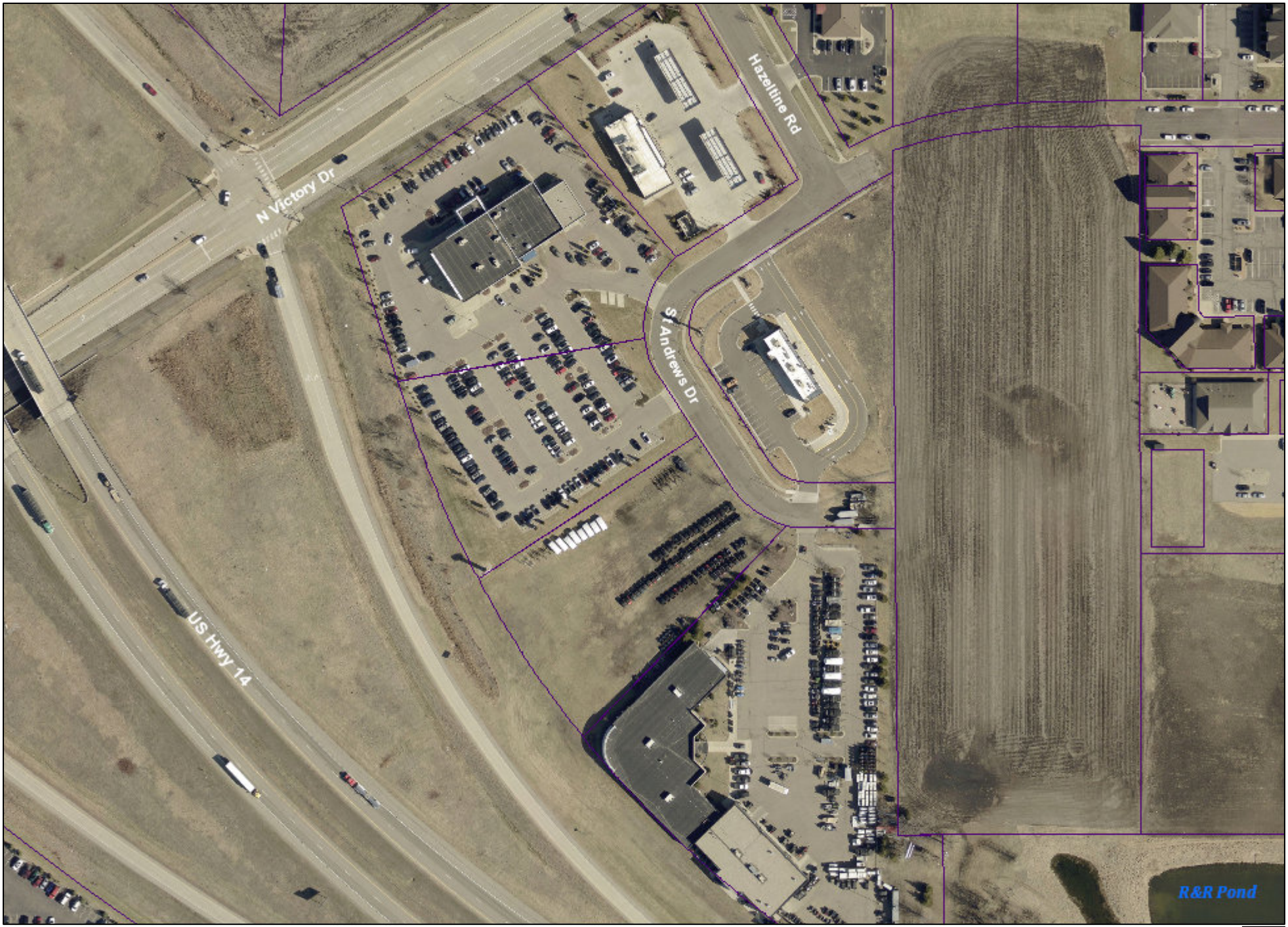
Date: July 2025

Author:

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City of Mankato

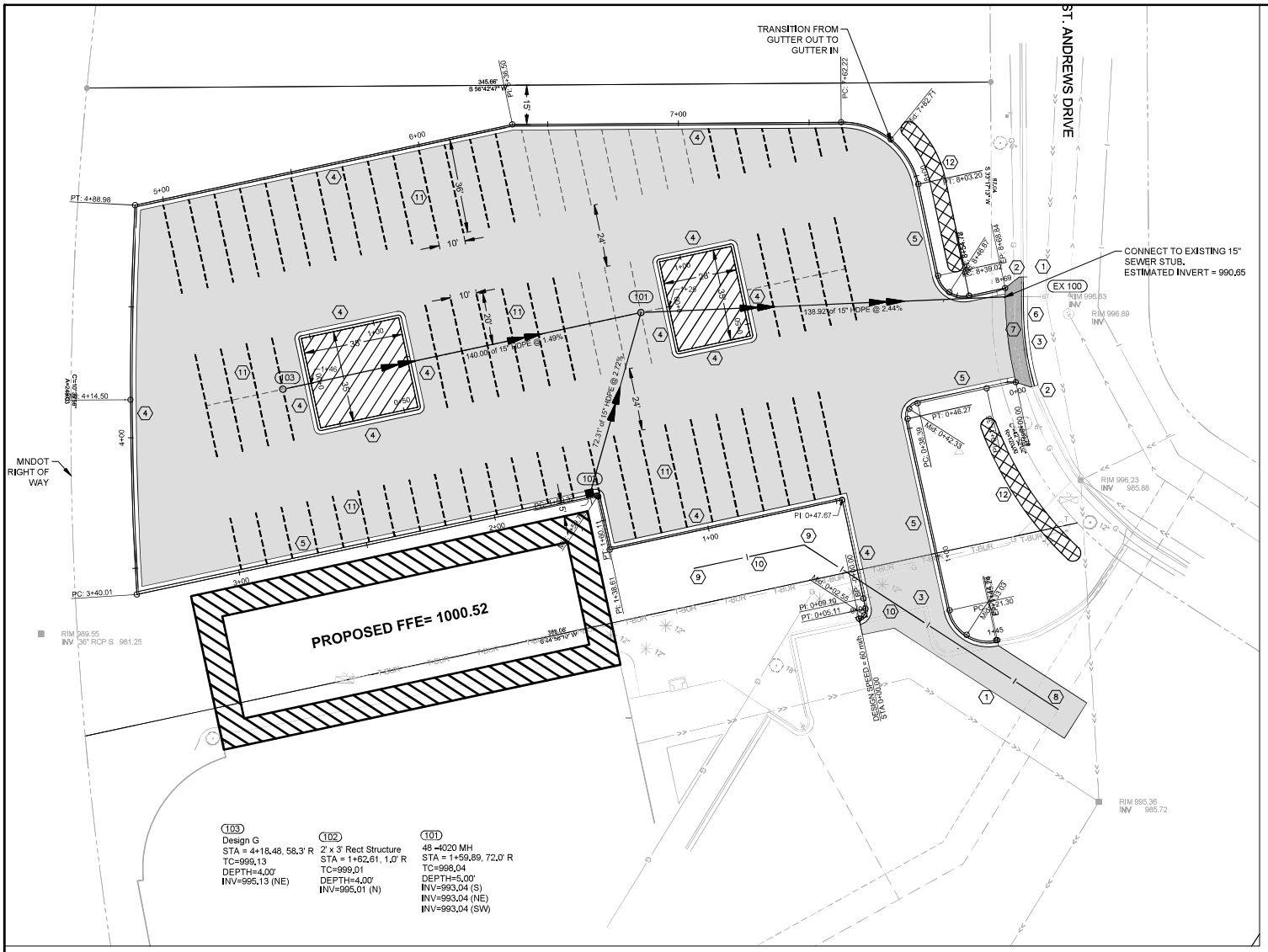


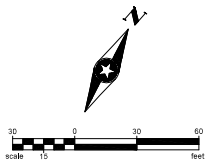
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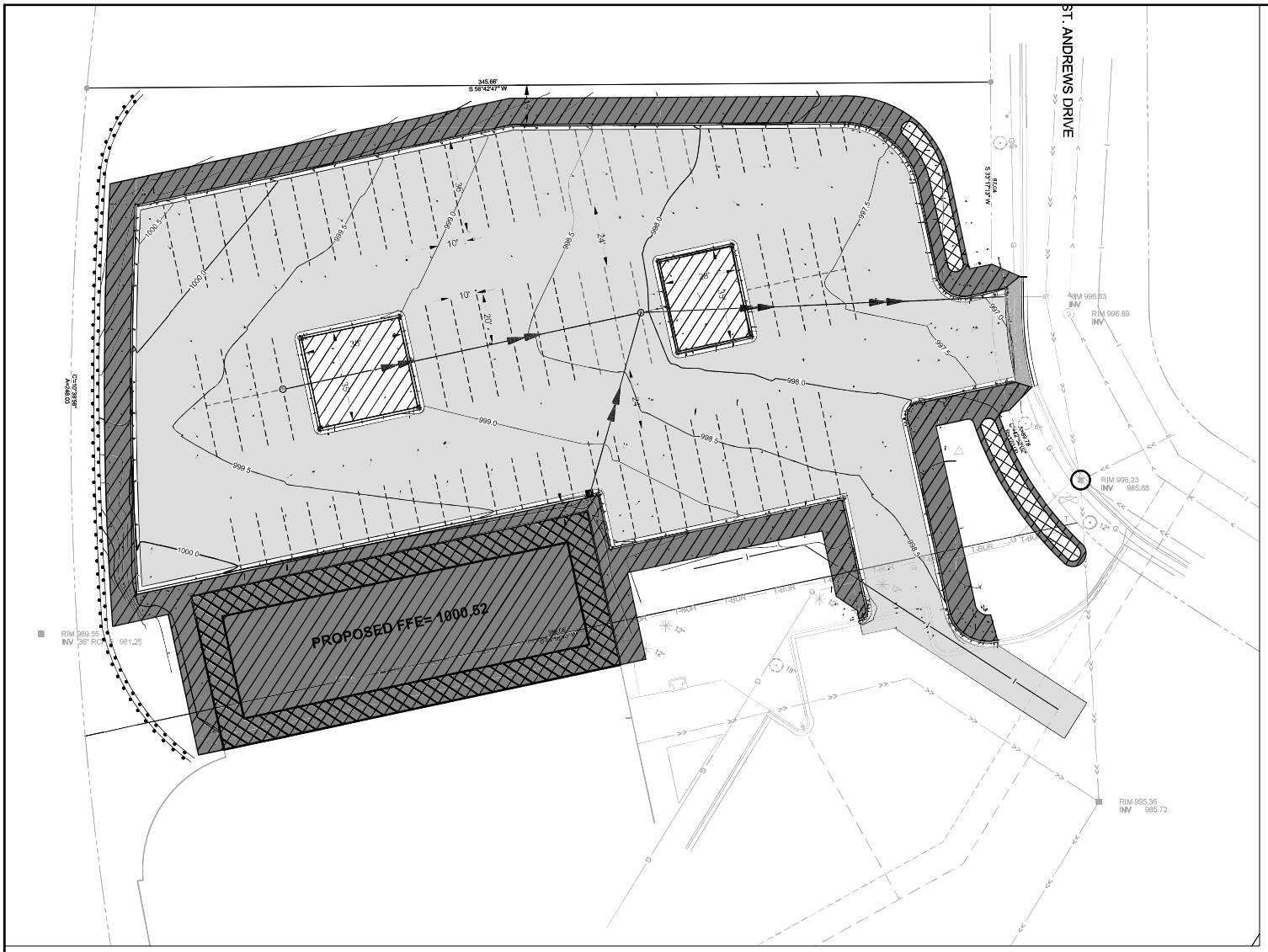




1. SAW CUT BITUMINOUS PAVEMENT
2. SAW CUT CONCRETE CURB AND GUTTER
3. REMOVE CONCRETE CURB AND GUTTER
4. CONSTRUCT D418 CURB AND GUTTER (GUTTER OUT)
5. CONSTRUCT D418 CURB AND GUTTER (GUTTER IN)
6. CONSTRUCT KNOCK DOWN B618 CURB AND GUTTER
7. CONSTRUCT 7" CONCRETE DRIVEWAY PAVEMENT
8. CONNECT TO EX. WATER MAIN
9. F&I 6" 45° BEND OR 6" CAP.
10. F&I 6" PVC (C900) WATER MAIN PIPE. (DEPTH = 7.5')
11. CONSTRUCT 4" WHITE STRIPING
12. CONSTRUCT 6' WIDE LANDSCAPING BERM WITH VEGETATIVE SCREENING, MINIMUM 4' HIGH.

Steve 10/30/2024 8:34 AM rscott Plot 4/1/2025 10:15 AM x:\KOM\MANMO\180664\5-final\dsgn\51-drawings\10-Civil\cad\dwg\sheet\1 CONSTRUCTION PLAN.dwg

SEH Project	MANMO 180664	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date	I HEARBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	MANKATO MOTORSPORTS PARKING LOT ADDITION	CONSTRUCTION PLAN	1
Drawn By	--	# #	#	# #	#						
Designed By	--	# #	#	# #	#			DOUGLAS J SCOTT, PE	MANKATO, MN		of 5
Checked By	--	# #	#	# #	#			DATE 06/05/2025 LICENSE NO. 57162			



30 0 30 60
scale 15 feet

TURF ESTABLISHMENT #1 (SEED MIX - SOUTHERN BOULEVARD)

TURF ESTABLISHMENT #2 (SEED MIX - RESIDENTIAL TURFGRASS)

INLET PROTECTION

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SEH Project	MANMO 180664	Rev.#		Revision Issue Description	Date	Rev.#		Revision Issue Description	Date		
Drawn By	--	#	#		#	#	#		#		
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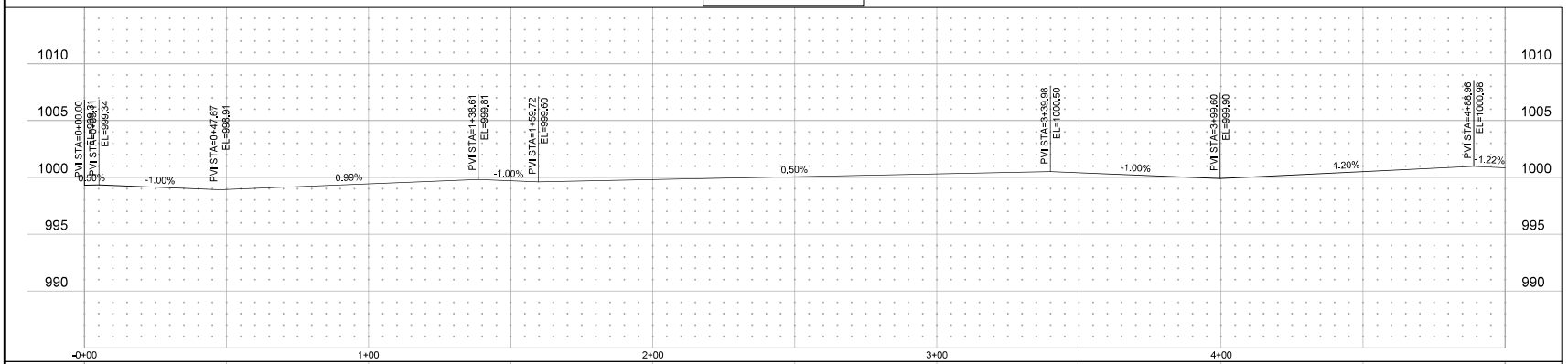
DOUGLAS J SCOTT, PE
DATE 06/05/2025 LICENSE NO. 57162

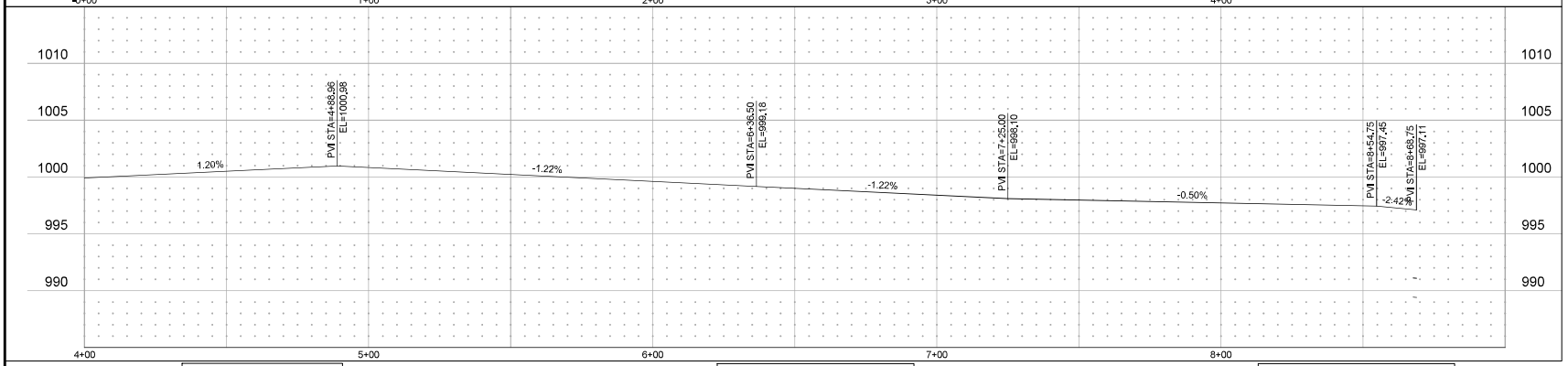
MANKATO MOTORSPORTS PARKING LOT ADDITION

MANKATO, MN

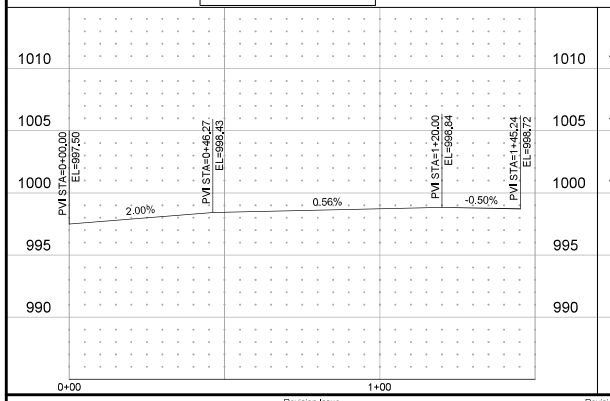
GRADING PLAN

ALIGNMENT #1

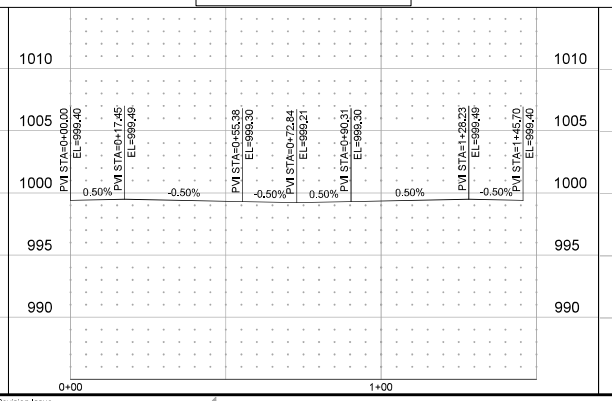




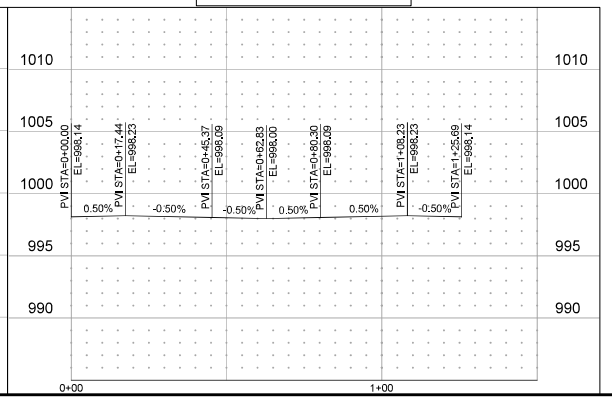
ALIGNMENT #2

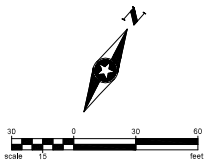


ISLAND #1 - BOC



ISLAND #2 - BOC





SEH Project	MANMO 180664	Rev.#		Revision Issue Description	Date	Rev.#		Revision Issue Description	Date	I HEARBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	MANKATO MOTORSPORTS PARKING LOT ADDITION
Drawn By	--	#	#		#	#	#		#		MANKATO, MN
Designed By	--	#	#		#	#	#		#	DOUGLAS J SCOTT, PE	**CONSTRUCTION PLAN**
Checked By	--	#	#		#	#	#		#	DATE 06/05/2025 LICENSE NO. 57162	

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SWPPP SUMMARY/OVERVIEW:
THIS STORM WATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN DEVELOPED TO ADDRESS THE REQUIREMENTS OF NPDES PERMIT MN R100001. THIS SWPPP INCLUDES A COMBINATION OF NARRATIVE AND PLAN SHEETS THAT DESCRIBE THE TEMPORARY AND PERMANENT STORM WATER MANAGEMENT PLAN FOR THE PROJECT.

PROJECT INFORMATION:

LOCATION:	MANKATO MOTORSPORTS, MANKATO MN.
LATITUDE/LONGITUDE:	44.178688, -93.962963
PROJECT DESCRIPTION:	PARKING LOT ADDITION
SOIL DISTURBING ACTIVITIES:	WATER SERVICE, STORM SEWER, PARKING LOT CONST.

CONTACTS:

OWNER:	MANKATO MOTORSPORTS
CONTACT:	TONY STEFFENSMEIER
ADDRESS:	130 ST. ANDREWS DR., MANKATO, MN 56001
PHONE:	507-304-6767
EMAIL:	TONYS@MANKATOMOTORSPORTS.COM

ENGINEER:	SHORT ELLIOTT HENDRICKSON INC. (SEH)
CONTACT:	DOUG SCOTT, PE
PHONE:	507-237-8384
EMAIL:	DSCOTT@SEHINC.COM
PROJECT NO.	MANMO 180664

KNOWLEDGEABLE PERSON/CHAIN OF RESPONSIBILITY
THE CONTRACTOR SHALL IDENTIFY A PERSON KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS WHO WILL COORDINATE WITH ALL CONTRACTORS, SUBCONTRACTORS, AND OPERATORS ON-SITE TO OVERSEE THE IMPLEMENTATION OF THE SWPPP.

CONTRACTOR	X
CONTACT	X
PHONE	X
EMAIL	X

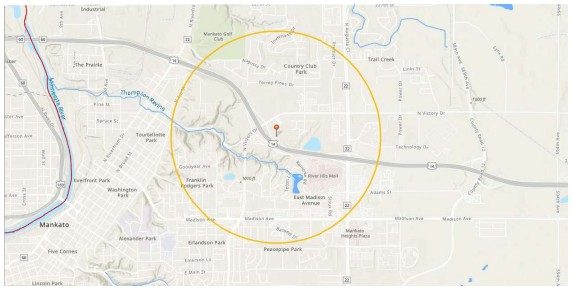
THE CONTRACTOR SHALL ESTABLISH A CHAIN OF RESPONSIBILITY FOR ALL CONTRACTORS AND SUB-CONTRACTORS ON SITE TO ENSURE THE SWPPP IS BEING PROPERLY IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL PROVIDE THE CHAIN OF RESPONSIBILITY TO THE OWNER AND ATTACH TO THE SWPPP PRIOR TO ANY CONSTRUCTION ACTIVITY.

GENERAL SWPPP RESPONSIBILITIES:
THE CONTRACTOR SHALL KEEP THE SWPPP ON-SITE, OR ELECTRONICALLY AVAILABLE ON SITE, DURING NORMAL WORKING HOURS WITH PERSONNEL WHO HAVE OPERATIONAL CONTROL OVER THE APPLICABLE PORTION OF THE SITE, INCLUDING ALL CHANGES TO THE SWPPP, INSPECTIONS, AND MAINTENANCE RECORDS.

THE SWPPP WILL BE AMENDED AS NEEDED AND/OR AS REQUIRED BY PROVISIONS OF THE PERMIT. PERMITTEES MUST AMEND THE SWPPP TO INCLUDE ADDITIONAL OR MODIFIED BMPS AS NECESSARY TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS SITUATIONS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS HAVING A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER. AMENDMENTS WILL BE APPROVED BY BOTH THE OWNER AND CONTRACTOR AND WILL BE ATTACHED OR OTHERWISE INCLUDED WITH THE SWPPP DOCUMENTS. THE SWPPP AMENDMENTS SHALL BE INITIATED, FACILITATED, AND PROCESSED BY THE CONTRACTOR.

PERMITTEES MUST AMEND THE SWPPP WITHIN 7 DAYS TO INCLUDE ADDITIONAL OR MODIFIED BMPS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS HAVING A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER.

PERMITTEES MUST AMEND THE SWPPP WITHIN 7 DAYS TO INCLUDE ADDITIONAL OR MODIFIED BMPS AS NECESSARY TO CORRECT PROBLEMS IDENTIFIES OR ADDRESS SITUATIONS WHENEVER INSPECTIONS OR INVESTIGATIONS BY THE SITE OWNER OR OPERATOR, USEPA OR MPCA OFFICIALS INDICATE THE SWPPP IS NOT EFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER OR THE DISCHARGES ARE CAUSING WATER QUALITY STANDARD EXCEEDANCES (E.G., NUISANCE CONDITIONS AS DEFINED IN MINN. R. 7050.0210, SUBP.2) OR THE SWPPP IS NOT CONSISTENT WITH THE OBJECTIVES OF A USEPA AAPROVED TMDL.



ALL SWPPP CHANGES MUST BE DONE BY AN INDIVIDUAL TRAINED IN ACCORDANCE WITH SECTION 21.2. CHANGES INVOLVING THE USE OF A LESS STRINGENT BMP MUST INCLUDE A JUSTIFICATION DESCRIBING HOW THE REPLACEMENT BMP IS EFFECTIVE FOR THE SITE CHARACTERISTICS.

BOTH THE OWNER AND CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER TERMINATION AND/OR TRANSFER OF THE PERMIT.

LONG TERM OPERATION AND MAINTENANCE
THE OWNER WILL BE RESPONSIBLE OR WILL OTHERWISE IDENTIFY WHO WILL BE RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT SYSTEM(S).

THE OWNER WILL PREPARE AND IMPLEMENT A PERMANENT STORMWATER TREATMENT SYSTEM(S) MAINTENANCE PLAN.

TRAINING DOCUMENTATION:

PREPARER/DESIGNER OF SWPPP:	DOUG SCOTT, PE
EMPLOYER:	SEH INC.
DATE OBTAINED / REFRESHED	MAY 2024
INSTRUCTOR(S)/ENTITY PROVIDING TRAINING:	UNIVERSITY OF MINNESOTA

CONTENT OF TRAINING AVAILABLE UPON REQUEST.

THE CONTRACTOR (OPERATOR) SHALL ADD TO THE SWPPP TRAINING RECORDS FOR THE FOLLOWING PERSONNEL:

-INDIVIDUALS OVERSEEING THE IMPLEMENTATION OF, REVISING, AND AMENDING THE SWPPP
-INDIVIDUALS PERFORMING INSPECTIONS
-INDIVIDUALS PERFORMING OR SUPERVISING THE INSTALLATION, MAINTENANCE AND REPAIR OF BMPS

TRAINING MUST RELATE TO THE INDIVIDUAL'S JOB DUTIES AND RESPONSIBILITIES AND SHALL INCLUDE:

1) DATES OF TRAINING
2) NAME OF INSTRUCTORS
3) CONTENT AND ENTITY PROVIDING TRAINING

THE CONTRACTOR SHALL ENSURE THAT THE INDIVIDUALS ARE TRAINED BY LOCAL, STATE, FEDERAL AGENCIES, PROFESSIONAL ORGANIZATIONS, OR OTHER ENTITIES WITH EXPERTISE IN EROSION PREVENTION, SEDIMENT CONTROL, PERMANENT STORMWATER MANAGEMENT AND THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER PERMIT.

PROJECT SUMMARY:

TOTAL DISTURBED AREA:	1.30 AC
PRE-CONSTRUCTION IMPERVIOUS AREA:	0.03 AC
POST-CONSTRUCTION IMPERVIOUS AREA:	1.06 AC
IMPERVIOUS AREA ADDED:	1.03 AC

RECEIVING WATER(S) WITHIN ONE MILE FROM PROJECT BOUNDARIES:
(http://pca-gis02.pca.state.mn.us/CSW/index.html)

ID	NAME	TYPE	SPECIAL WATER?	IMPAIRED WATER?	CONSTRUCTION RELATED IMPAIRMENT OR SPECIAL WATER CLASSIFICATION	TMDL
NA	THOMPSON	POND	N	N	NONE	NONE
ADDITIONAL BMPS AND/OR ACTIONS REQUIRED:						
SEE SECTION 23 OF THE PERMIT AND APPLICABLE TMDL WLA'S						

WATERBODY	NO WORK DURING
LAKES	APRIL 1 - JUNE 30
NON-TROUT STREAMS	MARCH 15 - JUNE 15
TROUT STREAMS	SEPTEMBER 1 - APRIL 1

SEE DNR PERMIT FOR MORE INFORMATION (DELETE THIS SECTION IS NOT APPLICABLE. WORK MUST BE PHYSICALLY WITHIN WATER TO APPLY).

SITE SOIL INFORMATION: (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)
(SOIL INFORMATION PROVIDED IS FOR NPDES PERMIT INFORMATION ONLY. SOIL INFORMATION WAS OBTAINED FROM THE USGS WEBSITE. THE CONTRACTOR SHALL NOT RELY ON THIS SOIL INFORMATION FOR CONSTRUCTION PURPOSES.)

SOIL NAME:	HYDROLOGIC CLASSIFICATION:
CORDOVA CLAY (65%)	C/D
STORDEN COMPLEX, VERY STEEP (33%)	B

RELATED REVIEWS & PERMITS:
ENVIRONMENTAL, WETLAND, ENDANGERED OR THREATENED SPECIES, ARCHEOLOGICAL, LOCAL, STATE, AND/OF FEDERAL REVIEWS/PERMITS:
COVERAGE UNDER THIS PERMIT CANNOT BE ISSUED UNTIL THE REQUIREMENTS FOR WETLAND PERMITS, DECISIONS, OTHER DETERMINATIONS, OR THE MITIGATIVE SEQUENCE REQUIRED IN SECTION 22 OF THE NPDES PERMIT MNR100001 HAVE BEEN FINALIZED AND DOCUMENTED.

AGENCY:	TYPE OF PERMIT:
X	X
X	X

IMPLEMENTATION SEQUENCE:
THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING SEQUENCE.
THE ENGINEER MAY APPROVE ADJUSTMENTS TO THE SEQUENCE AS NEEDED.

1.	INSTALL ROCK CONSTRUCTION ENTRANCE(S)
2.	INSTALL PERIMETER CONTROL AND STABILIZE DOWN GRADIENT BOUNDARIES
3.	INSTALL INLET PROTECTION ON EXISTING CATCH BASINS
4.	COMPLETE SITE GRADING
5.	INSTALL UTILITIES, STORM SEWER, INLET PROTECTION, CURB & GUTTER, PAVING
6.	COMPLETE FINAL GRADING AND STABILIZE DISTURBED AREAS
7.	AFTER CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ACCUMULATED SEDIMENT, REMOVE BMPS, AND RE-STABILIZE ANY AREAS DISTURBED BY THEIR REMOVAL.
8.	INSTALL FILTRATION MEDIA

PROJECT SPECIFIC NOTES:
XX

THE FOLLOWING DOCUMENTS ARE CONSIDERED PART OF THE SWPPP:
PLAN AND PROFILE PLAN SHEETS: 1
EROSION AND SEDIMENT CONTROL PLAN SHEETS: 2
TURF ESTABLISHMENT PLAN SHEETS: 2
STORM SEWER PLAN & PROFILE PLAN SHEETS: 3
GRADING PLAN SHEETS: 2
DETAIL PLAN SHEETS: NA
SWPPP NOTE AND DETAIL SHEETS: 4

TEMPORARY BMP DESIGN FACTORS:
EROSION PREVENTION AND SEDIMENT CONTROL BMP'S MUST BE DESIGNED TO ACCOUNT FOR:

THE EXPECTED AMOUNT, FREQUENCY, INTENSITY, AND DURATION OF PRECIPITATION

THE NATURE OF STORMWATER RUNOFF AND RON-ON AT THE SITE, INCLUDING FACTORS SUCH AS EXPECTED FLOW FROM IMPERVIOUS SURFACES, SLOPES, AND SITE DRAINAGE FEATURES

THE STORMWATER VOLUME, VELOCITY, AND PEAK FLOW RATES TO MINIMIZE DISCHARGE OF POLLUTANTS IN STORMWATER AND TO MINIMIZE CHANNEL AND STREAMBANK EROSION AND SCOUR IN THE IMMEDIATE VICINITY OF DISCHARGE POINTS

THE RANGE OF SOIL PARTICLE SIZES EXPECTED TO BE PRESENT.

TEMPORARY SEDIMENT BASINS:
THE CONTRACTOR SHALL INSTALL TEMPORARY SEDIMENT BASIN(S) INDICATED ON PLANS AND REQUIRED BY THE NPDES CONSTRUCTION PERMIT.

THE TEMPORARY BASIN MUST PROVIDE LIVE STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A TWO (2)-YEAR, 24-HOUR STORM FROM EACH ACRE DRAINED TO THE BASIN OR 1,800 CUBIC FEET OF LIVE STORAGE PER ACRE DRAINED, WHICHEVER IS GREATER.

TEMPORARY SEDIMENT BASIN OUTLETS SHALL BE CONSTRUCTED TO PREVENT SHORT-CIRCUITING AND PREVENT THE DISCHARGE OF FLOATING DEBRIS.

OUTLET STRUCTURES MUST BE DESIGNED TO WITHDRAW WATER FROM THE SURFACE TO MINIMIZE THE DISCHARGE OF POLLUTANTS.

BASINS MUST INCLUDE A STABILIZED EMERGENCY OVERFLOW, WITHDRAW WATER FROM THE SURFACE, AND PROVIDE ENERGY DISSIPATION AT THE OUTLET.

TEMPORARY SEDIMENT BASINS SHALL BE PROVIDED WITH ENERGY DISSIPATION AT ANY BASIN OUTLET TO PREVENT SOIL EROSION.

SEDIMENT BASINS MUST BE SITUATED OUTSIDE OF SURFACE WATERS AND ANY BUFFER ZONES, AND MUST BE DESIGNED TO AVOID THE DRAINING WATER FROM WETLANDS.

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SEH Project	MANMO 180664	Rev.#		Revision Issue Description	Date	Rev.#		Revision Issue Description	Date	I HEARBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	MANKATO MOTORSPORTS PARKING LOT ADDITION	STORMWATER POLLUTION AND PREVENTION PLAN	4
Drawn By	##	##	##		##	##	##		##		MANKATO, MN		of 5
Designed By	##	##	##		##	##	##		##	DOUGLAS J SCOTT, PE			
Checked By	##	##	##		##	##	##		##	DATE 06/05/2025 LICENSE NO. 57162			

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EROSION PREVENTION MEASURES AND TIMING:
THE CONTRACTOR IS RESPONSIBLE FOR ALL EROSION PREVENTION MEASURES FOR THE PROJECT.

EROSION PREVENTION MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL EROSION PREVENTION MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA AND TO MINIMIZE THE DISCHARGE OF POLLUTANTS IN STORMWATER FROM CONSTRUCTION ACTIVITIES.

THE CONTRACTOR SHALL PLAN AND IMPLEMENT APPROPRIATE CONSTRUCTION PRACTICES AND CONSTRUCTION PHASING TO MINIMIZE EROSION AND RETAIN VEGETATION WHENEVER POSSIBLE.

THE PERMITTEE SHALL DELINEATE AREAS NOT TO BE DISTURBED. PERMITTEE(S) MUST MINIMIZE THE NEED FOR DISTURBANCE OF PORTIONS OF THE PROJECT WITH STEEP SLOPES. WHEN STEEP SLOPES MUST BE DISTURBED, PERMITTEES MUST USE TECHNIQUES SUCH AS PHASING AND STABILIZATION PRACTICES DESIGNED FOR STEEP SLOPES.

CONTRACTOR MUST PHASE AND INCORPORATE STORMWATER MANAGEMENT PRINCIPLES AS THE CONSTRUCTION PROGRESSES. UNLESS INFEASIBLE, TEMPORARY OR PERMANENT WET SEDIMENTATION BASINS (WHEN REQUIRED, SEE SECTION 14 AND 15) SHOULD BE CONSTRUCTED AS A FIRST STEP IN THE PROCESS AND STORMWATER ROUTED TO THESE.

CONTRACTOR MUST NOT EXCAVATE INFILTRATION SYSTEMS TO FINAL GRADE, OR WITHIN THREE (3) FEET OF FINAL GRADE, UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN CONTRUCTED AND FULL STABILIZED UNLESS THEY PROVIDE RIGOROUS ERSION PREVENTION AND SEDIMENT CONTROLS (E.G. DIVERSION BERMS) TO KEEP SEDIMENT AND RUNOFF COMPLETELY AWAY FROM THE INFILTRATION AREA. CONTRACTOR MUST NOT INSTALL FOLTER MEDIA UNTIL THEY CONSTRUCT AND FULLY STABILIZE THE CONTRIBUTING DRAINAGE AREA UNLESS THEY PROVIDE REGOROUS EROSION PREVENTION AND SEDIMENT CONTROLS(E.G. DIVERSION BERMS) TO KEEP SEDIMENT AND RUNOFF COMPLETELY AWAY FROM THE FILTRATION AREA.

THE CONTRACTOR SHALL STABILIZE OF ALL EXPOSED SOILS IMMEDIATELY TO LIMIT SOIL EROSION. IN NO CASE SHALL ANY EXPOSED AREAS, INCLUDING STOCK PILES, HAVE EXPOSED SOILS FOR MORE THAN 7 DAYS WITHOUT PROVIDING TEMPORARY OR PERMANENT STABILIZATION. STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY HAS CEASED. TEMPORARY STOCKPILES WITHOUT SIGNIFICANT CLAY, SILT, OR ORGANIC COMPONENTS DO NOT REQUIRE STABILIZATION.

DRAINAGE PATHS, DITCHES, AND/OR SWALES SHALL HAVE TEMPORARY OR PERMANENT STABILIZATION WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER OR 24 HOURS AFTER CONSTRUCTION ACTIVITY IN THE DITCH/SWALE HAS TEMPORARILY OR PERMANENTLY CEASED.

THE CONTRACTOR SHALL COMPLETE THE STABILIZATION OF ALL EXPOSED SOILS WITHIN 24 HOURS THAT LIE WITHIN 200 FEET OF PUBLIC WATERS PROMULGATED "WORK IN WATER RESTRICTIONS" BY THE MN DNR DURING SPECIFIED FISH SPAWNING TIMES.

THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL BMPS AND VELOCITY DISSIPATION DEVICES ALONG CONSTRUCTED STORMWATER CONVEYANCE CHANNELS AND OUTLETS.

PERMITTEES MUST STABILIZE THE NORMAL WETTED PERIMETER OF THE LAST 200 LINEAR FEET OF TEMPORARY OR PERMANENT DRAINAGE DITCHES OR SWALES THAT DRAIN WATER FROM THE SITE WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE. PERMITTEES MUST COMPLETE STABILIZATION OF REMAINING PORTIONS OF TEMPORARY OR PERMANENT DITCHES OR SWALES WITHIN 14 CALENDAR DAYS (7 DAYS FOR SITES DISCHARGING TO SPECIAL OR IMPAIRED WATERS, SEE SECTION 24) AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE AND CONSTRUCTION IN THAT PORTION OF THE DITCH TEMPORARILY OR PERMANENTLY CEASES.

THE CONTRACTOR SHALL NOT UTILIZE HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES AS A FORM OF STABILIZATION FOR TEMPORARY OR PERMANENT DRAINAGE DITCHES OR SWALE SECTION WITH A CONTINUOUS SLOPE OF GREATER THAN 2 PERCENT.

THE CONTRACTOR SHALL ENSURE PIPE OUTLETS HAVE TEMPORARY OR PERMANENT ENERGY DISSIPATION WITH IN 24 HOURS OF CONNECTION TO A SURFACE WATER.

THE CONTRACTOR SHALL DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS TO INCREASE SEDIMENT REMOVAL AND MAXIMIZE STORMWATER INFILTRATION. VELOCITY DISSIPATION DEVICES MUST BE USED TO PREVENT EROSION WHEN DIRECTING STORMWATER TO VEGETATED AREAS.

SEDIMENT CONTROL MEASURES AND TIMING:
THE CONTRACTOR IS RESPONSIBLE FOR ALL SEDIMENT CONTROL MEASURES FOR THE PROJECT.

SEDIMENT CONTROL MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL SEDIMENT CONTROL MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL MEASURES ARE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE MEASURES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED.

A FLOATING SILT CURTAIN PLACED IN THE WATER IS NOT A SEDIMENT CONTROL BMP EXCEPT WHEN WORKING ON A SHORELINE OR BELOW THE WATERLINE. IMMEDIATELY AFTER THE CONSTRUCTION ACTIVITY IS COMPLETE, PERMITTEE(S) MUST INSTALL AN UPLAND PERIMETER CONTROL PRACTICE IF EXPOSED SOILS STILL DRAIN TO A SURFACE WATER.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL PRACTICES REMOVED OR ADJUSTED FOR SHORT-TERM ACTIVITIES BE RE-INSTALLED IMMEDIATELY AFTER THE SHORT-TERM ACTIVITY HAS BEEN COMPLETED. SEDIMENT CONTROL PRACTICES MUST BE REINSTALLED BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE SHORT-TERM ACTIVITY IS NOT COMPLETE.

THE CONTRACTOR SHALL ENSURE STORM DRAIN INLETS ARE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED.

THE CONTRACTOR MUST PROVIDE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROL AT THE BASE OF THE STOCKPILES ON THE DOWNGRADIENT PERIMETER PRIOR TO THE INITIATION OF STOCKPILING. SEDIMENT CONTROLS MUST BE MANAGED IN ACCORDANCE WITH SECTION 9.6 OF THE NPDES PERMIT MNR100001. CONTRACTOR SHALL INITIATE TEMPORARY OR PERMANENT STABILIZATION OF SEDIMENT CONTROL BMPS MADE OF SOIL WITHIN 24 HOURS.

THE CONTRACTOR SHALL INSTALL PERIMETER CONTROL AROUND ALL STAGING AREAS, BORROW PITS, AND AREAS CONSIDERED ENVIRONMENTALLY SENSITIVE.

THE CONTRACTOR SHALL ENSURE VEHICLE TRACKING BE MINIMIZED WITH EFFECTIVE BMPS. WHERE THE BMPS FAIL TO PREVENT SEDIMENT FROM TRACKING ONTO STREETS THE CONTRACTOR SHALL CONDUCT STREET SWEEPING, IN ADDITION TO VEHICLE TRACKING BMPS, TO REMOVE ALL TRACKED SEDIMENT.

THE CONTRACTOR SHALL IMPLEMENT CONSTRUCTION PRACTICES TO MINIMIZE SOIL COMPACTION.

THE CONTRACTOR SHALL ENSURE ALL CONSTRUCTION ACTIVITY REMAIN WITHIN PROJECT LIMITS AND THAT ALL IDENTIFIED RECEIVING WATER BUFFERS ARE MAINTAINED.

RECEIVING WATER	NATURAL BUFFER	IS THE BUFFER BEING ENCROACHED ON?	REASON FOR BUFFER ENCROACHMENT
NONE	NA		

A 50 FOOT NATURAL BUFFER MUST BE PRESERVED OR PROVIDE REDUNDANT (DOUBLE) PERIMETER SEDIMENT CONTROLS IF NATURAL BUFFER IS INFEASIBLE.

THE CONTRACTOR SHALL NOT UTILIZE SEDIMENT CONTROL CHEMICALS ON SITE.

INSPECTION AND MAINTENANCE:
ALL INSPECTIONS, MAINTENANCE, REPAIRS, REPLACEMENTS, AND REMOVAL OF BMPS IS TO BE CONSIDERED INCIDENTAL TO THE BMP BID ITEMS.

THE PERMITTEE(S) IS RESPONSIBLE FOR COMPLETING SITE INSPECTIONS, AND BMP MAINTENANCE TO ENSURE COMPLIANCE WITH THE PERMIT REQUIREMENTS.

THE PERMITTEE(S) SHALL INSPECT THE CONSTRUCTION SITE ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.

PERMITTEE MAY ADJUST THE INSPECTION SCHEDULE DESCRIBED AS FOLLOWS:

A. INSPECTIONS OF AREAS WITH PERMANENT COVER CAN BE REDUCED TO ONCE PER MONTH, EVEN IF CONSTRUCTION ACTIVITY CONTINUES ON OTHER PORTIONS OF THE SITE; OR
B. WHERE SITES HAVE PERMANENT COVER ON ALL EXPOSED SOIL AND NO CONSTRUCTION ACTIVITY IS OCCURRING ANYWHERE ON THE SITE, INSPECTIONS CAN BE REDUCED TO ONCE PER MONTH AND, AFTER 12 MONTHS, MAY BE SUSPENDED COMPLETELY UNTIL CONSTRUCTION ACTIVITY RESUMES. THE MPCA MAY REQUIRE INSPECTIONS TO RESUME IF CONDITIONS WARRANT; OR
C. WHERE CONSTRUCTION ACTIVITY HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, INSPECTIONS MAY BE SUSPENDED. INSPECTIONS MUST RESUME WITHIN 24 HOURS OF RUNOFF OCCURRING, OR UPON RESUMING CONSTRUCTION, WHICHEVER COMES FIRST.
D. FOR PROJECTS WHERE A POLLINATOR HABITAT OR NATIVE PRAIRIE TYPE VEGETATED COVER IS BEING ESTABLISHED, INSPECTIONS MAY BE REDUCED TO ONCE PER MONTH IF THE SITE HAS TEMPORARY VEGETATION WITH A DENSITY OF 70% TEMPORARY UNIFORM COVER. IF AFTER 24 MONTHS NO SIGNIFICANT EROSION PROBLEMS ARE OBSERVED, INSPECTIONS MAY BE SUSPENDED COMPLETELY UNTIL THE TERMINATION REQUIREMENTS IN SECTION 13 OF THE NPDES PERMIT MNR100001 HAVE BEEN MET.

THE PERMITTEE(S) SHALL DOCUMENT A WRITTEN SUMMARY OF ALL INSPECTIONS AND MAINTENANCE ACTIVITIES CONDUCTED WITHIN 24 HOURS OF OCCURRENCE. RECORDS OF EACH ACTIVITY SHALL INCLUDE THE FOLLOWING:

-DATE AND TIME OF INSPECTIONS;
-NAME OF PERSON(S) CONDUCTING INSPECTION;
-FINDINGS AND RECOMMENDATIONS FOR CORRECTIVE ACTIONS IF NECESSARY;
-CORRECTIVE ACTIONS TAKEN;
-DATE AND AMOUNT OF RAINFALL EVENTS;
-IF PERMITTEES OBSERVE A DISCHARGE DURING THE INSPECTION, THEY MUST RECORD AND SHOULD PHOTOGRAPH AND DESCRIBE THE LOCATION OF THE DISCHARGE (I.E., COLOR, ODOR, SETTLES OR SUSPENDED SOLIDS, OIL SHEEN, AND OTHER OBVIOUS INDICATORS OF POLLUTANTS); AND
-ANY AMENDMENTS TO THE SWPPP PROPOSED AS A RESULT OF THE INSPECTION MUST BE DOCUMENTED AS REQUIRED IN SECTION 6 OF THE NPDES PERMIT MNR100001 WITHIN SEVEN (7) CALENDAR DAYS; AND
-ALL PHOTOGRAPHS OF DEWATERING ACTIVITIES AND DOCUMENTATION OF NUISANCE CONDITIONS RESULTING FROM DEWATERING ACTIVITIES AS DESCRIBED IN SECTION 10 OF THE NPDES PERMIT MNR100001.

THE PERMITTEE(S) SHALL SUBMIT A COPY OF THE WRITTEN INSPECTIONS TO THE ENGINEER AND OWNER ON A MONTHLY BASIS. IF MONTHLY INSPECTION REPORTS ARE NOT SUBMITTED, MONTHLY PAYMENTS MAY BE HELD.

THE CONTRACTOR SHALL DOCUMENT AMENDMENTS TO THE SWPPP AS A RESULT OF INSPECTION(S) WITHIN 7 DAYS.

THE CONTRACTOR SHALL KEEP THE SWPPP, ALL INSPECTION REPORTS, AND AMENDMENTS ONSITE. THE CONTRACTOR SHALL DESIGNATE A SPECIFIC ONSITE LOCATION TO KEEP THE RECORDS

THE CONTRACTOR IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY BMP'S, AS WELL AS EROSION AND SEDIMENT CONTROL BMP'S.

THE CONTRACTOR SHALL INSPECT EROSION PREVENTION AND SEDIMENTATION CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS. ALL NONFUNCTIONAL BMPS SHALL BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPS WITHIN 24 HOURS OF FINDING. THE CONTRACTOR SHALL INVESTIGATE AND COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS:

PERIMETER CONTROL DEVICES, INCLUDING SILT FENCE SHALL BE REPAIRED, OR REPLACED, WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE DEVICE HEIGHT. THESE REPAIRS SHALL BE MADE WITHIN 24 HOURS OF DISCOVERY.

TEMPORARY AND PERMANENT SEDIMENT BASINS SHALL BE DRAINED AND THE SEDIMENT REMOVED WHEN THE DEPTH OF SEDIMENT COLLECTED IN THE BASIN REACHES 1/2 THE STORAGE VOLUME. DRAINAGE AND REMOVAL MUST BE COMPLETED WITHIN 72 HOURS OF DISCOVERY.

DURING EACH INSPECTION, CONTRACTOR MUST INSPECT AREAS ADJACENT TO THE PROJECT, SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS BUT NOT CURB AND GUTTER SYSTEMS, FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. CONTRACTOR MUST REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN AREAS ADJACENT TO THE PROJECT, SURFACE WATERS, INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS AND RESTABILIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL. CONTRACTOR MUST COMPLETE REMOVAL AND STABILIZATION WITHIN SEVEN (7) CALENDAR DAYS OF DISCOVERY UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL ACCESS CONSTRAINTS. CONTRACTOR MUST USE ALL REASONABLE EFFORTS TO OBTAIN ACCESS. IF PRECLUDED, REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN SEVEN (7) DAYS OF OBTAINING ACCESS. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AUTHORITIES AND RECEIVING ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK IN SURFACE WATERS.

CONSTRUCTION SITE VEHICLE EXIT LOCATIONS SHALL BE INSPECTED DAILY FOR EVIDENCE OF SEDIMENT TRACKING ONTO PAVED SURFACES. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES WITHIN 24 HOURS OF DISCOVERY.

IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED IN A MANOR AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.

EROSION PREVENTION BMP SUMMARY:
SEE EROSION AND SEDIMENT CONTROL PLAN SHEET AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF EROSION PREVENTION BMPS.

SEDIMENT CONTROL BMP SUMMARY:
SEE EROSION AND SEDIMENT CONTROL PLAN SHEETS AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF SEDIMENT CONTROL BMPS.

I HEARBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DOUGLAS J SCOTT, PE
DATE 05/05/2025 LICENSE NO. 57162

MANKATO MOTORSPORTS PARKING LOT ADDITION
MANKATO, MN

STORMWATER POLLUTION AND PREVENTION PLAN

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